

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ПОЛТАВСЬКА ДЕРЖАВНА АГРАРНА АКАДЕМІЯ**

Кафедра іноземних мов та українознавства

**ENGLISH FOR STUDENTS
OF AGRICULTURE**

**Навчальний посібник
для студентів спеціальностей 6.090101
«Агрономія» та 6.040106 «Екологія,
охорона навколишнього середовища
та збалансоване природокористування»**

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Автор-укладач:

Сільчук О. В. – викладач кафедри іноземних мов та українознавства ПДАА.

Рецензенти:

Ю. А. Зацний – доктор філологічних наук, завідувач кафедри теорії та практики перекладу з англійської мови Запорізького національного університету

В. Л. Кравченко – кандидат філологічних наук, доцент, доцент кафедри англійської та німецької філології Полтавського національного педагогічного університету імені В. Г. Короленка

Ю. О. Ніколаєнко – кандидат педагогічних наук, доцент, доцент кафедри іноземних мов та українознавства Полтавської державної аграрної академії

Мета навчального посібника – забезпечити формування необхідної комунікативної компетентності майбутніх фахівців агрономічних напрямів у сферах професійного спілкування в усній і письмовій формах. Навчальний посібник складається з таких структурних частин: вступ; перша частина (три змістовні модулі (26 тем); друга частина (спеціалізовані тексти для читання); третя частина (граматичний довідник); список рекомендованої літератури.

Система вправ забезпечує швидке й ефективне засвоєння студентами необхідних знань і вироблення стійких навичок фахової усної та письмової, комунікації, роботи з англомовними текстами професійного спрямування.

У граматичному довіднику розглядаються основні граматичні явища (морфологія), знання яких необхідно для успішного оволодіння іноземною мовою професійного спілкування.

Затверджено на засіданні кафедри іноземних мов та українознавства Полтавської державної аграрної академії

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INTRODUCTION

Інтеграція України у світовий освітній та економічний простори зумовлює необхідність підготовки висококваліфікованих, конкурентоспроможних фахівців-аграріїв. Тому одним із найактуальніших питань у сфері професійної підготовки майбутніх фахівців агрономічних спеціальностей є формування різних комунікативних аспектів, зокрема, уміння ефективно спілкуватися іноземною мовою у професійному середовищі.

Основною метою підготовки та видання навчального посібника є формування необхідної комунікативної спроможності майбутніх фахівців агрономічних напрямів у сферах професійного та ситуативного спілкування в усній і письмовій формах.

Навчальний посібник складається з таких структурних частин: вступ; перша частина (три змістовні модулі (26 тем), друга частина (спеціалізовані тексти для читання); третя частина (граматичний довідник), список рекомендованої літератури.

Перша частина посібника складається із трьох змістовних модулів (26 тем). У першому змістовному модулі «What is Agriculture» подано такі теми: «The History of Agriculture», «Plant Products», «Animal Products», «Soil», «Water», «Seeds», «Plant Growth», «Harvest», «Storage». До другого змістовного модуля «Conditions for Successful Agriculture» входять такі теми: «Classification and Composition», «The Nitrogen Cycle», «Soil Conservation», «Preparing, Seeding, and Planting», «Climate and Weather», «Pricing», «Government Intervention». У третьому змістовному модулі «New Tendencies in Agriculture» представлено теми: «Cropping Systems», «Growing Seasons», «Weeds, Pests, and Diseases», «Diagnosing Crop Problems», «Agribusiness Management», «International Trade», «The Futures Markets», «Sustainable Farming», «Organic Farming», «GMOs». До кожної теми подано тексти професійного спрямування для читання, вправи для обговорення, вправи на розуміння на слух оригінальних текстів фахової тематики та письмові вправи, пов'язані із професійною діяльністю фахівців агрономічних спеціальностей.

Друга частина навчального посібника містить тексти професійного спрямування. Тексти слугують не тільки для розвитку навичок читання та перекладу фахової літератури, а й несуть у собі нову важливу інформацію, необхідну для сучасних фахівців агрономічних спеціальностей.

Третя частина навчального являє собою довідник із граматики англійської мови, що відповідає логіці структури курсу граматики мови, і містить основні відомості про граматику (морфологію) англійської мови, подані у вигляді таблиць. Таблиці дозволяють виявити внутрішню логіку англійської граматичної системи, що й сприяють мимовільному запам'ятовуванню інформації, поданої в довіднику, та значно спрощують засвоєння граматичного матеріалу.

Навчальним посібником можуть користуватися як студенти, аспіранти агрономічних спеціальностей, так і всі, хто працює у сфері агропромислового виробництва.

PART I. MODULE 1. WHAT IS AGRICULTURE

UNIT 1. THE HISTORY OF AGRICULTURE

Get ready!

- **1. Before you read the passage? Talk about these questions.**

- 1 When did farming begin in your country?
- 2 What did farmers grow in your country?

Reading

- **2. Read the textbook passage. Then, mark the following statements as true (T) or false (F).**

- 1 ___ Crops cannot grow in deserts.
- 2 ___ The Nile River floods every year.
- 3 ___ Farmers raised animals before plants.

The Development of Agriculture

Agriculture began in the area known as the Fertile Crescent. The area is a hot, dry desert. But it has two of the requirements for **farming**: good soil and a **water supply**.

Many early farmers used the Nile River as a water supply. The Nile River floods at the same time every year. Farmers **planted crops** before the floods. This helped their plants to survive in the desert. Later, farmers created **irrigation ditches**. They moved water from the Nile River to their fields. They could cultivate crops any time of the year and **harvest** extra food.

Producing extra food was important. Later, farmers fed animals with it. These **domesticated** animals became another important part of agriculture.

Vocabulary

- **3. Match the words (1-6) with the definitions (A-F).**

- 1 ___ agriculture
- 2 ___ crop
- 3 ___ cultivate
- 4 ___ produce
- 5 ___ domesticate
- 6 ___ plant

A a large group of cultivated plants

B to put seeds in soil

C growing plants and raising animals

D to make something

E to raise a crop from seeding to harvest

F to tame an animal

• 4. Read the sentence pair. Choose where the words best fit the blanks.

1 *water supply / irrigation*

A The river is the farmer's _____.

B _____ helps farmers grow crops in areas with little rainfall.

2 *harvesting / farming*

A _____ includes raising animals and crops.

B Farmers wait until crops are mature to start _____.

• 5. Listen and read the text book passage again. Then, say three things you have learnt from the text.

Listening

• 6. Listen to a conversation between a student and teacher in a history class. Choose the correct answers.

1 What is the conversation mainly about?

A a way to predict floods

B an early irrigation method

C the number of early farmers

D the most common early crops

2 How did farmers control water?

A They put gates in ditches.

B They filled ditches with dirt.

C They carried water in buckets.

D They planted far from the river.

• 7. Listen again and complete the conversation.

Student: 1 _____, Mrs. Anderson. I have a question about the first farmers.

Teacher: Great. What is it?

Student: Well, they were in a desert. How did they irrigate their 2 _____?

Teacher: Oh, with 3 _____. They connected their fields and the Nile River.

Student: Okay. So, 4 _____ moved through the ditches to the fields.

Teacher: Exactly.

Student: Then, I have another question. How did they 5 _____ the water?

Teacher: The ditches had 6 _____. They opened and water flowed through.

Speaking

• 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Excuse me.

How did early farmers ...

They connected ...

Student A: You are a student learning about early agriculture. Ask Student B about:

- water supply
- watering fields
- controlling water

Student B: You are a History teacher. Answer Student A's questions.

Writing

- 9. Use the conversation from Task 8 to fill out the student's notes.

Name		Date	
Group			
Subject			
Farmers got water from _____			

Water came to the fields in _____			

They controlled water by _____			

UNIT 2. PLANT PRODUCTS

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 What are your favorite fruits and vegetables?
- 2 What non-food products come from plants?

Reading

- **2. Read the advertisement. Then, fill in the blanks with the correct items.**

1 Available fruits: _____

2 Available vegetables: _____

3 Cereal products: _____

4 Industrial crop products: _____

Support your local farmers!

Come to the **farmer's market** this Saturday,
8AM-3PM on Main Street.

This year's harvest is the best yet!

FRESH FOOD

Buy fresh fruit and **vegetables** for a good price!

Fruit: Delicious **melons**, strawberries, and blueberries.

Vegetables: Fresh broccoli, peas, and lettuce. We sell **tubers** and **legumes** too!

*This week we have Thompson's Granola. Thompson **cereal** crops are grown on a nearby farm.

CLOTHING

We offer some **industrial** crop products, such as **hemp** shoes, shirts, and hats.

WE HOPE TO SEE YOU ON SATURDAY!

Vocabulary

- **3. Match the words (1-6) with the definitions**

1 ___ harvest

2 ___ legume

3 ___ melon

4 ___ tuber

5 ___ cereal

6 ___ farmer's market

- A a crop that grows underground
- B a crop that produces grain
- C a crop that has pods
- D crops that have been gathered
- E a type of large, sweet fruit
- F a group of farmers selling crops

• **4. Check (V) the sentence that uses the underlined part correctly.**

- 1 ☐ A Legumes are a very popular fruit.
☐ B Kevin likes to wear hemp clothing.
- 2 ☐ A Many people prefer cereals because they have no seeds.
☐ B Vegetables are used in many meals.
- 3 ☐ A Most harvests grow completely underground.
☐ B Fruit is popular because it is sweet.
- 4 ☐ A Industrial crops are not eaten.
☐ B Some tubers are used to make clothes.

• **5. Listen and read the advert again. What can someone find at the market?**

Listening

• **6. Listen to a conversation between a customer and farmer at a farmer's market. Place a check (V) next to items the customer buys.**

1. Potatoes
2. Granola
3. Strawberries
4. Apples
5. Cereal crops

• **7. Listen again and complete the conversation.**

Farmer: Welcome to the farmer's market. Can I 1 _____ something?

Customer: Yes, please. I want some fresh fruit.

Farmer: These 2 _____ are perfect. We picked them yesterday.

Customer: Oh, good. And I'd like some 3 _____, too. 4 _____ are they?

Farmer: A three pound bag costs one dollar.

Customer: I'll take a bag, thanks.

Farmer: Okay. Anything else today?

Customer: Yeah. I saw your ad for 5 _____. Do you have that?

Farmer: Yes, we do. 6 _____ are grown on a nearby farm.

Speaking

• **9. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

Can I help you?

I want some ...

How much are they?

Student A: You are at a farmer's market. Talk to Student B about:

- three products
- prices

Student B: You are a farmer at a farmer's market. Answer Student A's questions.

Writing

- **10. Use the conversation from Task 8 to fill out the customer's receipt.**

Date of Sale: _____	
Items Purchased:	Price:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Total Amount Due:	_____

UNIT 3. ANIMAL PRODUCTS

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 What types of meat come from animals?
- 2 What other products come from animals?

Reading

- **2. Read the magazine article. Then, choose the correct answers.**

- 1 What is the article mainly about?
A Animals that only produce meat
B The most popular types of meat
C Products made from animals
D Waste products of rendering
- 2 Which of the following is NOT a by-product?
A fat
B bone
C hooves
D protein
- 3 What is true of rendering?
A It limits waste.
B It is a by-product.
C It provides protein.
D It is in marshmallows.

More than a meal

We rely on animals for a number of products. Some are more obvious than others. Animals' **milk** and **meat** provide us with **protein**. We make clothing and furniture with wool and leather. In addition, there is a long list of animal **by-products**. We use them every day. But we don't always know it.

We **render fat** or **tallow** into tires, soaps and candles. Marshmallows, buttons and tape include **bones** and **hooves**. Wool is often used in carpet. Even baseballs use animal products.

Animal by-products are found in unexpected places. Thanks to rendering, very little goes to waste. Meat is just one of many products that we take from animals.

Vocabulary

- **3. Read the sentence pair. Choose where the words best fit the blanks.**

1 wool / milk

- A** _____ is an important food source.
B Many clothes are made of _____.

2 protein / leather

A _____ is often used to cover furniture.

B Plant products and meat contain _____.

3 meat / by-products

A Humans have always used animals for _____.

B _____ are used in many common products.

• 4. Write a word that is similar in meaning to the underlined part.

1 Too much oily substance from plants and animals is unhealthy.

2 Hard materials that give a body structure are a by-product.

3 The hard feet of animals are used to make tape.

4 Soap is made by melting animal fat.

5 Fat that is used to make candles is also used in soap.

• 5. Listen and read the magazine article again. What happens to animal fat before it is used to produce soaps?

Listening

• 6. Listen to a conversation between a manager and a developer at a meeting. Mark the following statements as true (T) or false (F).

1 _____ The new product has no extra chemicals.

2 _____ The all-natural soap will be expensive.

3 _____ Tallow is rarely used in soap.

• 7. Listen again and complete the conversation.

Manager: 1 _____. We have a new product to sell. Miss Smith will tell us about it.

Developer: Okay. Customers want natural products, right? So we made an all-natural soap.

Manager: What 2 _____ by "all-natural"?

Developer: There are no extra 3 _____. It's just the basic ingredients.

Manager: Sounds interesting. Will it be 4 _____?

Developer: No. After all, the main ingredient is tallow.

Manager: 5 _____. What's tallow?

Developer: Oh, tallow is basically animal fat. It's used in 6 _____.

Manager: And it's cheap?

Developer: Very. It's a by-product that few people use.

Speaking

- **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

We have a new product.

What do you mean by

The main ingredient is

Student A: You are a salesman. Ask Student B about:

- a new product
- ingredients
- price

Student B: You created a new product that uses animal by-products. Answer Student A's questions.

Writing

- **9. Use the conversation from Task 8 and the magazine article to fill out the product description.**

NEW PRODUCT NOTES

Product: _____

Description/Special Qualities: _____

Main Ingredient: _____

Expected Costs: _____

UNIT 4. SOIL

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 What kind of soil is there in your country?

2 Why is good soil important?

Reading

- **2. Read the newspaper advice column. Then, mark the following statements as true (T) or false (F).**

1 ___ Tomatoes grow well in clay.

2 ___ Aeration does not occur in clay.

3 ___ Humus adds nutrients to soil.

CultiAdvice

Dear Green Thumb: My tomatoes are dying. They get plenty of sun and water. What am I doing wrong? – Tom G.

Dear Tom: Check the **soil**. Tomato roots need the right amount of water and air. They don't do well in **sand** or **clay**. Both have the wrong **soil structure**. Sand particles are too loose to hold enough water. **Dense** clay prevents aeration. You need a **soil texture** in between those extremes. **Loam** with high **silt** is usually good.

The other issue is nutrients. A soil's **parent material** determines what nutrients are in it. You can improve the nutrients by adding **humus**.

Vocabulary

- **3. Fill in the blanks with the correct words and phrases from the word bank.**

WORD BANK				
aeration	clay	loam	humus	soil structures

1 Some _____ hold more water than others.

2 Crops don't grow well in pure _____ soil.

3 Use _____ to add nutrients to soil.

4 _____ provides roots with air.

5 _____ is a mix of three soil types.

• **4. Match the words (1-6) with the definitions (A-F).**

- 1 ___ soil
- 2 ___ sand
- 3 ___ silt
- 4 ___ soil texture
- 5 ___ parent material
- 6 ___ dense

A a material made of small pieces of rock and mineral

B a material that is deposited by water

C rock and minerals that eventually form soil

D a layer of material that plants grow in

E the size of particles in a soil

F having a lot of material in a small space

• **5. Listen and read the newspaper advice column again. What do you need to take into consideration when planting tomatoes?**

Listening

• **6. Listen to a conversation between a customer and clerk in a plant supply store. Choose the correct answers.**

1 What is the customer buying at the store?

A soil

B pots

C houseplants

D vegetables

2 Why does the clerk recommend Wonder Grow?

A It contains no clay.

B It has dense soil structure.

C It supports vegetable growth.

D It has good aeration and holds water.

- **7. Listen again and complete the conversation.**

Clerk: Hi. Can I help you with anything?

Customer: Yes. I need some **1** _____.

Clerk: Is this for indoor or outdoor plants?

Customer: It's for indoor plants.

Clerk: What kinds of plants is it for? Houseplants? flowering plants? vegetables?

Customer: I have some spider plants. They need to be put in **2** _____.

Clerk: **3** _____, you should use Wonder Grow. It has **4** _____ and **5** _____ well, too.

Customer: Okay, **6** _____. Thanks for your help.

Speaking

- **9. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

I need some ...

What kind of plants is it for?

You should use ...

Student A: You work in a plant supply store. Talk to Student B about:

- type of plants
- soil types
- soil description

Student B: You need soil for your plants. Answer Student A's questions.

Writing

- **10. Use the conversation from Task 8 and the newspaper advice column to fill out the product description.**

Product name: _____

_____ can be used for

or _____
It supports _____

and _____ growth.
Best of all, it has _____

and _____ better than any product

UNIT 5. WATER

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 Where do farmers get water?

2 How do water shortages hurt farmers?

Reading

- **2. Read the article from the San Fernando Sun newspaper. Then, choose the correct answers.**

1 What is the article mostly about?

A a crop shortage

B a lack of rainfall

C new irrigation methods

D new types of crops

2 According to the article, what will cause a water shortage in the future?

A raising rain-fed crops

B using extra groundwater

C farming in arid locations

D planting crops in the mountains

3 What is true of the peaches and nectarines?

A They will not be damaged by the drought.

B They will be more expensive this year.

C They will need more water than most fruits.

D They will be grown by out of town farmers.

Drought continues

SAN FERNANDO – The central Valley's current **drought** is the worst in 50 years. It started five years ago. Average rainfall in the valley is down 35%. Less **rainfall** in the mountains also limits the **water cycle** in this already **arid** region as well.

Many **rain-fed** crops are dying. Recently, many famers dug ditches to **irrigate** them. They used extra **groundwater** from their wells, too. Many experts say that will create water **shortages** in the future.

Expect higher prices for many fruits and vegetables this summer. Peaches and nectarines are an exception. Local farmers are growing **drought-resistant** varieties of those crops.

Vocabulary

- **3. Read the sentence pair. Choose where the words best fit the blanks.**

1 ditch / groundwater

A Irrigate the crops by digging a ____ .

B Areas with a lot of _____ are ideal for farming.

2 shortage / rainfall

A With so much _____, Dawn didn't have to water her plants.

B Many crops died due to the water _____.

3 rain-fed / drought-resistant

A Linda prefers _____ crops since she lives in an arid region.

B Andrew doesn't irrigate; his crops are _____.

• **4. Match the words (1-4) with the definitions (A-D).**

1 _____ water cycle

2 _____ drought

3 _____ arid

4 _____ irrigate

A to guide water to plants

B the pattern of water moving and changing form

C receiving little rainfall

D a period of unusual dryness

• **5. Listen and read the article from the San Fernando Sun newspaper again. Why has the fact that there has been less rainfall in the mountains affected the region?**

Listening

• **6. Listen to a conversation between two farmers. Mark the following statements as true (T) or false (F).**

1 _____ The man's vegetable crop died.

2 _____ The woman might expand her irrigation system.

3 _____ The woman does not have drought-resistant crops.

• **7. Listen again and complete the conversation.**

Farmer 1: I'm worried. My vegetables won't 1 _____ if this drought continues.

Farmer 2: I feel the same way. My lettuce and cucumbers aren't doing well.

Farmer 1: What are you going to 2 _____ it?

Farmer 2: I might 3 _____ my irrigation system.

Farmer 1: That 4 _____ very expensive.

Farmer 2: I agree. But I don't know what else to do.

Farmer 1: You could always plant 5 _____ - _____ vegetables next year.

Farmer 2: That's a good idea. It will cost less. But it 6 _____ this year.

Speaking

- **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

My ... aren't doing well.

You could always ...

That's a good idea.

Student A: You are a farmer during a drought. Talk to Student B about:

- your crops
- irrigation
- other solutions

Student B: You are a farmer during a drought. Discuss solutions with Student A.

Writing

- **9. Use the conversation from Task 8 to fill out the farm report.**

FARM REPORT	
	Date: _____
Crops Planted: _____	

Crop Condition: _____	

Water Problems: _____	

Possible Solutions: _____	

UNIT 6. SEEDS

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 How do farmers plant seeds?

2 What do seeds need to grow?

Reading

- **2. Read the page from The New Gardener's Seed catalog. Then, mark the following statements as true (T) or false (F).**

1 ___ The seedlings can survive below 37° F.

2 ___ The broccoli seeds have hard coats.

3 ___ The seeds will sprout within two weeks.

****Bulk orders of 100 or more receive a discount of 10%****

Cold-weather **hybrid** broccoli. Bred for superior **seed vigor**. Seedlings survive in temperatures down to 37° F.

Germination: Soak seeds in water overnight to remove **hard coats** and end **dormancy**. Place in 70° F soil to **germinate**.

Location: **Sow** in a place that gets full sun.

Sowing method: Use a pen or similar shaped object to prepare holes 0.5 cm deep, 2 cm apart. Drop one **seed** per hole. Cover with soil. Water.

Days to sprout: 7-14

Days to maturity: 58

Harvest: Cut buds before they flower.

Price: \$ 0.5 /100 g. packet

Vocabulary

- **3. Match the words (1-6) with the definitions (A-F).**

1 ___ hard coat

2 ___ germinate

3 ___ seedling

4 ___ seed vigor

5 ___ hybrid

6 ___ sow

A the firm outer layer of a seed

B to sprout from a seed

C to plant seeds

D made by parents of different breeds

E a young plant

F the strength and survivability of a seed

- **4. Write a word that is similar in meaning to the underlined part.**

1 Farmers plant small objects from which plants grow in the spring.
s _ _ d _

2 Each plant has a different number of days until it can be harvested.

d _ _ _ t _ ma _ _ _ _ y

3 Some plants require special ways in which seeds are planted.

_ o w _ _ _ me _ _ _ _ _

4 To plant a large crop, you need a large quantity of seeds.

b _ _ k

5 Some plants produce seeds that pass the winter in an active state.

_ or _ _ _ _ y

• **5. Listen and read the page from The New Gardener's Seed catalog again. How many weeks will it take for the broccoli to be edible?**

Listening

• **6. Listen to a conversation between a customer and a farmer. Mark the following statements as true (T) or false (F).**

1 _ The customer wants watermelon seeds.

2 _ The farmer does not have the seed varieties that the customer wants.

3 _ The customer will receive 10% off.

• **7. Listen again and complete the conversation.**

Farmer: Hi there. Welcome to Braxton Farms. How can I help you?

Customer: Hi, I'd like to buy some seeds.

Farmer: Great. What varieties are you interested in?

Customer: I want some 1 _____, the Super King. And some cantaloupe, the Royal Gold.

Farmer: I'm sorry. I 2 _____ that.

Customer: Super King watermelon and Royal Gold cantaloupe.

Farmer: 3 _____. Also, we have a special today on 4 _____ orders. You get 10% off.

Customer: 5 _____. I only need two packets of each.

Farmer: Well, they 6 _____ packs of 3 for \$3.78.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

I'd like to buy some seeds.

What varieties are you interested in?

I only need ...

Student A: You are a farmer selling seeds. Talk to Student B about:

- seed varieties
- discounts
- total price

Student B: You are buying seeds. Answer Student A's questions.

Writing

- **9. Use the conversation from Task 8 to fill out the receipt.**

BRAXTON FAMS
<i>SALES RECEIPT</i>
Seed Variety: _____

Number of packets: _____
Seed Variety: _____

Number of packets: _____
Discount? Y / N
Total Price: _____

UNIT 7. PLANT GROWTH

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 How do plants change as they grow?

2 What function does each part of a plant serve?

Reading

- **2. Read the magazine article. Then, mark the following statements as true (T) or false (F).**

1 ___ No plant has more protein than quinoa.

2 ___ Quinoa sprouts quickly and then slows.

3 ___ Farmers who grow quinoa harvest its seeds.

QUINOA on the Rise

Few plants have as much protein as quinoa, and it can grow in many environments. For that reason, it's become popular with gardeners and commercial farmers alike. Check out the following tips to grow quinoa at home.

Quinoa requires full sun to conduct **photosynthesis**. Sow seeds where the plant will get plenty of light. Provide at least 10 inches between rows to give the **roots** plenty of space.

If you maintain **growth charts**, you'll notice that quinoa grows slowly at first. But when the **stem** reaches about 12 inches, the **buds** will **flower**. The plant is ready for harvest when the **leaves** drop. Only the **seedheads** will remain. These can be stripped from the **branches** with little effort. Remove and dry the seeds for your first quinoa harvest.

Vocabulary

- **3. Match the words (1-4) with the definitions (A-D).**

1 ___ photosynthesis

2 ___ branch

3 ___ stalk

4 ___ quinoa

A a narrow part that supports leaves

B a chemical process that produces energy

C a limb of a plant

D a strong plant that is grown for its seeds

• **4. Fill in the blanks with the correct words and phrases from the word bank.**

WORD BANK					
roots	growth chart	flowering	leaves	buds	seedhead

- Those _____ will grow into flowers.
- Plants absorb nutrients from the soil with their _____.
- Photosynthesis occurs in the _____ of a plant.
- Tom keeps a detailed _____ of his crops to test how effective his fertilizers are.
- _____ plants usually produce colorful blooms in spring.
- The _____ of a quinoa plant contains protein-rich harvest.

• **5. Listen and read the magazine article again. Why do gardeners like quinoa?**

Listening

• **6. Listen to a conversation between two farmers discussing plant growth. Mark the following statements as true (T) or false (F).**

- 1 ___ The man planted quinoa for the first time.
- 2 ___ The woman's crops did not grow.
- 3 ___ The woman planted quinoa on thousands of acres.

• **7. Listen again and complete the conversation.**

Farmer 1: Susan, you planted quinoa for the first time this year, 1 _____?

Farmer 2: I did. I was worried 2 _____ . But it seems okay now.

Farmer 1: Worried? Why?

Farmer 2: It was growing so slowly. But it just 3 _____ for the buds to flower.

Farmer 1: Oh, so they're 4 _____?

Famer 2: Yeah, they are. We expect to harvest them next week.

Farmer 1: That's great. How much do you expect to harvest?

Farmer 2: Well, we only planted a 5 _____. So probably two thousand pounds 6 _____.

Speaking

• 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

You planted quinoa?

Worried? Why?

How much do you expect to harvest?

Student A: You are a farmer. Ask Student B about planting quinoa for the first time. Talk about:

- growth rate
- concerns
- expected harvest

Student B: You are a farmer. Answer Student A's questions.

Writing

• 9. Use the conversation from Task 8 to fill out the farmers' notes on the first quinoa harvest.

Quinoa Harvest Summary	
Acres Planted:	_____

Summary of Crop Growth:	_____

Expected Harvest:	_____

Actual Harvest:	_____

UNIT 8. HARVEST

Get ready!

- 1. Before you read the passage, talk about these questions.

1 When do farmers harvest crops in your country?

2 How do farmers gather crops during harvest?

Reading

- 2. Read the harvest summary report. Then, mark the following statements as true (T) or false (F).

1 ___ The crops all have the same package type.

2 ___ None of the crops were rained on.

3 ___ Field #2 produced the smallest amount of wheat.

REYNOLDS HARVESTING HARVEST SUMMARY REPORT					
Farm: 0024					
Crops: Hay and Wheat					
Harvest date	Field # Crop	Yield	Type	Package Weight	Rained On
06/29	1/ Hay	0.5 ton /acre	Round Bale	0.6 tons	No
08/16	2/ Wheat	30 bushels/acre	Bushel	600 bushels	Yes
10/02	3/ Wheat	80 bushels/acre	Bushel	1600 bushels	No

Notes: Field #1 had the most abundant yield. Field #2 was more difficult. It **matured** later than expected. The farmers **reaped** several **bushels** too early. We also experienced an equipment problem during **threshing**. Some of the hay was not properly separated from the **chaff**. Field #3 was more successful. Inspectors discarded nearly a ton of unacceptable material from the **stacks**. Most came out of field #2.

Vocabulary

- 3. Read the sentence pair. Choose where the words best fit the blanks.

1 reap / mature

A _____ the crops in six months.

B Some plants take longer to _____.

2 chaff / harvest

A The annual _____ is next month.

B This machine removes the unusable _____.

3 tons / bales

A There were more round _____ of hay this year.

B How many _____ of wheat were harvested?

• 4. Write a word that is similar in meaning to the underlined part.

1 This year's quantity of crops produced was twice last year's.

y _ _ _ d

2 Removing unusable parts from wheat makes it edible.

_ h _ _ s _ _ n _

3 Instead of gathering the crops in bales, we left them in organized piles.

_ t a _ _ _

4 When you go to the market, get 2 units of measurement equal to 9.3 Gallons of grain.

b _ s _ _ _

5 When you place an order, tell them what form of packaging to use.

p _ _ _ _ _ _ t _ _ _

• 5. Listen and read the harvest summary report again. What problems did farmers experience with this year's harvest?

Listening

• 6. Listen to a conversation between two farmers discussing a harvest.

Choose the correct answers.

1 How does the man feel about the harvest?

A worried

B pleased

C confused

D disappointed

2 What can you infer about the farmers' planting method?

A It was unsuccessful.

B It created a smaller harvest.

C It had not been used before.

D It involved several types of crops.

• 7. Listen again and complete the conversation.

Farmer 1: Cathy, what's the 1 _____ on the latest corn harvest?

Farmer 2: Well, we have fifteen tons for immediate sale.

Farmer 1: Fifteen tons? 2 _____ tons did we sell from the last field?

Farmer 2: Um, let's see. We sold eleven tons from the last field.

Farmer 1: That's 3 _____ ! Your new 4 _____ is working nicely.

Farmer 2: Yes, it is. We also expect to approve another five tons by Friday.

Farmer 1: 5 _____, Cathy. This is our 6 _____ harvest ever.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

We have ... for sale.

We will approve ... by ...

This is our ... harvest

Student A: You are a farmer. Talk to Student B about:

- a crop report
- tons sold
- your opinion of harvest

Student B: You are a farmer. Answer Student A's questions.

Writing

• **9. Use the conversation from Task 8 to fill out the crop report.**

Date	Crop	Package type	Package weight

UNIT 9. STORAGE

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 How do farmers store crops in your country?
- 2 How can stored crops be damaged?

Reading

- **2. Read the email. Then, complete the summary of the email.**

Workers discovered mold in **1** _____ 13. There were two causes: improper **2** _____ and too much **3** _____. Most of the silage was destroyed. The rest is in **4** _____ bags. The workers might store silage in the **5** _____ silos.

To: garia@garciafarms.com

From: c.thompson@garciafrms.com

Subject: Storage Problem

Mr. Garcia,

We found a problem in **bunker silo** number 13. **Mold** is growing near the south opening. I suspect two causes. First, there was improper **leveling**. Too much **moisture** gathered at one end. Secondly, the silo has too much **ventilation**. It can't **dry** and **cool** the silage.

As a result, most of the silage is destroyed. The rest is for **silage bags** for now. Number 13 is closed until we removed the mold. Should we use one of the **tower silos** for **storage** in the meantime? We should also discuss now fix number 13. I don't want this happen again.

Thank you,

Carla Thompson,

Storage Manager

Vocabulary

- **3. Read the sentence pair. Choose which words best fit the blanks.**

1 cool / dry

A _____ the grain or the heat will ruin it.

B After the harvest, _____ the wet crops.

2 storage / mold

A Nancy is worried about getting _____ in her silo.

B Jim sold some of the grain and put the rest in _____.

3 silage bag / ventilation

A There's a problem with the silo; use a _____.

B Don's storage facilities have excellent _____.

• **4. Match the words (1-4) with the definitions (A-D).**

- 1 ___ leveling
- 2 ___ moisture
- 3 ___ tower silo
- 4 ___ bunker silo

A flattening the top of a pile

B a long trench used to store grain

C wetness

D a tall storage facility

• **5. Listen and read the email again. Why is Carla Thompson contacting Mr. Garcia?**

Listening

• **6. Listen to a conversation between a farm owner and a storage manager. Mark the following statements as true (T) or false (F).**

- 1 ___ A machine improperly leveled the grain.
- 2 ___ The new assistant will receive more training.
- 3 ___ Workers will use silage bags until the ventilation works.

• **7. Listen again and complete the conversation.**

Manager: Mr. Garcia, did you get my email about the bunker silo?

Owner: I did. How bad is it?

Manager: It's pretty bad. There's mold 1 _____.

Owner: How did this happen?

Manager: It was our 2 _____. He wasn't trained on 3 _____.

Owner: Well, 4 _____ he gets trained.

Manager: Of course. We're also checking the 5 _____ system. There's too much air moving in there.

Owner: Use the 6 _____ until you fix it. And keep me updated.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

How bad is it?

How did this happen?

Use the ... until ...

Student A: You are a farm owner. Talk to Student B about:

- mold in a silo
- causes
- storage

Student B: You are a storage manager. Answer Student A's questions.

Writing

- **9. Use the conversation from Task 8 and the email to fill out the storage manager's message to farm workers.**

ATTENTION

Bunker silo 13 _____

This was caused by _____

and _____

Use _____

until it is fixed.

There is training on _____

for all new employees this week.

MODULE 2.

CONDITIONS FOR SUCCESSFUL AGRICULTURE

UNIT 10. CLASSIFICATION AND COMPOSITION

Get ready!

- **1. Before you read the passage, talk about these questions.**
 - 1 What types of soil do you know? (sand, peat, highly-organic, silt)
 - 2 How does soil type affect crop growth?

Reading

- **2. Read the soil analysis report. Then, mark the following statements as true (T) or false (F).**

- 1 ___ No site had the same grain texture.
- 2 ___ Sites 01 and 03 had highly-organic soil.
- 3 ___ Adding peat to Site 02 will make it suitable for irrigated farming.

Soil analysis report

Prepared for: Sam Jones / Prepared by: Kim Horton

We took soil samples from three proposed farm locations. See the chat below for details.

The samples indicate substantially different soils at each location. The table below summarizes the texture, composition, and classification of the samples. No **highly-organic** soils were found. Both sites 01 and 03 offer desirable soil. However, in both cases we recommend adding **peat**. That will make them more suitable for agriculture. The soil at Site 02 is not suitable for irrigated agriculture.

Sample	Grain texture	Composition			Unified Soil Classification System
		% sand	% silt	% clay	Symbol / Group Name
Site 01	Fine-grained	5	15	80	CL/clay
Site 02	Coarse-grained	75	21	4	CM/ silty sand
Site 03	medium-grained	2	68	32	MH/elastic silt

Vocabulary

- **3. Read the sentence pair. Choose where the words fit the blanks.**

1 highly-organic / coarse-grained

A _____ soil is best suited for farming.

B Growing crops in _____ soil is difficult.

2 peat / clay

A _____ makes soil more fertile.

B _____ is much more dense than sand.

3 unified soil classification system / composition

A Each soil type has a different _____.

B Soil types are organized by the _____.

- **4. Match the words (1-6) with the definitions (A-F).**

1 __ sand

2 __ silt

3 __ grain

4 __ classification

5 __ fine-grained

6 __ texture

A soil deposited by water

B consisting of tiny particles

C a small piece of material

D group something belongs to

E how something feels

F soil made of rock and minerals

- **5. Listen and read the soil report again. Which site would not be a good location for a farm?**

Listening

- **6. Listen to a conversation between a scientist and a farmer. Choose the correct answers.**

1 Why does the farmer call the scientist?

A to ask for advice on which field to plant

B to discuss the soil analysis results

C to point out an error in the report

D to request a second analysis

2 When would the field need to be irrigated?

A when the soil became sandy

B when wheat is planted there

C when there is below average rainfall

D when clay is present in the soil

- **7. Listen again and complete the conversation.**

Scientist: Hello, KCI Laboratories, Kim Horton speaking.

Farmer: Hi, Kim. This is Sam Jones at Breyton Farming. I just looked over the results from the soil analysis you sent.

Scientist: Do you have any questions?

Farmer: Actually, yes, I do. Just so I'm clear, the sample from the north field had a lot of clay in it.

Scientist: That's correct.

Farmer: So if I planted wheat there, it would 1_____ well.

Scientist: Yes. It has very 2 _____-_____ clay. So when it rains, the soil will hold the water very well.

Farmer: If I 3 _____, then I wouldn't need to irrigate that field.

Scientist: That's correct. 4 _____ the rainfall is normal.

Farmer: Of course. There's 5 _____. The east field sample showed it's very sandy. I just want to 6 _____ that I can irrigate there.

Speaking

- 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Do you have any questions?

The sample from the north field has ...

I just want to make sure that I can ...

Student A: You are a farmer who received a soil analysis. Ask Student B about:

- clay in fields
- sand in fields
- irrigation

Student B: You are a scientist who analyzed the soil. Answer Student A's questions.

Writing

- 9. Use the conversation from Task 8 to fill out the farmer's notes.

Soil Composition:

.....

North field soil type: _____

North field water / irrigation requirements: _____

East field soil type: _____

East field water (irrigation requirements: _____

UNIT 11. THE NITROGEN CYCLE

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 How is nitrogen added to soil?
- 2 Why must farmers monitor nitrogen levels in soil?

Reading

- **2. Read the textbook passage. Then, mark the following statements as true (T) or false (F).**

- 1 ___ Plants cannot survive without nitrogen.
- 2 ___ During fixation, decomposers turn ammonia into nitrogen.
- 3 ___ Nitrous oxide can cause algae build up in water supplies.

Nitrogen is a crucial nutrient for growing plants. Without the **nitrogen cycle**, which restores **nutrient-poor** soil, plants could not survive. During this cycle, nitrogen takes on many forms. It starts in the atmosphere as nitrogen gas. In this form, plants cannot absorb it. That changes after **fixation**, the next phase of the nitrogen cycle. During fixation, bacteria turn nitrogen into **ammonia**. In the next phase, mineralization, **decomposers** in the soil turn ammonia into **nitrites** and **nitrites**-forms of nitrogen that plant can use. Finally, during **dentrification**, bacteria reduce nitrates back into nitrogen gas.

Of course, the nitrogen cycle can also have negative effects. For example, it produces chemicals like **nitrous oxide**. When this substance leaks into bodies of water, **eutrophication** occurs. This built up of algae can ruin a water supply. Unfortunately, commercial farming produces a great deal of such chemicals. A challenge facing modern farmers is to reduce their contribution to this harmful aspect of the nitrogen cycle.

Vocabulary

- **3. Read the sentence pair. Choose where the words best fit the blanks.**

1 ammonia / nitrous oxide

A _____ is a component in many fertilizers.

B _____ is a toxic product of the nitrogen cycle.

