

МИНИСТЕРСТВО СЕЛЬСКОГО ХОЗЯЙСТВА РОССИЙСКОЙ ФЕДЕРАЦИИ
ДЕПАРТАМЕНТ НАУЧНО-ТЕХНОЛОГИЧЕСКОЙ ПОЛИТИКИ И ОБРАЗОВАНИЯ
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ
ВЫСШЕГО ОБРАЗОВАНИЯ «ДОНСКОЙ ГОСУДАРСТВЕННЫЙ АГРАРНЫЙ
УНИВЕРСИТЕТ»
(ФГБОУ ВО Донской ГАУ)
АЗОВО-ЧЕРНОМОРСКИЙ ИНЖЕНЕРНЫЙ ИНСТИТУТ – ФИЛИАЛ
ФЕДЕРАЛЬНОГО ГОСУДАРСТВЕННОГО БЮДЖЕТНОГО
ОБРАЗОВАТЕЛЬНОГО УЧРЕЖДЕНИЯ ВЫСШЕГО ОБРАЗОВАНИЯ
«ДОНСКОЙ ГОСУДАРСТВЕННЫЙ АГРАРНЫЙ УНИВЕРСИТЕТ»
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Английский язык для направления «Агроинженерия»

Учебно-методическое пособие

Зерноград – 2020

УДК 811.111 (075.8)

Н73

*Печатается по решению методического совета
факультета «Инженерно-технологический»
Азово-Черноморского инженерного института – филиала
федерального государственного бюджетного образовательного учреждения
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Новикова, Ю.В. Английский язык для направления «Агроинженерия»:
Н73 учебно-методическое пособие / Ю.В. Новикова. – Зерноград: Азово-
Черноморский инженерный институт ФГБОУ ВО Донской ГАУ,
2020. – 58 с.

В учебно-методическом пособии приведены задания и упражнения по развитию навыков чтения и разговорной речи на английском языке на основе текстов по агроинженерии. Оно позволяет расширить лексический запас по выбранному направлению подготовки, а также развить навыки использования этих лексических единиц для понимания прочитанного и в речи. Тексты могут использоваться для просмотрового, поискового и изучающего чтения. Пособие может быть использовано как для аудиторной, так и для самостоятельной работы студентов факультетов, где есть бакалавриат для направления подготовки «Агроинженерия».

Рассмотрено и одобрено на заседании
кафедры гуманитарных дисциплин и иностранных языков
Протокол № 1 от 30 августа 2020 г.

Рассмотрено и одобрено методическим советом
Азово-Черноморского инженерного института ФГБОУ ВО Донской ГАУ.
Протокол № 1 от 14 сентября 2020 г.

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ФГБОУ ВО Донской ГАУ, 2020

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ВВЕДЕНИЕ

Учебно-методическое пособие разработано для обучения чтению в приложении к современным образовательным парадигмам. В настоящее время образовательном процессе используются две парадигмы: знаниево-центристская и гуманистическая личностно-ориентированная. Мы придерживаемся точки зрения, согласно которой в образовательном процессе должен иметь место процесс гармонизации рассматриваемых парадигм. У каждой из них есть своя роль. Знаниево-центристская создает основу так называемым *hard skills*, в то время как гуманистическая личностно-ориентированная способствует развитию *flexible skills*, которые ранее назывались *soft skills*. И апробацией выдвинутого теоретического предположения должно стать учебно-методическое пособие.

Для реализации целей ФГОС ВО мы предлагаем технологию блочно-структурированного чтения иноязычного технического текста с применением технологии *mind-mapping*, где понятие «блочно-структурированный» относится к форме организации и упорядочивания смысловых блоков текстовой информации, а *mind-mapping* используется как прием для запоминания основной информации. Мы полагаем, что технология блочно-структурированного чтения иноязычного технического текста с применением технологии *mind-mapping* направлена на развитие читательской компетенции как базовой составляющей профессиональной подготовки инженеров в сельскохозяйственном вузе.

В учебно-методическом пособии 10 тем, каждая из которых представлена двумя текстами. Текст 1 – академический профессионально-ориентированный, в нем содержится информация на профессиональные темы по агроинженерии и он имеет практическую направленность в рамках гуманистической парадигмы в соответствии с потребностями обучающегося, то есть то, что позволит развивать его мотивы и стимулы. Текст 2 содержит научно-популярную информацию и относится к публицистическому стилю (реклама, записки фермера), официально-деловому (деловое письмо), но при этом его содержание имеет непосредственное отношение к профессиональной деятельности специалистов в области сельского хозяйства в целом и агроинженерии в частности.