2 eutrophication / detrification

A _____ restores nitrogen in the air.

B _____ occurred in the pond due to fertilizer runoff.

• **4. Match the words (1-6) with the definitions (A-F).**

- 1 __ fixation
- 2 __ decomposer
- 3 __ nitrite
- 4 __ nutrient -poor
- 5 __ nitrate
- 6 __ nitrogen cycle

A not having the right amount of minerals to be healthy

B substance that bacteria create from ammonia

C the processes by which nitrogen is changed into chemical forms

D the process of converting nitrogen into ammonia

E substance that bacteria create from nitrites

F organism that turns dead animals or plants into chemical nutrients

• **5. Listen and read the textbook passage again. At what stage can plants start to absorb nitrogen gas?**

Listening

• **6. Listen to a conversation between two farmers. Choose the correct answers.**

1. Why are the farmers concerned about using fertilizer?

A It might set back the current harvest.

B It could affect the water supply.

C It can reduce the nitrogen in the soil.

D It may cause damage to the cover crop.

2. What will the farmers do with the south field?

A irrigate it more often

B leave the field fallow next year

C finishing harvesting its legumes

D plant nitrogen restoring crops in it

• **7. Listen again and complete the conversation.**

Farmer 1: So, what should we do with the south field?

Farmer 2: I'm not sure what you mean.

Farmer 1: Well, this year's yield is pretty low. The soil might be nutrient poor.

Farmer 2: What do you suggest?

Farmer 1: We could plant legumes.

Farmer 2: I'm not 1 _____. _____.

Farmer 1: Well, 2 _____ the soil is low on nitrogen. We could use legumes as this year's cover crop.

Farmer 2: 3 _____, _____ Just have the legumes restore the nitrogen.

Farmer 1: Exactly. It's better than using too much fertilizer. I don't want our 4 _____ getting damaged.

Farmer 2: Well, I think that's a good idea. Let's 5 _____ this year's harvest. We still have a few days left.

Farmer 1: Sounds good. Then we can sit down and 6 _____ what legumes to plant.

Speaking

- 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

What should we do with the south field?

We could use legumes as the cover crop.

It's better than using too much fertilizer.

Student A: You are a farmer. Talk to Student B about:

- nitrogen in the fields
- fertilizer
- legumes

Student B: You are a farmer. Talk to Student A about nitrogen in the fields.

Writing

- 9. Use the conversation from Task 8 to fill out the farmer's schedule.

Harvest and Planting Schedule	
South field	1. _____ _____ _____
	2. _____ _____ _____
	3. _____ _____ _____

UNIT 12. SOIL CONSERVATION

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 In what ways can soil be damaged?
- 2 What parts of your country have the best soil?

Reading

- **2. Read the magazine article. Then, choose the correct answers.**

- 1 What is the main purpose of the article?

- A to show the benefits of soil additives
- B to describe soil conservation methods
- C to recommend soil conservation products
- D to explain the financial costs of soil damage

- 2 Which is NOT a suggestion made in the article?

- A planting cover crops
- B using keyline design
- C applying manure fertilizer
- D having perimeter runoff control

- 3 Which would be the best solution for nutrient depletion?

- A crop rotation
- B land degradation
- C windbreaks
- D contour farming

A Guide to Soil Conservation

Without healthy soil, farmers can't produce healthy crops. But soil faces many threats, including **nutrient depletion** and **erosion**. Fortunately, several methods of **soil conservation** can turn unhealthy soil into a plant paradise.

One method, **crop rotation**, solves nutrient depletion. **Cover crops**, or **green manure**, are rotated with other crops. This process increases the amount of nitrogen in the soil and reverses **land degradation**.

In addition to addressing nutrient-depletion, farmers also combat erosion. Several practices can prevent erosion. Planting **windbreaks** stops topsoil loss from wind. **Perimeter runoff control** prevents erosion from water. For example, **grassways** slow water and direct it away from fields.

Contour-farming techniques, such as **keyline design**, also prevent water from eroding soil. In one method, farmers plow rows **perpendicular** to hills. The water slows as it reaches the rows, which results in less soil loss.

Vocabulary

- **3. Match the words (1-8) with the definitions (A-H).**

- 1 ___ nutrient depletion

- 2 __ contour farming
- 3 __ cover crops
- 4 __ green manure
- 5 __ soil conservation
- 6 __ grassways
- 7 __ keyline design
- 8 __ perimeter runoff control

- A** a name for cover crops that add nitrogen
B process where nutrients are taken from soil
C grassy areas that slow water flow
D the practice of maintaining soil
E plants that add nutrients to soil and prevent from washing away
F a method of plowing to prevent erosion
G the use of plants near a field's borders to prevent erosion
H design that maximizes water resources

• **4. Write a word that is similar in meaning to the underlined part.**

1. The rows are at right angles to the fence.
p _ _ pe _ d _ _ _ _ a _
2. The farmer needs a way to stop wind or water removing the soil in his fields.
_ _ o _ _ _ n
3. Tree barriers shelter fields from the wind.
_ _ n _ _ _ _ a _ _
4. Growing different crops at different times helps keep soil healthy.
c _ _ _ r _ _ _ t _ _ _
5. The forest experienced negative effects on the land after the flood.
_ _ n _ _ e _ _ _ d _ _ _ _ n

• **5. Listen and read the magazine article again. What is the importance of perimeter grassways? What do they do?**

Listening

• **6. Listen to a conversation between two farmers. Mark the following statements as true (T) or false (F).**

- 1__ The farmers are concerned about nutrient depletion.
- 2__ The land the farm sits on is flat.
- 3__ The farmers will plant a grassway.

• **7. Listen again and complete the conversation.**

Farmer 1: I'm really worried about the soil in the fields. It's 1 _____ soggy.

Farmer 2: Yeah, there's been so much rainfall the 2 _____.

Farmer 1: The soil is 3 _____. We have to do something.

Farmer 2: I agree. But what can we do?

Farmer 1: I think contour farming is a good option.

Farmer 2: I'm 4 _____ that. We'd have to re-design our fields.

Farmer 1: True, but look at our land! We have 5 _____.

Farmer: Well, you 6 _____ there. Contour-farming could be good for us in the next few years. But we have to do something sooner than that.

Farmer 1: How about starting with a grassway?

Farmer 2: I like that. We can buy some sod and install it next weekend.

Speaking

- 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

I'm worried about the soil in the fields.

We have to do something.

We'd have to re-design our fields.

Student A: You are a farmer. Talk to Student B about:

- soil condition
- future plans
- immediate plans

Student B: You are a farmer. Talk to Student A about soil.

Writing

- 9. Use the conversation from Task 8 and the magazine article to fill out the farmer's plan.

Plan for Field 7

Problem: _____

Solution: _____

Problem: _____

Solution: _____

Problem: _____

Solution: _____

UNIT 13. PREPARING, SEEDING, AND PLANTING

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 How are fields in your country prepared for planting?

2 What planting methods are the most common in your country?

Reading

- **2. Read the section of The Farmer's Guide. Then, mark the following statements as true (T) or false (F).**

1 ___ Amendments add nutrients to soil.

2 ___ Herbicides should be applied weeks after planting.

3 ___ Broadcast seeding is effective with oats.

The Farmer's Guide

Chapter I: Preparing, Seeding, and Planting

Although different crops demand different preparation, some practices apply to almost any crop. And what you do before planting is just as important as what you do after. Preparing the **topsoil** is always key. Test it in late summer to determine if **amendments** like lime, sulfur, or phosphorous are needed to adjust acidity. If the soil is nutrient-deficient, add fertilizer.

Likewise, most fields require treatment with a **herbicide**. Waiting two weeks to plant after using some herbicides is recommended.

Once the **soil temperature** is right, planting can begin. The **seeding rate** is determined by the ideal **seeds per pound** and **seeds per square foot**. Be sure to calculate the appropriate **plant density**. A miscalculation will result in low **emergence**.

The actual planting of seeds will vary by crop. **Broadcast seeding** may work for some seeds, while seed drills work better for small grains such as wheat or oats.

Vocabulary

- **3. Match the words (1-5) with the definitions (A-E).**

1 ___ seeds per pound

2 ___ broadcast seeding

3 ___ plant density

4 ___ amendment

5 ___ seeds per square foot

A a method of scattering seeds

B amount of seeds planted per square foot

C the number of seeds in a pound of seeds

D the number of plants in a certain area

E a substance added to improve soil

- **4. Fill in the blanks with the correct words and phrases from the word bank.**

WORD BANK					
soil temperature	seeding rate	herbicide	emergence	topsoil	fertilizer

- 1 The farmer used _____ to improve the soil.
- 2 The weeds died after Mary used _____.
- 3 It is still too cold to plant the seeds; the _____ is 25 degrees.
- 4 During droughts, the _____ can be blown away by strong winds.
- 5 The farmer was pleased to have 90 percent _____ of the newly planted crops.
- 6 This field's _____ is 10 pounds per acre.

- **5. Listen and read the section of The Farmer's Guide again. Which month would be best to test the topsoil?**

Listening

- **6. Listen to a conversation between two farmers. Check (V) the items the farmers plan to implement to increase production.**

- 1 ___ increased plant density
- 2 ___ fewer seeds per square foot
- 3 ___ fertilizer
- 4 ___ planting more fields

- **7. Listen again and complete the conversation.**

Farmer 1: Well, our production has been down. We didn't produce 1 _____ this year as we did last year.

Farmer 2: That's true. You think it's because we planted 2 _____ close together?

Farmer 1: Yes, exactly. I know we were trying to grow more wheat per field. But it's 3 _____ effect.

Farmer 2: So what do you suggest?

Farmer 1: We'll 4 _____ our seeding rate and plant fewer seeds per square foot.

Farmer 2: I guess that would work. But we can do more to increase production.

Farmer 1: What were 5 _____?

Farmer 2: Well, just the usual. Adding 6 _____, things like that.

Speaking

- **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:
Our production has been down.
What do you suggest?
We can do more to increase production.

Student A: You are a farmer. Talk to Student B about:

- crop production
- plant density
- improving soil

Student B: You are a farmer. Talk to Student A about your fields.

Writing

- Use the conversation from Task 8 to fill out the farmer's email to the farm owner.

Dear Mr. Owens.

I want to change how we _____

This year, _____

I think this is due _____

I recommend that we _____

We can also _____

Please let me know what you think of these changes.

Sincerely, _____

UNIT 14. CLIMATE AND WEATHER

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 How does the climate in your country affect farming?
- 2 How can weather help and harm crops?

Reading

- **2. Read the seed catalog. Then, mark the following statements as true (T) or false (F).**

- 1 ___ Poblano peppers grow best in areas with high precipitation.
- 2 ___ Both types of seeds require full sun.
- 3 ___ The cabbage should be harvested in the fall.

Vegetables

SEEDS UNLIMITED

POBLANO PEPPER \$3.19/pack

Plant in: full sun / **soil temperature:** 68-90 degrees Fahrenheit

DESCRIPTION: Poblanos are flavorful peppers that are perfect for spicing sauces. They grow in warm areas with moderate **humidity**. Check your **hardiness zone** to make sure Poblanos grow in your region. Plant seeds about twelve weeks before **last frost**. A local **long-range forecast** will help you determine when to plant. Poblanos need some water, but just to keep the soil slightly damp. Do not over-water. Harvest after 14 to 16 weeks.

FAMOSA CABBAGE \$3.79/pack

Plant in: partial shade / **soil temperature:** 59-64.4 degrees Fahrenheit

DESCRIPTION: The Famosa Cabbage is a crispy vegetable that grows in cool **climates**. Famosas need lots of water, so areas with high **precipitation** are ideal for growing. Use plenty of **mulch** to maintain healthy **soil moisture**. These cabbages need only partial sun. Plant six weeks before last frost. Harvest in late autumn for best results.

Vocabulary

- **3. Fill in the blanks with the correct words and phrases from the word bank.**

WORD BANK			
precipitation	last frost	temperature	hardiness zone

- 1 If the _____ falls too low, the plants will die.
- 2 Don't plant any seeds until after the _____.
- 3 If there is enough _____ you won't have to irrigate.

4 Different plants may have different _____.

• **4. Match the words (1-5) with the definitions (A-E).**

1 __ climate

2 __ humidity

3 __ mulch

4 __ long-range forecast

5 __ soil moisture

A weather conditions in a particular area

B the amount of water in the soil

C the amount of water in the air

D material that is spread on the ground to protect plants

E a prediction of future weather conditions

• **5. Listen and read the seed catalog again. What kind of location would be perfect for growing Famosa cabbage?**

Listening

• **6. Listen to a conversation between a seed store employee and a customer. Mark the following statements as true (T) or false (F).**

1 __ The Scottsdale seeds grow best in warm climates.

2 __ The man suggests a different seed type.

3 __ The last frost of the season has passed.

• **7. Listen again and complete the conversation.**

Customer: Excuse me. Can you help me 1 _____ some seeds?

Employee: 2 _____, _____. What type of crop do you want to grow?

Customer: I'm going to plant some lettuce. I found these Scottsdale lettuce seeds.

Employee: Oh, I wouldn't plant the Scottsdale. It needs a 3 _____ climate. I 4 _____ the Waldmann's lettuce.

Customer: 5 _____, _____? Why is that?

Employee: The Waldmann's is very hardy. It can 6 _____ weather around here.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH-AS:

Can you help me pick out some seeds?

I'm going to plant some ...

I recommend the ...

- type of crop
- seed types
- weather and climate

Writing

- [illegible]

UNIT 15. PRICING

Get ready!

• **1. Before you read the passage, talk about these questions.**

- 1 What factors influence crop prices?
- 2 What factors are included in farmer's cost of production?

Reading

• **2. Read the business letter. Then, choose the correct answers.**

1 What is the purpose of the letter?

- A to market a new product
- B to offer new services to a client
- C to bill a customer for services
- D to explain the results of an analysis

2 How do the client's prices compare to other's prices?

- A They are higher than other's prices
- B They are the same as other's prices
- C They are lower than other's prices
- D They change more often than other's prices

3 What suggestion does Ms Curry make?

- A lowering production costs
- B studying local supply and demand
- C marketing to grocery stores in the area
- D increasing prices by five percent

Dear Mr. Kowalski,

Our office analyzed your business practices as you requested. We have a few suggestions to improve your **pricing strategy**.

We believe that it is time to consider **pricing for competition**. There are several new **produce** sellers in your area. Some are offering lower prices for the same vegetables that you sell. For example, you sell spinach for \$5.49 per pound. Most other sellers are offering spinach for less than \$5.00 per pound. They attract customers who want large quantities by offering **pricing for value**. We suggest moderate price decreases that maintain **pricing for profit**. As long as your prices remain higher than your **cost of production**, your business will make money.

We also think it is time for you to expand beyond **direct marketing**. Profits will remain limited if you only sell at the local farmer's market. We recommend exploring a strategy of **indirect marketing** through larger area supermarkets.

Our office will continue to analyze **supply and demand** in your area. We will provide updated recommendations based on the most current trends.

Sincerely,

Nancy Curry, Professional Consultant

Vocabulary

- **3 Read the sentence pair. Choose where the words best fit the blanks.**

1 direct marketing / indirect marketing

A In _____ customers buy from farmers.

B _____ involves farmers selling crops to stores where customers shop.

2 supply and demand / cost of production

A Prices must make up for the _____.

B Prices change according to _____.

3 pricing strategy / produce

A Sell this _____ before it spoils.

B Change your _____ to make a bigger profit

- **4. Match the words (1-4) with the definitions (A-D).**

1__ pricing

2__ pricing for profit

3__ pricing for competition

4__ pricing for value

A setting a price that is less than other sellers

B setting a lower price for large quantities

C the process of establishing costs for items

D setting a price that exceeds the cost of production

- **5. Listen and read the business letters again. What does the consultant suggest would attract more clients?**

Listening

- **6. Listen to a conversation between a consultant and a farmer. Mark the following statements as true (T) or false (F).**

1__ The man did not know his competition's prices.

2__ The woman suggests a new pricing strategy.

3__ The client will charge the same price for large and small amounts.

- **7. Listen again and complete the conversation.**

Consultant: Mr. Kowalski, did you **1** _____ to read our recommended business improvements?

Farmer: I did, Miss Curry. Can you give me some more information about **2** _____?

Consultant: Of course. Your spinach goes for \$5.49 per pound. All **3** _____ in your area sell spinach for at least \$0.50 less per pound.

Farmer: Wow. I didn't **4** _____ my products are. What changes do you suggest?

Consultant: We 5 _____ some estimates. You can lower your spinach price to \$4.89 per pound and still cover your 6 _____.

Speaking

• 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Can you give me more information about ...

I didn't realize how expensive ...

What changes do you suggest?

Student A: You are a business consultant. Talk to Student B about:

- client's prices
- competition's prices
- new pricing strategy

Student B: You are a farmer. Talk to Student A about the price of your crops.

Writing

9. Use the conversation from Task 8 to describe the new pricing strategy.

Beginning this week, orders of _____

Orders of _____

will still be _____

UNIT 16. GOVERNMENT INTERVENTION

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 Does your government take an active role in agriculture?
- 2 Do you think governments should control agriculture? Why or why not?

Reading

- **2. Read the newspaper article. Then, mark the following statements as true (T) or false (F).**

- 1 ___ Some people do not support the plan.
- 2 ___ The plan calls for planting all available wheat fields.
- 3 ___ The government intends to lower taxes on exported wheat.

GOVERNMENT PROMISES HELP FOR WHEAT GROWERS

Government officials introduced a plan this week to enhance wheat production. Spokesperson Harriet Greene responded to reporters' questions on Friday. She said the government is committed to improving economic conditions in wheat-growing regions.

Greene said the plan supports the small farmers that the world's **food and fiber industry** relies on. The plan does have critics. But Greene responded that improving the wheat industry improves economies everywhere. She stated that the industry's **decline** negatively affects people around the world.

The plan is to decrease supply by employing a strategy of adjusting production. Leaving some wheat fields **fallow** should prevent excessive **surpluses** and wasted resources. Hopefully, this will increase **market demand**. Additionally, the government will implement various forms of **price support**. This includes establishing **price floors**, raising **quotas** and reducing **tariffs** on exports. Finally, the government is setting up a department to address **foreign trade enhancement**. The department will identify ways to increase wheat trade worldwide.

Vocabulary

- **3. Match the words (1-6) with the definitions (A-F).**

- 1 ___ decline
- 2 ___ quota
- 3 ___ price floor
- 4 ___ market demand
- 5 ___ adjusting production
- 6 ___ foreign trade enhancement

A the desirability of a product

B the process of becoming less or worse

C a limit on the amount of something

D a legal limit on how low a price can be

- E the act of improving international trade
- F changing the amount of a product that is made

• **4. Write a word that is similar in meaning to the underlined part.**

1 Most agriculture focuses on the production of food and other products.

f _ _ _ _ n _ _ _ _ ib _ _ _ _ in _ _ _ _ _

2 Taxes on imports and exports can help trade.

t _ r _ _ _ _

3 Leave that field unplanted this season.

_ _ ll _ _

4 The extra supply of wheat lowered prices.

_ u _ p _ _ _

5 Methods of maintaining high prices ensures that crop prices don't collapse.

_ _ _ ce _ _ pp _ _ _

• **5. Listen and read the newspaper article again. How does the government plan to decrease supply?**

Listening

• **6. Listen to a conversation between farmer and assistant. Choose the correct answers.**

1 Why isn't the farmer planting wheat?

A The fields need to lie fallow for a season.

B The price for wheat seeds has increased.

C He is participating in a government program.

D He is worried he won't be able to sell it.

2 Why are the prices for wheat low?

A The wheat crop was not good.

B There is a surplus of wheat.

C The market price for wheat is high.

D The production of wheat has decreased.

• **7. Listen again and complete the conversation.**

Assistant: But won't we lose money if we 1 _____ enough?

Farmer: Actually, the government is paying us to 2 _____.

Assistant: I had 3 _____. Why are they doing that?

Farmer: They want to decrease the supply. See, right now there's a 4 _____. So prices are low. But if everyone produces less wheat, the supply will fall. Do you see what I mean?

Assistant: I think so. And if the supply falls, the 5 _____ too. Right?

Farmer: Exactly. 6 _____, we'll just plant some cover crops in field 4-B.

Speaking

- **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

But won't we lose money.

Why are they doing that?

If everyone produces less wheat, the supply will fall.

Student A: You are a farming assistant. Ask Student B about:

- not planting wheat
- government intervention
- supply and prices

Student B: You are a farmer. Answer Student A's questions.

Writing

- **9. Use the conversation from Task 8 to fill out the memo to farm staff. Explain why wheat will not be planted. Include information about surpluses and prices.**

Franklin Farms

Memo

Staff: This year _____

Jack Franklin
Owner, Franklin Farms

MODULE 3. NEW TENDENCIES IN AGRICULTURE

UNIT 17. CROPPING SYSTEMS

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 How can conventional tilling damage soil?

2 What are some types of cropping systems? What are their strengths and weaknesses?

Reading

- **2. Read the publication on cropping systems. Then, choose the correct answers.**

1. What is the passage mostly about?

A the price of conventional tillage

B the environmental effects of fertilizer

C the diversification of crop systems

D the market price for various crops

2 Which is NOT advice given in the passage?

A research the market for crops

B select a method of crop diversification

C contact the agricultural extension office

D use herbicides after diversification

3 What is the drawback to a fallow field?

A It results in less available land for crops.

B It has herbicide residues that harm crops.

C It becomes less suitable for polyculture.

D It must be fertilized before planting again.

DIVERSIFICATION

Farmers benefit from understanding diversification. This section outlines benefits of **diversifying** and some ways to do it.

Why diversify? – Diversifying a **crop system** offers farmers economic and environmental benefits.

Many farmers use **conventional tillage** because they think it is cheaper. That is not always true in the long term.

Conservation tillage methods that rely on diversification can be more expensive at first. However, they protect the long-term health of the soil.

There are environmental benefits as well. Diversified fields are healthier. Farmers often find they use fewer fertilizers and **burn-down herbicides** after they diversify.

How to diversify? – We suggest you start connecting your local agricultural extension office. They can help you make informed decisions about which crops are most suitable.

Next, you need to research the market for those crops. Determine which crops are economical.

Finally, consider if you want to use **crop rotation** or **polyculture**. With the former, farmers leave a section of their field **fallow**. If they also use **zero tillage** methods, they will leave crop residues in place. Unfortunately, fallow field mean less available cropland at a given time. On the other hand, many popular crops, such as **winter wheat** and **spring wheat**, are not suitable for polyculture. So making this decision requires careful thought.

Vocabulary

- **3. Match the words (1-6) with the definitions (A-F).**

- 1 __ fallow
- 2 __ zero tillage
- 3 __ polyculture
- 4 __ conventional tillage
- 5 __ crop residue
- 6 __ spring wheat

A parts of plants left in the field after harvest

B growing different plants in the same field

C having no crops

D the standard cropping system

E a crop that is harvested in summer or fall

F a technique for growing crops without tilling

- **4. Write a word that is similar in meaning to the underlined part.**

1 A practice that prevents water and soil loss protects fields.

_o _ _ _ _ t _ _ n t _ _ _ _ e

2 Wheat that is planted in the fall is harvested in the spring.

w _ _ _ _ _ w _ _ _ _

3 Use the weedkiller before planting.

_ _ _ n-d _ _ _ _ e _ _ _ _ _ e

4 The process of growing different crops one after the other on a field improves soil quality.

c _ _ _ r _ _ _ _ _ n

5 There are several methods of growing crops.

_ _ _ p s _ s _ _ _ s

6 Increase the variety of your crops to reduce fertilizer use.

7 d _ _ _ r _ _ _ _

- **5. Listen to the publication on cropping systems again. What is a negative effect of crop rotation?**

Listening

• **6. Listen to a conversation between a farmer and an assistant. Mark the following statements as true (T) or false (F).**

- 1 ___ Rotating crops will require less fertilizer.
- 2 ___ They plan to plant crops in all five fields.
- 3 ___ Planting peanuts will deplete the soil.

• **7. Listen again and complete the conversation.**

Farmer: We're going to 1 _____ our crops in the spring.

Assistant: Why do you want to do that?

Farmer: Well, it'll allow us to 2 _____ more and to use less 3 _____.

Assistant: So, 4 _____ do we do this?

Farmer: First, we 5 _____ five separate sections. One each for wheat, corn, soybeans, and peanuts.

Assistant: Peanuts?

Farmer: Wheat takes 6 _____ the soil. Once we plant a crop of peanuts in that field, the nitrates will be replenished. So we can grow wheat there again.

Assistant: Now you said five sections, but there are only four crops.

Farmer: That's because the fifth section will be left fallow. 7 _____.

Assistant: Let me guess, that helps the soil replenish too.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

We're going to start ... in the spring.

Wheat depletes the soil.

The fifth section will be fallow.

Student A: You are a farmer. Talk to Student B about:

- crop rotation
- wheat and peanuts
- fallow fields

Student B: You are a farmer's assistant. Talk to Student A about next year's cropping system.

Writing

• **9. Use the conversation from Task 8 and the publication and dialogue to write a schedule for next year's cropping system. Include: the type of system, crops, and field.**

Crops schedule

System: _____

Crops: _____

Fields: _____

UNIT 18. GROWING SEASONS

Get ready!

- **1. Before you read the passage, talk about these questions**

- 1 How long are the growing seasons in your country?
- 2 How can farmers extend growing seasons?

Reading

- **2. Read the magazine article. Then, mark the following statements as true (T) or false (F).**

- 1 ___ The author believes site selection is the single most important aspect of planting crops.
- 2 ___ Areas with short photoperiods have colder average temperatures.
- 3 ___ Hoop houses increase air temperature.

The Challenges of Growing Seasons

One of the most critical concerns for any agriculturist is the changing of seasons. Specifically, the decline in temperature, often sharp and precipitous, that occurs as each fall turns to winter. Plants have varying degrees of tolerance for cold, so different strategies for coping with the cold may be used with each type of crop. Next to the characteristics of the plants themselves, the most important issue to consider is **site selection**.

Each agricultural site has its own unique characteristics. Different sites have differing growing seasons based on **elevation**, **growing degree days**, and **last frost dales**. For example, one site may have very high growing degree days, while in another area, the **mean temperature** may barely rise over the **base temperature**. Agriculturists can protect their crops from the cold by selecting sites with long **photoperiods** and higher mean temperatures.

Of course, selecting a new site isn't always an option. After all, humans have cultivated crops in nearly every region on Earth. Less favorable sites may require special care. For example, there are several methods of **freeze protection** that an agriculturist can use. **Greenhouses** and **hoop houses** can be used to absorb and trap whatever heat the region does not receive. Additionally, heaters can be used to raise the temperature of the air around the crops.

Vocabulary

• **3. Match the words (1-6) with the definitions (A-F).**

- 1 __ base temperature
- 2 __ last frost date
- 3 __ green house
- 4 __ site selection
- 5 __ mean temperature
- 6 __ growing degree day

- A the act of choosing a place to plant crops
- B the last day during which plants may freeze
- C the minimum temperature at which plants may grow
- D a structure that retains solar energy
- E an average temperature in an area
- F a measure of how much heat a plant will receive in a day

• **4. Write a word that is similar in meaning to the underlined part.**

1 Long amounts of time that plants are exposed to light produce strong light.

p _ _ _ _ p _ _ _ _ s

2 The structure with curved roof that traps heat allows farmers to grow in cold seasons

_ o _ _ _ _ o _ _ _

3 Janet's farm is at a higher height on an area relative to the ocean level.

_ l _ _ _ _ _ n

4 Preventing crops from freezing saved the harvest last winter.

_ re _ _ _ _ p _ _ _ _ t _ _ _

5 Norman wants to start a farm in an area with a long period during which plants grow.

g _ _ _ _ _ g _ _ e _ _ _ _

6 Get a device that burns fuel to create heat to keep the plants from freezing

_ _ a _ _ _

• **5. Listen and read the magazine article again. What do heaters do?**

Listening

• **6. Listen to a conversation between two farmers. Choose the correct answers.**

1 What does the man want to do?

A reduce fuel costs

B extend the growing season

C construct a second hoop house

D purchase less expensive heaters

2 When does the man suggest they use heaters?

A in the fall

B in the winter

C in the spring

D in the summer

• **7. Listen again and complete the conversation.**

Farmer 1: I want to try to extend our growing season.

Farmer 2: How would we do that?

Farmer 1: Well, we could plant our tomatoes, radishes, and spinach a month or two early if we used a hoop house.

Farmer 2: Perhaps. It would be nice to plant early.

Farmer 1: I'm trying to figure how we could extend our season into the late fall.

Farmer 2: Well, what about heaters?

Farmer 1: Oh, I see. When it starts to **1** _____ in the fall, we could use heaters at night.

Farmer 2: Exactly. We could probably have **2** _____ in a year.

Farmer 1: Hmm ... We could plant early, before the **3** _____. Then we could plant again in the late summer after harvest.

Farmer 2: Right. The only problem is size. The hoop house can't hold that many plants.

Farmer 1: That's a **4** _____.

Farmer 2: Let's **5** _____ the spinach and **6** _____.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

I want to try to ...

It would be nice to plant early.

We could use the heaters at night.

Student A: You are a farmer. Talk to Student B about:

- longer growing seasons
- hoop houses
- heaters

Student B: You are a farmer. Talk to Student B about growing seasons.

Writing

- **9. Use the conversation from Task 8 to write a letter to a farm owner. Include: how to extend the growing season, equipment needed, and the benefits.**

Dear _____

Regards _____

UNIT 19. WEEDS, PESTS, AND DISEASES

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 Name a damaging weed, pest, and disease in your country.

2 What are some ways to avoid crop damage from weeds, pests, and disease?

Reading

- **2. Read the page the farmer's guide. Then, mark the following statements as true (T) or false (F).**

1 ___ The guide advises against applying herbicides directly to fields.

2 ___ Biological controls pose fewer safety risks than chemical controls

3 ___ Fungal diseases are easier to prevent than bacterial diseases.

Simple's Guide to Farming

Three of the greatest threats to farmers are weeds, pests, and diseases. Nevertheless, an informed farmer can develop effective strategies for dealing with this problems.

Weeds

Weeds grow everywhere, but them seem to prefer farmer's fields. Use a **weed map** to identify problem areas. Then apply **herbicides** as needed for **suppression**. If **mulching** weeds, it is not advised to apply much directly to your fields.

Pests

Pests, primarily insects but also small mammals and birds, destroy countless crops every year. This is why farmers need a sound **pest management** strategy. These can be chemical or biological. Chemical controls refer to **pesticides**. They tend to be very effective but carry safety risks. Less risky, though sometimes less effective, are **biological controls**. An example is a predatory ground beetle, which feeds on crop-eating ground worms.

Disease

Disease arrives from one of the three types of **pathogens: bacterial**, viral and **fungal**. The first two are rather difficult to fight. The best defense is maintaining good soil and growing conditions to keep plants strong. Prevent fungal diseases with **fungicides**. Finally, simply **sanitizing** equipment can sometimes prevent the spread of **blight**.

Vocabulary

• **3. Match the words (1-6) with the definitions (A-F).**

- 1 ___ sanitize
- 2 ___ fungal
- 3 ___ bacterial
- 4 ___ pathogen
- 5 ___ weed
- 6 ___ pest management

A preventing organisms from harming crops

B being or related to fungus

C an unwanted wild plant

D being or related to bacteria

E to kill bacteria

F an organism that causes disease

• **4. Read the sentences pair. Choose where the words best fit the blanks.**

1 weed maps / biological controls

A _____ show where to apply herbicides.

B _____ give farmers an alternative to pesticides.

2 herbicide / blight

A The _____ destroyed the entire crop.

B Most weeds can be controlled with _____.

3 fungicide / suppression

A Wendy used a _____ to protect her crops.

B _____ of pests is a concern for farmers.

4 mulching / pesticide

A _____ plant waste can enrich soil.

B _____ effectively controls insect.

• **5. Listen and read the page from the farmer's guide again. What does it suggest is the best defence against diseases?**

Listening

• **6. Listen to a conversation between two farmers. Choose the correct answers.**

1 What did the man use on his crop?

A Biological controls

B Insects

C Chemical pesticides

D Herbicides

2 Which biological control will the man use?

A other plants

B borers

C wasps

D bollworms

• **7. Listen again and complete the conversation.**

Farmer 1: I just discovered that I have corn borers in my cornfields. I have to do something before they ruin my crop.

Farmer 2: I had a similar problem last year.

Farmer 1: What did you **1** _____ ?

Farmer 2: I **2** _____. I sprayed my fields with pesticides.

Farmer 1: I'd prefer to try a biological control rather than **3** _____.

Farmer 2: What do you mean, use other insects or something like that?

Farmer 1: Exactly. I **4** _____ wasps. Apparently, they eat the borers.

Farmer 2: How can insects be better than chemical pesticides?

Farmer 1: **5** _____ that shows they're very effective. And I wouldn't have to worry about chemical side-effects.

Farmer 1: Hmm. **6** _____ if it works. I'm starting to have a problem with bollworms.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

I just discovered that I have ... in my fields.

I sprayed my fields with pesticides.

How can insects be better than pesticides?

Student A: Student A: You are a farmer. Talk to Student B about:

- a problem with crops
- chemical controls
- biological controls

Student B: You are a farmer. Talk to Student A about controlling crop problems.

Writing

- **9. Use the conversation from Task 8 and the farmer's guide to write a farmer's memo to staff about a crop problem. Include the type of problem and the controls to be used.**

MEMO
To all staff: _____

UNIT 20. DIAGNOSING CROP PROBLEMS

Get ready!

- **1. Before you read the questions. passage, talk about these**

1 What are some signs that crops are failing?

2 What are some ways to save failing crop?

Reading

- **2. Read the webpage from an agricultural extension office Then, choose the correct answers.**

1 What is the purpose of the webpage?

A to explain a diagnostic technique

B to offer advice on diagnosing problems

C to give information about services

D to list common causes of crop problems

2 Who does the office provide assistance for?

A college students

B the general public

C laboratory scientists

D agriculture professors

3 Which service is NOT provided?

A advice on growing crops

B on-site diagnosis of problems

C laboratory analysis of samples

D preparation of new fields

University of Jacksonville

Extension office: Crop and Field Problems

Who are we

We are **agricultural advisors** with extensive experience in diagnosing crop and field problems. Our services are available to the general public.

What we can do for you – We can provide technical assistance in a variety of ways ranging from advice on crop selection to on-site and laboratory diagnosis.

On site diagnosis

Give us a call if your plants are **stippled, stunted, wilting, or browning**. We attempt to establish **symptom patterns** for small groups of plants. For larger problems, we attempt to identify the **field pattern**. Once this information has been gathered, we can usually provide a definitive diagnosis using our **symptomology keys**.

Laboratory diagnosis

When a symptomology key does not provide a definitive diagnosis, we usually turn to lab analyses. These tests can identify if a **symptom** is caused by **biotic** or **abiotic** factors.

How to connect us

If you'd like to get our advice, or set up an appointment for a field or crop diagnosis, please call 888-555-0505 or send an email to diagnosis@extension.ur.edu.

Vocabulary

- **3. Match the words (1-5) with the definitions (A-E).**

- 1 __ abiotic
- 2 __ brown
- 3 __ field pattern
- 4 __ symptomology key
- 5 __ symptom

A to change color

B non-living

C a sign that indicates disease

D a tool used to diagnose diseases

E a sign of disease that occurs throughout an area

- **4. Fill in the blanks with the correct words and phrases from the word bank.**

WORD BANK				
Biotic	stunted	wilt	stippled	symptom pattern

1. _____ leaves are covered with spots.
2. A _____ plant will be much smaller than others.
3. Many crop problems have _____ causes.
4. The crops started to _____ in the heat.
5. Researchers are analyzing the _____.

- **5. Listen and read the webpage from an agricultural extension office again. What happens when a symptomology key doesn't provide a definite diagnosis?**

Listening

- **6. Listen to a conversation between an agricultural advisor and a farmer. Check (V) the symptoms of the farmer's corn.**

- 1 __ wilting
- 2 __ drying out
- 3 __ browning tops
- 4 __ blackened roots
- 5 __ stunted growth

• **7. Listen again and complete the conversation.**

Advisor: Mr. Fussel, what's the problem with your corn?

Farmer: Well, **1** _____ even though I gave them plenty of water and fertilizer.

Advisor: **2** _____ first noticed the problem.

Farmer: That would have been **3** _____. First, I noticed the tops of some of the plants were browning.

Advisor: What happened next? **4** _____?

Farmer: Not that. Next, they **5** _____ slightly. That's when I **6** _____ water.

Speaking

• **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

What's the problem with your corn?

I noticed the tops of some of the plants were ...

And what happened next?

Student A: You are an agricultural advisor. Ask Student B about:

- crop problems
- symptoms
- changes

Student B: You are a farmer. Answer Student A's questions.

Writing

• **9. Use the conversation from Task 8 to write an email to an agricultural advisor. Include: your problem, crop symptoms, and changes you've seen.**

To: Farmadvisor@farmsite.com

From: THernandez@Hfarm.com

To _____

Sincerely

UNIT 21. AGRIBUSINESS MANAGEMENT

Get ready!

- **1. Before you read the passage, talk about these questions.**

1 What are the main costs and expenses of farming?

2 Do you think it is wiser to manage your own finances or to get professional help?

Reading

- **2. Read the letter from an accountant to a farmer. Then, mark the following statements as true (T) or false (F).**

1 ___ The farmer earned \$168,745 last year.

2 ___ The farmer has over \$450,000 in debt.

3 ___ The farmer has a negative net worth.

Financial summary

Revenue	
Farm cash receipts	<i>\$355,960</i>
Investment income	<i>\$12,435</i>
Miscellaneous income	
Gross farm revenue	<i>\$368,395</i>
Expenses	
Total Production expenses	<i>(\$168,745)</i>
Wages	<i>(\$43992)</i>
Feed costs	<i>(\$22081)</i>
Fuel costs	<i>(\$79554)</i>
Other materials	<i>(\$23118)</i>
Fixed cash expenses	<i>(\$34,248)</i>
Depreciation	<i>(\$20,889)</i>
Insurance	<i>(\$13,359)</i>
Interest payments on loan	<i>(\$70,038)</i>
Non-cash expenses	<i>(\$11,578)</i>
Gross farm expenses	<i>(\$284,609)</i>

Net farm income	\$83,786
Total farm assets	\$587,995
Total non-farm assets	\$125,877
Total outstanding debt	\$467,388
<i>Net worth</i>	\$264,484

Dear Mr. Walsh,

As per your request, I have prepared a summary of your financial position. The attached summary is based on the information you provided to Mason and Howard, LLC. It includes a summary of your revenues minus expenses. We have also calculated your net worth. The information contained in this summary will be used to prepare your federal and state income taxes. Please review to ensure that it accurately matches your records.

Should you have any questions, feel free to contact me at any time.

Sincerely,

Glenda Mason

Senior Accountant

Mason and Howard, LLC

Vocabulary

• 3. Match the words (1-5) with the definitions (A-E).

- 1 __ interest payments
- 2 __ gross farm revenue
- 3 __ total production expenses
- 4 __ income
- 5 __ loan

A the total of all costs

B the sum of all money from sales

C money that a person earns

D money that is paid to a lender

E money that is borrowed

• 4. Write a word that is similar in meaning to the underlined part.

1. Record all cash income from sales of farm produce and government subsidies.

f _ _ _ c _ _ _ r _ c _ _ _ s

2. Avoid taking on money owed to a lender.

_ _ b _

3. When equipment loses value, it is called a cost not due to spending.

n _ n - _ _ _ _ _ x _ _ _ _ e

4. The expenses of feeding livestock went up.

_e _ _ _ c _ _ _ _

5. What are your expenses that don't change?

_ _ x _ _ _ _ h _ x _ _ _ _ s

6. Expenses increased, so gross revenue minus expenses decreased.

n _ _ f _ _ _ n _ _ _ e

• **5. Listen and read the letter from an accountant to a farmer again. What will the information in the summary be used for?**

Listening

• **6. Listen to a conversation between a farmer and an accountant. Choose the correct answers.**

1 Why does the farmer call the accountant?

A to address an error

B to request a summary

C to make an appointment

D to ask for assistance

2 What will the farmer do tomorrow?

A create a financial summary

B correct the expenses section

C recalculate the wages information

D deliver information to the accountant

• **7. Listen again and complete the conversation.**

Accountant (W): Hello, Glenda Mason speaking.

Farmer (M): Hi, Glenda, this is Peter Walsh. I need to talk to you about the financial summary you just sent me.

Accountant: Sure, I'd be glad to go over it with you.

Farmer: Okay, well some of the figures in the summary don't match my records.

Accountant: Where have you found discrepancies?

Farmer: Well, **1** _____ with the numbers in the expenses section.

Accountant: Which ones **2** _____ to you?

Farmer: Well, you **3** _____ \$43,992 for wages. And I have \$43,292.

Accountant: Okay, I've **4** _____. I'll need to review the original documents. **5** _____?

Farmer: Unfortunately, no.

Accountant: **6** _____ did you find?

Farmer: Your insurance figures are too low. I forgot to **7** _____ some documentation.

Speaking

- **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

Sure, I'd be glad to go over it with you.

Where have you found discrepancies?

Your insurance figures are too low.

Student A: You are a farmer. Talk to Student B about:

- your financial summary
- expense figures
- insurance figures

Student B: You are a farmer's accountant. Talk to Student A about a financial summary.

Writing

- **9. Use the conversation from Task 8 and the financial summary to write a farmer's financial summary. Include: income, expenses, and debt.**

Financial summary

UNIT 22. INTERNATIONAL TRADE

Get ready!

- **1. Before you read the passage, talk about these questions.**
 - 1 How does international trade affect what farmers plant?
 - 2 Does your country import or export more agricultural products?

Reading

- **2. Read the trade profile summaries. Then, mark the following statements as true (T) or false (F).**

- 1 ___ High tariffs are a setback to exporting to Canada.
- 2 ___ Chile exports more than it imports.
- 3 ___ Both nations require labels in two languages.

Canada – Agricultural companies looking to start selling in global markets may look to Canada.

Canada is one of the leading exporters of agricultural goods such as wheat and other grains. But it also receives significant yearly **imports** of organic fruits and vegetables. With one of the world's healthiest economies, Canada is a major player in the **World Trade Organization** (WTO). It is an advocate of liberalized trade. Canada charges very minimal **tariffs** on imported goods. The country also applies little or no trade restriction **quotas**. One setback to sending goods to Canada is the requirement of dual language labeling, in both English and French.

Chile – The republic of Chile thrives as one of South America's strongest economies based on **international trade**. While Chile remains **import dependent** with respect to energy related goods, it is **export dependent** overall. Recent increases in the price of copper, Chile's leading **export**, have fueled the country's financial growth. Since 2006, Chile has enjoyed a positive **balance of trade**. Despite its **trade surpluses** the country still imports large amounts of agricultural goods such as soybeans and corn. Companies importing to Chile will find a six percent tariff on all imported goods. All products imported to Chile must have labels printed in Spanish.

Vocabulary

- **3. Fill in the blanks with the correct words and phrases from the word bank.**

Word Order			
export	trade surplus	quota	import dependent

- 1 A(n) _____ country purchases more than it sells internationally.
- 2 Wheat is a major _____ to other countries.
- 3 The government may impose a new _____.
- 4 Fewer imports led to a(n) _____.

- **4. Write a word that is similar in meaning to the underlined part.**

1 Countries interact through the exchange of products across borders.

in _____ a _____ r _____

2 The organization that oversees trade among nations is considering some new regulations.

3 Increases in exports alter the difference between the value of exports and imports.

b _____ e _____ t _____

4 High fees on imported or exported goods protect domestic farmers.

a _____ s

5 Many countries depend on products brought in from other countries

mp _____

6 Countries that have surpluses are often reliant on selling products internationally.

x _____ d p _____

• **5. Listen and read the trade profile summaries again. What is Chile's main export?**

Listening

• **6. Listen to a conversation between a farmer and an accountant. Choose the correct answers.**

1 What is the conversation mainly about?

A avoiding tariffs

B importing hay

C reducing trade costs

D exporting surplus hay

2 What will the speakers likely do next?

A discuss hay prices

B look at trade profiles

C search for label printers

D contact buyers in Mexico

• **7. Listen again and complete the conversation.**

Farmer: I hadn't really thought about it. Could I get a better price?

Accountant: Perhaps. But there are 1 _____ to consider.

Farmer: I 2 _____ that buyers in Mexico aren't going to pay what my clients here do.

Accountant: That 3 _____. But it would 4 _____ to unload your excess hay.

Farmer: Interesting. I don't 5 _____ that surplus now, do I?

Accountant: No, you don't.

Farmer: Well, if you think we can sell it internationally, 6 _____

Accountant: We also have to consider the costs. There are shipping costs and tariffs.

Farmer: I see. So what do you recommend?

Accountant: Well, let's look at a few different countries' trade profiles. An import-dependent country might have a good set up for you.

Speaking

• 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Could I get a better price?

There are shipping cost and tariffs.

What do you recommend.

Student A: You are an accountant. Talk to Student B about:

- international sales
- excess hay
- costs and benefits

Student B: You are a farmer. Talk to Student A about selling hay internationally.

Writing

• 9. Use the conversation from Task 8 to write an email to a farmer. Include information about trade, tariffs and quotas benefits.

To:

Regards,

UNIT 23. THE FUTURES MARKET

Get ready!

- **1. Before you read the passage, talk about these questions.**
 - 1 Are investments in futures markets popular in your country?
 - 2 How do changes in the futures market impact farmers?

Reading

- **2. Read the article from a financial newspaper. Then, choose the correct answers.**

1 What is the article mainly about?

- A the effects of price changes
- B the causes of crop damage
- C the best markets to invest in
- D the expected carryover for the year

2 Why is the stocks-to-use ratio high?

- A Ending stocks were low.
- B Beginning stocks were high.
- C Wheat purchases increased.
- D Carryover was lower than usual.

3 What can you infer about futures purchases?

- A They limit crop production.
- B They create low carryovers.
- C They decrease when prices drop.
- D They are impacted by weather patterns

Falling Price of Wheat Futures						
Index	Value	Change	Open	High	Low	Time
S&G	752.50	-3.00	755.50	758.00	751.50	11:34 a.m.
FRE 100	2,737.00	-43.00	2,780.00	2,788.00	2,737.00	11:35 a.m.
<p>At week's end, values in the March wheat futures market appear to be falling. Prices fluctuated greatly throughout the week. But, Friday's values closed twelve to fifteen cents lower than when the market opened on Monday. This change is interesting news for those wishing to sell the commodity in the coming season.</p> <p>This new high may be better for those who have wheat ready to sell.</p> <p>But a low could set off a run of wheat sales in coming weeks. Last year</p>						

was marked by surplus wheat production across the board, and most major wheat producers began the year with a heavy **carryover** of last year's **ending stocks**. With **beginning stock** running well above normal, the industry has suffered from unusually high **stocks-to-use ratios**. With the sudden fall of the wheat prices in every **index**, we may see a surge in wheat purchases. This could be good news for growers of wheat.

Expected changes in weather patterns, however, may begin to affect this trend. The predicted two inches of diminished rainfall could significantly affect the year's crop yield. The first signs of such a dry season will almost certainly lead to an increase in wheat futures purchases.

Vocabulary

• **3. Match the words (1-6) with the definitions (A-F).**

- 1 __ value
- 2 __ change
- 3 __ open
- 4 __ high
- 5 __ low
- 6 __beginning stock

- A the amount at the beginning of a year
- B a smaller amount or value
- C a larger amount or value
- D to begin a market for the day
- E monetary worth
- F difference occurring over time

• **4. Write a word that is similar in meaning to the underlined part.**

- 1 There was an increase on corn prices in each method of measuring the corn market's capitalization.
_n _ _ _
- 2 This year's amount of stocks remaining has been unusually high.
e _ _ _ _ g s _ _ _ _
- 3 Anything of value can be considered a thing that is bought, sold, or traded.
c _ _ _ o _ _ _ _
- 4 Last year, the amount of the previous year's stocks remaining was unusually low.
c _ _ _ y _ _ _ _
- 5 Carrie made a lot of money on the exchange where contracts are bought and sold.
f _ _ _ _ e _ _ _ r k _ _

6 Mark was very impressed with the carryover stock divided by total use.
_ _ oc _ - t _ - _ _ _ r _ _ _ o

- **5. Listen and read the article from a financial newspaper again. How will dryer weather affect futures purchases?**

Listening

- **6. Listen to a conversation between a farmer and an investment analyst. Mark the following statements as true (T) or false (F).**

- 1 __ Wheat prices have increased.
- 2 __ The man had carryover last year.
- 3 __ The woman suggests planting less wheat.

- **7. Listen again and complete the conversation.**

Farmer: I heard the March wheat prices are falling.

Analyst: You heard correctly, fifteen cents in one week.

Farmer: That can't be good for us.

Analyst: It might not be so bad, actually.

Farmer: What do you mean? Lower prices means I make less money. I mean, I already planted a thousand acres of wheat. I was going to plant three thousand more. But I don't know if it's worth it now.

Analyst: I'd plant it 1 _____ you.

Farmer: With all of last year's surplus, I don't want to 2 _____.
But if you think it's a good idea, I 3 _____ grow it.

Analyst: You did have a 4 _____ last year. But with prices so far below the index, futures will sell. Trust me.

Farmer: Okay. 5 _____ the three thousand acres.

Analyst: 6 _____. I think this trend is going to last awhile.

Speaking

- **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

I heard ... prices are ...

With prices so low, futures will sell.

I think this trend is going to last a while.

Student A: You are an investment analyst. Talk to Student B about:

- wheat prices
- planting crops
- confidence

Student B: You are a farmer. Talk to Student A about prices and planting crops.

Writing

- **9. Use the conversation from Task 8 and the article to write a letter to a farmer. Include: changes to crop prices, how it will affect the futures market, and your recommendations for planting crops.**

[illegible]

UNIT 24. SUSTAINABLE FARMING

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 What sustainable farming practices are common in your country?
- 2 What challenges does sustainable farming present?

Reading

- **2. Read the flyer for a discussion on sustainable farming. Then, mark the following statements as true (T) or false (F).**

- 1 ___ The focus of the event is farming basics.
- 2 ___ Mr. Arnold will receive an award at the event.
- 3 ___ JCFA speakers will address soil amendments.

FARMING IN your BACKYARD

Join the Johnson County Farmer's Association (JCFA) for a discussion on **sustainable** farming. Several experts will give lectures and answer questions. Come and enjoy free food from local farms and learn about agriculture in your community.

When: April 10th at 6:00 PM

Where; Johnson County Community Center

Admission: Free

- Fred Arnold, author of *Modern Farming*, will talk about reducing dependence on **non-renewable resources** like petroleum. The talk will cover the importance of expanding the whole community's **systems perspective**. Mr. Arnold won the JCFA's Excellence Award for improving local **economic sustainability** through alternative energy sources.

- Lisa Perry, Professor of Agriculture, will discuss methods for successful farming. Her lecture will focus on ways to make crops stronger and more reliable. Topics include the benefits of **intercropping** and the advantages of **biodiversity** over **monoculture**. Ms. Perry teaches a class on farming basics at Johnson University.

Members of the JCFA will give advice on limiting negative **off-farm impact**. The presentation will cover tips for producing your own **soil amendments** like **compost** and manure. The JCFA encourages audience members to ask questions and share their own farming techniques.

Vocabulary

- **3. Match the words (1-6) with the definitions (A-F)**

- 1___ sustainable
- 2___ biodiversity
- 3___ intercropping
- 4___ off-farm impact

- 5__ systems perspective
6__ non-renewable resource

- A able to last a long time
B the effect of farm activities on other areas
C something that exists in a limited amount
D a broad view of the effects of agriculture
F the existence of a variety of organisms
F planting multiple crops in the same field

• **4. Read the sentence pair. Choose where the words best fit the blanks.**

1 compost / monoculture

A _____ is disappearing as more farmers embrace biodiversity.

B Using _____ is a great way to fertilize soil.

2 economic sustainability / soil amendments

A A farm will fail if it lacks _____.

B Most farmers add _____ to fields.

• **5. Listen and read the flyer for a discussion on sustainable farming again. What will Lisa Perry's lecture focus on?**

Listening

• **6. Listen to a conversation between a farmer and a sustainable farming expert. Choose the correct answers.**

1 What is the man seeking advice about?

- A preparing fields for the growing season
B planting two kinds of vegetables together
C using pesticides to get rid of flies
D giving a presentation on agriculture

2 How do onions protect carrots?

- A pests will attack the onions instead
B pests do not like how the onions smell
C carrots' smell is masked by the onions
D onion leaves hide the carrot tops

• **6. Listen again and complete the conversation.**

Farmer: Professor Perry, I **1** _____, if you don't mind?

Speaker: **2** _____.

Farmer: Well, I grow onions and carrots, but I've always **3** _____ fields. Do you think I should try intercropping?

Speaker: Absolutely, Ed. Onions and carrots grow **4** _____. Onions are perfect for protecting carrots from pests.

Farmer: Really? How does that work?

Speaker: Well, 5 _____ different types of crops. You've 6 _____ attacking your carrots.

Speaking

• 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

I have a question for you, if you don't mind.

Do you think I should try intercropping?

Really? How does that work?

Student A: You are a farmer. Ask Student B about:

- intercropping
- crops you grow
- avoiding pesticides

Student B: You are a sustainable farming expert. Answer Student A's questions.

Writing

• 9. Use the conversation from Task 8 to write notes on a talk about sustainable farming. Include information about intercropping and its benefits.

<u><i>Sustainable farming</i></u>

UNIT 25. ORGANIC FARMING

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 What are the challenges of organic farming?
- 2 Are organic products popular in your country?

Reading

- **2. Read the publication on organic farming. Then, choose the correct answers.**

- 1 What is the magazine article mainly about?

- A organic crop growers
- B organic farmer certification
- C organic pest control
- D organic farming standards

- 2 Which is NOT a type of inspector?

- A crop inspector
- B livestock inspector
- C documentation inspector
- D processing inspector

- 3 What can you infer about organic facilities?

- A They can also produce non-organic crops.
- B They must be inspected every year.
- C They must report changes in material inputs.
- D They pay membership fees to certifiers.

Going organic?

What to do to get your certification

1. Find a Certifier: To be considered **organic**, you must comply with specified eco-friendly standards. Each **certifier** has its own guidelines, but all certifiers stress environmental sustainability and eco-friendly production practices.

2. Apply: Submit an application and **organic system plan** to a certifier. If the certifier approves your plan, an **inspector** will schedule a visit to observe your production facility.

3. Prepare for Inspection: Documentation of production must be accessible to the inspector. It is important to keep your **field activity log** up to date as the inspector will examine it.

4. Inspection: All inspections are performed onsite. There are three types of inspectors that specialize in examining different aspects of production.

- Crop inspectors monitor the health of the plants, soil and water. They also observe whether there is **compliance** with pest-control regulations.

• Livestock inspectors judge the health of animals and their living conditions. Have vaccination reports prepared as well as a list of **material inputs**.

• Processing inspectors check for **organic integrity** in production facilities. These inspectors assess whether there is **contamination** or **commingling** with crops from on-site non-organic fields or materials.

5. Certification: If your facility fulfills the organic standards you will be certified. Keep **audit trail documents** on file as proof of the organic authenticity of your products

Vocabulary

- **3. Fill in the blanks with the correct words from the word bank.**

WORD BANK				
compliance	contamination	commingle	certifier	organic

- 1 The farm maintains _____ with regulations.
- 2 The inspector is checking for _____ of organic crops with non-organic materials.
- 3 John is preparing for a visit from the _____.
- 4 The farm offers _____ produce.
- 5 Don't _____ organic and non-organic produce.

- **4. Match the words (1-6) with the definitions (A-F).**

- 1 __ organic system plan
- 2 __ organic integrity
- 3 __ audit trail document
- 4 __ inspector
- 5 __ material inputs
- 6 __ field activity log

A someone who examines facilities, crops, and animals

B a written statement describing methods

C adhering to certifier's rule for organic products

D a record to prove organic authenticity

E a record of additives and work in fields

F supplies used in production

- **5. Listen and read the publication on organic farming again. What are the three types of inspectors?**

Listening

- **6. Listen to a conversation between a farmer and an organic inspector. Mark the following statements as true (T) or false (F).**

- 1 __ The man hopes organic labels will attract attention to his produce.
- 2 __ The woman certifies the farm as organic.
- 3 __ The farm received a random inspection.

- **7. Listen again and complete the conversation.**

Farmer: So, Ms. Walton, what did you think of the tour?

Inspector: It went well, Mr. Davis. You seemed prepared for our visit.

Farmer: That's good to know. We're hoping **1** _____ attention with an organic label.

Inspector: I understand. Organic goods are in high demand these days.

Farmer: Do you think we'll be certified?

Inspector: **2** _____. But your field activity logs showed your practices to be in compliance with our regulations.

Farmer: **3** _____. We've worked very hard.

Inspector: **4** _____. There didn't seem to be any contamination with non-organic produce.

Farmer: Oh, we're very careful about that. So, **5** _____ to hear if we'll be certified?

Inspector: **6** _____. The certifier needs to review the documents you supplied.

Speaking

- **8. With a partner, act out the roles below based on Task 7. Then, switch roles.**

USE LANGUAGE SUCH AS:

Do you think we'll be certified?

There didn't seem to be any contamination ...

The certifier needs to review the documents.

Student A: You are a farmer. Ask Student B about:

- becoming certified
- time to respond
- what to do next

Student B: You are a crop inspector. Answer Student A's questions.

Writing

- **9. Use the conversation from Task 8 and the publication to write a crop inspector's report. Include information about: field activity logs, compliance and organic integrity.**

Report

Name: _____

organic inspect

UNIT 26. GMOs

Get ready!

- **1. Before you read the passage, talk about these questions.**

- 1 How can genetically modified organisms help farmers?
- 2 How do consumers feel about genetically modified organisms in your country?

Reading

- **2. Read the webpage from a seed company. Then, mark the following statements as true (T) or false (F).**

- 1 ___ Soy #7 is designed to thrive in poor soil.
- 2 ___ Sorghum #2 grows well in dry climates.
- 3 ___ The company tests their products on animals.

SMITH'S SEEDS inc.

About Us

Smith's Seeds offers the best seeds that technology can produce. Each **biotech seed** contains favorable **traits** carefully selected by our genetic engineering team. Sustainability is important to us, and that's why we're producing more than a **conventional seed**.

Available Seeds

Soy #7: This variety is characterized by both **herbicide-resistance** and **insect-resistance**. If pesky insects are affecting your crop yields, this is the seed for you. These plants will withstand many conventional herbicides.

Wheat #5: This variety is characterized by its incredible output. Wheat #5 seeds can be planted more closely together than conventional wheat seeds. Because these plants occupy little space, you can expect marked **yield enhancement**.

Corn #10: This variety is characterized by its great yields that result from **nitrogen efficiency**. These seeds will grow even in compromised soil conditions. If soil quality has decreased your corn production, Corn #10 is your solution.

Sorghum #2: This variety is characterized by its **drought-resistance**. If you farm in a dry area that receives irregular rainfall, this is the perfect variety for you. Expect a hardy plant and big yields from this remarkable seed.

Safety Concerns

All of our **genetically modified organisms** (GMOs) undergo extensive **analysis** before they are sold. Our **animal performance assessments** guarantee the safety of our products.

Vocabulary

- **3. Match the words (1-5) with the definitions (A-E).**

- 1 ___ drought-tolerant
- 2 ___ GMO
- 3 ___ animal performance assessment
- 4 ___ nitrogen efficiency
- 5 ___ yield enhancement

- A increasing the size of a harvest
- B able to withstand dryness
- C the ability to use minimal nitrogen
- D organism produced by genetic engineering
- E a test of the effects of a product

• **4. Read the sentence pair. Choose where the words best fit the blanks.**

1 biotech seed / analysis

- A This _____ can resist herbicides.
- B _____ suggests that the product is safe.

2 herbicide tolerant / insect-resistant

- A _____ seeds counter pest populations.
- B _____ seeds let farmers kill weeds.

3 conventional seeds / traits

- A Scientists are enhancing desirable _____.
- B Some farmers prefer _____ to GMOs.

• **5. Listen and read the webpage from a seed company again. Which variety will grow in compromised soil?**

Listening

• **6. Listen to a conversation between a seed developer and a salesman. Choose the correct answers.**

1 What is the main benefit of the seed?

- A nitrogen efficiency
- B drought-resistance
- C insect-resistance
- D herbicide-resistance

2 Why does the woman believe the seed will benefit the environment?

- A Less land will be used per season.
- B More farmers will plant in dry regions.
- C Animals will have healthier feed.
- D Less irrigation will be needed.

• **7. Listen again and complete the conversation.**

Salesman: Carol, please come in. **1** _____ your new seed is almost ready for marketing.

Developer: It is. After the animal performance assessments, it will **2** _____.

Salesman: Wonderful. **3** _____ I want to know the best way to advertise it.

Developer: Well, the main benefit is that it's extremely **4** _____.

Salesman: Okay. So we'll **5** _____ it to farmers in dry regions.

Developer: Yes. We'll 6 _____ where rainfalls are unpredictable.

Salesman: Okay. What else?

Developer: We should emphasize the dependability of our seed. Tests showed that the yields produced during rainy seasons and those produced during droughts varied very little and they're better for the environment than conventional seeds.

Salesman: How?

Developer: With fewer crops failing during drought seasons, there'll be greater yields. That means 7 _____ per season.

Salesman: Excellent, Carol.

Speaking

• 8. With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

I want to know the best way to advertise it.

We should emphasize ...

Excellent point.

Student A: You are a salesman. Ask Student B about:

- a new seed
- seed benefits and traits

Student B: You a seed developer. Answer Student A's questions.

Writing

• 9. Use the conversation from Task 8 and the web page to write product descriptions of two new seeds. Include the crop types, seed traits and benefits.

Crop Type: _____

Traits: _____

Benefits: _____

Crop Type: _____

Traits: _____

Benefits: _____

TESTS

Short test (Unit 1)

I. Choose a, b or c according to the text of the unit 1.

1. The requirements for farming are _____.
 a) warm climate and fresh water.
 b) good soil and a water supply.
 c) black soil and much water.
2. What river did many early farmers use as a water supply?
 a) the Mississippi river
 b) the Nile river
 c) the Thames
3. When did early farmers plant crops?
 a) when the weather is sunny
 b) after floods
 c) before the floods
4. Early farmers moved water from the Nile River _____.
 a) to the ground.
 b) to their fields.
 c) to the people.
5. What became another important part of agriculture?
 a) domesticated animals
 b) wild animals
 c) herbivorous

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. irrigation	a) сільське господарство
2. farming	b) рів, канава
3. harvest	c) врожай
4. water supply	d) зрошення
5. ditch	e) водопостачання

III. Match the words and phrases with the definitions.

1. To domesticate is ...	a) to put seeds in the soil and help them to grow.
2. Irrigation is ...	b) the amount of clean water in one area.
3. A water supply is ...	c) to grow food with care.
4. To plant is ...	d) to tame an animal or adapt plant for human use.
5. To cultivate is ...	e) the practice of bringing clean water to plants.

Score _____ / 15

Short test (Unit 2)

I. Complete the sentences with the words below.

Words				
fresh vegetables	industrial crop products	cereal crops	farmer's market	fresh fruit

1. Our local farmers offer _____, such as delicious melons, strawberries, and blueberries.

2. Local farmers sell _____, such as broccoli, peas, and lettuce, tubers and legumes too.

3. We offer some _____, such as hemp shoes, shirts, and hats.

4. Thompson _____ are grown on a nearby farm.

5. Come to the _____ this Saturday!

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. Granola	a) зернові культури
2. cereal crops	b) біб
3. industrial crops	c) конопля
4. legume	d) технічні культури
5. hemp	e) мюслі

III. Match the words and phrases with the definitions.

1. A vegetable is ...	a) a part of edible plant that grows completely underground.
2. A harvest is ...	b) to collect a crop.
3. A melon is ...	c) a group of mature plants.
4. To harvest is ...	d) a part of edible plant that doesn't have seeds.
5. A tuber is ...	e) a large, sweet kind of fruit.

Score _____ / 15

Short test (Unit 3)

I. Choose a, b or c according to the text of the unit 3.

1. Animals' milk and meat provide us with _____.
 - a) leather.
 - b) protein.
 - c) material.
2. What do we make clothing and furniture with?
 - a) wool and leather
 - b) protein and minerals
 - c) render fat or tallow
3. We _____ fat or tallow into tires, soaps and candles.
 - a) produce
 - b) render
 - c) make
4. What do marshmallows, buttons and tape include?
 - a) bones and hooves
 - b) rubber and plastic
 - c) tree sap
5. Do baseballs use animal products?
 - a) Yes, they do.
 - b) No, they do not.
 - c) The test does not say about it.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. soap	a) жир
2. fat	b) копита
3. by-product	c) білок
4. protein	d) побічний продукт
5. hooves	e) мило

III. Match the words and phrases with the definitions.

1. To render animal fat is ...	a) the edible flesh of an animal
2. Tallow is ...	b) to melt it for use in a product.
3. Meat is ...	c) a fat from an animal that can be made into soap or candles.
4. Fat is ...	d) the hard, white material that gives the body structure.
5. Bone is ...	e) an oily substance found in plants and animals.

Score _____ / 15

Short test (Unit 4)

I. Choose a, b or c according to the text of the unit 4.

1. Tomato roots need the right amount of _____.
 - a) water and air.
 - b) dense clay.
 - c) pure soil.
2. Tomatoes does not grow well in _____.
 - a) in a spot with full sun and well-drained soil.
 - b) rich soil.
 - c) sand or clay.
3. Sand particles are too loose to hold _____.
 - a) enough water.
 - b) much soil.
 - c) enough sunlight.
4. What soil type prevents aeration?
 - a) sand
 - b) clay
 - c) humus
5. You can improve the nutrients by adding _____.
 - a) sand
 - b) humus
 - c) loam with silt

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. Houseplants	a) тип ґрунту
2. soil type	b) поживні речовини
3. sand	c) кімнатні рослини
4. layer	d) пісок
5. nutrients	e) шар, пласт

III. Match the words and phrases with the definitions.

1. Aeration is ...	a) a type of a sticky soil used to make pots, bricks or tiles.
2. Clay is ...	b) a type of soil that has silt, clay and sand.
3. Humus is ...	c) the action of exposing soil to air.
4. Loam is ...	d) made when soil mixes with body of water and then deposited.
5. Silt is ...	e) a type of soil made of dead plants or other organic matter.

Score _____ / 15

Short test (Unit 5)

I. Complete the sentences with the words below.

Words				
Wells	groundwater	drought-resistant	prices	dug

1. Recently, many famers _____ ditches to irrigate their fields.
2. They used extra groundwater from their _____, too.
3. We expect higher _____ for many fruits and vegetables this summer.
4. Areas with a lot of _____ are ideal for farming.
5. Andrew doesn't irrigate; his crops are _____.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. water cycle	a) зрошувати
2. irrigate	b) сухість
3. dryness	c) атмосферні опади
4. arid	d) водний цикл
5. rainfall	e) посушливий

III. Match the words and phrases with the definitions.

1. A ditch is ...	a) the water that is underground.
2. Groundwater is ...	b) when an area gets less rain or snow than is typical.
3. Irrigation is ...	c) if a plant a drought-resistant it can survive in a drought.
4. Drought-resistant is ...	d) a long, narrow cut in the ground used to hold or move water.
5. Drought is ...	e) the practice of bringing clean water to plants.

Score _____ / 15

Short test (Unit 6)

I. Complete the sentences with the words below.

Words				
soil	use	temperatures	buds	water

1. Seedlings survive in _____ down to 37° F.
2. Soak seeds in _____ overnight.
3. You should place in 70° F _____ to germinate.
4. Farmers _____ a pen or similar shaped object to prepare holes 0.5 cm deep, 2 cm apart.
5. Then they cut _____ before they flower.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. sowing method	a) маса, об'єм
2. seed vigor	b) метод посіву
3. to sprout	c) проростати
4. bulk	d) сіянець
5. seedling	e) енергія проростання насіння

III. Match the words and phrases with the definitions.

1. To geminate is ...	a) it is made by parents of different breeds.
2. If a plant is hybrid,	b) the hard outer layer of some seeds.
3. A seed is ...	c) the state of not being active now with the possibility of being active later.
4. Dormancy is ...	d) a small, usually hard, object from which a plant grows.
5. A hard coat is ...	e) for a seed to begin to grow.

Score _____ / 15

Short test (Unit 7)

I. Choose a, b or c according to the test of the unit 7.

- Why has quinoa become popular with gardeners and commercial farmers?
 - it can grow in desert.
 - it can grow without water
 - it can grow in many environments.
- Check out the following tips to _____ quinoa at home.
 - grow
 - cultivate
 - make
- Quinoa requires full sun to conduct _____.
 - hybrid.
 - photosynthesis.
 - oxygen.
- Sow seeds where the plant will get plenty of light.
 - sand.
 - light.
 - silt.
- When is the plant ready for harvest?
 - when the leaves drop
 - when the leaves are brown
 - in the fall

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. quinoa	a) однорічна рослина
2. annual	b) гілка
3. branch	c) лобода
4. flowering	d) стебло
5. stalk	e) цвітіння

III. Match the words and phrases with the definitions.

1. A stem is ...	a) the small part of a plant that grows from the stem or branch and develops into a leaf or flower.
2. An annual is	b) the process in which a plant uses light to convert water and carbon dioxide in to food.
3. A grow chart is ...	c) the long, narrow part of a plant that support the leaves and flowers.
4. Photosynthesis is ...	d) a graph that shows the change in growth of a population of a group of plants.
5. A bud is ...	e) a plant that completes its life in one year.

Score _____ / 15

Short test (Unit 8)

I. Complete the sentences with the words below.

Words				
Reaped	threshing	abundant	hay	more

1. Field #1 had the most _____ yield.
2. Field #2 was _____ difficult.
3. The farmers _____ several bushels too early.
4. We also experienced an equipment problem during _____.
5. Some of the _____ was not properly separated from the chaff.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. threshing	a) тонна
2. stack	b) пакування
3. chaff	c) стіг, скирта
4. packaging	d) молотьба
5. ton	e) полова

III. Match the words and phrases with the definitions.

1. To reap a crop is ...	a) a unit for measuring grain that is equal to approximately 35.2 liters.
2. A bushel is ...	b) to become more developed.
3. A harvest is ...	c) to collect it from the field.
4. Yield is ...	d) a process of gathering crops.
5. To mature is ...	e) the amount or quantity of a crop that is produced.

Score _____ / 15

Short test (Unit 9)

I. Complete the sentences with the words below.

Words				
leveling	gathered	bunker silo	ventilation	mold

1. We found a problem in _____ number 13.
2. _____ is growing near the south opening.
3. There was improper _____.
4. Too much moisture _____ at one end.
5. _____ can't dry and cool the silage.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. bunker silo	a) силосна яма
2. trench	b) нівелювання
3. tower silo	c) траншея
4. storage	d) силосна башта
5. leveling	e) зберігання

III. Match the words and phrases with the definitions.

1. Ventilation is ...	a) to remove moisture from it.
2. To dry something is	b) the circulation of air through an enclosed space.
3. A bunker silo is ...	c) a substance that grows on rotting organic material.
4. Mold is ...	d) the tiny amounts of water in the air or on something.
5. Moisture refers to	e) a long, covered trench for strong agricultural products.

Score _____ / 15

Short test (Unit 10)

I. Complete the sentences with the words below.

Words				
Clay	peat	composition	course-grained	highly-organic

1. _____ soil is best suited for farming.
2. Growing crops in _____ soil is difficult.
3. _____ makes soil more fertile.
4. _____ is much more dense than sand.
5. Soil types are organized by the _____.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. peat	a) мул
2. silt	b) пісок
3. sand	c) крупнозернистий,
4. clay	d) торф
5. course-grained	e) глина

III. Match the words and phrases with the definitions.

1. Texture is ...	a) made when soil mixes with body of water and is deposited.
2. Silt is ...	b) a material made from decaying plants that can be added to soil to help plants grow.
3. A grain is ...	c) the process of sorting thing into different groups.
4. Classification is ...	d) how something feels when touched.
5. Peat is ...	e) a very small, hard piece of material.

Score _____ / 15

Short test (Unit 11)

I. Complete the sentences with the words below.

Words				
nitrogen cycle	ammonia	dentrification	nutrient	forms

1. Nitrogen is a crucial _____ for growing plants.
2. Without the _____, which restores nutrient-poor soil, plants could not survive.
3. During this cycle, nitrogen takes on many _____.
4. During fixation, bacteria turn nitrogen into _____.
5. Finally, during _____, bacteria reduce nitrates back into nitrogen gas.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. decomposer	a) азотний цикл
2. nutrient-poor	b) бідний на поживні речовини
3. nitrogen cycle	c) водорості
4. converting	d) редуцент
5. algae	e) перетворення

III. Match the words and phrases with the definitions.

1. Ammonia is ...	a) the process where nitrogen from organic matter is converted into ammonium.
2. Eutrophication is ...	b) the process by which nitrogen is removed or lost from nitrogen compounds like nitrates and nitrites.
3. Mineralization is ...	c) chemical compounds that bacteria create from nitrites.
4. Nitrates are ...	d) a chemical made from Nitrogen and Hydrogen, created during fixation.
5. Dentrification is ...	e) the process by which substances like nitrates permeate fresh bodies of water.

Score _____ / 15

Short test (Unit 12)

I. Choose a, b or c according to the text of the unit 12.

1. Without healthy soil, farmers can't produce _____ crops.
 - a) tall
 - b) healthy
 - c) dry
2. Cover crops, or green manure, _____ with other crops.
 - a) are produced
 - b) are rotated
 - c) are prevented
3. Planting windbreaks stops topsoil loss from _____.
 - a) wind
 - b) sun
 - c) rain
4. _____ slow water and direct it away from fields.
 - a) fields
 - b) meadows
 - c) grassways
5. **Contour-farming** techniques also _____ water from eroding soil.
 - a) prevent
 - b) help
 - c) control

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. threat	a) збереження ґрунту
2. contour farming	b) запобігти
3. crop rotation	c) контурне землеробство
4. nutrient depletion	d) сівозмінна
5. windbreak	e) деградація землі
6. soil conservation	f) регулювання стоку
7. green manure	g) виснаження поживних речовин
8. land degradation	h) сидерат
9. perimeter runoff control	i) загроза
10. to prevent	j) захисна лісосмуга

Score _____ / 15

Short test (Unit 13)

I. Choose a, b or c according to the text of the unit 13.

1. If the soil is nutrient-deficient, _____ fertilizer.
a) cultivate
b) rotate
c) add
2. Most fields require treatment with a _____.
a) demand.
b) herbicide.
c) plants.
3. Once the _____ temperature is right, planting can begin.
a) water
b) seed
c) soil
4. The _____ rate is determined by the ideal seeds per pound and seeds per square foot.
a) seeding
b) planting
c) harvesting
5. The farmer used _____ to improve the soil.
a) herbicide
b) fertilizer
c) silt

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. amendment	a) гербіцид
2. broadcast seeding	b) збільшувати
3. herbicide	c) покращувати
4. fertilizer	d) щільність травостою
5. plant density	e) виробляти
6. emergence	f) норма висіву
7. increase	g) проростання
8. seeding rate	h) добриво
9. produce	i) поліпшувач ґрунту
10. improve	j) розкидний посів

Score _____ / 15

Short test (Unit 14)

I. Choose a, b or c according to the text of the unit 14.

1. If the _____ falls too low, the plants will die.
 - a) rain
 - b) temperature
 - c) frost
2. Don't plant any seeds until after the _____.
 - a) last frost.
 - b) last rain.
 - c) last precipitation.
3. If there is enough _____ you won't have to irrigate.
 - a) heat
 - b) precipitation
 - c) dry
4. Different plants may have different _____.
 - a) hardiness zone.
 - b) comfortable zone.
 - c) Frost zone.
5. _____ a prediction of future weather conditions.
 - a) humidity
 - b) long-range forecast
 - c) soil moisture

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. climate	a) вологість
2. humidity	b) шкодити
3. mulch	c) останній мороз
4. long-range forecast	d) мульча
5. soil moisture	e) помірний
6. hardiness zone	f) опади
7. precipitation	g) вологість ґрунту
8. last frost	h) довгостроковий прогноз
9. moderate	i) клімат
10. harm	j) зона морозостійкості

Score _____ / 15

Short test (Unit 15)

I. Complete the sentences with the words below.

Words				
produce	supply and demand	indirect marketing	cost of production	pricing strategy

1. _____ involves farmers selling crops to stores where customers shop.
2. Prices must make up for the _____.
3. Prices change according to _____.
4. Sell this _____ before it spoils.
5. Change your _____ to make a bigger profit.

I. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. supply and demand	a) непрямий маркетинг
2. cost of production	b) продавець, торговець
3. indirect marketing	c) сучасні тенденції
4. seller	d) пропозиція і попит
5. current trends	e) собівартість виробництва

II. Match the words and phrases with the definitions.

1. Market is ...	a) the method a seller chooses for establishing a product's price.
2. Cost of production is ...	b) the process of establishing a product's price that will cover exceed the cost of production
3. Pricing for profit is ...	c) the sum of all costs required to produce something, including labor, land and materials.
4. Direct market is ...	d) a place or area where products are advertised or sold
5. A pricing strategy is ...	e) a method of sales in which the producer sells products directly to consumers.

Score _____ / 15

Short test (Unit 16)

I. Choose a, b or c according to the text of the unit 16.

1. Government officials introduced a plan this week _____ wheat production.
 - a) to produce
 - b) to enhance
 - c) to cultivate
2. The government is committed to improving economic _____ in wheat-growing regions.
 - a) conditions
 - b) circumstances
 - c) climate
3. The plan supports the small _____ that the world's food and fiber industry relies on.
 - a) farmers
 - b) businessmen
 - c) engineers
4. The industry's decline _____ affects people around the world.
 - a) positively
 - b) effectively
 - c) negatively
5. Leaving some wheat fields _____ should prevent excessive surpluses and wasted resources.
 - a) tallow
 - b) fallow
 - c) plow

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. economic conditions	a) регулювання
2. wheat industry	b) впливати
3. affect	c) підвищувати
4. adjusting	d) пшенична галузь
5. enhance	e) економічні умови

III. Match the words and phrases with the definitions.

1. Food and fiber industry is ...	a) the process of limiting the production of a product to only wheat is needed for immediate sales
2. Foreign trade enhancement is ...	b) a limit of the amount or number of a product can be imported or exported.
3. A quota is ...	c) a tax on products that are being imported to or exported from a country.
4. A tariff is ...	d) a network of farmers, distributors, retailers and other organizations that contribute to the production of food and other product.
5. Adjusting production is ...	e) the practice of improving systems and technologies for trade with other countries.

Score _____ / 15

Short test (Unit 17)

I. Choose a, b or c according to the text of the unit 17.

1. _____ a crop system offers farmers economic and environmental benefits.
 - a) Cultivating
 - b) Diversifying
 - c) Preventing
2. Conservation tillage methods protect the long-term _____ of the soil.
 - a) health
 - b) structure
 - c) texture
3. Farmers often find they use _____ fertilizers after they diversify.
 - a) more
 - b) fewer
 - c) any
4. Local agricultural extension office can help you make informed decisions about which crops are _____.
 - a) most expensive.
 - b) cheapest.
 - c) most suitable.
5. You need to research the _____ for those crops.
 - a) market
 - b) place
 - c) apartment

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. benefit	a) нульова обробка ґрунту
2. diversifying	b) полікультура
3. polyculture	c) яра пшениця
4. zero tillage	d) перевага
5. spring wheat	e) урізноманітнення

III. Match the words and phrases with the definitions.

1. Crop residue is	a) a chemical used to kill weeds at the time a plant is planted.
2. A fallow field	b) any practice that reduces water and soil loss associated with conventional tillage.
3. To diversify is ...	c) does not have any crops growing on.
4. A burn-down herbicide is ...	d) to increase the different types of crops produced.
5. Conservation tillage is ...	e) the remainder of plants left in the field after farmers harvest their crops.

Score _____ / 15

Short test (Unit 18)

I. Choose a, b or c according to the text of the unit 18.

1. Plants have varying _____ of tolerance for cold.
 - a) degrees
 - b) selections
 - c) description
2. Different strategies for _____ with the cold may be used with each type of crop.
 - a) helping
 - b) coping
 - c) preventing
3. Next to the characteristics of the plants themselves, the most important issue to consider is _____.
 - a) site selection.
 - b) plant selection.
 - c) weather selection.
4. Different sites have differing _____ based on elevation, growing degree days, and last frost dales.
 - a) climate season
 - b) warm period
 - c) growing seasons
5. Agriculturists can protect their crops from the cold by selecting sites with long photoperiods and _____ mean temperatures.
 - a) lower
 - b) higher
 - c) better

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. base temperature	a) а́рочні тепли́ці
2. last frost date	b) до́вгий фотопе́ріод
3. green house	c) гра́дусо-дні́ росту
4. site selection	d) височи́на
5. mean temperature	e) дата́ останнього́ морозу́
6. growing degree days	f) боро́тьба з холо́дом
7. long photoperiod	g) ви́бір діля́нки
8. elevation	h) базо́ва температу́ра
9. hoop houses	i) се́редня температу́ра
10. coping with the cold	j) тепли́ця

Score _____ / 15

Short test (Unit 19)

I. Choose a, b or c according to the text of the unit 19.

1. Biological controls show where to apply _____.
 - a) herbicides.
 - b) suppression.
 - c) weeds.
2. Weed maps give _____ an alternative to pesticides.
 - a) doctors
 - b) farmers
 - c) chemists
3. The _____ destroyed the entire crop.
 - a) silt
 - b) loam
 - c) blight
4. Most weeds can be controlled with _____.
 - a) herbicide.
 - b) blight
 - c) pests
5. Pesticide effectively controls _____.
 - a) wild big animals.
 - b) risks.
 - c) insect.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. biological control	a) гербіциди
2. pest management	b) комаха
3. pathogen	c) дезінфікуюче обладнання
4. blight	d) мульчування
5. herbicides	e) захворювання рослин
6. mulching	f) патоген
7. sanitizing equipment	g) черв'яки
8. worms	h) бур'ян
9. insect	i) боротьба з шкідниками
10. weed	j) біологічний контроль

Score _____ / 15

Short test (Unit 20)

I. Complete the sentences with the words below.

Words				
biotic	spots	heat	symptom pattern	smaller

6. Stippled leaves are covered with _____.
7. A stunted plant will be much _____ than others.
8. Many crop problems have _____ causes.
9. The crops started to wilt in the _____.
10. Researchers are analyzing the _____.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. spot	a) почорнілі коріння
2. wilting	b) в'янення
3. stunted growth	c) пляма, цятка
4. blackened roots	d) порада
5. advice	e) сповільнене зростання

III. Match the words and phrases with the definitions.

1. If something is abiotic	a) it is living thing.
2. A symptom is ...	b) is a professional who provides advice and support to people working in agriculture.
3. A field pattern is ...	c) a sign that indicates disease
4. If something is biotic	d) it is non-living thing.
5. An agricultural advisor is ...	e) the regular and repeated way that a problem occurs in a field which is used to diagnose a problem.

Score _____ / 15

Short test (Unit 21)

I. Choose a, b or c according to the text and exercises of the unit 21.

7. _____ all cash income from sales of farm produce and government subsidies.
- record
 - minus
 - protect
8. Avoid taking on money owed to a _____.
- render.
 - master.
 - lender.
9. When equipment loses value, it is called a _____ not due to spending.
- money
 - income
 - cost
10. The _____ of feeding livestock went up.
- wages
 - expenses
 - cash
11. Expenses increased, so gross revenue minus expenses _____
- increased.
 - decreased.
 - did not change.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. debt	a) валові витрати
2. assets	b) безготівкові витрати
3. gross farm expenses	c) борг
4. non-cash expenses	d) заробітна плата
5. wages	e) активи

III. Match the words and phrases with the definitions.

1. Interest payments are ...	a) the total of all costs
2. Income is ...	b) the sum of all money from sales
3. A loan is ...	c) money that a person earns
4. Total production expenses are ...	d) money that is paid to a lender
5. Gross farm revenue is ...	e) money that is borrowed

Score _____ / 15

Short test (Unit 22)

I. Choose a, b or c according to the text of the unit 22.

1. What agricultural goods does Canada export?
 - a) wheat and other grains
 - b) rice and rye
 - c) grapes and other fruit
2. What agricultural goods does Canada import?
 - a) organic fruits and vegetables
 - b) wheat and other grains
 - c) soybeans and corn
3. Is the economies of the republic of Chile based on international trade?
 - a) Yes, it is.
 - b) No, it isn't.
 - c) The text doesn't tell about it.
4. What agricultural goods does Chile import?
 - a) fresh fruit
 - b) canned vegetables
 - c) soybeans and corn
5. What labels must have all products imported to Chile?
 - a) produced in Chile
 - b) printed in Spanish
 - c) The text doesn't tell about it

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. import	a) міжнародна торгівля
2. label	b) квоти
3. trade surplus	c) експортувати
4. import dependent	d) етикетка
5. quotas	e) активне сальдо торгового балансу
6. international trade	f) переваги
7. reduce	g) зменшувати
8. trade costs	h) торгові витрати
9. benefits	i) залежний від імпорту
10. export	j) імпортувати

Score _____ / 15

Short test (Unit 23)

I. Complete the sentences with the words below.

Words				
futures market	commodity	carryover	ending stock	index

6 There was an increase on corn prices in each _____.

7 This year's _____ has been unusually high.

8 Anything of value can be considered _____

9 Last year, a _____ was unusually low.

10 Carrie made a lot of money in the futures market.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. value	a) вартість, цінність
2. index	b) низький
3. carryover	c) вимірювання
4. ending stocks	d) грошова цінність
5. stocks-to-use ratio	e) гарний вибір
6. good choice	f) відношення перехідних запасів до використання
7. monetary worth	g) залишок
8. measuring	h) кінцеві запаси
9. low	i) показник, індекс
10. commodity	j) твар, продукт

Score _____ / 15

Short test (Unit 24)

I. Complete the sentences with the words below.

Words				
soil amendments	economic sustainability	carrots	monoculture	compost

1. _____ is disappearing as more farmers embrace biodiversity.

2. Using _____ is a great way to fertilize soil.

3. A farm will fail if it lacks _____.

4. Most farmers add _____ to fields.

5. Onions are perfect for protecting _____ from pests.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. biodiversity	a) сталий
2. intercropping	b) перевага
3. non-renewable resource	c) вплив
4. compost	d) поліпшувач ґрунту
5. monoculture	e) заохочувати, підтримувати
6. impact	f) монокультура
7. soil amendments	g) компост
8. encourage	h) невідновлюваний ресурс
9. advantages	i) поєднання культур
10. sustainable	j) біорізноманіття

Score _____ / 15

Short test (Unit 25)

I. Choose a, b or c according to the text of the unit 25.

6 The farm maintains _____ with regulations.

- a) farming
- b) cultivation
- c) compliance

7 The inspector is checking for _____ of organic crops with non-organic materials.

- a) contamination
- b) condition
- c) climate

3. If your facility fulfills the organic standards you will be _____.

- a) eco-friendly
- b) certified
- c) changed

4. The farm offers _____ produce.

- a) friendly
- b) organic
- c) sustainable

5. Don't _____ organic and non-organic produce.

- a) grow
- b) commingle
- c) propose

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. organic system plan	a) екологічні стандарти
2. certifier	b) особа, що видає сертифікат
3. material inputs	c) інспектор
4. inspector	d) матеріальні витрати
5. organic standards	e) план екологічно чистої системи

III. Match the words and phrases with the definitions.

1. If food is organic	a) a verification that a product is organic and not contaminated.
2. An inspector is ...	b) when an undesirable substance mixes with a product to make it impure.
3. Audit trail document is ...	c) a record to prove organic authenticity
4. Contamination is ...	d) someone who examines farm facilities, crops, and animals to verify compliance with organic codes.
5. Organic integrity is ...	e) it is produced without unnatural fertilizers or pesticides.

Score _____ / 15

Short test (Unit 26)

I. Complete the sentences with the words below.

Words				
biotech seed	herbicide tolerant	insect-resistant	traits	analysis

1. This _____ can resist herbicides.
2. _____ suggests that the product is safe.
3. _____ seeds counter pest populations.
4. _____ seeds let farmers kill weeds.
5. Scientists are enhancing desirable _____.

II. Match English words and phrases in A with their Ukrainian equivalents in B.

A	B
1. biotech seed	a) надокучливі комахи
2. favorable traits	b) ГМО
3. pesky insect	c) засухостійкий
4. genetically modified organisms	d) бажані (потрібні) особливості
5. drought-tolerant	e) генномодифіковане насіння

III. Match the words and phrases with the definitions.

1. Yield enhancement is ...	a) one that has not been altered by genetic engineering.
2. Biotech seed is ...	b) it is able to withstand dryness.
3. Nitrogen efficiency is ...	c) an increase in the size of a harvest.
4. When a plant is drought-tolerant	d) the ability of a plant to use little nitrogen and grow to its full potential.
5. Conventional seed is ...	e) one that has been altered by genetic engineering.

Score _____ / 15

ANSWER KEY

Unit 1. The History of Agriculture

- I. 1b 2b 3c 4b 5a
- II. 1d 2a 3c 4e 5b
- III. 1d 2e 3b 4a 5c

Unit 2. Plant Products

- I. 1 fresh fruit 2 fresh vegetables 3 industrial crop products 4 cereal crops
5 farmer's market
- II. 1e 2a 3d 4b 5c
- III. 1d 2c 3e 4b 5a

Unit 3. Animal products

- I. 1b 2a 3b 4a 5a
- II. 1e 2a 3d 4c 5b
- III. 1b 2c 3a 4e 5d

Unit 4. Soil

- I. 1a 2c 3a 4b 5b
- II. 1c 2a 3d 4e 5b
- III. 1c 2a 3e 4b 5d

Unit 5. Water

- I. 1 dug 2 wells 3 prices 4 groundwater 5 drought-resistant
- II. 1d 2a 3b 4e 5c
- III. 1d 2a 3e 4c 5b

Unit 6. Seeds

- I. 1 temperatures 2 water 3 soil 4 use 5 buds
- II. 1b 2e 3c 4a 5d
- III. 1e 2a 3d 4c 5b

Unit 7. Plant Growth

- I. 1c 2a 3b 4b 5a
- II. 1c 2a 3b 4e 5d
- III. 1c 2e 3d 4b 5a

Unit 8. Harvest

- I. 1 abundant 2 more 3 reaped 4 threshing 5 hay
- II. 1d 2c 3e 4b 5a
- III. 1c 2a 3d 4e 5b

Unit 9. Storage

- I. 1 bunker silo 2 mold 3 leveling 4 gathered 5 ventilation
- II. 1a 2c 3d 4e 5b
- III. 1b 2a 3e 4c 5d

Unit 10. Classification and composition

- I. 1 highly-organic 2 course-grained 3 peat 4 clay 5 composition
- II. 1d 2a 3b 4e 5c
- III. 1d 2a 3e 4c 5b

Unit 11. The nitrogen cycle

- I. 1 nutrient 2 nitrogen cycle 3 forms 4 ammonia 5 denitrification
- II. 1d 2b 3a 4e 5c
- III. 1d 2e 3a 4c 5b

Unit 12. Soil conservation

- I. 1b 2b 3a 4c 5a
- II. 1i 2c 3d 4g 5j 6a 7h 8e 9f 10b

Unit 13. Preparing, seeding, and planting

- I. 1c 2b 3c 4a 5b
- II. 1i 2j 3a 4h 5d 6g 7b 8f 9e 10c

Unit 14. Climate and weather

- I. 1b 2a 3b 4a 5b
- II. 1i 2a 3d 4h 5g 6j 7f 8c 9e 10b

Unit 15. Pricing

- I. 1 indirect marketing 2 cost of production 3 supply and demand 4 produce
5 pricing strategy
- II. 1d 2e 3a 4b 5c
- III. 1d 2c 3b 4e 5a

Unit 16. Government intervention

- I. 1b 2a 3a 4 c 5b
- II. 1e 2d 3b 4a 5c
- III. 1d 2e 3b 4c 5a

Unit 17. Cropping system

- I. 1b 2a 3b 4c 5a
- II. 1d 2e 3b 4a 5c
- III. 1e 2c 3d 4a 5b

Unit 18. Growing seasons

- I. 1a 2b 3a 4c 5b
- II. 1h 2e 3j 4g 5i 6c 7b 8d 9a 10f

Unit 19. Weeds, pests, and diseases

- I. 1a 2b 3c 4a 5c
- II. 1j 2i 3f 4e 5a 6d 7c 8g 9b 10 h

Unit 20. Diagnosing crop problems

- I. 1 spots 2 smaller 3 biotic 4 heat 5 symptom pattern
- II. 1c 2b 3e 4a 5d
- III. 1d 2c 3e 4a 5b

Unit 21. Agribusiness management

- I. 1a 2c 3c 4b 5b
- II. 1c 2e 3a 4b 5d
- III. 1d 2c 3e 4a 5b

Unit 22. International trade

- I. 1a 2a 3a 4c 5b
- II. 1j 2d 3e 4i 5b 6a 7g 8h 9f 10c

Unit 23. The futures market

- I. 1 index 2 ending stock 3 commodity 4 carryover 5 futures market.
- II. 1a 2i 3g 4h 5f 6e 7d 8c 9b 10j

Unit 24. Sustainable farming

- I. 1 monoculture 2 compost 3 economic sustainability 4 soil amendments
5 carrots
- II. 1j 2i 3h 4g 5f 6c 7d 8e 9b 10a

Unit 25. Organic farming

- I. 1c 2a 3b 4b 5b
- II. 1e 2b 3d 4c 5a
- III. 1e 2d 3c 4b 5a

Unit 26. GMOs

- I. 1 biotech seed 2 analysis 3 insect-resistant 4 herbicide tolerant 5 traits
- II. 1e 2d 3a 4b 5c
- III. 1c 2e 3d 4c 5a

PART II.

TEXTS FOR READING

A FEW WORDS ABOUT AGRONOMY

Agronomy deals with the cultivation of fields for regular production of crops: food crops and industrial crops. Cultivation means the preparation of the ground for planting seeds, tubers etc. Cultivation is done by means of various kinds of agricultural machines and implements: gang plows, harrows, sweepers, etc.

As the climate and the soil greatly differ in different regions of our country, agronomists regularly exchange experience. This regular exchange of plants which may be grown in different regions and has given start to the development of various means for the improvement of crops.

It is known that regular study of the chemical composition of soils and the development of means for the reproduction of their fertility have become a fundamental part of agriculture science.

It may be said that the development of agriculture has become an important factor in the development of national economy and has resulted in the rise of national economy and has resulted in the rise of living standard of the Ukrainian people.

Word list:

agronomy – агрономія
cultivation – культивуація; обробка
experience – досвід
fertility – властивості, родючість
gangplows – причіпні плуги
harrows – борони
improvement – покращення; вдосконалення
planting – садіння

WHAT IS AGRICULTURE?

Agriculture is a human activity in which people use areas of land to produce food, clothing and other necessary materials.

The word – «ager» is a Latin word. It means a field. The word – «agriculture» means the cultivation of fields and growing crops. But this is the old meaning of this word. Now it also means the use of land to breed animals. At present there are two main branches of agriculture. They are crop growing and animal breeding.

We do not know when people began to grow crops. It was many thousand years ago. Now crop growing is a highly developed branch of agriculture.

The soil is the basis of agriculture. Enough food for all the people can be grown if there is sufficient good soil for crops to produce high yields.

There are two ways to grow enough food. They are the increase in area of arable land and the intensification of agricultural production in the areas already used for cropping. At present the second way is more important because there is not enough experience to reclaim tropical and subtropical lands.

The intensification of production in the traditional agricultural areas is based on the knowledge of climate, soils and their use, and on a large collection of high – yielding varieties and hybrids of agricultural crops.

All intensification factors, such as full mechanization, high application of fertilizers and extensive use of herbicides must be used in such a way as not to disturb the biological equilibrium of the soil.

Word list:

agriculture – сільське господарство

application – застосування; нанесення

crop – сільськогосподарська культура

cropping – врожайний

equilibrium – склад

intensification – інтенсифікація

sufficient – достатній

to disturb – заважати

to increase – збільшувати

to reclaim – переробляти

yield – врожай

MAN AND PLANTS

Plants: grass, flowers and trees grow everywhere – high in the mountains, far out in the ocean and in many deserts and polar regions.

There are over 350,000 species of plants. Some are so small, that we see them only with a microscope; some are very large, such as the giant sequoia trees in California, they are over 100 met. high and about nine met. wide. Plants are very old living things. Pine trees live 300 – 500 years. There are plants in Ukraine 2000 years old.

Life is impossible without plants. We breathe the oxygen which comes from plants, we eat the food which also comes from plants or from animals that eat plants. Many thousand years ago man built houses and made useful things from timber which he got from trees. He made his clothing from plants too.

Plants also give beauty. People like to look at flowers, at fields of grain, they like to be in the forest. Man began to change plants about 10,000 years ago, when he began to grow the first food plants. The first farmers saw that there were good plants and not so good plants.

They sowed the seed of good plants and grew new plants from them. In this way man, developed the basic food crops of the world. For example, the Indians

developed little ears of wild corn into large ears with many grains, which we use today. When Christopher Columbus came to the New World the new corn grew over large territory there.

Word list:

about nine met. wide – біля 9 метрів в обхваті
ears of wild corn – колосся дикої кукурудзи
have not got any idea – навіть не знаю
in this way – таким чином
nobody knows for sure – ніхто напевне не знає
species – вид, порода
the giant sequoia trees – гігантські секвої

PLANTS AND THEIR USES

From earliest times plants are known to play an important part in everyday life of men. We know – plants to provide us with food, clothing, shelter and many other necessary things. We are still as dependent upon plants as primitive men to grow plants. And the cultivation of plants is thought to be closely connected with man's progress. In order to grow plants man had to settle down and to begin building homes. Primitive men had few needs except food and clothing.

Civilization has increased man's wants to a surprising extent. The man of today is no longer satisfied with merely having food to eat and house to live in. He wants raw materials which can be made into useful things and products.

Our food and clothing are produced directly or indirectly by plants. Many animal food on plants and produced food and raw materials are used by man. Without plants life neither animals nor man will be able to live.

Many things we use in everyday life are made from plants. The paper we write on, the clothes we wear, the tables we sit at, all come from plants. Plants are used as timber in the making of furniture and as fuel. Many drugs are made from plants.

Plant culture began great many years ago. The most important plants in the world are said to have been grow 4 000 years ago.

There exist very many species of plants. But the best known to most people are those that are useful to men. They are grown and cultivated by farmers and are called farm crops. These crops are used for many different purposes.

Some crops are used directly by man, some are consumed by animals, others are used in industry and medicine. We can certainly expect new uses to be found and the value of other plants to be discovered.

Word list:

consumed – вживати
drugs – ліки
expect – очікувати, рахувати
merely – просто, тільки

order – порядок
provide – забезпечувати
shelter – будівля, укриття
timber – балка, лісоматеріал
to be found – знаходити, встановлювати
to settle – приживатись

WHEAT

Wheat-growing was extensively practiced throughout Europe in prehistoric times and this cereal was of great importance in the ancient civilizations of Persia, Greece and Egypt. It spread to all the temperate countries where it now plays a major part in the food supply of many nations and it is also widely cultivated in tropical and subtropical areas.

Cultivation. It is often said that winter wheat does best on a well-formed seed-bed. Plugging should be done as early as possible and the normal depth would be in the region of 6 inches. The type of seed-bed required for winter wheat can be described as one with a reasonable tilt in the top 2–3 inches, with a surface containing a high proportion of clods, the largest of these being about the size of a man's hand. This is to prevent capping, a condition which can easily arise with heavy rain, when the soil surface runs together forming a crust.

Managing. With all crops it is essential to ensure that adequate supplies of phosphate and potash are available during the first few weeks of growth. Once observed it is not possible to correct properly any deficiency and both of these major elements are required either in advance of drilling or they may be combine-drilled with the seed.

Combine drilling is the most economical way of applying these fertilizers, but with winter wheat time of sowing being of prime importance, the fast method of application using fertilizer spinners is more often preferred. For average conditions 30 units (one unit is equal to 1.12 lb. and is the same as 1% on analysis) each of phosphate and potash will be sufficient. If the soil is rich in nitrogen, then 30 units/acre of fertilizer nitrogen would suffice, but under average conditions levels up to 60 units are considered economic rising to 80 units in the low rainfall areas. Previous cropping, local environment and to some extent cultural techniques can also influence the optimum level of this nutrient. When the soil is likely to supply some nitrogen for early growth of a winter crop, then it is unlikely that any autumn fertilizer nitrogen would be required.

The short, stiff-stemmed varieties of wheat can stand high levels of fertilizer nitrogen whereas the taller ones used to produce quality straw will only tolerate moderate amounts. Of all the cereals winter wheat will give the highest response to his fertilizer and to obtain the best return the proper dressing should be applied at the correct time.

As far as spring wheat is concerned up to 60 units of nitrogen can be economic. It should be applied prior to drilling or combine-drilled with the seed.

Seeding Rates. The amount of seed required for autumn wheat will vary between 1 and 2.5 cwt/acre. Early sowings need the least since the temperatures for germination are higher than those later on and a larger number of the seeds produce plants. As one goes north the autumn temperatures become significantly lower and hence to obtain the optimum number of plants it is necessary to sow larger quantities of seed.

Harvest. Winter wheat is normally harvested from August to October (in Britain), depending on the type of summer experienced and also the geographical location. Spring wheat matures much later than winter wheat and later than the other cereals.

Following a hot, dry summer grain may be combine-harvested under very good conditions; and if the moisture does not exceed 14% then it can be stored without drying. Moisture tests can be carried out at harvest and these are often used to indicate the stage of ripeness or readiness for combining.

Most of the wheat being cut by combine harvester, there is still a small, but significant acreage, which is hindered to satisfy the demand for long straw. It is said to be binder-ripe when the grain is fairly firm, has a cheesy texture and does not exude any milky fluid when pressed. This stage is usually reached between 1 and 2 weeks before it can be combine-harvested. The actual binding should not take place until the morning dew has disappeared. Once cut the grain will mature in the ear and the straw will dry out.

Word list:

combine drilling – посів із застосуванням добрив

cultivation – обробіток ґрунту

dry out – висушувати

harvest – збирання урожаю

ripeness – стиглість

seeding – посівна

straw – солома

tropical and subtropical areas – тропічні та субтропічні райони

wheat – пшениця

OATS

Soil. The cultivation of oats may take place on a wide range of soil types with a reasonable degree of success. Oats can be found on all the light to medium soils in the higher rainfall areas and will give high yielding crops of good quality. They can also produce good crops on some of the heavier soils, clay and silts, in the drier areas of Britain where there are significant moisture reserves in the soil, which can be drawn upon during a particularly dry time.

It is true that oats will grow well where barley will fail completely and wheat produces only moderate crops but extreme acidity even with oats cannot be tolerated.

Climate. The oat crop is particularly suited to the cooler, more humid climate of the western and northern regions of Britain where growth is relatively slow and as a result the grains have plenty of time to fill out to produce good plump samples.

Oat crops which do not suffer through lack of moisture will produce high grain yields of good quality and on the average the straw will weigh slightly more than the grain. Most of the world's oats are supposed to be produced at elevations below 2,000 feet and probably half below 1,000 feet.

Seedbed Preparation. Oats are said to be the best cereal to follow the plugging up of grassland but this is only true if the grass is turned in timely and well, the furrow slice being properly inverted and no large air pockets left which tend to accentuate drying out.

Plugging depths should be 6 inches except where grass or surface trash need to be buried deeper and then 8–9 inches plough depths may be required. Where early plugging has been carried out it is often only necessary to give the land a light-medium harrowing to obtain the desired tilth in the top 3 inches of the soil.

Drilling. Optimum drilling depth with oats lies in the region of 1.5–2 in. When seed-beds have an irregular surface tilth, drilling depth becomes uneven and in order to ensure that all the seed is covered, it will often go in well below the optimum in many areas and this will be responsible for patchy stands.

Drilling in autumn tends to be at slightly lower depths than in spring on account of the rougher soil surface, which is purposely left to reduce the dangers of surface capping. Early spring drilling may also go in deeper than normal in an attempt to reduce losses through bird activity.

The two main advantages of combine drilling are firstly, the seed and fertilizer go on in one operation and secondly, it is possible to obtain maximum benefit from the minimum amount of fertilizer, notably the phosphate and potash content. The main disadvantage lies in the fact that the rate of sowing is much reduced and since delays in drilling usually mean lower yields the faster method of seeding using a wide drill following a fertilizer spinner is more often employed for winter seeding.

Harvest. It has been pointed out that for straw to have additional feeding value the crop should be cut early and this will mean hindering one or two weeks before full ripeness. Very tall crops may be cut earlier than usual to make the harvesting easier and to avoid risks of late lodging and this will also apply to crops, which have been under sown. Quick maturing varieties will often be cut before the rest to avoid grain losses and lodging. Some people suppose the best time to cut a good standing crop of oats is a few days before it is fully ripe. Since oats are much more prone to losing their grain by shattering than the other cereals then hindering must always be before full maturity.

Windrow Harvesting. Oats have been said to shatter more easily, high winds (when the crop is ripe) resulting in extensive loss of grain. In some parts of the United States and in parts of Canada a high proportion of the oat crop grown specifically for grain is windrowed to avoid these losses due to shattering. This method of harvesting has not been widely adopted in Britain but has been practiced

to a limited extent for many years. It is a two-stage harvesting technique designed to allow the crop to be cut earlier than with direct combining. The first operation involves cutting the crop with a windrower to lay it evenly on high stubble, well off the ground. A combine harvester fitted with a pick-up attachment several days later when the straw and grain have dried out gathers this windrow.

Combine Harvesting. The proportion of the oat crop harvested by combine has risen markedly over the past few years. The advantages of combining the crop lie firstly in the speed at which the operation can be carried out. Secondly grain losses can be kept to a minimum and thirdly it is possible to save lodged crops which would be extremely difficult by any other means.

The grain should be left to dry out as far as possible in the field to reduce artificial drying costs, but not at the expense of grain losses.

Word list:

climate – клімат

combine harvesting – механізоване збирання урожаю

oat – овес

ploughing – оранка

seedbed preparation – підготовка до посівної

soil – ґрунт

tilth – рілля

windrow harvesting – немеханізоване збирання урожаю

MAIZE

Types of Maize. Several thousand varieties of maize are now grown throughout the world and most of these can be allocated to one of the seven most important groups: dent maize, flint maize, sweet corn, soft maize, popcorn, waxy maize, pod maize.

Soil Requirements. Successful, maize cultivation is more frequently and more easily achieved on soils, which are of medium texture. As the soils become lighter the greater is the chance of their – drying out in midsummer and although there is really nothing else against them, the very light sandy soils should be avoided.

Having suggested light to medium textured soils for maize, it must also be stressed that organic status and fertility should be high.

The maize land should be free draining in order that as much of the heat as possible is employed in raising soil temperatures and not removing excess of soil moisture. The soil should be naturally free draining to enable a full rooting system to develop in a plentiful supply of oxygen.

Maximum yields are believed to be obtained between pH 4 and 9. Some scientists believe maize to be successfully cultivated on the moderately acid soils (pH 6–7 as optimal). Others say that maize growing can be successful under alkaline conditions provided there are no serious deficiencies of the micro-nutrients.

Application of Fertilizers. It has been suggested that phosphate and potash should be applied to the land well in advance of drilling and the nitrogen incorporated into the seedbed just prior to drilling, otherwise much of it would be lost by leaching.

One should remember that germination is much retarded by fertilizers in contact with the seed.

Cultivation. With a more extensive and deeper rooting system than the other cereals, maize will require deeper plugging, cultivations and seedbeds to obtain maximum growth. Autumn plugging is advisable on stronger soils and it may be left until the early spring when textures are light. Cultivations which follow should be to a depth of 4-5 inches. They kill the weeds after germination: inter-row cultivation can follow crop emergence to obtain further weed control. Chemical means are often preferred. Seed-beds should be uniform and fine to obtain a quick germination and to assist the action of herbicides in their control of weeds.

Seeding. Minimum temperatures for growth of maize are around 50° F (10°C) and thus early spring sowings are of little value except when the soils are warmer than usual. Under cool conditions seeds rot.

When the average t° is over 50° F the emergence of maize will take approximately two weeks. Late spring frosts can also be damaging to seedling maize, although with the cold tolerant varieties being introduced, there is every chance that this crop may now survive the first few degrees of frost.

Sunshine and Solar Energy. Little is said and written about sunshine and solar energy requirements with this cereal. It is, however, assumed that for satisfactory growth and ripening of the crop high levels of bright sunshine are required.

Maize is quite unique in its mode of growth and extent and duration of its leaves. They grow in a manner which facilitates efficient use of radiant energy by trapping most of the sun's rays and since the duration of full leaf extends almost to grain maturity, the sun's energy can be transferred to grain yield throughout the whole life of the plant. A point close to optimum leaf area is obtained early and maintained almost to grain maturity thus making maize one of the most efficient utilizes and converters of solar energy into plant energy particularly when the whole plant is considered as the economic yield.

Word list:

application of fertilizers – застосування добрив

maize – кукурудза

sunshine and Solar Energy – сонячна та штучна енергія

BARLEY

The first requirement in the production of any crop is to see that soil conditions are as close to the optimum as possible. Barley prefers well-drained soils, light to medium in texture with a high pH. When fertility is high and weather conditions are favourable high yielding crops of good quality are obtained. When

pH values are recorded below 6.0, it would be wise to lime specifically for this crop and it should be worked into the topsoil in advance of sowing. Since the grain yield with barley is likely to be higher than with oats and due to its better feeding value, it has replaced the traditional oat crop on many dairy farms in Britain. As long as the pH is over 6 and the soil is in reasonable conditions, there is no reason why this crop cannot be grown on most soils in Britain, one notable exception being the wet soils associated with upland conditions

When barley is grown in the wetter areas of Britain, it does best when the rainfall is below normal and when sunshine hours are higher than usual. Low rainfall in April and early May and cool weather in May are required for high yields. High rainfall in the previous winter appeared detrimental and warm dry weather was required during ripening.

Winter barley is often sown after early harvested sugar beet on the lighter soils, since seed-beds can often be easily and quickly prepared for sowing in October and November. With large acreage of arable land in cereals, many crops of winter barley will go in after spring cereals, but it would be unwise to grow winter barley following winter barley due to the increased disease risks involved. Spring barley may follow almost any other crop provided the land is not in too high a state of fertility, otherwise wide-spread lodging can result. Under systems of cereal monoculture or close cereal cropping spring barley is the most commonly chosen crop since it appears least affected by disease spring barley and with such a short growing season cultural weed-control, disease control timely plugging and that recorded at the beginning of the experiment. Results from a continuous barley cropping experiment between yield and quality where feeding barleys are concerned since a high protein content in phase and potash must always be applied before or at seeding to obtain a full and vigorous stand. The majority of the need to be close at hand immediately following germination so that growth can go ahead unimpeded. However, where often pay to apply the average levels of phosphate and potash to the barley and half of the nitrogen. Once the crop is well wherever possible earlier turning of the soil being recommended. Where stubble from the previous crop is material to be turned over the depth of plugging might well be reduced to four inches. Medium to heavy soils should be ploughed early before the turn of the year in order than the weather, especially the action of snow and frost, may play its part in producing a fine seed-bed. Early plugging on the light soils may also be useful in easing the burden of spring work, however it is not essential and spring plugging will often do just as well. Cultivation or heavy harrowing will follow to the lowest depths required and where perennial weeds are present, special equipment may be brought into use to remove them at this stage. Medium to light harrowing just prior to drilling will normally be required to produce a fine seed-bed in the top 2,00 inches of the soil. The object in seed-bed preparation is to produce the right degree of tilth with the minimum operations and soil moisture conservation in many areas must always be kept in mind. The optimum depth of drilling is in the region of 1 – 1.5 inches. Placing the seed much deeper can result in lower field germination, an irregular emergence and plants which come through the ground in a feeble condition having used up most of the nutrients from the seed

before they reach the light. The time of sowing is an important consideration since it can have a marked effect on grain yield and in general terms, the earlier the drilling date once the land is prepared and the conditions are right.

Word list:

barley – ячмінь

inch – дюйм (англійська мірка)

rainfall – сильний дощ, злива

WATER IS LIFE

Water is the natural resource we all know very well. We know its many forms – rain, snow, ice, hail, vapour, fog. Yet, water is the natural resource we least understand.

How does water get into the clouds? What happens when it reaches the Earth? Why is there sometimes too much and other times too little of it?

And most important, is there enough water for all the plants, and all the people?

Water covers nearly three fourth of Earth most being sea water. But sea water contains various salts, including those that are harmful to most land plants and animals. Still, it is from the salt seas and oceans that most of our fresh water comes – no longer salty and harmful. Water moves from clouds to land and back to the ocean in a never – ending cycle.

Ocean water evaporates into atmosphere leaving salts behind, and moves across the Earth as water vapour. Water in lakes and rivers also evaporates and rises into the air. Having cooled in the air the water vapour condenses and falls to topography. This part of the cycle is very important because man can use water stored in the atmosphere only when it falls to the land.

Every year about 450000 cubic kilometres of water evaporates from the ocean and about 61000 cubic kilometres from land sources.

Water is an unchanging and ever renewing resource but its distribution on the surface of the globe varies greatly – there is either too little or too much water. Many problems are caused by too much water when we do not want it or too little when we do want it.

No natural resource on our planet has so many uses as water. We need water to support our lives, to grow our crops, to water our stock, to power our industries and for many others purposes.

Our water needs are great and they continue to grow. Agriculture requires great quantities of water to provide wood and raw materials for industry. Industry consumes not less water than agriculture. Per capita use of water is increasing rapidly in the world.

There is plenty of water on the Earth. But the amount of fresh water available to man is very small.

In Ukraine we have to use water more efficiently in industry, towns, cities, in agriculture and irrigation. All life depends on water.

Word list:

fog – туман

hail – град

plenty of – багато

to want – потребувати

vapour – пара

AGRICULTURAL ENGINEERING

Agricultural engineering can be defined as the application of engineering to agriculture but this definition does not cover all the fields it is connected with. Engineering is, in truth, an integral part of the science of agriculture, the present high position of modern agriculture largely depends on.

The development of fertile swamp and overflowed lands, the irrigation of arid regions, the construction of new sources of power has become important factors in the development of agriculture in many countries. The invention of the cotton gin, the steel plow, and the tractor has affected not only agriculture, but also many of the economic and social phases of life.

At first progress was slow but with the growth of engineering knowledge more and more engineering achievements found useful application in agriculture. Now agriculture can not be separated from agricultural engineering.