К Тексту 1 разработаны лексико-грамматические упражнения по уровням языка для развития навыка чтения профессионально-ориентированных текстов:

- 1) фонетические упражнения
- 2) лексические упражнения
- 3) грамматические упражнения
- 4) упражнения развития для устной речи
 - а) «Answer the questions on the text»
 - б) «Match the two parts to make up a sentence»
 - с) «Make up a plan and retell the text»

К Тексту 2 разработана система упражнений по разным видам чтения.

Для развития навыка поискового чтения обучающемуся предлагается найти определенные лексические единицы или грамматические формы. Отработка навыков ознакомительного чтения обеспечивается через упражнения «Highlight a subproblem for each problem», «Retell the text using a mind-map» и др. Навык изучающего чтения предлагается развивать через упражнение «Write the theses on the content of the text». Закрепление общеупотребительной и специальной технической лексики достигается, в том числе, с помощью упражнения на словообразовательные формы «Translate the words and their derivatives». Выход на устную речь достигается через пересказ текста с использованием технологии mind-mapping.

Таким образом, учебно-методическое пособие закладывает фундамент для выработки навыков чтения для работы с узкоспециальными профессиональными текстами, когда студенту приходится сочетать языковую информацию с узкоспециальными знаниями, о которых он еще не имеет полного представления на 1 курсе, так как профессионализация начинается со 2 курса подготовки на бакалавриате или специалитете.

AGRICULTURE

TEXT 1. What is agriculture?

VOCABULARY

1. **agriculture** (*n*) – сельское хозяйство
2. **growth** (*n*) – рост
3. **development** (*n*) – развитие
4. **supply** (*v*) – снабжать
5. **raw materials** – сырьё
6. **cultivation** (*n*) – обработка
7. **field** (*n*) – поле
8. **in order to** – для того, чтобы
9. **grow** [grəʊ] (**grew, grown**) (*v*) – расти, выращивать
10. **crop** (*n*) – сельскохозяйственная культура
11. **breed** (*v*) – разводить
12. **farm animal** – домашнее животное
13. **crop production** – растениеводство
14. **animal husbandry** – животноводство
15. **develop** (*v*) – развивать
16. **plant** (*n*) – растение
17. **food** (*n*) – пища, еда
18. **agricultural** (*adj*) – сельскохозяйственный
19. **apply** (*v*) – применять
20. **increase** (*n, v*) – увеличение, увеличивать
21. **use** (*v*) – использовать
22. **crop yield** – урожайность

1. Read and translate the following words.

Climate, region, tractor, combine, tendency, to mechanize, tradition, traditional, bulldozer, machine, important, branch, to include, purpose, directly, technology.

2. Read and translate the text «What is agriculture?».

What is agriculture?

Agriculture is an important branch of economy. Economic **growth** of any country depends on the **development** of **agriculture**. It **supplies** industry with **raw materials** and people with clothing and food.

The Latin word «agre» means the **cultivation** of **fields in order to grow crops**. Now **agriculture** also includes the use of land to **breed farm animals**.

People began to grow **crops** many thousand years ago. At present **crop production** and **animal husbandry** are highly **developed** branches of **agriculture**.

Life is impossible without **plants**. They play a very important role in everyday life of people. Farm crops are **plants** grown by farmers. Most of them are used directly as **food** for people, others are used in industry and medicine.

Our **agricultural farms apply** widely intensive technologies **in order to increase** animal products and **crop yields**.

3. Answer the questions on the text.

1. Where are farm crops used?
2. Can you name two branches of agriculture?
3. Is the word «agre» a Latin word? What does this word mean?
4. Why is life impossible without plants?
5. Why is agriculture a very important branch of economy?

4. Insert the following prepositions: *of, on, with, without, in, at, by*.

1. Economic growth ... any country depends ... the development ... agriculture which supplies people ... food and clothing and industry ... raw materials.
2. ... present crop production and animal husbandry are developed branches ... agriculture.
3. Life is impossible ... plants.
4. Plants play an important role ... everyday life ... people.
5. Most ... them are used as food ... people and animals, others are used ... industry and medicine.
6. Farm crops and plants are grown ... farmers.