Word list:

agricultural engineering – агротехніка

invention – винахід

AGRICULTURE IN AUSTRALIA

Australia is mainly a flat, dry, and thinly populated land. Only a few regions along the coast receive enough rain to support agriculture and large populations.

Only three percent of Australia's total surface is cultivated, but another 62 percent is used for rough grazing for the very large sheep and cattle stations where up to 45 acres per cow is required.

Wheat is the dominate grain crop in Australia, and on nearly all livestock farms, hay is produced from grass or oats. Sheep are the dominating type of livestock.

Farm mechanization is generally based on 100-to 200horsepower four-wheel drive tractors pulling large implements. Large combine harvesters and other self-propelled equipment used are mostly made in North America, or under license in Australia. Most farms also have their own trucks for grain hauling and other transport tasks.

Due to the normally stable weather pattern, both seeding and harvesting seasons are longer than elsewhere. Being a southern hemisphere country, Australia's seasons are opposite to Europe and North America. Nearly all grain crops are based on the winter varieties. This means that the bed preparation and

seeding takes place mainly from April to June, with harvest – from November to January.

Word list:

cattle– велика рогата худоба
cow – корова
grain crop – зернова культура
grain hauling – вивіз зерна
hemisphere – півкуля
sheep– вівця (вівці)
to cultivate – обробляти

AGRICULTURE IN CANADA

Canada is the second largest country in the world and covers more than 50 percent of the North American continent. Most of the population lives less than 450 miles from the United States border, and most farm land is found there as well.

Only 17 percent of Canada's land is utilized for farming and of that only about one third can be classified as good farm land. Most of the other two thirds are used for permanent grazing.

The climate is mainly continental with long, cold winters and relatively short but fairly warm summers. Winter grain crop varieties are not common, and the spring crops are often of 90-day varieties suitable for the short frost-free growing season.

Crop yields in the prairie regions are low by world standards due to limited rainfall that also limits fertilizer application.

Field mechanization in these regions is based on U.S. - or Canadian- made tractors, many of which are in the 200-to 350horsepower range with four-wheel drive and capable of pulling large implements. Most farms have self-propelled combine harvesters and trucks for grain transport. Many farms have well-equipped workshops capable of handling common farm repairs.

Word list:

combine harvester – комбайн (сільськогосподарська машина)
farm land – фермерська земля
mechanization – механізація
self-propelled – самохідний
well-equipped – добре оснащений
workshop – майстерня

AGRICULTURE IN FRANCE

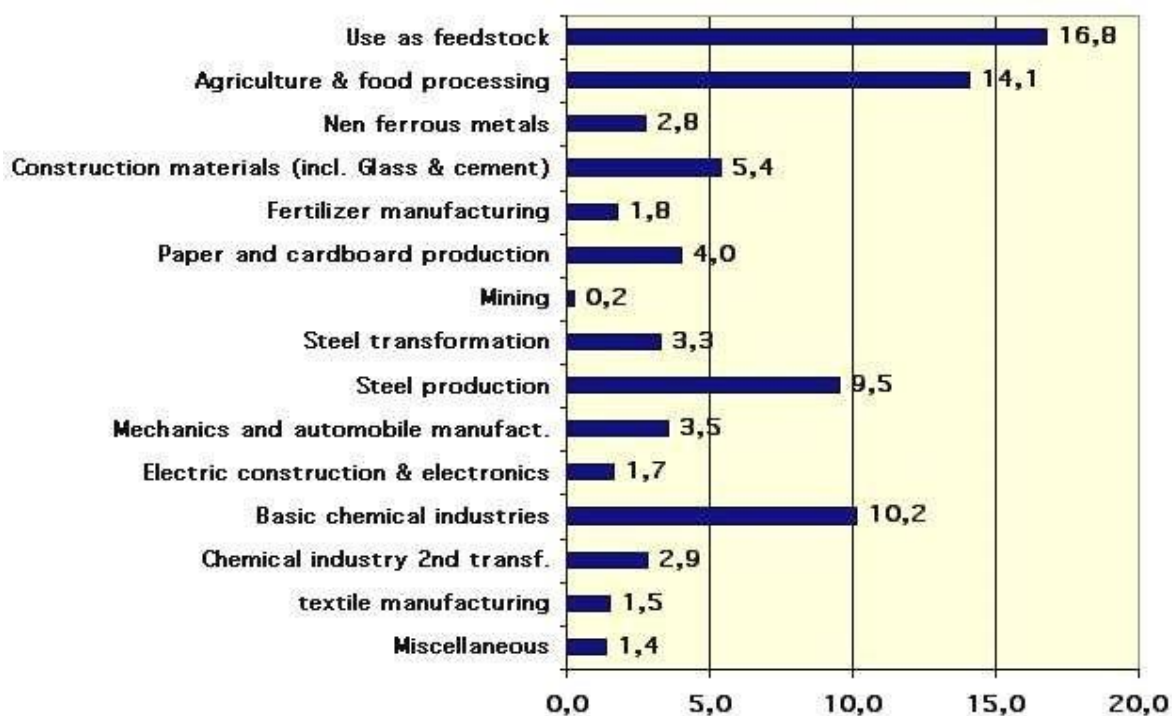
France is the largest country in Western Europe and has a very diverse countryside, offering flat land, gentle rolling plains, and large mountains. Most of

France is blessed with rich farmlands, making it Western Europe's leading agricultural country.

Agricultural France is also very diverse. The typical farm is in the 110-to 350-acre range. Specializing in three to five crops and one to two different types of livestock, of which dairy or beef cattle and pigs are most common.

Agricultural crops in France include wheat, barley, rye, potatoes, sugar beets, various oil seeds and forage crops for grazing, silage, and hay. In the Bordeaux region of France, grapes are produced and are used almost exclusively for the production of wine.

French agriculture is well mechanized with 50- to 200-horsepower tractors, and combine harvesters and implements of European manufacture.



Word list:

barley – ячміннь

beef cattle and pigs – м'ясна промисловість (велика рогата худоба та свині)

dairy – молочна промисловість

oil seeds – зернові для вироблення олії

potatoes – картопля

rye – жито

sugar beet – цукровий буряк

wheat – пшениця

wine – вино

AGRICULTURE IN SWEDEN

Sweden has great variations in climate and topography. The countryside is generally flat or undulating, but quite beautiful with thousands of lakes and extensive forests.

Although less than 8 percent of Sweden's total land surface is suitable for cultivation (and most of this is found in the southern third of the country), its farms furnish nearly all food required.

The typical farm is in the 110- to 500-acre range, specializing in three to five crops and one to two types of livestock, normally dual-purpose dairy and beef cattle or pigs.

Common crops include winter and spring varieties of wheat or barley, oats, canola seed, seed crops, sugar beets, and various forage crops for green feed, silage, or hay. Most protein supplements are imported.

Farm mechanization is based on 50- to 120-horsepower tractors, many of which are made in Sweden, and a high percentage of implements and combine harvesters imported from Denmark or Finland.

The climate is fairly uniform. Summers are relatively cool and rainy, and winters are reasonably mild with snow falling three to four months of the year. Some winter work includes clearing snow from roads and farmyards.

Sweden is nearly self-sufficient in most food products and has a small surplus in some. The government protects domestic production and subsidizes consumer prices to assure farmers have an income comparable to that of other groups of society.

Word list:

canola seed – насіння каноли

domestic production – внутрішнє виробництво

forest – ліс

hay – сіно

lake – озеро

self-sufficient – самодостатній

surface – поверхня

FARMS IN ENGLAND

There are about 53500 farms in England. Most of them are farms less than 50 acres each. These small farms are family farms. All the work on the farm is done by the farmer and his family.

The types of the farm in England are different in soil and climatic areas. In the Eastern part of England most farms are arable. The farmers grow different crops here. They grow grain crops and potatoes, fruits and vegetables and other crops. In the Western part of the country dairy farms are predominant.

Most small farms in England are mixed farms on which farmers grow some crops and keep some farm animals.

In old days most of the work on farms was done by hand or with the help of horses. Now the work is highly mechanized. Many useful machines are used by farmers. The soil is plowed with a tractor, crops are planted with different planting machines, grain crops are harvested with combines.

Now the main tendency in agricultural development of this country is that small traditional farms are gradually disappearing because they can't compete with modern big industrial farms.

Words list:

acre – акр

arable – орний

compete – конкурувати

dairy – молочний

disappear – зникати

gradually – поступово

horse – кінь

to keep – тримати, утримувати

to mix – змішувати

GARDENING

My family has got a small weekend house not far from the town. It's set in the picturesque place near the river. Our garden is not very big, but still we have got plenty of work there. Working in the garden is our family's hobby. It gives us a lot of moments of pleasure and excitement. Isn't it amazing to put a seed into the ground and watch it grow, blossom and give fruit? But at the same time garden means a lot of work, because it needs a lot of care.

In spring when the nature awakens from its long winter sleep, we have to whitewash the trees, protecting them from harmful insects, to cut away useless branches. If we want to grow some vegetables, we must put some fertilizer, sow the seeds into the soil and water them carefully. Very often we grow seedlings of tomatoes, egg-plants in our small greenhouse and then plant them out. It helps us to grow the crop earlier. Summer is a busy time for a gardener. It is necessary to water plants, protect them from bugs. All the gardeners adore autumn, because they can see the results of their work: they gather nice crops, pick fruit and vegetables.

Last autumn I had a wonderful chance to acquire some habits in planting trees. My father made up his mind to plant 2 or 3 good apricot saplings. It was the end of October, the most favorable period for planting fruit trees. I prepared all necessary garden tools: spades, a rake, a ridging hoe, a fork, a garden's knife and others. After finding the most suitable place for the young plants Daddy began to dig a hole. Mother started doing the watery fertilizer and I brought a water house and waited patiently for other instructions.

When the hole was ready my parents put some fertilizer into it and placed one the saplings into the hole. They asked me to hold it straight and the accurately,

standing on their knees spread its roots. They began to throw the earth into the hole till it's full. After ramming the earth around it parents did a deep pit round the tree. Then it was my turn to take part in planting and I began it watering to quench the thirst of the young apricot tree. That day I enjoyed helping my parents in the garden

I understood the importance of my Daddy's words: – «Gardening takes much time and efforts but it brings you a great pleasure and satisfaction».

Word list:

egg-plant – баклажан
favourable – сприятливий
fork – вила
garden tools – інвентар для саду
greenhouse – теплиця
hose – шланг
picturesque place – мальовниче місце
rake – граблі
ridging hoe – мотика
root – корінь
sapling – молоде дерево
seedlings – розсада
spade – лопата, заступ
suitable – той, що підходить
to acquire some habits – набувати вмінь
to adore – обожнювати
to dig a hole – копати яму
to make up one's mind – вирішувати
to plant out – висаджувати
to quench the thirst – втамувати спрагу
to ram – трамбувати
to sow – сіяти
to whitewash – білити
watery fertilizer – рідке добриво
weekend house – заміський будинок

MODERN FARMS

Dwaine is a businessman. The name of his business is Wilson creek. He has forty-five dairy cows. Dwaine knows each of his cows intimately – how much milk she gives, when she is going to have her next calf, and whether she is bossy or obedient.

Dwaine manages his herd to get the most milk he can while keeping his cows healthy. He has many farming consultants to give him advice.

Dwaine milks his forty-five cows twice a day with an electric milkier. The milk never touches the air in the barn. It is drawn through glass pipes into a large

refrigerated tank in the milk house. Every other day, a tractor trailer comes to pick up the milk and take it to the processing plant. It carries the milk in a large tank insulated like a thermos so the milk stays cold.

At the processing plant, the milk is pasteurized, homogenized and packaged, then sent on its way to you.

Each of Dwaine's cows gives about fifty to sixty pounds of milk a day. Dwaine needs to know when a cow will give birth, because that affects milk production. A cow produces the most milk about four months after giving birth. Then she produces less and less until the milk stops six weeks or so before her next calf is born. A cow can live to be ten years old and may have seven or eight calves in her lifetime.

Cleanliness is important to Dwaine. An inspector makes surprise visiting to the farm to see if the barn and milk house are really clean. He leaves Dwaine's – report card: to tell him what looks good and what should be improved. Dwaine was very happy with the 94 percent he got on a recent inspection.

Besides sanitary surroundings, it takes good, clean feed to make good, clean milk. Dwaine raises corn and alfalfa hay for his herd to eat. A crop consultant helps Dwaine to reduce his use of artificial fertilizer and insect and weed killers.

But clean, healthful crops won't do Dwaine's cows much good if they don't eat them in the proper amounts. Cows that give lots of milk need additional high-protein grain, such as corn or soybean meal.

A nutritionist tests the cows' feed to be sure it contains the right nutrients. If it doesn't, more vitamins and minerals are added. A computer helps Dwaine feed his heard. Each of his cows wears an electronic device called a transponder on a chain around her neck. Dwaine programs into the computer how many pounds of grain each cow needs. Once a day the computer gives Dwaine a printout that tells him how much feed each cow ate. This is important to know, because if a cow is getting sick, she doesn't eat much. Then Dwaine makes sure she gets the treatment she needs.

A cow's health is watched more closely than the health of most people. The veterinarian visits Wilson creek Farm monthly to check the herd.

Even with all the help from consultants and modern equipment, some things on the farm never change. Dwaine still gets up at 5:30 in the morning, 365 days a year, to care for his cows.

Word list:

alfalfa – люцерна

barn – корівник

bossy – норовистий

calf – теля

dairy – молочний

device – пристрій

electric milkier – електродоїлка

feed – корм, фураж

herd – стадо

insulated – ізольований
nutritionist – дієтолог
obedient – покірний, слухняний
processing plant – переробний завод
refrigerated – охолоджений
tank – цистерна
to affect – впливати
to homogenize – гомогенізувати
to manage – управляти, керувати
to milk – доїти
to pasteurize – пастеризувати
trailer – причіп
weed killers – гербіциди

AGRO-INDUSTRIAL COMPLEX

The present management reform in the agro-industrial complex will contribute considerably towards implementing Ukraine Food Programme. District agro-industrial amalgamations will now get spread all over the country.

The agro-industrial amalgamation in Ukraine appeared a few years ago. Besides collective and state farms, it incorporated enterprises which process farming products or furnish the farms with supplies. There is the intercollective farm construction organization, a forestry station, dairy, meat, and fodder combines, the local farming machinery branch, and others.

Management of the district's agro-industrial complex is concentrated in single hands. In the first place this allows better coordinated operation of the farms and the enterprises of the amalgamation.

The board does routine work, while the amalgamation council solves the most important questions, it includes collective farm chairmen, state farm directors, and people from processing and supplying enterprises, and trade organizations.

The amalgamation now has four centralized funds for production development, social and cultural needs and housing construction, and a reserve fund. They are made up by farm and enterprise contributions.

Mutual responsibility among the amalgamation's various links is of great importance.

Naturally, farms differ in soil fertility, available technology, labour force, etc. This mainly accounts for the difference in the achievements. The council has divided all the farms into five groups. The ones having objectively better conditions contribute more to the common funds.

The money given by the amalgamation serves as good assistance to the farm's own resources and state loans. The weak farms now have better possibilities for building, getting technology, and other requirements.

The growth of agricultural production is provided mainly by raising the low-efficiency collective and state farms to the level of the best ones on the principle of mutual assistance.

Some results can already be summed up. For the first two years of the amalgamation the amount of the district plant and animal produce has considerably grown and the incomes have generally increased.

About 12 per cent of the Ukrainian population is employed in agriculture. Statisticians believe that the percentage will be even lower there in the near future. So each farmer's role becomes increasingly greater.

The amalgamation helped the farms to solve housing construction problem. As a result people don't think any longer about going away to town.

The district agro-industrial amalgamation is divided into nine production zones of three or four farms. The zone centre will have a hospital and clinic, all the necessary shops, a school, a house of culture, and a stadium. Measures are taken to supply every farm with its own school, club and sporting facilities.

Word list:

amalgamation – об'єднання, укрупнення

collective and state farms – колгоспи і радгоспи

dairy, meat, and fodder combines – молочні, м'ясні, і кормові комбінати

forestry – лісове господарство

implementing – забезпечення, виконання

AGRICULTURE IN DENMARK

Denmark is situated in Northwestern Europe. Its population is more than one million.

Agriculture is the most important industry in this country. It is highly developed. At present big farms are predominant in Denmark. Small and medium farms cannot compete with big industrial farms and they are quickly disappearing.

The country has very favourable climate, soils and topography for farming. Most soils are light. There are no heavy clay soils. The climate is mild. The rainfall ranges from 30 inches in the West to 22 inches in the East. These factors favour crop growing and animal breeding.

Most of the farm land is under grass. Of the crops grown the most important is barley that is used in pig feeding. Animal products make up more than a half of the total agricultural export of the country.

The natural conditions of Denmark, a great number of livestock on the farms, and the use of fertilizers are the factors that favour the growing of high yields of crops.

Word list:

livestock – худоба

natural conditions – природні умови

predominant – переважаючий

small and medium farms – малі та середні ферми

FARMING IN JAPAN

Most of Japan's land can not be used for farms because it is too mountainous. Islands do not provide enough land for cultivation. Every bit of land that can be used for growing crops is made to produce as much as possible in order to provide food for the people.

Small areas among the mountains are used as farmland. The largest is around Yokohama and Tokyo. This area contains more nearly level land than can be found in any other place in Japan. The climate here is favourable for raising crops. There is a long growing season with plenty of rain all through the year. All this helps to make it one of the best farming areas in Japan.

Rice is a favourite food of the Japanese, and they raise more of it than any other food. Rice grows in standing water in fields that have low banks around them to hold in the water. In some places the rice seed is scattered over the ground of the rice field. The farmers walk through the water and stick rice plants one by one into the soil below. These plants have been raised in small seed beds to be transplanted later in the larger fields.

The fields are drained when the rice is ripe, and the plants are cut. They are then tied into small bundles and laid out on the ground to dry. Small threshing machines may then be used to separate the rice grains from the stalks. Most rice is raised on the lower, flatter lands where it is easier to flood the rice fields. Where sloping land is used, it has to be terraced.

On the higher, quite level areas, there are fields of other grains, such as wheat, barley, and corn. Sweet potatoes and vegetables are grown on the higher levels too. Sweet potatoes are a big crop in Japan.

Word list:

mountainous – гірський

rice – рис

sloping – похилий

sweet potatoes – солодка картопля

to raise – вирощувати

AGRICULTURE A HALF CENTURY FROM NOW

Agricultural equipment made of stainless steel? Agricultural equipment of industrial machinery durability? Agricultural equipment of machine tool precision? Yes! These, plus greater productivity and low cost will be usual for agricultural equipment next century.

In the next 50 years we will see an increase in large farms, increased use of synthetic meats and animal products, increased consumption of crop products compared to animal products, great control of farm pollution, and everyday control of water and soil erosion. That is why today the institutes and colleges are preparing themselves to educate and train the new kind of agricultural engineers who in future will ensure a continuing abundance of low-cost, high quality food.

Word list:

agricultural equipment – сільськогосподарське обладнання

animal products – продукти тваринного походження

pollution – забруднення

synthetic meat – синтетичне м'ясо

AGRICULTURAL ENGINEERS IN FUTURE

Agricultural engineers will be working on satellites circling the Earth, monitoring movements of water and air masses and directing them in areas of the world where they are needed most.

Thousands of agricultural engineers will be designing systems to grow crops and trees on saline soils and saline waters. Many will be working in the design of farming complexes in the deserts using nuclear plants to pump water miles away.

Thousands of agricultural engineers will continue to work in environmental pollution control and particularly in the re-use of polluted air, soil and water.

Hundreds of agricultural engineers will be among the first thousands to be sent off from the Earth to establish food production complexes on Earth II.

Word list:

agricultural engineer – інженер-агроном

saline soils and saline waters – солончаки та солоні води

satellite – супутник

CLIMATE

What is climate? Climate is the average conditions of the weather over a space of Earth (the temperature, sunshine, wind, rainfall, etc.).

The greater part of Ukraine has a continental climate: the summers are warm, even hot in some places; the winters are cold. The parts of the country along the Azov Sea have a temperate climate: the summers in the East are cool and the winters mild. The further east, the more continental the climate.

In the southern parts of the country – in the Crimea – it is much warmer. In Herson, the continental air is hot and dry, the rainfall is low. Various systems of irrigation are used according to the special conditions of the land.

The Climate of Great Britain. Great Britain lies between the parallels on which Moscow and Kiev are situated but its climate is much milder than that of this part of Ukraine, because Great Britain lies on islands and the Gulf Stream flowing near them influences its climate. The January temperature is higher and the July temperature – lower in London than in Kiev. The British ports ice free and the rivers are not frozen throughout year. In the west of the country there is much rainfall and thick fogs sometimes continue for days and weeks in autumn and winter months. As a result many species of plants do not grow well here, especially grain crops. But grasses grow very well all year round providing fresh fodder for cattle.

The Climate of the USA. The climate of the United States of America is as much varied as that of Ukraine. The warm sea current of the Atlantic Ocean – the Gulf Stream – influences the USA climate less because the winds of North America blow from the sea to the land.

Along the western coast the climate of the USA is warm because the Rocky Mountains form a barrier from the cold winds of the North and the land here is open to the warm winds of the Pacific Ocean. The climate in the southern part of this coast is hot and dry, the soil arid, the rainfall low and irrigation must be used to cultivate many species of plants.

Climate, Microclimate and Forest. Microclimate is climate upon a small space. Thus we speak about the microclimate of the room you live in, of the classroom you study in, of the soil in your garden, the microclimate of this forest or of this or that part of the forest, etc. The kind of forest, its growth, its life is influenced both by climate and by microclimate. Various climatic zones give rise to principally different forests – the jungles in the tropics, the treeless poor vegetation in the Arctic, green varied forests of the temperate climatic zone.

Microclimate influences the forest environment within a very small area and the changes in the structure of the forest cause changes in its microclimate. For example, when a road is built in an old or middle-aged forest many trees of the dense stand are to be removed and a gap is formed. As the observation shows, radical changes in the microclimate of the place where the gap is formed in comparison with the whole forest take place: thanks to the influence of direct solar radiation, the temperature of the soil and the air of the gap rises increasingly against the temperature of the soil and air of the whole forest. Changes in microclimate are in direct proportion to the width of the road and to the height of trees, and depend on the direction of the road too. The microclimate of some forest stands is less influenced by road building, of others – more. That is why all forest road building should be carried out cautiously.

To know the microclimate of this or that part of the area is important for cultivating crops in correct places, where they can grow and produce best.

Word list:

condition – впливати

continental – континентальний

irrigation – зрошення

jungles – джунглі

microclimate – мікроклімат

observation – спостереження

to influence – впливати

SEASONS

Spring. Spring is the time to prepare the soil for planting. First, the farmer fertilizes his field with cow manure or a chemical fertilizer. Then he plows the soil, turning it over and mixing in the fertilizer to provide a rich soil for the crops. Later,

when the days a little longer and the sun has warmed the soil, it is time to plant the seeds.

Meanwhile, if the farmer raises the animals, spring is the time when the animals are giving birth, and both mothers and their young ones have to be watched and cared for.

Summer. After planting the farmer waits and watches. He watches the weather, hoping for enough sun. He waters the young plants and watches carefully for signs of plant disease and attacks of insects. Many farmers spray their fields with chemicals to keep away disease and harmful insects. With water, sun, care and protection the plants grow strong and healthy. Summer is also suitable time for cutting grass and making hay.

Autumn. This is the busiest time of the year. Now the crops in the fields are ready to harvest. The fruit is ready to pick. It is time to gather in the vegetable crops and to reap the grass crops, such as wheat and corn. The farmers have to work quickly. Often it is necessary to call in extra workers to work in the fields and bring in the crops. Work starts when the sun rises and finishes when the sun sets. The days are hard and long. But when the job is done, it is time for celebrating, for dancing, eating, drinking and having fun.

The days are getting shorter and shorter. The harvested crops are sold in the markets or stored in the barns, ready feed and animals through the winter months. The farmer chops wood, preparing to keep his house warm through the long cold winter nights. And when winter finally comes, it is time for planning, for deciding where and what to plant next year. For soon it will be spring again and the cycle of planting, growing, and harvesting will start again.

Word list:

air – повітря

Indian summer – «бабине літо»

changeable – мінливий

cloud – хмара

fresh – свіжий

frost – мороз

hay – сіно

lightning – блискавка

magnificent – чудовий

mist – туман, імла

nature – природа

overcast – вкритий хмарами

severe – лютий

slippery ice – ожеледь

storm – буря

the Earth – земля

thunder – грім

to appear – з'являтися

to awaken – прокидатися

to be covered with – бути вкритим
to cut grass – косити траву
to freeze – морозити
to gather crops – збирати урожай
to return – повертатися

WEATHER

Weather. The weather is changing. Within a twenty-four hour period we can have rain, sun, wind, snow and a 20-degree change of temperature.

Everybody needs to know what tomorrow's weather will be. Farmers are greatly dependent on the weather changes which may destroy a whole year's work in a few hours. Being dependent on the weather they observe things around them. They learn to notice changes. They notice what happens just before the wind blows, fog forms, rain or snow falls. They learn to know the signs of changing weather. Observations of the weather have been carried on over a long period of time. Some of these observations resulted in beliefs that are true but also in some that are not.

Some of the weather knowledge men have gathered has been put in the form of sayings. Most weather sayings have two parts. The first part tells what to observe. The second part tells what will or will not happen.

For example, the proverb «When the dew is on the grass, rain will never come to pass» tells that if we can observe dew on the grass, we can be sure of a clear day.

— Dark clouds in the west stay indoors and rest. — When the sunset is clear, a cool night comes near. Clouds are known to reflect heat. When there are no clouds in the sky, the heated air rises into the atmosphere after the sun sets and the night will be cool or cooler than there are clouds that reflect heat to the ground.

«When clouds move down and turn dark grey, a rainy day is on the way». «A ring around the sun or moon brings rain or snow upon you soon». The ring is caused by the fine ice crystals high in the air. They scatter the – night or moonlight in the form of a ring.

The proverb «A year of snow – a year of plenty» is used by people who grow wheat. Some wheat is sown in the autumn. If the winter which follows has warm weather followed by freezing weather, the grain may start to grow during the warm period and then be frozen when the ground freezes again. When the wheat plants are covered with snow for most of the winter they are not likely to thaw out. They do not start growing until real spring weather comes. As a result, there is a good crop and a «year of plenty» for the farmer.

«Smoke drifting slowly, close to the ground, tells us that rain may be coming around.» Warm moist air has less pressure than cool, dry air. Having less pressure it is less able to raise smoke which just drifts without rising.

Of course, warm moist air doesn't always show that rain is coming but there is a good chance that it will. That is why many people believe rising smoke to be a sign of good weather.

Sounds move faster on some days than on others. Some people say that if a train can be heard from a great distance it is a sign of good weather. Before rain, the air pressure is weaker, it presses less strongly against things. With less air pressure, flowers are more able to send out sweet vapours that make the air smell pleasant. The same weakened air pressure also increases less pleasant smells from decaying plants in marshes.

Through long experience farmers know these signs. That is why they sometimes say, «It smells like rain».

There are thousands of little sayings about the weather. Every part of the country has its own special little sayings, and so does every other part of the world.

Word list:

air pressure – атмосферний тиск

moonlight – місячне світло

smoke – туман

sweet vapours – солодкі пари

wind blows – вітер дме

SECRETS OF THE ATMOSPHERE

Weather moves. Air masses and their fronts usually don't stand but move across the country. The moving air takes along its weather. The air in the lower strata of the atmosphere usually moves at a speed of 40–50 kilometres per hour while in the upper strata the speed increases up to 100–200 kilometres per hour. So to forecast weather for Kyiv one day in advance it is necessary to get a lot of information on the air which is at the present moment 1,000–2,000 kilometres away from the city. The information includes the following: air temperature, speed of the wind, wind direction, humidity, and cloud formation and so on.

To make a forecast 2 – 3 days in advance it is necessary to get a picture of the state of the atmosphere over the entire Northern hemisphere at least.

The weather, however, is dependent not only on the movement of the air, but also on huge bodies of water, the Sun, the Earth's rotation, mountains, volcanic activities, forest fires and even supersonic airplanes whose flight in the stratosphere causes condensation of water vapour.

How are all these factors measured and compared in order to determine the weather for any given area of the Earth?

The scientists turn to mathematics. Mathematical modeling of natural processes and phenomena has helped the weathermen to understand many things and to see them in a new light. Today, in several minutes they can calculate the weather one day ahead due to electronic computers. Are these forecasts true? Only one in 10 is incorrect.

It is much more difficult to compute a forecast for a week, month or even more ahead, and they are, of course, less accurate.

But in spite of this long-range forecasts are very important for the country's economy. The weather depends on natural conditions, so knowledge of the amount of snow accumulated in winter will permit to calculate the volume of the spring

flow of rivers. This is of much importance in planning the hydro resources for irrigation and transport.

The meteorologists obtained many new data by means of rockets and sputniks which «observe» vast areas of the globe from above and transmit back to the Earth data on the physical phenomena in the higher strata of the atmosphere and in the ionosphere.

Several times a day the satellites transmit pictures of the cloud and snow blankets, ice cover on the day and night sides of the globe and certain data on temperature and radiation.

This information goes to the computers which process it and make the forecast.

Word list:

forecast – прогноз погоди

ice cover – крижаний покрив

in spite of this – незважаючи на це

lower strata – нижчі шари

mathematical modeling – математичне моделювання

meteorologist – метеоролог

physical phenomena – фізичні явища

radiation – випромінювання

satellite – супутник

snow blanket – снігова ковдра

supersonic airplane – надзвукові літаки

volcanic activity – вулканічна активність

AGRICULTURAL MELIORATION

There are millions of hectares of farm land in the world. But according to the Food and Agriculture Organization of the United

Nations, possibilities to expand growing areas are very limited. So, there is but one way out: to raise soil Ukraine it is the southern Ukraine, the Dnieper area, and some other areas that need irrigation. All of them are the main grain producing areas. Large areas in the non-black-earth zone in Ukraine need drainage and regulation of the water and air regimes. That is why irrigation and drainage problems are of great national importance.

A great increase in the production of grain and other crops in the Dnieper area is planned due to the implementation of the irrigation programme.

The regions of the middle and lower Dnieper are among the most arid zones of the country. Their climate is extremely unstable. In the years of enough rain the Dnieper area can provide much grain. But in a rainless year dry winds kill each growing plant.

Irrigation in the Dnieper area has a long history but big irrigation systems were started in the 90s. In 1990 a long water canal was built. Much water from the Dnieper comes into the steppes of the Trans- Dnieper area over an irrigation canal which was built in 1992. To ensure stable harvests it is necessary to irrigate

millions of hectares of land. The construction of the Dnieper canal is of great importance for the area.

The Dnieper River is the main source of irrigation water in the Dnieper area. At present not much water from the Dnieper River is used for irrigation of the zone. In future with the development of other irrigation systems the scientists plan to use also the water of the northern rivers that will be connected with the Dnieper by canals.

Word list:

non-black-earth – нечорноземний

irrigation – зрошення

steppe – степ

implementation – виконання, реалізація

rainless year – посушливий рік

dry wind – сухий вітер

A NEW HYBRID

Triticale is a most unusual hybrid. It is a hybrid between wheat and rye. Its name comes from a combination of the scientific names for wheat, *Triticum*, and rye, *Secale*. The first hybrids between wheat and rye were obtained as far back as in 1875. But those hybrids were highly sterile and did not reproduce.

Triticale as a variety was first released for commercial production in Hungary in 1968. In America the first variety of triticale was developed in 1970. Its name is Rosner. A few thousand hectares of triticale were grown in Ukraine in 1973.

At present there are triticales that can be produced commercially. Triticale is classified now as a feed grain. As such it is equivalent to other cereals. The grain quality is good enough to use it for bread making. The laboratory tests conducted in Hungary show that satisfactory bread can be made from triticale and that the protein content of triticale grain is higher than that of wheat.

There is winter and spring types of triticale. However, winter types are generally insufficiently hardy to withstand the low temperatures during the winter months. More attention is therefore paid by the scientists to the development of spring triticale.

Hilly areas and cool growth temperatures appear to provide the best conditions for triticale growing. Good growth is obtained even when night temperatures approach freezing. It makes triticale a valuable forage and pasture crop. Triticale grows well on sandy soils. Much of the commercial production of triticale is done on lighter sandy soils.

Compared to wheat, triticale is generally more susceptible to lodging. It is one of the problems to be solved by scientists. They are now working to develop triticale varieties with shorter and thicker stems. Such varieties will not lodge.

Shallow seeding is important, since germination is usually poor if triticale is seeded deeper than 9 centimeters.

Protein content of the hybrid can be 30 per cent, compared to 8 or 10 per cent for corn and 10 – 12 per cent for barley and wheat. And triticale protein is high in lysine and other essential amino acids, making it excellent feed for livestock.

Triticale cannot yet compete with wheat and other cereals in quality and yield except under some specific conditions which have already been spoken about. Considerable breeding work must still be done to improve its grain quality and yield. Scientists believe triticale to be a promising crop.

Word list:

hybrid – гібрид

rye – жито

seeding – посів

triticale – тритикале

wheat – пшениця

NO-TILLAGE METHOD

Planting corn and other row crops-directly into sod is a new practice. More and more growers are using this easy and economical method of planting row crops.

The idea of planting row crops without plowing goes-back to at least 1993. But no-tillage or zero-tillage remained largely experimental until several effective herbicides have been developed.

Crops are planted in unprepared soil in a narrow seed furrow opened with a coulter. The tilled area is only 2 to 3 inches wide. Using this tillage system one should be very careful in applying the proper amount of herbicides for weed control. They should include both a contact herbicide to kill early weeds or sod, and a residual herbicide. By combining a contact herbicide with a residual one to which corn has a high tolerance, nearly all vegetation present in the cornfields before planting, can be killed. The residual herbicide also controls weeds during the corn growing season, making cultivation unnecessary.

While spraying the sod one should use enough water with the herbicide to cover all the vegetation. As much as 150 gallons per acre may be needed in very heavy vegetative cover.

At present scientists agree that zero-tillage is quite a promising method but it will never fit all farms and all conditions.

Zero-tillage continues to move from south to north and from hills to flatlands. This method is not used on heavy or poorly drained soils, because these soils need aeration that is provided by plowing.

Advantages of No-Tillage:

1. The experiments show that no-tillage corn yields 20 per cent more than corn grown with conventional tillage. This is mainly due to the fact that the soil organic matter increases considerably without tillage.

2. The crop residue and untreated upper soil layer reduce moisture loss. This is a very important factor for growers in areas where spring moisture is usually less than ideal for proper germination of seed and early growth.

3. Conventional moldboard plowing – especially spring plowing – cannot often be done early enough because of weather or soil conditions. This results in late planting and that means lower yields. The reduction in spring work, resulting in timelier planting is probably one of the most attractive advantages of the no tillage system.

4. Due to early planting it is possible to practice double-cropping, that is, growing two crops on the same soil during one growing season.

5. The presence of crop residue on the soil surface protects the soil from wind and water erosion. Erosion control is the main reason why the no-till production of corn is practiced in hilly areas where the rainfall is relatively high during the growing season.

6. Corn is very cheap to grow with the zero-tillage method. Since fewer trips across the field are necessary during the growing season and less soil preparation equipment is required, labour, machinery and fuel costs are minimized.

7. No-tillage planting also provides a better footing for heavy harvest machines if there is much rain at the time of harvest. Under such conditions no-tillage farmers will be able to harvest while conventional-tillage farmers will wait for fields to dry.

Word list:

corn – кукурудза

harvest machines – збиральні машини

no-tillage planting – обробіток без оранки

zero-tillage method – обробіток без оранки

SOME PARTS OF THE FIELD NEED MORE FERTILIZER

Variability is typical of almost anything in nature. The soils are no exception.

Good and poor areas of crop growth in a field may be caused by variation in one or a combination of some soil factors, but one very common cause of the differences is variation in soil fertility. So, a field is almost never an area of uniform soil fertility. Yet, the entire field is almost always fertilized at one rate from end to end.

Two approaches are most common as far as the rate fertilization is concerned.

1. Fertilize at a rate which will be best for the biggest part of the field.

2. Fertilize the entire field so that the lowest fertility area receives an adequate amount of nutrients.

With practice No. 1, part of the field will receive less an adequate fertilizer and consequently there will be less than maximum yield from those areas. Part of the field, being above average in fertility, will receive more fertilizer than necessary, resulting in unnecessary added cost. And, if the excess is nitrogen fertilizer, it then becomes subject to loss to the surface and ground waters.

Under practice No. 2, if the entire field is fertilized at the rate needed by the lowest fertility level, a very large part of the field will be over-fertilized, resulting in unnecessary added cost for the excess of fertilizer. Also, an excess of nitrogen can result in an undesirably high level of protein in wheat.

Neither system, therefore, results in maximum possible crop production per acre of land. What can be done to solve this problem? First, one must recognize that a field is seldom an area of uniform soil fertility. Second, one should determine soil fertility in different parts of the field. Finally, prepare a soil fertility map and fertilize each area according to need so that maximum production can be achieved.

The two areas in a field need not only a different rate of nitrogen but also a different rate of applying phosphorus, because phosphorus is usually as variable as nitrate nitrogen. The level of each nutrient must be evaluated because the addition of one nutrient will do little or no good if another nutrient is in short supply. Thus, in order to obtain maximum efficient use of applied fertilizer, to obtain the potential yield on every area of land and to obtain wheat of uniform protein content the practices outlined must be followed.

Word list:

crop production – рослинництво

fertilize – удобрювати

nutrient – поживна речовина

soil fertility – родючість

WHY HERBICIDES DON'T ALWAYS WORK

Chemical weed control is important in growing many crops to get high yields, but herbicides don't always work. There are some reasons for this.

Weed control with chemicals is affected by things that can be arranged into three groups: selection, application and environment.

Selecting the proper chemical to control the weeds that are present is probably one of the most important things. To do this properly one should know specific weed species that are found or are likely to be found in the crop grown. Then one should choose the herbicide or a mixture of herbicides to control those weeds.

Improper application is another common reason for herbicide failure. Properly working machines for the application of the herbicides, the right rate per acre and good timing are the things that must be paid attention to minimize the possibility of failure.

A pre-emergence herbicide must be placed evenly on the surface of the soil. For the chemical to move into the germination zone of the weeds, rainfall is required within seven to ten days after application.

Some herbicides are volatile. They must be incorporated into the soil just after spraying. If this is not done the herbicide effectiveness will be reduced.

Post-emergence herbicides should be applied after the weeds come up.

Growers should carefully prepare the machines for the application of the herbicides. If they use several herbicides at a time, the chemicals must be mixed thoroughly.

The right rate of chemical application per acre is also very important. Applying too low rates of the chemical may allow weeds to grow. Too high rates can cause the injury of the growing crop.

Timing of the application is another factor of herbicide effectiveness. Some must be applied about ten weeks before planting, while others should be applied two weeks before planting.

Environmental conditions affecting herbicide effectiveness cannot usually be controlled, but information about them can be helpful.

Word list:

application – застосування

herbicide – гербіцид

post-emergence – післясходовий

pre-emergence – передсходовий

weed control – боротьба з бур'янами

PHYSICAL PROPERTIES OF SOILS

The physical properties of a soil are determined largely by its texture, or the size of the particles of which it consists and its structure, or the arrangement of these particles.

For a soil be in good physical condition for plant growth the air, water, and solid particles must be in the right proportions at all times. Every cubic foot of soil that supports plant life must be:

1) well enough aerated to permit all plant root cells to obtain oxygen at all times, but not excessively aerated to the point of preventing a continuous contact of roots with moist soil particles;

2) open enough to permit the right amount of rain-water or irrigation water to enter the soil, but not so open to allow excessive loss of water and plant nutrients by deep percolation;

3) sufficiently retentive of moisture to supply roots with all needed water, but not so retentive as to create undesirable suspended water-tables.

Soil texture has to do with the fineness or coarseness of soil particles. Mineral particles which make up the bulk of soil vary greatly in size. The four principal size categories are «gravel», «sand», «silt», and «clay». Some soils, for example sand, consist largely of particles of approximately the same size. Most

soils, however, have two or more groups, classified by size of particles, usually with one group dominant. Thus, in grouping soils into texture, classes, the proportion of particles belonging to different size groups, as well as the particle sizes themselves, are important.

In most soils texture varies greatly from the surface downward. The subsoil usually contains more clay and other fine material than does the surface soil, although this is not always the case. In soil classification, the texture of the surface soil seems more significant than that of deeper layers. Therefore, soils are usually classified according to the texture of a six- to eight-inch thick surface layer, approximately the «plow layer». Six major texture groups are «sand», «sandy loam», «silt loam», «loam», «clay loam», and «clay». Each of these groups may be subdivided when it is useful to do so.

Many soil qualities are closely related to texture. Since fine-textured soils have greater pore space and larger surface area than coarse-textured soils, they provide greater storage space for water and better feeding zones for plant roots. Thus, in a broad way, relatively fine-textured soils are more productive agriculturally than are soils with coarse texture. Too fine a texture, however, adversely affects tillage. Sands and sandy loams are more easily tilled than clays and clay loams because the tilling of the former requires less power and is hindered less by wetness.

Soil structure refers to the manner in which the individual soil particles are arranged. Structure has much in common with texture, although structure is much more complex. As a property of soil, structure in some instances may be even more important than texture. Physical, chemical, and biological forces in nature work together arranging soil particles into a great variety of structural patterns. Good structure is valuable in any soil. Some soils have structures that make them difficult to manage and render them practically worthless agriculturally. Because of structural differences, some soils require much more care than others. Preventive measures often check structural breakdowns, and careful management can restore deteriorated structures to of normal.

Water is the most variable property of the soil. The functions of soil water are varied. Soil water is vital to plant life, since all nutrients that plants take from the soil are dissolved in it. Water aids in the decomposition of organic and mineral matter and in bringing about chemical changes with in the soil.

Soil water is a very significant factor in planting, tilling, le and harvesting cultivated crops. It often determines the time and the depth at which seeds should be planted for proper germination. Water may be so abundant in the soil as to strict machine cultivation, thus making the control of weeds difficult. On the other hand, scarcity of water may make the soil hard, cloddy, and very difficult to plow. Too much soil water at harvest time often delays or completely prevents of the use of harvesting machinery.

Soils range in colour from white to black, but the most common colours are the different shades of red, yellow, and brown. These colours indicate the different degrees of hydrations and the concentration of iron and aluminum oxides which stain the soil grains.

Dark-coloured soils are considered to suggest higher productivity than light-coloured ones, though it is not always the case.

Word list

aluminum oxides – оксид алюмінію

gravel – гравій

sand – пісок

sandy loam – сугісок

silt – мул

clay – глина

coarse-textured structure of soil – крупно-зерниста структура ґрунту

dark-coloured – темного кольору

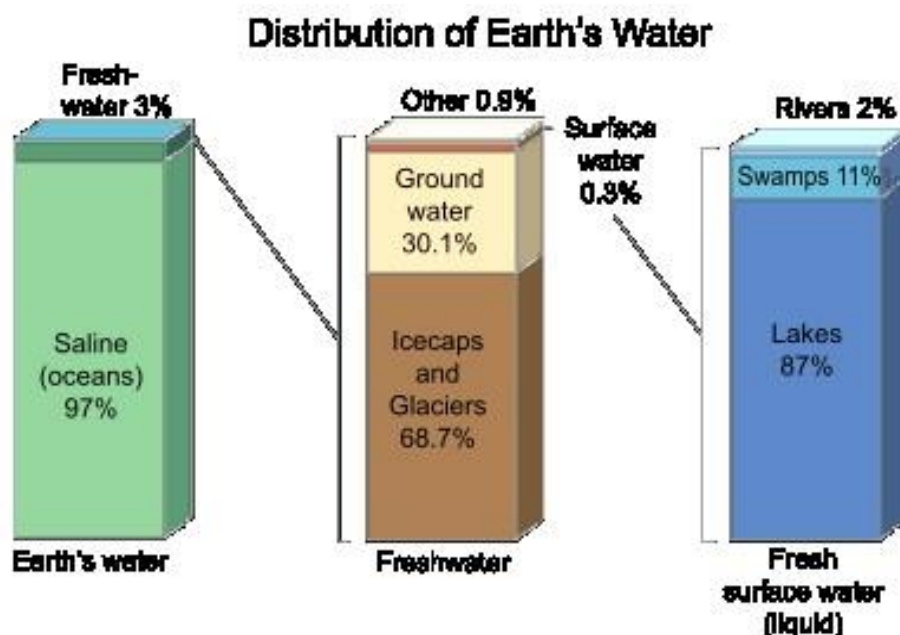
light-coloured – світлого кольору

soil structure – структура ґрунту

FRESH WATER RESOURCES

The Earth's water cycle or hydro-logic cycle is the continuous circulation of moisture and water on our planet. The time required for a water particle to pass through one or more phases of the hydrologic cycle varies from a few hours to months or even centuries.

A water particle may be evaporated from the ocean and in a short period falls back as rain or snow on the same water surface. If a water particle falls, as snow or hail on a mountain height, it may remain there for months until it is melted and joined with other melted particles on the long journey overland or underground.



If a water particle is evaporated from the ocean and carried into the Polar Regions, falling there as ice or snow, it may remain frozen for centuries before it

returns to the ocean as part of an iceberg, or as melted outflow from the glacier. Rain, hail, and snow are various forms of precipitation. Precipitation that falls upon land areas is the source of all fresh water supply. The people depend upon it to compensate the quantity that is taken from lakes, streams and wells for man's numerous uses.

Ukrainian hydrologists completed a study the world water balance. They estimated that the natural water cycle is far more intensive than had been supposed.

Annual evaporation from the Earth's surface amounts to the colossal figure of over half a million cubic kilometres of water, while the atmospheric moisture is renewed every ten days on the average. River water has 2-day replacement cycle. Glaciers proved to be the slow – accumulators of moisture. Their replacement cycle is 300 years. These figures will make it possible to achieve a more accurate picture of the world's fresh water resources.

World list:

evaporation – випаровування

fresh water resources – прісноводні ресурси

glacier – льодовик

hail – град

hydro-logic cycle – вологооборот

hydrologist – гідролог

moisture – вологість

natural water cycle – природний водний цикл

Polar Regions – приполярні райони

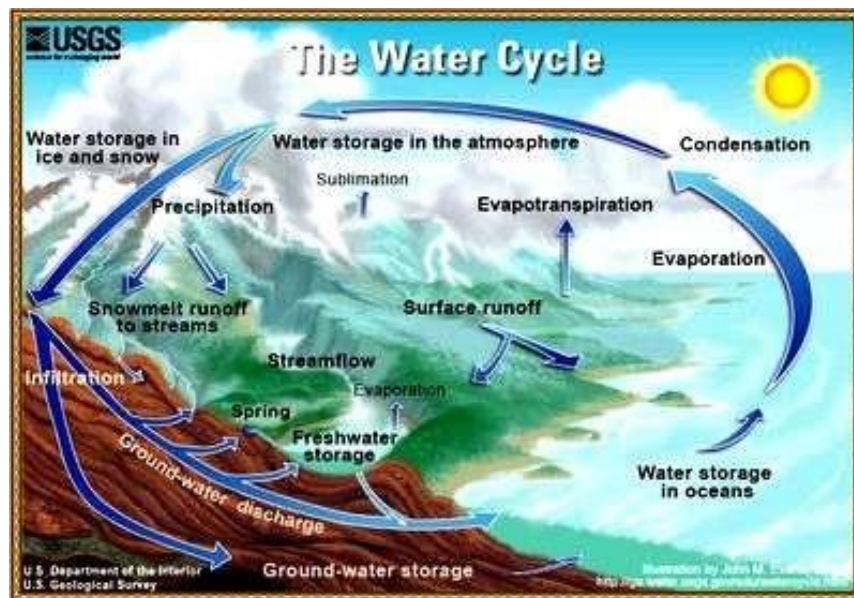
precipitation – випадання опадів

SOIL AND WATER DEVELOPMENTS TRENDS

What are the future developments in the use of the soil and water resources? It is clear that the resources cannot be used in a blundering way. If they are, our beautiful Earth will soon become hostile to Man.

The main source of food for many will still be from land-based agriculture. This agriculture will have become highly efficient. In many cases production will include carbon dioxide enrichment and methods for more efficient use of the Sun's energy.

Water pollution will continue to be a problem. Most nutrients from water treatment plants of cities and industries will be returned to the soil to help replenish this delicate resource of the Earth. Agricultural engineers will work more closely with ecologists using computers, so that Man's actions are with Nature but not against it. Water will be used and re-used. By the end of the next half century there will be much more people on the Earth – all dependent on its resources. Survival will not be without the use of the regenerative power of our soil and water. Agricultural engineers must continue to lead in this work.



Word list:

soil and water resources – ґрунтові і водні ресурси

sun's energy – енергія сонця

to re-use – повторно використовувати

survival – виживання

replenish – поповнювати

PROSPECTS OF IRRIGATION ENGINEERING

Irrigation of crops has been a normal practice in the arid regions during all the history of man. In some cases it was the overflow of the river that wetted the soil. In others, man diverted small streams of water to his crops, or brought himself after to his plants. However, it is only in the recent years that man understood the need to irrigate land in; he so-called «wet regions» – for example in the tropics. Here temperatures allow year-long cropping. Irrigation during the dry periods can help vary from one crop year to several, thus providing for crop rotation.

Irrigation should become a usual practice in all areas of the world. In the high rainfall areas it must be done with good surface and subsurface drainage. The removal of water during wet periods and the application of water during dry periods will allow creating an environment most suitable to crop production. There will be no continuously wet areas which encourage the production of insects.

Due to automated irrigation the optimum amounts of water at the optimum timing will automatically come to crops. Irrigation projects will be operated from a central office including the river structures for both flood control and water supply needs for irrigation, pollution control, etc.

Word list:

irrigation – зрошення

drainage – дренаж

removal of water – осушення

SOIL EROSION AND FLOOD CONTROL

Erosion is the wearing away of land, usually by running water or blowing winds. Many nations have been careless in cutting down forests, overgrazing grassland, and depleting soil fertility with bad farming practices. Conserving trees in the forests and maintaining other vegetation will help store water and prevent floods. Farming practices that leave the land bare through the rainy seasons assist erosion. Running water and dust storms easily carry away the valuable topsoil from such land.

The soil carried away by rivers and winds is priceless, for it can not be manufactured; it forms slowly nature. A careful study showed the new formation of only one sixteenth of an inch of topsoil in fifty years, the average it takes nature about five hundred years to make each inch of good topsoil. Rich productive farmland is a mixture of minerals, bits of plant and animal tissue, living organisms, air and water. This complex mixture is the result of a great many slow changes. Nature making soil very slowly, man must learn to conserve it for self-preservation.

Water controlled is a friend; water in flood is an enemy. Floods occur often and are very destructive, largely because man upsets nature's balance. Thus when the natural forest areas are eliminated in order to get timber, the water formerly absorbed and stored in the porous forest soil runs off uncontrolled, downhill. Excessive cutting of timber, clearing of land, and bad farming practices have all led to destructive floods.

Forest lands usually control the water movement of a locality. They keep moisture, store water, and provide a steady regular and dependable flow of water. Lack of forest land produces an independent flow of water, rising to rapid flood peaks after the rains, followed by quick drying up of rivers in the dry seasons.

Failure to store water in the soil or in natural reservoirs causes failure of the water supply during the dry months of the year. Water shortage can cause serious crop failures. There are countries where farmers today harvest only one profitable crop in five or six years, because of drought. Ruined farms, dust storms, and semi-desert conditions now prevail in these regions where only one generation ago there was a sea of waving grass and profitable crops. Water power is needed in many regions to turn dynamos and generate electric power. Failure of a water supply can stop hydroelectric output.

Watersheds must be kept clean. A Watershed is usually a forest or grassland area that stores water. It is very important to farms, industries and population that watersheds be maintained in good condition. The trees, branches, leaves, shrubs, grass, plants break the force of falling rain. They keep the rain from eroding the soil.

The problems of flood control and those of soil erosion are closely connected. Their causes, their effects, and control over them are all part of the major problem, of conservation of natural resources. Man must stop erosion and floods.

Word list:

grassland – пасовище

soil erosion – ерозія ґрунту

shrub – кущ

semi-desert conditions – умови напівпустелі

flood – повінь

SELECTION OF AGRICULTURAL CROPS

Selection is an important direction of agronomy. For a long time, plant-breeders have been breeding new varieties of drought-resistant grain crops and other agricultural plants which are resistant to the unfavourable climatic and weather conditions. At the same time, they are characterized by high yield productivity. The agricultural biotechnology is of the greatest importance. It should create the new highly productive varieties and hybrids of the agricultural plants, biological means of the plant protection, different preparations and the ways of the waste recovery.

Thanks to the cell engineering the researchers have bred an unvirus substance for different potatoes varieties. They have been breeding new varieties and hybrids of grain crops, fruits and vegetables. They breed seeds of sugar beets in the form of seedlings. Later they are ready for the further sowing in the granule form.

The biotechnology is based on the fact that a celled organism is fully preserved by a gene of the previous type.

Simultaneously this simplest organism has much common with the microorganism. Exactly it is a basis of the cell engineering and biotechnology. The plant cells are able to divide without any limit. It's necessary to keep the cell sterility and that's why we use special utensils. The cell amount for the cultivation is provided with the help of the plant organs processing. Their cultivation is provided into separate cells. They are put on the nutrient environment. The gene engineering is based on the molecular biology. It gives the possibility of inserting changes into the molecular interaction of the principal molecules inside the cell and outside it.

Recombinant DNA is used and will be used in the work with microorganism for the production of different valuable substances in medicine, biochemical industry and agriculture. Besides their use is connected with two important discoveries. New techniques developed a rapid analysis of complicated biological molecules. After analysis came synthesis. The first gene was synthesized. Then it became possible to synthesize necessary genes.

The construction technology of recombinant DNA is the most important achievement of the biotechnology. The agricultural, possibilities of such techniques are almost as exciting. For example, it may become possible to transfer the nitrogen-fixing genes of certain bacteria to plants such as cereals which are unable to fix nitrogen. Should this prove possible, the savings in terms of fertilizer and improved soil fertility will be enormous. Similarly of there is the prospect of

transferring to a number of different crops civic genes responsible for improved yield or pest resistance.

Word list:

cereals – злаки

DNA – ДНК

gene – ген

pest – шкідник

soil fertility – родючість ґрунту

substance – речовина

POTATOES CULTIVATION

Potatoes belong to the most important agricultural crops. It's very valuable for the human nutrition. The potatoes value is determined by the high tasty data and favourable chemical composition for the human health. Generally, its tubers contain about 75 – 80% of water and up to 25% of dry substances. The protein content is up to 20%. It is easily absorbed and divided into sugar amounts. According to its amino acid content potatoes is very close to meat. Potato tubers contain much potassium, calcium, magnesium, phosphorous and iron.

Potato is a valuable feed crop especially for pigs. It is also a valuable industrial crop. We use potatoes as a principal raw material to produce glucose, starch, alcohol, etc. Potato is a tillage crop. It is of a high agro technical importance. It influences positively upon the grain crops if it is sown the next year. Potato belongs to the crops of the moderate climate. If the temperature falls to 7 – 8 degrees below zero or rises up to 30 degrees over zero, potatoes stops its vegetation. This crop is very demanding to moisture. It forms a big underground amount having a developed root system. If the soil humidity is 75 – 80%, a high potatoes yield is harvested. Potato is cultivated on the sandy and loamy black soils and grey forest soils. Former peat deposits are good for the potatoes cultivation. Potato is high-yield on the sandy soils with a substantial amount of the organical fertilizers. It is low-yield on the clay soil and shale. Flax, winter crops and perennial grasses positively influence on a high yield of potatoes. A main task of the soil tillage is a deep ploughing of a soil layer, the formation of the favourable water and aerial conditions, the weeds destruction, the moisture preservation and the increase of the soil nutrient substances. In order to increase the soil fertility and the yield capacity it's very important to enrich fields with organically fertilizers. After fertilizing the seedbed is plowed again. Later it's necessary to sow quick-growing cabbage crops, oil reddish, mustarded. Organically fertilizers and hydrates improve the soil structure and the yield capacity, Mineral fertilizers such as nitrogen fertilizers and calcium saltpeter also improve the yield capacity.

The seed material preparation is an arduous process. It foresees both the tuber preservation in the winter time and job in spring. In spring it's necessary to warm and germinate the selected tubers. It is also necessary to disinfect them

before the sowing. Nowadays about 70 potatoes varieties are utilized in agriculture. Depending on their utilization they are divided into four groups: food varieties, feed varieties, industrial varieties and universal varieties.

Word list:

alcohol – алкоголь

arduous process – важкий процес

calcium – кальцій

feed varieties – кормові сорти

food varieties – харчові сорти

glucose – глюкоза

industrial varieties and universal varieties – промислові сорти і універсальні сорти

iron – залізо

magnesium – магній

phosphorous – фосфор

potassium – калій

raw material – сировина

seedbed – ґрунт, підготовлений для посіву

starch – крохмаль

to disinfect – дезінфікувати

THE COLORADO BEETLE

The Colorado beetle is a principal pest of potatoes fields. It is accustomed to different climatic and weather conditions. It is also characterized by a great fertility and voracity. Each bug female lays about 3000 ova. Its larvae may destroy potatoes plants on the area of 2,5 ha. That's why it's necessary to spray insecticides twice during the vegetation time. We may use different insecticides mostly of phosphorous and organically composition. Nowadays the portrayed variety of insecticides is widely spread in Ukraine.

World list:

colorado beetles/bugs (Amer.) – колорадські жуки

voracity –прожерливість

ovum (pl. ova) – яйце

larva (pl. larvae) – личинка

to spray – оприскувати

HOPS CULTIVATION

Hop belongs to the hemp group of plants. The Ukrainian varieties belong to the ordinary hop varieties. It is a perennial plant which consists of the underground and over ground parts. The hop foetus is a firm grey brown cone 3 mm long and 2 mm wide.

Hop is very demanding to the natural and climatic conditions. It substantially influences on its development and productivity. It is a crop of the temperate climate. Hop is cultivated in the zones with the average annual temperature of 8 degrees over zero in spring, with the average daytime temperature 17 – 19 degrees over zero at the vegetation time and without any sharp change in the afternoon and at night.

Hops like humidity. It needs 500 – 600 mm of the annual rainfalls. About 250 – 300 must fall on the vegetation period. Hop requires relative air humidity of about 70 – 80 per cent. The light positively influences on the yield and especially on its quality. During the vegetation time hops require 1600 hours of the sun radiation. Hop needs about 700 – 750 hours of radiation during blossoming and about 850 hours of the sun radiation before harvesting.

Hop needs peculiar soils. Its best soils are turf – podzol, grey forest and black soil. Planting hops is a very responsible agrotechnical process. The further vegetation, the life duration and productivity of hops plants strongly depend upon hops. The best planting term is autumn and the best planting material is a seedling.

The forest planting machine MLU – 1 as an implement with a tractor is used for the mechanized planting.

The aromatic varieties with a small percentage of bitter particles are widely used in the modern selection. The bitter varieties were used earlier. The hops varieties contain a certain quantity of common pitches, alpha-acids, beta-acids, common polyphonies and the volatile oil in the laboratory samples of the cones after the recount to the dry substance quantity.

Different hops varieties of the Ukrainian and foreign selection are cultivated in our country. They are the British varieties: Northern Brewers, Brewers Gold, Bullion, etc. Ukrainian hops varieties are Alta, Kumor, Polyssian, Zagrava, etc.

Ukraine occupies a certain position at the world and European hops market.

Word list:

alpha-acids – альфа-кислоти

annual temperature – річна температура

beta-acids – бета-кислоти

blossoming – цвітіння

hemp – конопля

hop – хміль

hop foetus – плід хмелю

pitches – смоли

productivity – продуктивність

vegetation time – час вегетації

SUGAR BEET CULTIVATION

The sugar beet is a two-year plant. It forms a well-developed tuber. The seeds absorb much moisture at the germination time. The sugar beet seeds must be sown into the plowed soil. The seeds sprout at the temperature of 3 – 4 degrees over zero. If the soil is enough humid and warms up to 18 degrees over zero, the sugar beet shoots will germinate in 7 – 8 days. It's very important to reduce the term between the sowing and the germination of shoots. Shoots absorb the nutrient substances of seeds before they sprout. First leaves appear in ten days. Leaves start growing very quickly. The sugar beet yield depends upon the moisture quantity especially in July and August.

Sugar beets need a sufficient amount of the nutrient substances in the ground. The fertilizing system requires a sufficient fertilization in three terms: the principal fertilizer is applied in autumn. At the sowing time we apply the row fertilizers. And at the vegetation time the sugar beets need some nutrition. That's why sugar beets are very high-yield on the fertile soil. Sugar beets are also cultivated on the loamy soils and grey forest soils. It is low-yield on the clay soils.

Sugar beets occupy the second place in the range of plants after wheat. A regular range of plants and a proper ploughing ensure high and stable yield of sugar beets.

The highest yield of sugar beets with the biggest sugar amount is harvested at the period of the growth cessation. Too early and too late terms of harvesting cause the yield loss. Generally, the tuber amount increases in August and September. Simultaneously the sugar amount increases up to 2,2%.

Sugar beets are mostly harvested with the help of the special equipment. There are three ways of harvesting: flow, roll and mixed harvesting. The sugar beet top is cut simultaneously. Sugar beet combines dig tubers. In order to get rid of sugar beet losses, it's necessary to adjust all the combine mechanisms taking into account the soil humidity, the top height and the tuber size.

Word list:

fertilizing system – система удобрення

mixed harvesting – змішаний збір врожаю

germinate – проростати

humid – вологий

losses – втрати

moisture – вологість

row fertilizers – рядні добрива

seeds – насіння

simultaneously – одночасно

sowing – посів

sugar beet – цукровий буряк

to get rid of – позбутися

tuber – бульба

HORTICULTURE

Horticulture is an important branch of agriculture. The industrial fruit plantings are classified according to the fruit varieties: apple-trees, pear-trees, plum-trees, cherry-trees, apricot-trees, peach-trees. According to the ripening terms they are classified as early ripening, middle-ripening and late-ripening. In order to increase the yield capacity it's necessary to form the tree crown. It's very important to reduce the crown. It must be less than the root system. Each branch is cut in such a way that the bottom branch should be shorter than the top one. Before the trees start bearing fruits, the gardeners cut all the unnecessary branches and ensure the maximum yield capacity. In order to increase the fruit productivity it's necessary to choose fruit varieties very correctly. They must be resistant to the unfavourable climate conditions. The fruit varieties must have a high yield capacity. The fruits should have a good taste and a proper technological quality. It's necessary to choose correctly the fruit varieties in the garden planting.

The principal task of the soil tillage is to increase its fertility. We must use ploughs and harrows. The weeds are rooted out with the help of special implements. Herbicides are also used to root out all the weeds. It's necessary to follow the norms of the safety technique.

The gardeners must apply organically fertilizers once in 3 – 4 years. But the mineral fertilizers are applied each year.

Strawberry, raspberry and currants belong to the berry crops. Strawberry grows on all the soil types with the exception of lime, clay and marshy soils. Raspberry and currants are very demanding to the soil type. Organically and mineral fertilizers are mostly applied before planting. Harvesting is the most labour-intensive process in horticulture. The fruits must be ripe. Then they'll be well preserved. The ripening proof is the size and the fruit colourings intensity. Fruits easily split off the branch. The crumb density and taste qualities are also a very important factor at the harvesting time.

Word list:

apple-tree – яблуня

apricot-tree – абрикос

branch – гілка

cherry-tree – вишня

crown – крона

crumb and peel density – щільність м'якуша і шкірки

currants – смородина

fruit colouring intensity – інтенсивність забарвлення плода

horticulture – садівництво

labour-intensive process – трудомісткий процес

marshy soil – заболочений ґрунт

peach-tree – персик

pear-tree – груша

planting – насадження
plum-tree – слива
raspberry – малина
ripe – стиглий
ripening – стиглість
ripening proof – ознака стиглості
soil tillage – обробіток ґрунту
strawberry – полуниця
to bear fruits – плодоносити
to root out – викорінювати

VEGETABLE PRODUCTION

The vegetable production provides the population with necessary products. Vegetables are a reliable resource of the vitamins. Cabbage, carrot, beets, cucumbers, tomatoes, onion, pepper, garlic, different condiments such as parsley, sorrel and dill belong to vegetables. It's very important to keep to the range of vegetables. A deep plowed layer must form the biological soil activity. This layer should preserve moisture and nutrient substances. The soil must be plowed very thoroughly. The ploughing depth must be up to 30 cm. The organically and mineral fertilizers must be applied in spring before planting. The vegetable seeds should correspond to certain demands. Tomato, cu-cumber, pepper and carrot seeds must be put into the salt solution or into the ammonia saltpeter solution. They are covered with the nutrient mixture. It consists of peat and manure. The vegetable seeds are sown in the greenhouses. In the favourable weather conditions seedlings are planted out-of-doors if there are no ground frosts.

The black soil is the best for vegetables. But they may grow on the loamy soil too. The seedlings planted on the light sandy soils need much fertilizing. If there is a lack of precipitations in summer, the seedlings of tomatoes, pepper and cucumbers must be watered.

Tomatoes are harvested if they are enough ripe. Cucumbers are harvested if they reach a certain size and a certain dark green colour. Cabbage has several varieties. There are early-ripening, middle-ripening and late-ripening varieties. After harvesting tomatoes, cucumbers and cabbage may be marinated. Among them only cabbage is resistant to the ground frosts.

Carrot and beets belong to the tubers. They contain a lot of vitamins and nutrient substances. They may be preserved all the year. They are frost resistant. Condiments are very useful for the marinating and for everyday meals. Their leaves are cut about four times a year. Onion and garlic are cultivated on all the soil types. Onion may be sown by seeds and may be planted by bulbs. Bulbs are harvested in August. It's very important to dry bulbs very thoroughly before the preservation.

Word list:

beets – буряки

bulb – цибулина
cabbage – капуста
carrot – морква
condiments – приправи
cucumbers – огірки
dill – окріп
early-ripening – ранньостиглий
garlic – часник
greenhouse – теплиця
late-ripening – пізньостиглий
middle-ripening – середньостиглий
onion – цибуля
parsley – петрушка
pepper – перець
range of vegetables – асортимент овочів
salt solution – розчин солі
seedling – саджанець
sorrel – щавель
to correspond – відповідати
to dry – сушити
to marinate – маринувати
to water – поливати
tomatoes – помідори

PART III.

GRAMMAR REFERENCE

САМОСТІЙНІ ЧАСТИНИ МОВИ

ІМЕННИК (NOUN)

Іменник – це частина мови, що характеризується:

- 1) значенням предметності;
- 2) вираженням значення предметності за допомогою категорій роду, числа й відмінка;
- 3) вживанням у реченні у функції підмета, додатка, означення й іменної частини складного іменного присудка;
- 4) наявністю характерних суфіксів.

Граматичні категорії іменників. Категорія роду

Рід \ Мова	Українська	Англійська
Чоловічий (він – he)	1) істоти чоловічої статі: <i>чоловік, хлопчик, кінь, кіт;</i> 2) неістоти, що традиційно відносять до чоловічого роду: <i>дім, стіл, комп'ютер</i>	істоти чоловічої статі, у тому числі тварини- самці: <i>man, boy, son, uncle, he- dog</i>
Жіночий (вона – she)	1) істоти жіночої статі: <i>жінка, дівчина, лисиця, кішка;</i> 2) неістоти, що традиційно відносять до жіночого роду: <i>ручка, земля, ніч, книга</i>	істоти жіночої статі, у тому числі тварини- самки: <i>woman, girl, daughter, aunt, she- dog</i>
Середній (воно – it)	1) неістоти, що традиційно відносять до середнього роду: <i>поле, небо, вікно, дерево;</i> 2) деякі істоти, що традиційно відносять до середнього роду: <i>немовля</i>	1) усі неістоти: <i>field, sky, window, tree;</i> 2) назви тварин <i>cat, dog, goat;</i> а також іменник <i>baby</i> .

Більшість іменників англійської мови має ту саму форму для іменників жіночого й чоловічого роду, наприклад: *teacher* – учитель, учителька; *student* – студент, студентка; *journalist* – журналіст, журналістка. Однак деякі іменники чоловічого й жіночого роду мають дві різні форми: *actor* – actress; *bridegroom* – bride; *emperor* – empress; *hero* – heroine; *prince* – princess; *waiter* – waitress.

NB! Назви країн, а також слово *ship* (корабель) відносять до жіночого роду: *“Cutty Sark” is a famous ship. She used to bring tea from China.*

Категорія числа

В англійській мові, як і в українській, іменники мають дві форми числа: форму однини й форму множини.

Утворення множини іменників

Закінчення –es	
Основа не змінюється	Основа змінюється
<p>1. Основа на шиплячий (-s, -ss, -sh, ch, -x) <i>bus – buses</i> <i>dress – dresses</i> <i>bush – bushes</i> <i>bench – benches</i> <i>box – boxes;</i></p> <p>2. Основа на -o: <i>tomato – tomatoes</i> <i>potato – potatoes.</i></p> <p>Але: <i>radios, videos, photos, pianos etc.</i></p>	<p>1. Основа на -у (якщо перед у приголосний) <i>baby – babies</i> <i>lady – ladies.</i></p> <p>Але: <i>day – days, toy – toys;</i></p> <p>2. Основа на -f, -fe: <i>wife – wives</i> <i>shelf – shelves</i> <i>life – lives.</i></p> <p>Але: <i>cliff – cliffs</i> <i>roof – roofs</i> <i>chief – chiefs etc.</i></p>
В інших випадках закінчення -s: <i>cats, dogs, books</i>	

Особливі випадки утворення множини

Суплетивні форми	Слова грецького й латинського походження
<i>child – children</i>	<i>phenomenon – phenomena</i>
<i>man – men</i>	<i>datum – data</i>
<i>woman – women</i>	<i>stadium – stadia</i>
<i>mouse – mice</i>	<i>radius – radii</i>
<i>foot – feet</i>	<i>criterion – criteria</i>
<i>tooth – teeth</i>	<i>bacterium – bacteria</i>
<i>goose – geese</i>	
<i>deer – deer</i>	
<i>trout – trout</i>	

Іменники, що мають тільки форму множини:

1) іменники, що позначають парні предмети: *trousers, pyjamas, scissors, binoculars, glasses;*

2) деякі збірні іменники: *cattle, clothes, goods, people, police* і т. ін.

Деякі іменники мають тільки форму однини:

1) речовинні іменники (*bread, tea, milk*);

2) абстрактні іменники (*beauty, love, advice*);

- 3) слова із суфіксом -ics (*athletics, mathematics*);
- 4) назви ігор і хвороб, що мають закінчення множини :s (*billiards, mumps*);
- 5) іменники *weather, luggage, furniture, money, news*.

Це **незлічувані іменники**, такі, що не піддаються лічбі. Вони узгоджуються з дієсловом в однині й ніколи не вживаються з неозначеним артиклем *a/an*; замість неозначеного артикля з незлічуваними іменниками вживається неозначений займенник **some**: *some milk, some bread, some money, some information*.

Але: **a piece of advice/furniture/news/information; a glass of water; a loaf of bread; a kilo of meat/sugar/flour** і т. ін.

Деякі іменники в англійській мові вживаються тільки в однині, а відповідні їм іменники в українській мові мають форми однини й множини або навіть тільки множини: *advice* – *порада, поради*; *knowledge* – *знання*; *information* – *інформація, відо- мості*; *news* – *новина, новини*; *progress* – *успіх, успіхи*; *money* – *гроші*.

Іменники, що позначають групу людей: *army* (армія), *audience* (публіка), *class* (клас), *club* (члени клубу), *committee* (комітет), *company* (компанія), *council* (рада), *crew* (команда), *family* (сім'я), *government* (уряд), *press* (преса), *public* (суспільство), *team* (команда), узгоджуються з присудком:

* в однині, якщо позначають групу як єдине ціле (*The team was the best in the country*);

* у множині, якщо маються на увазі члени цієї групи (*The team were all given medals*).

Деякі іменники, змінюючи число, змінюють і своє лексичне значення:

people (люди) – *peoples* (народи); *glass* (скло) – *glasses* (окуляри); *wood* (дерево) – *woods* (ліс); *hair* (волосся) – *hairs* (волосинки).

Категорія відмінка

Відмінок – це вираження граматичної й змістової залежності одних слів у реченні від інших.

В українській і англійській мовах така залежність між словами в реченні виражається по-різному: в українській мові засобом вираження граматичної залежності є відмінкові закінчення й прийменники, які вживаються з тим чи іншим відмінком; в англійській мові така залежність одних слів від інших виражається за допомогою прийменників, і лише одне значення – присвійності – відображається за допомогою закінчень. Тому традиційно в англійській граматиці виділяють два відмінки іменників: *Common Case* (загальний відмінок) та *Possessive Case* (присвійний відмінок).

Відмінки іменників					
Англійська мова			Українська мова		
відмінок Case	засіб вираження	приклад	відмінок	засіб вираження	приклад
Загальний Common	Прийменники Prepositions	house boy	Н	Відмінкові закінчення	дім хлопчик
		(of) house (of) boy	Р		дома хлопчика
		(to) house (to) boy	Д		дому хлопчику
		house boy	З		дім хлопчика
		(with) house (with) boy	О		домом хлопчиком
		(about) house (about) boy	М		(на) домі хлопчику
Присвій- ний Possessive	1) закінчення 's; 2) апостроф (')	boy's, cat's boys', cats'	1) родовий відмінок іменника, 2) присвійні прикметники	закінчення родового відмінка, суфікси прикметників	хлопчика кішки/ кішкин хлопчиків кішок

NB! закінчення 's приєднується до основи іменника в однині, наприклад: *boy + 's = boy's*.

Закінчення 's може стосуватися словосполучення: *Ann and Kate's room*

Апостроф (') приєднується до основи іменника в множині, наприклад: *boys + ' = boys'* (за винятком суплетивних форм множини: *men's, children's*).

Як правило, присвійний відмінок іменників вживають з іменниками на позначення істот (люди та тварини): *My sister's house, Alex's book, the dog's owner*.

Однак у поширених словосполученнях вживають прийменник *of*:

The case of one of the most dangerous terrorist.

The assassin of John Kennedy, one of the most distinguished American presidents.

Обидві конструкції вживають для назв місць та установ:

London's galleries та *the galleries of London*.

Присвійний відмінок вживають для визначення часу:

This week's conference, today's trial, yesterday's news.

Суфікси іменників

Суфікс	Приклад
-er/-or	barrister, solicitor, inspector
-ment	unemployment, government
-ship	friendship, membership
-ness	happiness, wildness
-ion/-ation/-tion/sion	dictation, constitution, solution, Mission
-hood	brotherhood, childhood
-dom	kingdom, freedom

АРТИКЛЬ

Іменники звичайно супроводжуються артиклями.

Артикль – службове слово при іменниках для вираження їхнього вживання при визначеному чи невизначеному значенні.

В англійській мові існують три артиклі:

1) неозначений **a/an** (**an** ставиться із метою благозвучності перед іменниками, що починаються з голосного звука: *an apple, an oak-tree, an eye, an hour*);

2) означений **the**;

3) нульовий.