5. Match the two parts to make up a sentence.

1. At present crop production and animal husbandry are ...
 2. Economic growth of any country depends on ...
 3. Our state and collective farms apply widely intensive technologies in order to ...
 4. Most of them are used directly as food for people, others are used in ...
 5. Now agriculture also includes the use of land to ...
 6. The Latin word «agre» means ...
- a. ... increase animal products and crop yields.
 - b. ... highly developed branches of agriculture.
 - c. ... the development of agriculture.
 - d. ... medicine and industry.
 - e ... the cultivation of fields in order to grow crops.
 - f. ... breed farm animals.

6. Make up a plan and retell the text.

TEXT 2. The history of agriculture

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

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

2. Scan the text «The history of agriculture» and find the meaning of the underlined words.

3. Read the text «The history of agriculture» and get ready to do post-reading exercises.

The history 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 **harvest** crops any time of the year and **get** extra food.

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

4. Read the text «The history of agriculture». 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.

5. Match the words (1-6) with their 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.

6. 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.

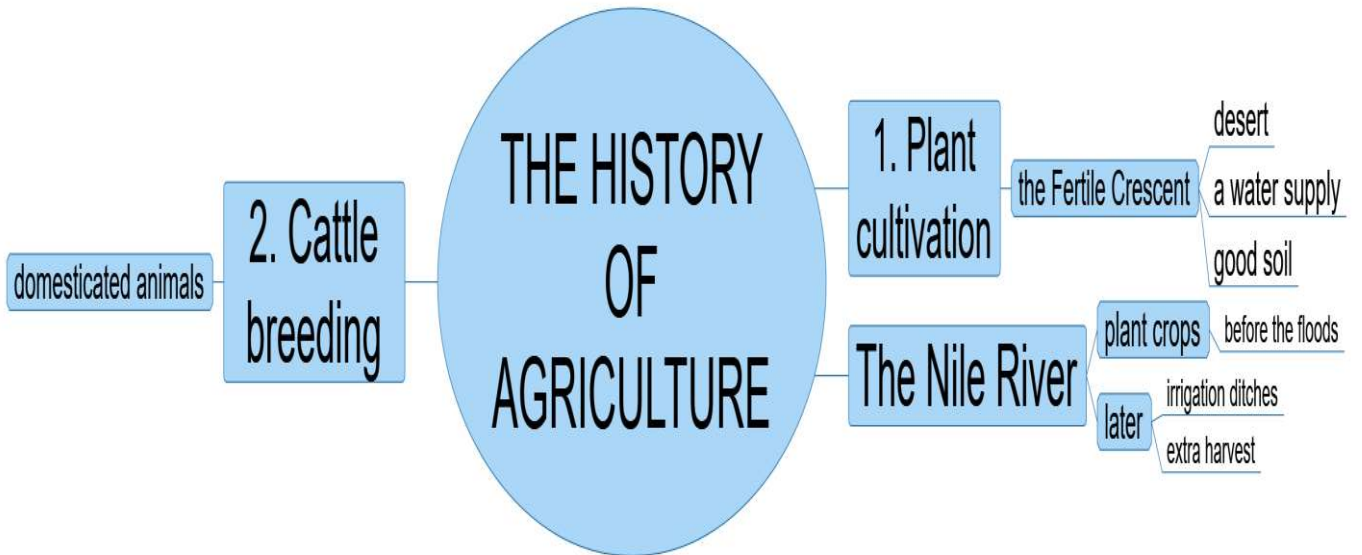
2. *harvesting / farming*

- a. _____ includes raising animals and crops.
- b. Farmers wait until crops are mature to start _____.

7. Translate the words and their derivatives.agriculture (*n*) – agricultural – agriculturist (*n*)fertile (*adj*) – fertility (*n*)dry (*adj*) – dryness (*n*)requirement (*n*) – require (*v*)farm (*n*) – farming (*n*) – farmer (*n*)flood (*n*) – flood (*v*)plant (*n*) – plant (*v*)irrigate (*v*) – irrigation (*n*)harvest (*n*) – harvest (*v*) – harvester (*n*)important (*adj*) – importance (*n*)domesticate (*v*) – domestication (*n*)**8. Translate the following sentences from Russian into English.**

1. Мы используем водоснабжение.
2. Люди не выживают в пустыне.
3. Люди создали ирригационные каналы.
4. Вы убрали урожай?
5. Мы покормим животных завтра.
6. Река Нил выходит из берегов.
7. Она не использует водоснабжение.
8. Река Нил выходит из берегов?
9. Они покормили животных вчера?
10. Они создадут ирригационные каналы в следующем году.
11. Река Нил вышла из берегов в прошлом году?
12. Она не покормила животных вчера.
13. Они уберут урожай завтра.
14. Они выжили в пустыне.
15. Он будет выживать в пустыне?