Основні випадки вживання артикля

Неозначений a/an	Означений the	Нульовий
Вживається		
<p>1) зі злічуваними іменниками в однині, що мають невизначене значення: <i>A cat is a domestic animal;</i></p> <p>2) у значенні «один з»: <i>She is a student.</i> <i>He is a Kennedy</i> (Він-представник родини Кенеді)</p>	<p>1) з іменниками, значення яких визначене контекстом або ситуацією: <i>We met a man in the park. The man was a famous burglar searched by the police;</i></p> <p>2) з іменниками, що позначають єдині у своєму роді предмети: <i>the Earth, the Eiffel Tower;</i></p> <p>3) з назвами кінотеатрів, готелів, музеїв, галерей, газет і журналів, кораблів: <i>the Odeon, the Sheraton, the British Museum, the Tate Gallery, the Guardian, the Marie Celeste;</i></p> <p>4) з назвами річок, каналів, морів та океанів, груп островів, гірських ланцюгів, пустель: <i>the Thames, the English Channel, the Black Sea, the Atlantic Ocean, the Bahamas, the Alps, the Sahara desert;</i></p> <p>5) з назвами країн, що складаються з двох чи більше слів: <i>the USA, the United Kingdom</i>, а також <i>the Argentine, the Netherlands, the Sudan, the Hague, the Vatican;</i></p> <p>6) з титулами: <i>the Queen, the Prince</i> (Але: <i>Queen Victoria, Prince Albert</i>)</p> <p>7) з назвами історичних подій: <i>the Middle Ages, the First World War</i> (але: <i>World War I</i>);</p> <p>8) зі словами <i>beach, cinema, city, country(side), ground, jungle, library, pub, radio, sea, seaside, station, shop, theatre, world</i>;</p>	<p>1) з назвами видів спорту, днів тижня, місяців, кольорів, мов (якщо за назвою мови не йде слово “<i>language</i>”): <i>She plays tennis very well;</i> <i>It's Monday today;</i> <i>My brother was born in May;</i> <i>I like red;</i> <i>I speak English and German</i> (але: <i>The English language is spoken all over the world</i>);</p> <p>2) з назвами країн, міст, вулиць, мостів, парків, вокзалів, гір, островів, озер, материків: <i>Italy, Oxford Street, Trafalgar Square, Tower Bridge, Hyde Park, Victoria Station, Everest, Cyprus, Lake Michigan, Europe;</i></p> <p>3) з присвійними займенниками: <i>This is not your bag;</i></p> <p>4) із словосполученнями, в яких перше слово є власною назвою: <i>Kennedy Airport, Westminster Abbey;</i></p>

Неозначений a/an	Означений the	Нульовий
	<p><i>She went to the station to see Jim off;</i></p> <p>9) з прикметниками <i>only, last, first:</i> <i>He was the last person to come;</i></p> <p>10) з прикметниками, що перейшли в іменники (<i>the poor, the rich, the young, the blind, the homeless</i>): <i>She is writing an article about the homeless;</i></p> <p>11) з прикметниками найвищого ступеня порівняння: <i>He is the brightest student of the class;</i></p> <p>12) з порядковими числівниками: <i>the first, the fifth, the fifty-seventh;</i></p> <p>13) з прислівниками <i>уранці, удень, увечері:</i> <i>in the morning/evening/afternoon;</i></p> <p>14) з назвами музичних інструментів й танців: <i>the piano, the guitar, the tango;</i></p> <p>15) з назвами національностей: <i>the English, the Chinese, the Ukrainians;</i></p> <p>16) з ім'ям родини: <i>the Browns (родина Браунів).</i></p>	<p>5) у сталих словосполученнях: <i>to be in bed, to be at school, to be in prison, to be in hospital, to be at work, to travel by car/bus/plane/ train/ship.</i> Але: <i>in the car, on the bus/train;</i></p> <p>6) зі словами <i>home, mother/father</i>, коли ми кажемо про свій дім і своїх батьків: <i>Mother is at home;</i></p> <p>7) з назвами хвороб: <i>He's got malaria.</i> Але: <i>flu</i> та <i>the flu, measles</i> та <i>the measles, mumps</i> та <i>the mumps</i></p>

Вживання артикля в деяких сталих словосполученнях

Неозначений a/an	Означений the	Нульовий
<ul style="list-style-type: none"> – <i>have a look/wash/swim etc.</i> – <i>have a good time</i> – <i>have a toothache/headache etc.</i> – <i>it's a pity/shame</i> – <i>as a matter of fact</i> – <i>be in a hurry</i> – <i>be at a loss</i> – <i>go for a walk</i> – <i>in a low/loud voice</i> – <i>all of a sudden</i> – <i>tell a lie</i> – <i>for a short/long time</i> – <i>at a time</i> – <i>at a speed of</i> – <i>a lot of</i> – <i>a little</i> – <i>a few</i> 	<ul style="list-style-type: none"> – <i>in the affirmative/negative</i> – <i>in the direction of</i> – <i>in the east/west/north/south</i> – <i>on the one/other hand</i> – <i>on the right/left</i> – <i>in the positive/negative</i> – <i>in the country</i> – <i>in the street</i> – <i>in the sun</i> – <i>go to the cinema/theatre</i> – <i>in the morning/afternoon/evening</i> – <i>the other days</i> – <i>on the whole</i> – <i>on the way</i> – <i>on the advice of</i> – <i>all over the world</i> – <i>play the piano/guitar</i> – <i>tell the truth</i> – <i>pass the time</i> – <i>the more... the more...</i> 	<ul style="list-style-type: none"> <input type="checkbox"/> <i>be in love</i> <input type="checkbox"/> <i>be in need</i> <input type="checkbox"/> <i>at night/day/sunrise</i> <input type="checkbox"/> <i>at home/work/school</i> <input type="checkbox"/> <i>at breakfast/lunch/dinner</i> <input type="checkbox"/> <i>at peace/war</i> <input type="checkbox"/> <i>by car/ bike/train/air etc.</i> <input type="checkbox"/> <i>by heart</i> <input type="checkbox"/> <i>by chance</i> <input type="checkbox"/> <i>by mistake</i> <input type="checkbox"/> <i>in time</i> <input type="checkbox"/> <i>on time</i> <input type="checkbox"/> <i>in demand</i> <input type="checkbox"/> <i>on demand</i> <input type="checkbox"/> <i>in town</i> <input type="checkbox"/> <i>in fact</i> <input type="checkbox"/> <i>from... to....</i> <input type="checkbox"/> <i>be in bed/ hospital/ church/prison</i> <input type="checkbox"/> <i>in any case</i> <input type="checkbox"/> <i>in full</i> <input type="checkbox"/> <i>in pencil</i> <input type="checkbox"/> <i>in return</i>

ЗАЙМЕННИК (PRONOUN)

Займенник – це частина мови, що:

- 1) вказує на предмет чи ознаку предмета, але не називає його;
- 2) змінюється за родами, особами, числами й відмінками;
- 3) у реченні виконує функцію підмета, додатка, означення або частини складного іменного присудка.

Розряди займенників

Розряд	Приклад
Особові	I, me, we, us, you, he, him, she, her, it, they, them
присвійні	my, mine, our, ours, your, yours, his, her, hers, its, their, theirs
Вказівні	this, these, that, those
зворотні	myself, ourselves, yourself, yourselves, himself, herself, itself, themselves
питальні	who, whom, whose, what, which
Відносні	who, whom, whose, that, which
Неозначені	some, any, both, all, each, either, every
Заперечні	no, none

Особові займенники

Особові займенники вказують на мовця чи мовців (*I, we*), особу, до якої звернена мова (*you*), особу чи предмет, про який йдеться (*he, she, it, they*).

<div style="display: inline-block; transform: rotate(-45deg);"> Особа й число Відмінок </div>	I		II	III	
	однина	множина	однина= множина	однина	множина
Називний	I	we	you	he she it	they
Об'єктний (Objective Case)	me	us	you	him her it	them

Роль особових займенників у реченні

У реченні особові займенники можуть бути підметом або додатком.

Особа	Підмет	Додаток
I	<i>I greeted my lawyer. We often write to Mr. Johnson</i>	<i>The lawyer greeted me. Mr. Johnson often writes us</i>
II	<i>You are a notary, aren't you?</i>	<i>I want to be a notary like you.</i>
III	<i>He is an experienced prosecutor. She needs a help of a lawyer.</i>	<i>Everyone always agrees with him.</i>

NB! Зверни увагу на порядок слів:

Ми з другом ходили в кіно.

*My friend and **I** went to the cinema. (X **I** and my friend... X)*

Це подарунок від мене і Тома.

*This present is from Tom and **me**. (X...me and Tom.X)*

Присвійні займенники

Присвійні займенники вказують на належність до однієї з трьох осіб:

Особа \ Число	Однина	Множина
I	my	our
II	your	your
III	his her its	their

В англійській мові існують дві форми присвійних займенників: залежна (dependent) і абсолютна (absolute). Залежний присвійний займенник завжди стоїть перед іменником:

This is **my** house.

Абсолютні присвійні займенники можуть вживатися самостійно:

This house is **mine**.

Присвійні займенники		
	залежні	абсолютні
I	<i>This is my new car.</i>	<i>This red car is mine.</i>
II	<i>This is your fault!</i>	<i>The fault is yours.</i>
III	<i>This is the house that Jack built. This is his house.</i>	<i>The house is his. I don't like my haircut. I like hers</i>

Порівняй: *my friend* – мій друг та *a friend of mine* – один із моїх друзів

Вказівні займенники

Вказівні займенники вказують на людину чи предмет: this – цей; that – той; these – ці; those – ті.

This is a police department.

THIS *Look at this!*

I know this law.

These are police.

THESE *These laws weren't put into effect.*

What are these?

That is the Chief Constable.

THAT *Say that again.*

Give me that report.

What are those?

THOSE *Those are police ranks in Britain.*

Those people are jurors.

Зворотні займенники

Зворотні займенники вживаються у випадку, коли суб'єкт дії збігається з об'єктом, і відповідають українському займеннику «сам» та дієслівному суфіксу «ся» (*The judge prepared the documents **himself**.*)

Зворотні займенники утворюються від присвійних займенників за допомогою суфікса *-self* в однині та *-selves* у множині:

my + self = myself,

our + selves = ourselves.

Займенники *himself*, *herself*, *themselves* утворюються від особових займенників в об'єктному відмінку.

В англійській мові зворотний займенник завжди узгоджується з підметом у роді, особі й числі:

You have to investigate it **yourself**. I questioned the suspect by **myself**.

He really hated **himself** for not telling the truth.

NB: зворотні займенники не вживаються з дієсловами *wash*, *shave*, *dress*, *feel*, *meet*, *relax*, *concentrate*.

Питальні займенники

Питальні займенники містять запитання щодо особи чи предмета, їхніх ознак, приналежності й кількості:

who? – хто?

Who is the Vice-President of the USA at present?

whose? – чий?

Whose things were used as the evidence in the court?

what? – що?

What is a person who looks after prisoners called?

which? – який з?

Which of those men is a criminal?

Відносні займенники

Відносні займенники виконують функцію сполучникових слів для приєднання підрядного речення до головного:

who – який (про людей)

*The man **who** is announcing the sentence is a judge.*

which – який (про предмети)

*The Norman invasion **which** was in 1066 influenced the English legal system greatly.*

that – який (про людей і про предмети) *Congress is the legislative body that makes laws.*

whose – чий

*He was the murderer **whose** picture was placed in the newspaper.*

what – що

*I wonder **what** the Electoral College is.*

NB! У деяких типах підрядних речень сполучник або сполучникове слово може оминатися. Це такі, як:

1) з'ясувальні підрядні речення:

I know you cheated at that exam on Criminology yesterday;

2) означальні підрядні речення, в яких сполучникове слово виконує функцію додатка:

The girl you were talking to is a pickpocket, so you'd better check your wallet.

Неозначені й заперечні займенники

Неозначені займенники (*some, somebody, something etc. any, anybody, anywhere etc., both, all, each, either, every*) вказують на невідомі чи неозначені особи, предмети, ознаки.

Заперечні займенники (*no, nobody, nothing etc.*) вказують на відсутність особи, предмета або їх ознаки.

Займенники **some, any, no**.

Займенники *some, any* означають деяку кількість предметів чи речовини.

Неозначені займенники <i>some, any</i> та заперечний займенник <i>no</i> вживаються в реченнях		
стверджувальних	питальних	заперечних
- some у значенні “декілька”, “трохи”: <i>There are some evidence of his guilt.</i>	- any у значенні “який-небудь”, “скільки-небудь” <i>Are there any evidence of his guilt?</i>	- (not +) any у значенні “ніякий”, “ніскільки”: <i>There are not any evidence of his guilt.</i>
- any а) у значенні “будь-який”: <i>When you remember his name I want you to call me any time;</i> б) у підрядних умовних реченнях: <i>If there's any news inform me at once.</i>	- some а) у значенні “декілька”, “трохи” за умови, що мовець упевнений, що відповідь на його запитання буде позитивною: <i>Can I have some more time?</i> б) у спеціальних запитаннях <i>Where can I get some stamps?</i>	- no у значенні “ніякий”, “ніскільки”: <i>There are no evidence of his guilt.</i> NB! на відміну від української мови в англійському реченні можливо тільки одне заперечення: <i>There are no evidence of his guilt.</i> <i>There are not any evidence of his guilt.</i>

Сполучення займенників *some, any, no, every* зі словами *body, thing, one, where* утворюють складні займенники:

	one	body	thing	where
some	someone	somebody	something	somewhere
any	anyone	anybody	anything	anywhere
No	none	nobody	nothing	nowhere
Every	everyone	everybody	everything	everywhere

Складні займенники із другим компонентом *-body, -thing, -one* узгоджуються з присудком у формі однини:

Everybody must know the laws of his country.

Займенник *one*

Займенник *one* вживається

1) для позначення неозначеної особи в реченнях, що відповідають безособовим та узагальнено-особовим реченням української мови:

One must keep his word.

One never knows what it really means;

2) як слово-замісник, щоб уникнути повторення іменника, про який йдеться у попередньому реченні:

I don't like this hat. Give me another one.

These hats are too big. Show me the smaller ones.

NB! займенник *one* не вживається після присвійних займенників та іменників у присвійному відмінку:

This is not my bag. My bag is much smaller (пор. Mine is much smaller).

Ben's test is good. Tom's test is not (пор. Tom's is not).

ПРИКМЕТНИК (ADJECTIVE)

Прикметник – це частина мови, яка:

1) характеризується значенням ознаки предмета (якості, властивості тощо);

2) змінюється за ступенями порівняння (на відміну від прикметників української мови англійські прикметники не змінюються за відмінками, родами та числами);

3) виконує в реченні функцію означення, а також іменної частини складеного іменного присудка;

4) має характерні суфікси.

Розряд	Значення	Мова	
		українська	англійська
якісні	позначають ознаку предмета безпосередньо, тобто без ставлення до іншого предмета	добрий темний щасливий	kind dark happy
відносні	указують на ознаку предмета не прямо, а опосередковано, через відношення до іншого предмета	золоте волосся дерев'яний будинок апельсиновий сік горіхова шкарлупа	виражаються: 1) прикметниками: golden hair wooden house; 2) іменниками orange juice nut shell
присвійні	позначають належність предмета певній людині чи тварині	батьківський дім левине серце	виражаються іменником присвійного відмінку: parents' house lion's heart

Ступені порівняння прикметників

Прикметник в англійській мові не має категорій роду, числа й відмінка. Єдині словозмінні форми прикметника англійської мови – це форми ступенів порівняння. Ступені порівняння утворюються від якісних прикметників. Прикметник має три ступені порівняння: нульовий, вищий і найвищий. Вищий та найвищий ступені утворюється від прикметника нульового ступеня за допомогою суфіксів *-er*, *-est* та прислівників *much* (*more*, *most*):

Прикметники	Ступені порівняння		
	нульовий	вищий	найвищий
односкладні	<i>tall fast cold</i>	<i>taller faster colder</i>	<i>the tallest the fastest the coldest</i>
двоскладні, що закінчуються на -er, -ly, -y, -w	<i>clever early happy shallow</i>	<i>cleverer earlier happier shallower</i>	<i>the cleverest the earliest the happiest the shallowest</i>
двоскладні та багатоскладні	<i>painful beautiful reliable</i>	<i>more painful more beautiful more reliable</i>	<i>the most painful the most beautiful the most reliable</i>

NB! При суфіксальному способі утворення вищого й найвищого ступеня порівняння прикметників слід дотримуватися таких правил:

1) якщо прикметник закінчується на німе **-e**, то при додаванні суфікса **-er, -est** німе **-e** не пишеться: *large – larger – largest*;

2) якщо прикметник закінчується на **-y**, то **-y** змінюється на **-i**: *happy – happier – happiest*;

3) якщо прикметник закінчується на приголосний з попереднім коротким голосним, то при додаванні суфікса **-er, -est** кінцевий приголосний подвоюється: *hot – hotter – hottest*.

Винятки (Irregular forms)

Ступінь порівняння		
нульовий	вищий	найвищий
<i>good</i>	<i>better</i>	<i>the best</i>
<i>Bad</i>	<i>worse</i>	<i>the worst</i>
<i>much</i>	<i>more</i>	<i>the most</i>
<i>many</i>	<i>more</i>	<i>the most</i>
<i>Little</i>	<i>less</i>	<i>the least</i>
<i>Far</i>	<i>farther further</i>	<i>the farthest the furthest</i>

Місце й роль прикметників у реченні

Прикметники звичайно стоять перед іменниками й у цьому випадку виконують функцію означення:

I saw a new French comedy yesterday.

Виняток: прикметники *afraid, alone, alive, awake, asleep, glad*: *My son is asleep (X asleep son X)*.

Однак прикметник може виконувати функцію іменної частини присудка, і тоді він стоїть після дієслова-зв'язки:

I'm glad you proved your innocence.

Якщо в реченні поряд стоять декілька прикметників, то вони розташовуються у такому порядку:

Оцінка	розмір	вік	форма	колір	походження	матеріал	функція (призначення)
<i>lovely</i> <i>bad</i>	<i>large</i> <i>small</i>	<i>old</i> <i>new</i>	<i>triangle</i> <i>round</i>	<i>red</i> <i>brown</i>	<i>Chinese</i> <i>French</i>	<i>leather</i> <i>silver</i>	<i>motorcycling</i> <i>chess</i>

That's a wonderful large old rectangular black Chinese wooden linen chest.

Афікси прикметників

Серед суфіксів і префіксів прикметників найчастотнішими є такі:

Суфікс	Префікс	Приклад
-ful		useful
-less		careless
-ous		marvelous
-al		central
-able		capable
-ent		different
-ish		English
-y		sunny
	un-	unusual
	in-	indifferent

ПРИСЛІВНИК (ADVERB)

Прислівник – частина мови, яка:

- 1) позначає ознаку дії (*sing loudly*) чи ознаку ознаки (*very beautiful*), а також обставини, за яких відбуваються події (*yesterday*);
- 2) змінюється за ступенями порівняння;
- 3) виконує в реченні функцію обставини;
- 4) має характерні суфікси.

Типи прислівників

Прислівник	Частотності	Часу	Місця	Способу дії	Міри й ступеня
відповідає на запитання	як часто?	коли?	де?	як?	наскільки?
приклад	<i>often never usually</i>	<i>today now then</i>	<i>here there far</i>	<i>angrily carefully well</i>	<i>very rather enough</i>

Ступені порівняння прислівників

Прислівники	Ступені порівняння		
	нульовий	вищий	найвищий
збігаються за формою з прикметниками	<i>hard fast near early</i>	<i>harder faster nearer earlier</i>	<i>the hardest the fastest the nearest the earliest</i>
двоскладні та багатоскладні	<i>sadly comfortably</i>	<i>more sadly more comfortably</i>	<i>the most sadly the most comfortably</i>

Винятки (Irregular forms)

Ступені порівняння		
нульовий	вищий	найвищий
<i>well</i>	<i>better</i>	<i>the best</i>
<i>badly</i>	<i>worse</i>	<i>the worst</i>
<i>much</i>	<i>more</i>	<i>the most</i>
<i>many</i>	<i>more</i>	<i>the most</i>
<i>Little</i>	<i>less</i>	<i>the least</i>
<i>Far</i>	<i>farther further</i>	<i>farthest furthest</i>

Місце прислівників у реченні

1) Прислівники частотності, а також такі прислівники часу, як *already*, *no longer*, *normally*, *hardly*, *nearly*, *almost* звичайно стоять перед основним дієсловом, але після дієслова *to be*:

I usually get up early.

We nearly missed the train. Але: He is never late for classes. There's hardly any cake left.

2) Прислівники міри й ступеня стоять перед прикметника* ми й прислівниками, які вони позначають:

You are very good at History.

Однак прислівники *a lot, much, a little, a bit, absolutely* можуть стояти в кінці речення:

We waited a little, and started the hearing.

3) Прислівники часу звичайно стоять в кінці речення:

He successfully passed his test in Civil Procedure yesterday.

Однак якщо акцент ставиться на часі, прислівник часу стоїть на початку речення:

Yesterday he successfully passed his test in Civil Procedure.

4) Прислівники способу дії звичайно стоять після дієслова, яке вони позначають:

My father did well at the University.

Якщо в реченні використовується декілька різних типів прислівників, то слід дотримуватися такої послідовності:

Прислівник способу дії	Прислівник місця	Прислівник часу (від меншого періоду часу до більшого)
------------------------	------------------	--

Наприклад: *I met them gladly at the station at 8 p.m. yesterday.*

Однак, якщо присудок – дієслово, що позначає рух, то слід дотримуватися такого порядку прислівників:

Прислівник місця	Прислівник способу дії	Прислівник часу (від меншого періоду часу до більшого)
------------------	------------------------	--

Наприклад: *I was driving home carefully that evening.*

Утворення прислівників

Більшість прислівників в англійській мові утворюється від прикметників за допомогою суфікса *-ly*:

glad – gladly, wide – widely.

Низка прислівників збігається за формою з відповідними прикметниками:

fast; straight; late; daily; early; hard.

Деякі прислівники мають дві форми (суфіксальну й без-суфіксальну) з однаковим значенням:

quick, quickly, cheap, cheaply, bright, brightly, fair, fairly.

Однак спільнокореневі прислівники із суфіксом *-ly* чи без нього можуть мати різні значення:

late – пізно, lately – нещодавно;

deep – глибоко (униз), deeply – сильно, глибоко (про почуття); dear – дорого (про ціну), dearly – сильно (про почуття); free – безкоштовно, freely – вільно;

near – поряд, nearly – майже; short – рантом, shortly – скоро.

Прикметник чи прислівник?

Прикметники	Прислівники
характеризують	
<p>- іменники: <i>The common law is based on the judicial precedent;</i></p> <p>- дієслова <i>appear, be, become, feel, seem, smell, taste</i>: <i>The soup smells good.</i></p>	<p>- дієслова: <i>I am not able to think logically at this very moment!</i></p> <p>- прикметники: <i>His guilt is so obvious;</i></p> <p>- інші прислівники: <i>You are doing quite well.</i></p>

ЧИСЛІВНИК (NUMERAL)

Числівник – частина мови, що:

- 1) характеризується позначенням кількості предметів та їх порядку при лічбі;
- 2) має особливі форми словозміни й словотворення;
- 3) виконує в реченні функцію підмета, додатка, означення чи іменної частини складеного іменного присудка.

Числівники		
Кількісні	Порядкові	Дробові
позначають в цілих одиницях число чи кількість однорідних предметів: <i>two, fifteen, one hundred and seven</i>	позначають порядок слідування предметів при лічбі: <i>first, tenth, fifty-sixth</i>	позначають дробову величину, тобто величину, що виражена в частинах одиниці: <i>one third, two seventh</i>

* Іменник, що позначається порядковим числівником, вживається з означеним артиклем:

Monday is **the first** day of the week.

Утворення числівників

Усі числівники англійської мови утворюються від основи числівників від 3 до 9, іноді видозмінюючись у корені: *six – sixteen – sixty – six hundred – six million – sixth*.

<p>+ teen (13 – 19) + ty (20 – 90) + th (4 – etc.)</p>

Утворення числівників						
від основи числівників	утворюються числівники					
	кількісні				порядкові	
1 – 9	11 – 19		20 – 90		1-й – 9-й	
	змінюється	приклад	змінюється	приклад	змінюється	приклад
<i>one</i>	корінь	<i>eleven</i>		----	корінь	<i>first</i>
<i>two</i>	корінь	<i>twelve</i>	корінь	<i>twenty</i>	корінь	<i>second</i>
<i>three</i>	корінь + teen	<i>thirteen</i>	корінь + ty	<i>thirty</i>	корінь	<i>third</i>
<i>four</i>	+ teen	<i>fourteen</i>	+ ty (u)	<i>forty</i>	+ th	<i>fourth</i>
<i>five</i>	+ teen (ve → f)	<i>fifteen</i>	+ ty (ve → f)	<i>fifty</i>	+ th (ve → f)	<i>fifth</i>
<i>Six</i>	+ teen	<i>sixteen</i>	+ ty	<i>sixty</i>	+ th	<i>sixth</i>
<i>seven</i>	+ teen	<i>seventeen</i>	+ ty	<i>seventy</i>	+ th	<i>seventh</i>
<i>eight</i>	+ teen (t)	<i>eighteen</i>	+ ty (t)	<i>eighty</i>	+ th (t)	<i>eighth</i>
<i>nine</i>	+ teen	<i>nineteen</i>	+ ty	<i>ninety</i>	+ th (e)	<i>ninth</i>

Правила читання деяких цілих кількісних числівників

Числівник		Читається
20 – 99	21 32	twenty-one thirty-two ninety-nine
100 – 999	101 121 300 432 999	a/one hundred (and) one a/one hundred (and) twenty-one three hundred four hundred (and) thirty-two nine hundred (and) ninety-nine
1000 –	1001 2121 50,000 200,232 6,900,999	a/one thousand (and) one two thousand one hundred (and) twenty-one fifty thousand two hundred thousand two hundred (and) thirty-two six million, nine hundred thousand, nine hundred (and) ninety-nine

Порівняй написання й читання числівників в українській та англійській мові:

Українська мова	Англійська мова	Відмінності
двадцять вісім	twenty-eight	в англійському числівнику з'являється дефіс
5 098 789	5,098,789	сотні й тисячі в англійській мові відокремлюються комами
72,6	72.6	дроби в англійській мові пишуться через крапку
триста чотири	three hundred and four	десятки (одиниці) в англійських числівниках відокремлюються від сотень сполучником <i>and</i>
1900 рік 2002 рік 1995 рік	nineteen hundred two thousand and two nineteen ninety five	роки в англійській позначаються кількісними числівниками
кімната номер 415	room number four one five	називаємо кожну цифру окремо
(телефонний номер) 348756	three four eight seven five six	називаємо кожну цифру окремо

Дробові числівники

Дроби			
прості		десятинні*	
пишуться	вимовляються	пишуться	вимовляються
1/2	<i>one/a second/half</i>	0.1	<i>nought / zero point one</i>
1/3	<i>one/a third</i>	0.02	<i>nought / zero point nought / zero two</i>
1/4	<i>one/a fourth/ quarter</i>	1.345	<i>one point three four five</i>
1/5	<i>one/a fifth</i>	1.5	<i>one point five</i>
2/6	<i>two sixths</i>	67.94	<i>six seven point nine four</i>

Дроби			
прості		десятинні*	
пишуться	вимовляються	пишуться	вимовляються
$5/7$	<i>five sevenths</i>	265.5987	<i>two six five point five nine eight seven</i>
$2\ 4/9$	<i>two and four ninths</i>	9787.953	<i>nine seven eight seven point nine five three</i>

* На відміну від десятинних числівників української мови, де ціле число відокремлюється від дробу комою, у десятинних числівників англійської мови ціле число відокремлюється від дробу крапкою: 0.05. Крапка вимовляється як *point*, нуль – як *nought* чи *zero*, кожна ж цифра вимовляється окремо (див. таблицю вище).

ДІЄСЛОВО (VERB)

Дієслово – це частина мови, що:

- 1) позначає дію чи стан як процес;
- 2) виражає ці значення за допомогою категорій способу, стану, часу та особи;
- 3) виконує в реченні функцію присудка, іноді підмета;
- 4) має певні афікси.

Особові й неособові форми дієслова (Finites and Nonfinites)

Особовими (Finites) називаються **форми дієслова**, що змінюються за особами, числами, часами й способами:

Спосіб і час Особа і число	Дійсний			Наказовий	Умовний
	теперішній	минулий	майбутній		
1 особа однина	<i>I work</i>	<i>I worked</i>	<i>I shall work</i>	<i>Work!</i>	<i>If you work hard, you'll pass your exam. If you worked hard, you would pass your exam</i>
1 особа множина	<i>We work</i>	<i>We worked</i>	<i>We shall work</i>		
2 особа	<i>You work</i>	<i>You worked</i>	<i>You will work</i>		
3 особа однина	<i>He/she/it works</i>	<i>He/she/it worked</i>	<i>He/she/it will work</i>		
3 особа множина	<i>They work</i>	<i>They worked</i>	<i>They will work</i>		

Неособовими (Nonfinites) формами дієслова називають форми, що не змінюються за особами, числами, часами й способами. До неособових дієслівних форм відносять дієприкметник, інфінітив і герундій.

Особові форми дієслова

Серед особових форм дієслова виділяють дієслова смислові, модальні й допоміжні.

Дієслово Особливості	Смислове Notional	Модальне Modal	Допоміжне Auxiliary
Позначає	дію, процес, стан: <i>I study law at the National Law Academy.</i>	ставлення мовця до дії, процесу чи стану <i>I can play tennis</i>	не має самостійного лексичного значення; служить для утворення питальних і заперечних форм смислових дієслів, а також часових форм груп Continuous, Perfect, Perfect Continuous. <i>Do you study law at the National Law Academy? I don't study law at the National Law Academy</i>

Дієслово Особливості	Смислове Notional	Модальне Modal	Допоміжне Auxiliary
здатність самостійно утворювати питальні й заперечні форми	не здатні (крім дієслів <i>to be, to have</i>) <i>I play tennis</i> X <i>Play I tennis?</i> X <i>Do you play tennis?</i> <i>Can I play tennis?</i>	здатні <i>Can I play tennis?</i> <i>I can't play tennis</i>	здатні <i>Do you study law at the National Law Academy?</i> <i>I don't study law at the National Law Academy.</i> <i>Have you seen this legal report yet?</i> <i>I haven't seen that legal report yet.</i> <i>Are you reading? No, I'm not reading</i>
роль у реченні	присудок <i>I study law at the National Law Academy.</i>	частина складеного дієслівного присудка <i>I can play tennis</i>	частина складеного іменного чи дієслівного присудка <i>The deputies are discussing the legal reform.</i> <i>The deputies have already discussed the legal reform.</i>

Особові форми дієслова

Серед особових форм дієслова виділяють дієслова смислові, модальні й допоміжні.

Основні форми дієслова

В англійській мові виділяють чотири основні форми дієслова, від яких утворюються усі інші дієслівні форми:

V	Форма дієслова	Утворюється	Використовується	Приклад
V1	перша форма	відкиданням від інфінітиву частки <i>to</i> : <i>to look</i> <i>look</i>	для утворення форм: теперішнього неозначеного часу (Present Simple), крім форм 3 особи однини; спонукальних речень	<i>As a judge of the crown court, I usually sit with two or four justices of the peace.</i> <i>Get up! It's time to go to the Academy!</i>
V2 (V+ed)	форма минулого часу	приєднанням до V1 закінчення <i>-ed</i>	для утворення форм минулого неозначеного часу (Past Indefinite)	<i>The jury considered the evidence of the accused.</i>

V	Форма дієслова	Утворюється	Використовується	Приклад
V3	форма дієприкметника минулого часу	приєднанням до V1 закінчення <i>-ed</i>	для утворення форм: часів групи Perfect (Present Perfect, Past Perfect, Future Perfect); пасивного стану; дієприкметника минулого часу	<i>The parliament has passed a new tax bill this week.</i> <i>He couldn't find his watch. It had been stolen!</i> <i>She will have finished her scientific research by the end of July.</i> <i>The precedents are used to settle new cases.</i> <i>The bill offered by the President last week was approved by the simple majority.</i>
V4 (Ving)	форма дієприкметника теперішнього часу	приєднанням до V1 закінчення <i>-ing</i>	для утворення часів групи Continuous (Present Continuous, Past Continuous, Future Continuous, Present Perfect Continuous); як дієприкметник теперішнього часу; як дієприслівник	<i>I'm thinking about your plan.</i> <i>I was preparing for the seminar in Civil Law, when the telephone rang.</i> <i>He'll be answering the Prosecutor's questions this time next week. I have been waiting for you for 20 minutes already.</i> <i>This was a fascinating trial.</i> <i>Listening carefully, we managed to come to the correct conclusion.</i>

Правильні й неправильні дієслова (Regular and Irregular verbs)

Залежно від форми утворення минулого часу (2 форма дієслова – V2) і форми дієприкметника минулого часу (3 форма дієслова – V3) усі дієслова англійської мови поділяються на дві групи: правильні (irregular) і неправильні (irregular).

Правильні дієслова утворюють другу й третю форми шляхом додавання до основи першої форми дієслова суфікса **-ed (-d)**, який вимовляється як:

* [d] після голосних та дзвінких приголосних: clean – cleaned, play – played;

- * [t] після глухих: work – worked;
- * [Id] після [t] и [d]: want – wanted, mend – mended.

NB! При утворенні другої і третьої дієслівних форм слід звернути увагу на такі правила орфографії:

1) якщо перша форма являє собою короткий кореневий склад та закінчується на одинарний приголосний, то при додаванні закінчення **-ed** останній приголосний кореня подвоюється: *stop – stopped*;

2) якщо основа дієслова закінчується на приголосний+у, то перед закінченням **-ed** буква у замінюється буквою **i**: *carry – carried, study – studied*.

Однак якщо основа дієслова закінчується на голосний + у, то до основи просто додається закінчення **-ed**:

Play – played, stay – stayed;

3) якщо основа дієслова закінчується на букву **-e**, що не вимовляється, то друга й третя форми дієслова утворюються додаванням закінчення **-d**: *arrive – arrived*.

Неправильні дієслова мають особливі, фіксовані форми минулого часу й дієприкметника минулого часу: *make – made – made, go – went – gone, bring – brought – brought* (див. таблицю неправильних дієслів).

Граматичні категорії дієслова. Особа й число дієслова

Як і в українській мові, дієслова англійської мови змінюються за особами й числами:

Особа \ Число	Однина	Множина
I	I am busy. I study . I have a textbook.	We are busy. We study . We have a textbook.
II	You are busy. You study . You have a textbook.	You are busy You study . You have a textbook.
III	He/she/it is busy He/she/it studies . He/she/it has a textbook.	They are busy. They study . They have a textbook.

Спосіб

Спосіб – дієслівна категорія, що виражає встановлене мовцем ставлення дії (стану) до дійсності:

I'm studying to be a lawyer. I would become a lawyer. Study hard!

Спосіб	Дійсний	Умовний	Наказовий
значення	реальна дія, що стверджує або заперечує, що відбувається у цей час, у минулому або що має відбутися.	дія, що мислиться мовцем як бажана чи можлива	спонукання до здійснення дії
приклад	<i>We watch an international news report every evening. Yesterday we watched an international news report. We will watch an international news report next Sunday</i>	<i>If we had a cable TV, we would watch an international news report. If we had had a cable TV, we would have watched an international news report.</i>	<i>Switch on the TV and let's watch an international news report.</i>

Стан (Voice)

В англійській мові дієслово має два стани: активний (Active Voice) і пасивний (Passive Voice).

Активний стан показує, що дія здійснюється суб'єктом і спрямована на об'єкт:

The people of the USA elected George Bush the President for the second term.

Пасивний стан показує, що особа чи предмет, що виступає в реченні в ролі підмета, є об'єктом дії:

George Bush was elected the President of the USA for the second term.

Пасивний стан утворюється за допомогою відповідної часової форми дієслова **to be** та дієприкметника II смислового дієслова:

Час \ Часова група	Indefinite (simple)	Continuous	Perfect
Present	Present Indefinite <i>The letter is written.</i> <i>Is the letter written?</i> <i>The letter is not written.</i>	Present Continuous <i>The letter is being written now.</i> <i>Is the letter being written now?</i> <i>The letter is not being written now.</i>	Present Perfect <i>The letter has already been written.</i> <i>Has the letter already been written?</i> <i>The letter has not been written yet.</i>
Past	Past Indefinite <i>The letter was written an hour ago.</i> <i>Was the letter written an hour ago?</i> <i>The letter was not written an hour ago.</i>	Past Continuous <i>The letter was being written from 5 to 6 p.m.</i> <i>Was the letter being written from 5 to 6 p.m.?</i> <i>The letter was not being written from 5 to 6 p.m..</i>	Past Perfect <i>By the time you came the letter had already been written.</i> <i>Had the letter been written by the time you came?</i> <i>The letter had not been written by the time you came.</i>
Future	Future Indefinite <i>The letter will be written tomorrow. Will the letter be written tomorrow? The letter will not be written tomorrow.</i>	Future Continuous -	Future Perfect <i>The letter will have been written by tomorrow.</i> <i>Will the letter have been written by tomorrow?</i> <i>The letter will not have been written by tomorrow.</i>

NB! Часи групи **Perfect Continuous** не вживаються в пасивному стані: замість них використовується відповідний час групи **Perfect** у пасивному стані чи зберігається конструкція з дієсловом активного стану:

This metro line has been built for years.

They have been building this metro line for years.

Як видно з таблиці, форми **Future Continuous Passive** не існує: замість неї вживається **Future Continuous Active**: *They will be writing the letter this time tomorrow.*

Час дієслова

Система часів англійської мови (активний стан)

Час \ Часова група	Indefinite (Simple)	Continuous	Perfect	Perfect Continuous
Present	Present Indefinite <i>I often write letters.</i>	Present Continuous <i>I am writing a letter now.</i>	Present Perfect <i>I have written a letter to her.</i>	Present Perfect Continuous <i>I have been writing a letter for two hours already.</i>
Past	Past Indefinite <i>I wrote a letter an hour ago.</i>	Past Continuous <i>I was writing a letter from 5 to 6 p.m.</i>	Past Perfect <i>By the time you came I had written a letter to her.</i>	Past Perfect Continuous <i>By the time you came I had been writing a letter for two hours already.</i>
Future	Future Indefinite <i>I'll write you a letter.</i>	Future Continuous <i>I'll be writing a letter this time tomorrow.</i>	Future Perfect <i>I will have written a letter to her by tomorrow.</i>	Future Perfect Continuous <i>By 10 p.m. I will have been writing a letter for two hours already.</i>
Future-in-the-Past	Future-in-the-Past Indefinite <i>He said he would write me a letter.</i>	Future-in-the-Past Continuous <i>He said he would be writing a letter that time next day.</i>	Future-in-the-Past Perfect <i>He said he would have written a letter to her by next day.</i>	Future-in-the-Past Perfect Continuous <i>He said he would have been writing a letter for two hours by 10 p.m.</i>

Група Indefinite (Simple)

Загальне значення часів цієї групи: позначають просту дію, не обмежену проміжком часу і таку, що не має значення закінченості до певного моменту в минулому, теперішньому чи майбутньому (не обтяжену додатковими семантичними ознаками тривалості або завершеності); мають просту, порівняно з іншими часовими групами, формулу: **V (V1(s), V+ed, will V, would V)**.