9. Write the theses on the content of the text.**10. Highlight a subproblem for each problem.**

11. Retell the text using a mind-map.

SOIL

TEXT 1 Soil: definition, texture, conditions

VOCABULARY

1. **land plant** – наземное растение
2. **ensure** (*v*) – обеспечивать, гарантировать
3. **artificial manure** – искусственное удобрение
4. **supply** (*v*) – снабжать, поставлять
5. **derive** (*v*) – получать, извлекать
6. **rock** (*n*) – порода почвенная
7. **power** (*n*) – способность
8. **generation** (*n*) – поколение, генерация
9. **symptom** (*n*) – симптом
10. **exhibit** (*v*) – проявлять, показывать
11. **agriculturist** (*n*) – агроном, земледелец
12. **farmyard manure** – навоз
13. **soak** (*v*) – впитывать
14. **drainage** (*n*) – дренаж, дренирование, осушение
15. **remedy** (*n*) – средство, мера (против чего-либо)
16. **defect** (*n*) – порок, дефект
17. **adequate** (*adj*) – соответствующий, адекватный
18. **nutrients** (*n, pl*) – питательные вещества

1. Read and translate the following words.

Surface, substance, previous, support, fertile, exhibit, remedy, sufficient, moisture, improve, regularly, irrigation, evaporation, manure, soak, ensure, cultivation, adequate.

2. Read and translate the text «Soil: definition, structure, conditions».

Soil: definition, structure, conditions

Soil is surface layer of the earth on which **land plants** grow. It is made of the mineral substances **derived** from the **rock**, and the organic substances **derived** from previous generations of plants.

The fertility of the soil is its **power** to support plant life. No soil is perfectly fertile. The problem of the **agriculturist** is to study the soil and the **symptoms exhibited** by the plant, to discover the defects and to find suitable **remedies**.

A fertile soil has sufficient depth to allow full root development. Depth of soil can be improved by deep cultivation or drainage to lower water level. A good soil must supply sufficient moisture regularly. Water supply can be improved by irrigation and by reducing loss of water. We know that a fine layer of soil on the surface reduces evaporation. Also the presence of organic matter, e.g. **farmyard manure**, increases the power of absorbing water and prevents it from soaking through the soil. Temperature of the soil is usually best improved by drainage. Air

supply is **ensured** by adequate cultivation and by **drainage**. **Nutrients** are supplied in **artificial manures**. The use of fertilizers in proper amounts and at the most suitable time may greatly increase yields.

3. Answer the questions on the text.

1. What is soil?
2. What is soil made of?
3. The fertility of the soil is its power to support plant life, isn't it?
4. What is the problem of the agriculturist?
5. What allows full root development?
6. Why is drainage done?
7. What way can water supply be improved?
8. What reduces evaporation?

4. Insert the following prepositions: *of, on, with, without, in, at, by.*

1. Soil is the surface layer ... the earth ... which land plants grow.
2. Water supply can be improved ... irrigation or ... reducing loss ... water.
3. A fine layer ... soil ... the surface reduces evaporation.
4. Nutrients are supplied ... artificial manures.
5. The use ... fertilizers ... proper amount and ... the most suitable time may greatly increase yields.

5. Match the two parts to make up a sentence.

1. Soil is made of the mineral substances ...
 2. The problem of the agriculturist is ...
 3. A fertile soil has sufficient depth ...
 4. Water supply can be improved by ...
 5. The presence of organic matter increases ...
 6. Air supply is ensured by ...
- a. ... irrigation or by reducing loss of water.
 - b. ... the power of absorbing water.
 - c. ... derived from the rock.
 - d. ... study the soil and the symptoms exhibited by the plant, to discover the defects and to find suitable remedies.
 - e. ... adequate cultivation and by drainage.
 - f. ... to allow full root development.

6. Make up a plan and retell the text.

TEXT 2. Cultiadvice

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?