Час	Значення	Формула	Допоміжне дієслово	Уживається з обставинами часу	Приклад
Present Indefinite (Simple)	1) звичайна регулярна дія, що повторюється;	V1	do, does	<i>every day/ week/ month, usually,</i>	<i>My classes usually start at 9.</i>

Час	Значення	Формула	Допоміжне дієслово	Уживається з обставинами часу	Приклад
	2) постійний стан; 3) загальновідомий факт; 4) дія за розкладом			<i>occasionally, often, seldom, always, never, sometimes, in the morning/ evening/ afternoon, at night, on Mondays</i> та ін.	
Past Indefinite (Simple)	1) дія, що була здійснена до моменту мовлення, не обмежена проміжком часу и не пов'язана з теперішнім моментом; 2) послідовність дій у минулому	V2 (Ved)	did	<i>yesterday, ago, last week/month/ year/Monday, then, in 1930</i> та ін.	<i>I went to Paris last month.</i>
Future Indefinite (Simple)	1) майбутня дія, що позначає спонтанно прийняте рішення; 2) дія, що її буде здійснено, не залежить від мовця	will + V1	will	<i>tomorrow, tonight, next week/month/ year, in two days/weeks, soon</i> і т. ін.	<i>I will be 30 next year.</i>
Future-in-the-Past Indefinite (Simple)	вживається при узгодженні часів для вираження дії, що відбудеться після дії в головному реченні	would + V1	would	<i>next day/week/month / year, in two days/weeks, soon</i> і т. ін.	<i>The passengers of the "Titanic" were sure it would be a safe trip.</i>

Present Indefinite (Simple) Значення

Теперішній неозначений (простий) час виражає:

1) звичайну, регулярну, повторювану дію:

I usually go to the library after classes.

2) постійний стан:

My uncle owns a consulting firm.

3) загальноприйнятий факт:

Money doesn't buy health.

4) дія за розкладом: *The train arrives at 2 p.m.* **Формула:**

I/we/you/they start my work at 9 a.m.

V1:

V1s (для 3 особи однини):

He/she/it starts his/her/its work at 9 a.m.

Допоміжне дієслово

do, does (для 3 особи однини):

Do I start my work at 9? I do not (don't) start my work at 9. Does he start his work at 9? He does not (doesn't) start his work at 9. **Вживається з обставинами часу:**

every day/week/month/year, usually, occasionally, often, seldom, always, never, sometimes, in the morning/evening/afternoon, at night, on Mondays та ін.

Present Indefinite дієслова *to be*

Дієслово **to be** є особливим, тому що вживається в реченні інакше, ніж інші дієслова:

1) в особливий спосіб узгоджується з підметом в особі й числі:

Число Особа	Однина	Множина
1	<i>I am</i>	<i>we are</i>
2	<i>you are</i>	<i>you are</i>
3	<i>he/she/it is</i>	<i>they are</i>

2) самотійно (без допоміжного дієслова) утворює питальну й заперечну форми:

He is a notary. Is he a notary?

He is not (isn't) a notary.

Present Indefinite дієслова *to have (got)*

Як і дієслово **to be**, дієслово **to have (got)** поводитьсь в реченні інакше, ніж інші дієслова:

1) в особливий спосіб узгоджується з підметом в особі й числі:

Особа \ Число	Однина	Множина
1	<i>I have (got)</i>	<i>we have (got)</i>
2	<i>you have (got)</i>	<i>you have (got)</i>
3	<i>he/she/it has (got)</i>	<i>they have (got)</i>

2) самостійно (без допоміжного дієслова) утворює питальну й заперечну форми.

I have (got) a computer. Have I (got) a computer?

I have not (got) a computer.

Однак у деяких випадках дієслово **to have** вживається подібно звичайним смисловим дієсловам, тобто утворює питальну й заперечну форму за допомогою допоміжного дієслова:

1) в американській англійській: *Do I have a computer?, I don't have a computer.*

2) у сталих словосполученнях з дієсловом **to have**: *to have a shower, to have dinner/breakfast/supper* тощо:

Do you always have classes on Saturdays?

Крім того, необхідно розрізняти дієслово **to have (got)** (**мати, володіти**) та замісник модального дієслова **must** – **to have (got) to (мусити)**, оскільки ці дієслова по-різному утворюють питальну й заперечну форми:

to have (got) мати, володіти	to have (got) to мусити
<i>I have (got) a mobile phone. Have you (got) a mobile phone? I haven't (got) a mobile phone.</i>	<i>I have (got) to wear a police uniform. Do I have (got) to wear a police uniform? I don't have (got) to wear a police uniform.</i>

Past Indefinite (Simple) Значення

Минулий неозначений (простий) час виражає:

1) дію, здійснену до моменту мови, не обмежену проміжком часу й не пов'язану з теперішнім моментом:

Julius Cesar landed in England in 55 BC.

2) послідовність дій у минулому:

He switched off the TV and opened a textbook in Theory of State and Law.

I/we/you/he/she/it/they started work at 9 a.m.

Формула: V2 (V+ed):

Допоміжне дієслово: did

Did I start my work at 9? I did not (didn't) start my work at 9.

Вживається з обставинами часу:

yesterday, ago, last week/month/year/Monday, then, in 1930 та ін.

Past Indefinite дієслова *to be*

Дієслово **to be** в минулому часі:

1) в особливий спосіб узгоджується з підметом в особі й числі:

Особа \ Число	Однина	Множина
1	<i>I was</i>	<i>we were</i>
2	<i>you were</i>	<i>you were</i>
3	<i>he/she/it was</i>	<i>they were</i>

2) самотійно (без допоміжного дієслова) утворює питальну й заперечну форми:

She was busy. Was she busy? She was not busy.

Future Indefinite (Simple) Значення

Майбутній неозначений (простий) час виражає дію, що буде здійснена після моменту мовлення, якщо:

1) речення виражає рішення, прийняте безпосередньо в момент мовлення:

- *It's Jane's birthday today.*

- *I will buy her flowers.*

2) дія, що її буде здійснено, не залежить від мовця:

She will be 40 next year.

Формула: will + V1:

I/we/you/he/she/it/they will start work at 9 a.m.

Допоміжне дієслово: would

Вживається з обставинами часу:

next day/week/month/year, in two days/weeks, soon і т.ін.

Група Continuous

Часи цієї групи позначають дію, що триває протягом певного проміжку часу.

Формула часів групи Continuous: **to be + Ving (V4)**

Час	Значення	Формула	Допоміжне дієслово	Уживається з обставинами часу	Приклад
Present Continuous	Виражає дію: 1) що відбувається у момент мовлення;	am/is/are + V4	am/is/are	<i>now, at the moment, at present,</i>	<i>What are you doing?</i> <i>– I'm</i>

Час	Значення	Формула	Допоміжне дієслово	Уживається з обставинами часу	Приклад
	2) заплановану, а також дію, що відбудеться в найближчому майбутньому; 3) повторювану, що викликає осудження й критику (при наявності у реченні слова <i>always</i>)			<i>nowadays, still.</i>	<i>looking for my CD.</i>
Past Continuous	Виражає дію, що відбувалася: 1) в певний момент у минулому; 2) протягом обмеженого періоду часу в минулому; 3) у минулому та її було перервано іншою дією в минулому	was/ were + V4	was/ were	<i>while, when, as</i> і т. ін.	<i>What were you doing at 1.30 p.m. yesterday? – I was flying to Paris.</i>
Future Continuous	Виражає: 1) дію, що буде здійснюватися в певний момент у майбутньому; 2) намір здійснити дію в майбутньому; 3) дію в питальних реченнях, коли йдеться про плани на майбутнє	will be +V4	will	<i>this time tomorrow/ next week/ month/year, in two days/ weeks, soon</i> і т. ін.	<i>He'll be sunbathing in Hawaii this time next week</i>
Future-in-the-Past Continuous	вживається при узгодженні часів для вираження дії, що відбудеться після дії в головному реченні	would be + V4	would	<i>that time next</i> <i>day/week/month/year,</i> <i>in two</i> <i>days/weeks, soon</i> і т. ін.	<i>I knew that 5 minutes later they would be looking for me.</i>

Present Continuous Значення

Теперішній тривалий час виражає дію, що відбувалася: Виражає дію:

1) що відбувається у момент мовлення:

The investigator is questioning a witness at the moment.

2) заплановану, а також дію, що відбудеться в найближчому майбутньому:

I'm meeting my lawyer tomorrow.

3) повторювану, що викликає осудження й критику (при наявності у реченні слова *always*):

He is always borrowing money from his friends.

Формула: Теперішній час дієслова to be + Ving (V4):

I am

he/she/it is + Ving (V4)

we/you/they are

Допоміжне дієслово

Теперішній час дієслова to be: **am** (узгоджується з іменником першої особи однини), **is** (узгоджується з іменником третьої особи однини), **are** (узгоджується з іменником у множині)

Вживається з обставинами часу:

now, at the moment, at present, nowadays, still тощо.

У Present Continuous не вживаються дієслова:

1) що виражають емоції: *love, like, hate, forgive* та ін.

I hate rats!

2) що виражають думку: *agree, believe, consider, suppose* та ін.

I consider Churchill to be the great politician.

3) чуттєвого сприйняття: *see, hear, smell, feel, taste* та ін.

The soup tastes awful! There's too much salt in it.

В англійській мові є низка дієслів, що можуть позначати і дію, і стан:

smell – нюхати, пахнути; *look* – дивитися, виглядати;

taste – куштувати, мати смак; *weigh* – зважуватися, важити; *feel* – торкатися, бути на дотик.

Значення дії передається формою Present Continuous, значення ж стану – формою Present Indefinite (Simple):

Дієслово	Виражає	
	Дію (Present Continuous)	Стан (Present Indefinite)
<i>smell</i>	<i>Why are you smelling your soup?</i>	<i>The kitchen smells of burnt meat.</i>
<i>look</i>	<i>Why are you looking at me like that?</i>	<i>Your hair looks great.</i>
<i>taste</i>	<i>I'm tasting the sauce because it might need some species.</i>	<i>The cake tastes delicious.</i>
<i>weigh</i>	<i>I'm weighing myself on my new scales.</i>	<i>I weigh 51 kilo.</i>
<i>feel</i>	<i>Why are you feeling your pockets?</i>	<i>This cloth feels like velvet.</i>

Past Continuous Значення

Минулий тривалий час виражає дію, що відбувалася:

1) у певний момент у минулому:

What were you doing at 1.30 p.m.? – I was studying legal materials in the reading room of our library.

2) протягом обмеженого проміжку часу в минулому:

We were having lessons from 9 a.m. to 3 p.m. yesterday.

3) у минулому та її було перервано іншою дією в минулому.

I was cycling to work when I fell off the bike.

Формула: Минулий час дієслова to be + Ving (V4):

(I/he/she/it) **was** + **Ving (V4)**

(We/you/they) **were**

Допоміжне дієслово

Минулий час дієслова **to be**: **was** (узгоджується з іменником в однині), **were** (узгоджується з іменником у множині)

<i>I/he/she/it + was</i>	<i>we/you/they + were</i>
<i>I was preparing for my exam all night yesterday.</i>	<i>We were preparing for the exam all night yesterday.</i>
<i>Was I preparing for my exam all night yesterday?</i>	<i>Were we preparing for the exam all night yesterday?</i>
<i>I was not (wasn't) preparing for my exam all night yesterday.</i>	<i>We were not (weren't) preparing for the exam all night yesterday.</i>

Вживається з обставинами часу:

while, when, as тощо.

Future Continuous. Значення

Майбутній неозначений (простий) час виражає:

1) дію, що буде здійснюватися в певний момент у майбутньому:

He'll be sunbathing in Hawaii this time next week.

2) намір здійснити дію в майбутньому:

I'll be visiting Kyiv next month.

3) у питальних реченнях, коли йдеться про плани на майбутнє:

Will you be passing exams in June?

Формула: will be + V1:

I/we/you/he/she/it/they will start work at 9 a.m.

Допоміжне дієслово: will

Will I start my work at 9? I **will** not (won't) start my work at 9.

Вживається з обставинами часу:

this time tomorrow/next week/month/year, in two days/weeks, soon
тощо.

NB! У підрядних реченнях часу й умови, що вводяться сполучниками *when, as soon as, if, whether* та ін., для позначення майбутньої дії вживається теперішній час:

When you are sunbathing in Hawaii, I'll be working really hard this time next week.

Future in the Past Continuous

Майбутній у минулому тривалий час вживається при узгодженні часів для вираження дії, що відбудеться після дії в головному реченні:

I knew that 5 minutes later they would be looking for me.

Формула: would +be +V1:

I/we/you/they/he/she/it would be sleeping.

Допоміжне дієслово: would

Would you be reading? You **wouldn't** be reading.

Вживається з обставинами часу:

that time next day/week/month/year, in two days/weeks, soon тощо.

Група Perfect

Часи цієї групи позначають дію, що здійснилася або здійсниться до певного моменту в минулому, теперішньому чи майбутньому.

Формула часів групи Perfect: **to have + V+ed (V3)**.

Час	Значення	Формула	Допоміжне дієслово	Вживається з обставинами часу	Приклад
Present Perfect	вживається: 1) для вираження дії, що має безпосередній стосунок до моменту мовлення; 2) якщо дія (стан) тривала до моменту мовлення і можливо триває у момент мовлення; 3) якщо йдеться про події, що колись відбувалися	have/ has + V+ed (V3)	have/has	<i>just, ever, never, already, yet</i> (у питальних і заперечних реченнях), <i>so far, since, for, today, this week/month/year</i>	<i>I have never seen this picture before.</i>
Past Perfect	вживається для 1) вираження дії, яку було здійснено до певного моменту в минулому; 2) для вираження дії, яку було здійснено раніше за іншу дію в минулому	had + V+ed (V3)	had	<i>by the time, after, before, never</i> (у питальних і заперечних реченнях), <i>already</i> .	<i>The police arrived, but the robbers had already escaped.</i>
Future Perfect	вживається для вираження дії, яку буде здійснено до певного моменту в майбутньому.	will have + V+ed (V3)	will	<i>by, by then, by the time, before, until</i> (у питальних і заперечних реченнях).	<i>I will have finished this report by tomorrow.</i>
Future-in-the-Past Perfect	вживається при узгодженні часів для вираження дії, що відбудеться після дії в головному реченні	would have + V+ed (V3)	would	<i>by, by then, by the time, before, until</i> (у питальних і заперечних реченнях).	<i>He promised he would have finished his report by the next day.</i>

Present Perfect Значення

Теперішній завершений час вживається:

1) для вираження дії, що має безпосередній стосунок до моменту мовлення:

I have lost my keys and can't come into my room.

2) якщо дія (стан) тривала до моменту мовлення і можливо триває у момент мовлення:

I have worked at the Prosecutor's office for 10 years already.

3) якщо йдеться про події, що колись відбувалися:

The defendant has never been accused of a crime before.

Формула: Теперішній час дієслова to have + V+ed (V3)

I/we/you/they + have + V3 He/she/it + has + V3
--

Допоміжне дієслово:

have, has

Вживається з обставинами часу:

just, ever, never, already, yet (у питальних і заперечних реченнях), *so far, since, for, today, this week/month/year* тощо.

Past Perfect Значення

Минулий завершений час вживається:

1. для вираження дії, яку було здійснено до певного моменту в минулому:

By 5.05 p.m. the jury had already passed a verdict.

2. для вираження дії, яку було здійснено раніше за іншу дію в минулому:

By the time the police arrived, the robbers had already escaped. The police

I/we/you/they/he/she/it + had + V3

arrived, but the robbers had already escaped.

Формула: Минулий час дієслова to have + V+ed (V3)

Допоміжне дієслово: **had**

Вживається з обставинами часу:

by the time, after, before, never, already, yet (у питальних і заперечних реченнях) тощо.

Future Perfect Значення

Майбутній завершений час вживається:

для вираження дії, яку буде здійснено до певного моменту в

майбутньому:

She will have graduated from the Law Academy by next year.

I/we/you/they/he/she/it + will have + V3

Формула: майбутній час дієслова to have + V+ed (V3)

Допоміжне дієслово: will

Вживається з обставинами часу:

by, by then, by the time, before, until (в заперечних реченнях) тощо.

Future in the Past Perfect

Значення

Майбутній у минулому завершений час уживається при узгодженні часів для вираження дії, що відбудеться після дії в головному реченні:

I expected that you would have come by 6 p.m.

Формула: would + have + V+ed (V3)

I/we/you/they/he/she/it + would + have + V+ed (V3)

Допоміжне дієслово: would

Вживається з обставинами часу:

by, by then, by the time, before, until (в заперечних реченнях) тощо.

Група Perfect Continuous

Часи цієї групи позначають дію, що почалася до моменту в минулому, теперішньому чи майбутньому й тривала в момент в минулому, теперішньому чи майбутньому.

Формула часів групи Perfect Continuous: to have been + V4.

Час	Значення	Формула	Допоміжне дієслово	Вживається з обставинами часу	Приклад
Present Perfect Continuous	вживається для вираження дії, що почалася до моменту мовлення й тривала в момент мовлення	have/has been + V4	have/has	<i>since, for</i>	<i>I'm so tired – I have been working since 7 a.m.</i>

Час	Значення	Формула	Допоміжне дієслово	Вживається з обставинами часу	Приклад
Past Perfect Continuous	вживається 1) для вираження дії, що почалася й тривала до моменту в минулому, позначеного в ситуації; 2) для вираження дії, що почалася й завершилася до певного моменту в минулому	had been + V4	had	<i>since, for</i>	<i>She was so tired – she had been working since 7 a.m. that day.</i>
Future Perfect Continuous	вживається для вираження дії, що почалася до певного моменту в майбутньому й усе ще триватиме в певний момент у майбутньому	will have been + V4	will	<i>by ... for</i>	<i>By the end of this week they will have been working together for a month already.</i>
Future-in-the-Past Perfect Continuous	вживається при узгодженні часів для вираження дії, що відбудеться після дії в головному реченні	would have been + V4	would	<i>by ... for</i>	<i>They said that by the end of that week they would have been working together for a month already.</i>

Present Perfect Continuous Значення

Теперішній завершений тривалий час вживається для вираження дії, що почалася до моменту мовлення й тривала в момент мовлення:

I have been waiting for you for 15 minutes already!

Формула: Теперішній час дієслова to have + been + V4

I/we/you/they + have + been + V4 He/she/it + has + been + V4

Допоміжне дієслово:

have, has

Вживається з обставинами часу:

since, for.

Past Perfect Continuous Значення

Минулий завершений час вживається:

1) для вираження дії, що почалася й тривала до моменту в минулому, позначеного в ситуації:

When I met them yesterday they were wet as they had been walking in the rain.

2) для вираження дії, що почалася й завершилася до певного моменту в минулому:

She had been working as a judge for 25 years before she retired.

Формула: Минулий час дієслова to have + been + V4

I/we/you/they/he/she/it + had + been + V4

Допоміжне дієслово:

had

Вживається з обставинами часу:

since, for.

Future Perfect Continuous Значення

Майбутній завершений час вживається для вираження дії, що почалася до певного моменту в майбутньому й усе ще триватиме в певний момент у майбутньому:

By the end of this month she will have been working in the court for two years already.

Формула: майбутній час дієслова to have + V4

I/we/you/they/he/she/it + will have + been + V4

Допоміжне дієслово:

will.

Вживається з обставиною часу *by ... for.*

Future-in-the-Past Perfect Continuous Значення

Майбутній у минулому завершений тривалий час вживається при узгодженні часів для вираження дії, що відбудеться після дії в головному реченні

He said that by the end of summer he would have been living in New York for 7 years already.

Формула: would + have + been + Ving (V4)

I/we/you/they/he/she/it + would + have + been

Допоміжне дієслово:

would

Вживається з обставиною часу *by ... for.*

УЗГОДЖЕННЯ ЧАСІВ (Sequence of Tenses)

В англійській мові існує залежність дієслова-присудка підрядного речення від часу присудка головного речення, а саме: **якщо дієслово головного речення стоїть у минулому часі, присудок у підрядному реченні також повинен стояти в одному з минулих часів:**

The paper announced that a dangerous murderer had escaped from the prison.

Така залежність часу дієслова-присудка підрядного речення від часу присудка головного речення називається узгодженням часів.

NB! Правило узгодження часів діє тільки тоді, якщо присудок у головному реченні стоїть у минулому часі:

*He says he **knows** this girl. He **said** he **knew** that girl.*

На відміну від англійської в українській мові правило узгодження часів не діє. Порівняй:

Дія підрядного речення	Виражається часом	
	в англійській мові	в українській мові
одночасна з дією головного речення	Past Indefinite <i>I couldn't understand why he liked the job of a judge so much.</i> Past Continuous <i>I was sure you were flying to Paris!</i>	теперішнім <i>Я не міг зрозуміти, чому йому так подобається працювати суддею.</i> <i>Я був упевнений, що ти летиш до Парижу!</i>
передуює дії в головному реченні	Past Perfect <i>She couldn't explain how she had got there.</i> Past Perfect Continuous <i>I thought you had been staying with your parents for that week.</i>	минулим <i>Вона не могла пояснити, як потрапила туди.</i> <i>Я думав, що цей тиждень ви провели з батьками.</i>
відбудеться після дії в головному реченні	Future-in-the-Past Indefinite (Simple) <i>I hoped I would meet that mysterious lady at Tompson's party.</i> Future-in-the-Past Perfect <i>The boss expected that all the employees would have come by 8 a.m.</i> Future-in-the-Past Continuous <i>I thought you would be preparing for your test for the whole evening.</i> Future-in-the-Past Perfect Continuous	майбутнім <i>Я сподівався, що зустріну цю таємничу незнайомку на вечірці у Томпсона.</i> <i>Начальник думав, що всі службовці прийдуть на роботу до восьмої години ранку.</i> <i>Я думав, що ти цілий вечір будеш готуватися до заліку.</i>

	<i>My parents said that by the tenth of April they would have been living together for 27 years already.</i>	<i>Мої батьки сказали, що 10 квітня буде вже 27 років, як вони живуть разом</i>
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Суфікси дієслів

суфікс	приклад
-en	sharpen, widen
-ize	critisize, minimize
-fy	classify, simplify

НЕОСОБОВІ ДІЄСЛІВНІ ФОРМИ (Nonfinites)

До неособових дієслівних форм відносять дієприкметник, інфінітив та герундій.

Дієприкметник (Participle)

Дієприкметник (Participle) – дієслівна форма, що має ознаки дієслова та ознаки прикметника чи прислівника.

В англійській мові є дві принципово різні форми дієприкметників: дієприкметники теперішнього часу (Participle I) і дієприкметники минулого часу (Participle II).

Дієприкметники теперішнього часу (Participle I) відповідають таким неособовим дієслівним формам української мови, як:

1) дієприслівники недоконаного виду (*reading* – *читаючи*, *dancing* – *танцюючи*);

2) активні дієприкметники теперішнього часу (*reading* – *читаючий*, *dancing* – *танцюючий*).

Дієприкметники минулого часу (Participle II) відповідають пасивним дієприкметникам минулого часу української мови (*built* – *побудований*, *written* – *написаний*).

Інфінітив (Infinitive)

Інфінітив (Infinitive) – початкова форма дієслова, що позначає дію без її відношення до суб'єкта, тобто особи, числа, часу й способу: *to do* – *робити*, *to read* – *читати*.

В англійській мові ознакою інфінітива є частка *to*.

Герундій (Gerund, :ing form)

Герундій (Gerund, :ing form) – віддієслівний іменник зі значенням дії: *reading* – *читання*, *swimming* – *плавання*, *running* – *біг*.

Інфінітив чи герундій?		
Вживається		
інфінітив		герундій
з часткою <i>to</i> (<i>to</i> + infinitive)	без частки <i>to</i>	
1) для вираження мети: <i>She went out to buy some bread.</i> 2) після дієслів <i>advise, agree, expect, promise,</i>	1) після модальних дієслів (крім <i>ought to</i>): <i>You must be back by 10 p.m.</i> 2) після	1) у функції іменника: <i>Eating fruits is good for your health.</i> 2) після дієслів <i>admit, avoid, consider, continue, delay, deny, enjoy, escape, excuse, fancy, finish, forgive, imagine, involve, keep</i> (у значенні <i>continue</i>), <i>look forward to, mention, mind, miss, object to,</i>

<i>hope, refuse:</i> <i>He agreed to come.</i> <i>Tom promised to come.</i> 3) після питальних слів <i>where, how, what, who, which</i> (крім <i>why</i>): <i>I don't know what to do.</i> 4) після словосполучень <i>would like/would love/ would prefer:</i> <i>I'd love to have a cup of tea.</i> 5) після іменників: <i>It's a hard job to teach children.</i> 6) після прикметників: <i>I'm glad to see you happy.</i>	словосполучень <i>had better, would rather:</i> <i>You'd better go.</i> 3) після конструкції <i>make/let/see/hear/ feel + object:</i> <i>My parents let me watch TV until 11 p.m.</i> <i>I heard my brother come back.</i>	<i>postpone, practise, prevent, report, resist, risk, save, stand, suggest, understand:</i> <i>Do you mind my opening the window?</i> <i>Smith admitted murdering his wife.</i> 3) після дієслова <i>go:</i> <i>I go swimming every morning in summer.</i> 4) після дієслів <i>see, hear, listen, watch</i> для вираження дії, що відбувалося протягом якогось проміжку часу: <i>I heard a police siren screaming in the distance and breaking the silence of the night.</i> 5) після конструкцій <i>be busy, be no use, what's the use of, it's (no) good, it's (not) worth, can't help, there's no point (in), can't stand, be/get used to, have difficulty in, be interested in, be good at, be keen on:</i> <i>It's no use crying over the spilt milk.</i> 6) після словосполучення <i>spend/waste time:</i> <i>You waste your time playing computer games.</i> 7) після прийменників: <i>He entered without knocking at the door.</i>
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NB! З дієсловами *begin, start, continue, advise, allow, permit, recommend* може вживатися як інфінітив, так і герундій, причому значення словосполучення не змінюється: *The guests started dancing/ to dance; It is not allowed standing/to stand there.*

Однак існують дієслова, які в сполученні з інфінітивом мають одне значення, а в сполученні з герундієм інше:

1) **go on + to infinitive** – *починати*

After finishing breakfast, she went on to write a letter.

go on + gerund – *продовжувати*

I tried to calm her down, but she went on crying.

2) **mean + to infinitive** – *мати намір*

She means to find a better job. mean + gerund – значити

Doing well on this course means studying very hard.

3) **try + to infinitive** – *робити все можливе*

I was trying to start the car, but the engine was dead. try + gerund – спробувати

Why don't you try adding some spices to the sauce? It may taste better.

4) **want + to infinitive** – *хотіти*

I want to spend my holiday in the Crimea. want + gerund – бути необхідним

My car wants repairing again.

5) *stop + to infinitive* – *зупинитися з метою*

On the way home I stopped to buy some milk.

stop + gerund – *закінчити, кинути щось робити* *Stop talking! You are in the library.*

Модальні дієслова (Modal Verbs) та їхні замітники Модальні дієслова позначають ставлення мовця до дії, процесу, стану. На відміну від смислових дієслів модальні дієслова змінюються за особами та числами (крім модального дієслова *need*), здатні самотійно утворювати питальні й заперечні форми, а також потребують після себе інфінітива без частки *to* (крім дієслова *ought to*):

I/she/they can type fast.

Can you come to the party? – Sorry, I can't. You should give up smoking.

Але: *You ought to give up smoking.*

За допомогою модальних дієслів передаються модальні значення (фізичної й теоретичної), рекомендації, наказу, заборони, дозволу. Значення Дієслово	Можливість		Дозвіл	Рекомендація	Наказ, заборона
	фізична	теоретична			
<i>Can (could)</i>	<i>The baby can already walk.</i>	<i>Where is she? -She can be at home.</i>	<i>Can I use your phone? – Of course, you can.</i>		<i>You can't stand here.</i>
<i>May (might)</i>		<i>Jane may pass her test this time.</i>	<i>Might I speak to the bank manager, please? Luggage may be left here.</i>		
<i>Must</i>		<i>She must have lost her way.</i>			<i>Soldiers must obey their commander's orders. You mustn't make any noise.</i>
<i>Should</i>		<i>Has Nancy phoned yet? – No, she should have phoned an hour ago.</i>		<i>You should give up smoking.</i>	

<i>Ought to</i>		<i>Tom is a good student. He ought to pass his exam.</i>			<i>You ought to treat animals kindly.</i>
<i>Need</i>				<i>Your hair needs cutting.</i>	

Замінники модальних дієслів

Модальні дієслова *can* та *must* мають замітники для позначення минулої й майбутньої дії:

Час Модальне дієслово	Теперішній	Минулий	Майбутній
<i>Can</i>	<i>can</i> <i>I can drive. Can you drive?</i> <i>I can not (can't) drive.</i>	<i>could/was able to</i> <i>I could drive./ I was able to drive.</i> <i>Could you drive?/Were you able to drive?</i> <i>I could not (couldn't) drive./ I was not able to drive.</i>	<i>will/shall be able to</i> <i>I shall be able to drive.</i> <i>Will you be able to drive?</i> <i>I shall not (shan't) be able to drive.</i>
<i>Must</i>	<i>must</i> <i>You must be in time at work. Must I be in time at work?</i> <i>You must not (mustn't) be in time at work</i>	<i>had to</i> <i>You had to be in time at work.</i> <i>Did I have to be in time at work?</i> <i>You did not (didn't) have to be in time at work.</i>	<i>will/shall have to</i> <i>You will have to be in time at work.</i> <i>Shall I have to be in time at work?</i> <i>You will not (won't) have to be in time at work.</i>

Крім того, замітники модальних дієслів мають додаткове значення:

Модальне дієслово	Замітник модального дієслова	Додаткове значення	Приклад
<i>Can</i>	<i>to be able to</i>	можливість здійснити дію зараз, у минулому чи в майбутньому	Порівняй: <i>I can read</i> и <i>I am not able to read these tiny letters!</i> <i>He was not able to come yesterday, but he will be able to come tomorrow.</i>
<i>Must</i>	<i>to have to</i>	змушеність виконання дії у зв'язку з обставинами	<i>I have to work hard to pass my exam.</i> <i>I had to get up early this morning. If you want to live here you'll have to tidy up your room sometimes.</i>
	<i>to be to</i>	домовленість про здійснення дії	<i>We are to meet at the theatre. We were to go to the library.</i>

Дієслова-зв'язки

Дієслова *to be, to become, to get, to turn* (у значенні *ставати*) можуть вживатися як дієслова-зв'язки: у цьому випадку дієслово виконує граматичну функцію – служить для утворення форм складного іменного присудка й виражає його граматичне значення (час, особа, число, стан); лексичне ж значення дієслова-зв'язки неактуальне (послаблене):

She is always late for classes. Cinderella became a Princess. It gets dark early in December.

- What happened with your hair? – I dyed it black, but I don't know why it turned green!

СЛУЖБОВІ ЧАСТИНИ МОВИ ПРИЙМЕННИК (PREPOSITION)

Прийменник – службова частина мови, що поєднує слова, які виражають відношення просторові (*in the country*), часові (*from morning till night*), об'єктні (*the song about Motherland*), причинові (*to get white with fear*), цільові (*for love or money*) і т. ін.

Прийменники, що виражають просторові відношення

Прийменник	Приклад
<i>at</i>	<i>Somebody is standing at our front door.</i> <i>Were you at the theatre yesterday?</i>
<i>above</i>	<i>There's a rainbow above the forest.</i>
<i>across</i>	<i>I was going across the street when I heard a voice of an old friend of mine.</i>
<i>against</i>	<i>The wind was so strong that it was difficult to walk against it.</i>
<i>along</i>	<i>She was going slowly along the road.</i>
<i>among</i>	<i>That woman standing among the children must be their teacher.</i>
<i>around</i>	<i>We are travelling around the world.</i>
<i>behind</i>	<i>There is a swimming pool behind the house.</i>
<i>below</i>	<i>The temperature is 10 degrees below zero.</i>
<i>beside</i>	<i>Our summer house is beside the river.</i>
<i>between</i>	<i>Who is sitting between Kate and Mary?</i>
<i>by</i>	<i>I like sitting by the window.</i> <i>She ran by without saying "hello".</i>
<i>down</i>	<i>Getting down the hill was even more difficult than climbing up.</i>
<i>from</i>	<i>Take the dictionary from the shelf and look up this word in it.</i>
<i>in</i>	<i>Waiter! There is a fly in my soup!</i>
<i>inside</i>	<i>I can hear a strange noise inside the kitchen. I think this is a mouse.</i>
<i>into</i>	<i>Put the sandwich into your bag and don't eat at the</i>

<i>next to</i>	<i>lesson any more!</i>
<i>off</i>	<i>Next to the Tower of London there's Tower bridge.</i>
<i>over</i>	<i>Off we go!</i>
<i>out of</i>	<i>A flying saucer was hanging over the forest.</i>
<i>outside</i>	<i>He took a knife out of the pocket.</i>
	<i>Why are there so many people standing outside our house?</i>
<i>through</i>	<i>I could see the rain through the window.</i>
<i>to</i>	<i>Let's go to the seaside!</i>
<i>towards</i>	<i>Go towards that cathedral and you'll see the bank</i>
<i>under</i>	<i>building on your left.</i>
<i>up</i>	<i>Hands up!</i>

Зіставлення прийменників *in, at, on, by*

Прийменник **in** вживається:

- 1) з назвами міст: *in London*;
- 2) зі словами: *an armchair, danger, the middle of, a queue, a book, a newspaper, the sky, a row, a hotel, the centre, the park, prison, hospital, the country*;
- 3) в сталих словосполученнях:
in cash, in pen, in pencil, in ink, in writing, in one's opinion, in the end.

Прийменник **at** вживається:

- 1) перед номерами будинків: *at 23 Baker St.*;
- 2) зі словами *home, school, university, work, the bus stop, the station, the airport, the seaside, a hotel, the table, the desk.*

Прийменник **on** вживається:

- 1) зі словами *the river, the border, the farm, an island, a beach, the coast*;
- 2) у сталих словосполученнях: *on foot, on business, on holiday, on a trip, on the way, on the phone, on TV, on radio, on purpose, on the right/left.*

Прийменник **by** вживається в сталих словосполученнях: *by bus, by taxi, by car, by plane, by train, by ship, by sea, by air.* Але: **on** *a/the bus/plane/train/ship*, **in** *a/the taxi/car*

Прийменники, що виражають часові відношення

Прийменник	Приклад
<i>after</i>	<i>What are you doing after the lessons?</i>
<i>at</i>	<i>Let's meet at five.</i>
<i>before</i>	<i>Mom! I'm going to the party. Don't wait for me before midnight.</i>
<i>by</i>	<i>You must be back by 12.00.</i>
<i>during</i>	<i>I had a lot of fun during my summer holiday.</i>
<i>for</i>	<i>I'll stay in the country for a week.</i>
<i>from</i>	<i>Where were you from 8 p.m. to 11 p.m.</i>

<i>in</i>	yesterday? My son was born in 1995. See you in a week.
<i>on</i>	See you on Monday. On coming home I checked my mail.
<i>since</i>	I haven't seen her since Christmas.
<i>till/until</i>	Let's stay here until tomorrow.
<i>within</i>	My history teacher gave us a project to finish within a week, and I haven't started it yet.

Зіставлення прийменників *at, in, on*

at	in	on
at 9.00 at Christmas/Easter at noon/night/midnight at breakfast/lunch/dinner/supper at that time at the moment at the weekend	in the morning/evening/afternoon in the Christmas/Easter holiday in January (months) in (the) winter (seasons) in 1992 (years) in the 19 century (centuries) in an hour/week/year	on Monday on Easter Sunday on Christmas Day on Friday night on July 21st on a summer afternoon on that day

NB! Прийменники не вживаються перед словами *yesterday, tomorrow, next, this, last, every*:

yesterday morning, next year, this week, last Christmas.

Прийменники, що виражають граматичну залежність слів у реченні

Як зазначалося вище, в українській мові засобом вираження граматичної залежності є відмінкові закінчення й прийменники, які вживаються з тим чи іншим відмінком; в англійській мові така залежність одних слів від інших виражається за допомогою прийменників:

Відмінок (в українській мові)	Прийменник	Приклад	
		українська мова	англійська мова
родовий	of	Наприкінці уроку учитель оголосив оцінки.	At the end of the lesson the teacher told the marks.
давальний	to	Я повернув собаку хазяїну.	I returned the dog to its master .
орудний	with by	Чому ти пишеш диктант олівцем? Ця книга була написана Джеком Лондоном.	Why are you writing with the pencil ? This book was written by Jack London .
місцевий	about	Розповіси мені про цю людину.	Tell me about this man.

СПОЛУЧНИК (CONJUNCTION)

Сполучники – службові слова, що служать для поєднання однорідних членів речення, а також частин складного речення:

*You **and** your friend did well in the test.*

*You did well in the test, **but** your friend didn't.*

Залежно від їхньої синтаксичної функції розрізняють сполучники сурядності й підрядності. Сполучники сурядності служать для поєднання рівноправних одиниць (однорідних членів речення, а також частин складносурядного речення).

Сполучники підрядності служать для поєднання синтаксично нерівноправних одиниць (головного й підрядного речень, рідше членів простого речення).

Сполучники			Приклад
сурядності	зіставні	<i>and, both...and, neither ...nor</i>	<i>I've been to England and Scotland.</i>
	протиставні	<i>but, whereas</i>	<i>I don't like classical music, whereas my mother loves it.</i>
	розділові	<i>or, either ... or</i>	<i>Shall we go on holiday or shall we buy a computer?</i>
	пояснювальні	<i>that is</i>	<i>In the Ukrainian restaurant we tried 'borsh' – that is a kind of vegetable soup.</i>
	приєднальні	<i>and also</i>	<i>She is so nice, and also very clever!</i>
підрядності	з'ясувальні	<i>that</i>	<i>This is the boy that started the fight.</i>
	часові	<i>when, as soon as, as long as, while, after, before, since, until</i>	<i>I'll tell you about my holiday when I get home.</i>
	причинові	<i>because, as, so/such... that, since (поскольку)</i>	<i>Since it's your birthday, I'll let you borrow my best suit.</i>
	наслідкові	<i>so, therefore</i>	<i>Martin has broken his leg, so he can't play football.</i>
	порівняльні	<i>as, as ... as, as if, than</i>	<i>I'm as happy as a child.</i>
	умовні	<i>if, whether</i>	<i>If you get out in the rain, you'll catch cold.</i>
	допустові	<i>although, though, in spite of, despite the fact</i>	<i>Although he has lived in Germany for two years, she can't speak German.</i>
	мети	<i>in order to, so that</i>	<i>I moved that vase so that the dog wouldn't break it.</i>

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