2. Scan the text «Cultiadvice» and find the meaning of the underlined words.

3. Read the 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** and **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.

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

1. ___ Tomatoes grow in clay well.
2. ___ Aeration does not occur in clay.
3. ___ Humus adds nutrients to soil.

5. Fill in the blanks with the correct words and phrases from the word bank:

aeration, clay, loam, humus, soil structures.

1. Some _____ hold more water than the 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.

6. 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 materials 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

7. Translate the words and their derivatives.

water (*n*) – water (*v*)

air (*n*) – air (*v*)

sand (*n*) – sandy (*adj*)

dense (*adj*) – density (*n*)

determine (*v*) – determination (*n*)

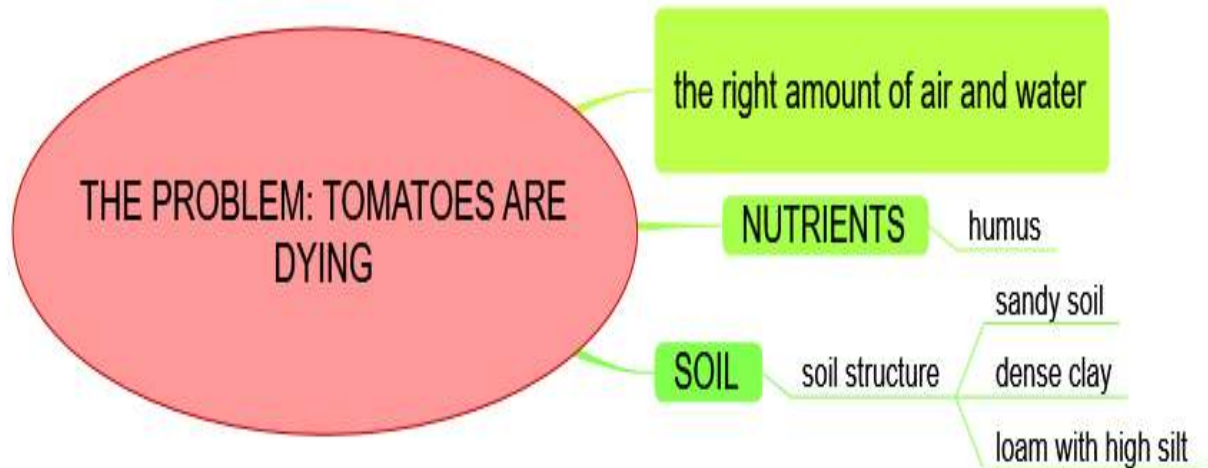
improve (*v*) – improvement (*n*)

8. Translate the following sentences from Russian into English.

1. Они не получают много урожая.
2. Она препятствовала наводнению.
3. Почва из ила не удерживает много воды.
4. Почва имеет аэрацию?
5. Мы добавляем гумус.
6. Я улучшаю аэрацию.
7. Мы улучшили аэрацию.
8. Они не препятствовали наводнению.
9. Почва из ила не удержала воду.
10. Она не получила много урожая.
11. Они улучшат аэрацию в следующем году.
12. Они препятствуют наводнению?
13. Эта почва не имеет аэрации.
14. Они добавили гумус.
15. Он получит урожай в следующем году?

9. Write the theses on the content of the text

10. Highlight a subproblem for each problem.

11. Retell the text using a mind-map.

SEEDS

TEXT 1. Seeds: parts and germination

VOCABULARY

1. **germ** (*n*) – зародыш
2. **embryo** (*n*) – эмбрион, зародыш
3. **endosperm** (*n*) – эндосперм
4. **cotyledon** (*n*) – семядоля
5. **viability** (*n*) – жизнеспособность
6. **swell** (*v*) – набухать, разбухать
7. **reproductive part** (*or reproductive organ*) – органы размножения
8. **embryonic** (*adj*) – эмбриональный, зародышевый
9. **dormant state** – состояние покоя (семена, растения)
10. **germinate** (*v*) – прорасти
11. **seed coat** – семенная оболочка
12. **oats** (*n*) – овес

1. Read and translate the following words.

Ordinarily, embryonic, cereals, legumes, cotyledon, sufficiently, viable, storage, species, viability, moisture content, vitality, thoroughly air-dried, mature.

2. Read and translate the text «Seeds: parts and germination».

Seeds: parts and germination

Ordinarily a plant is divided as follows: a) root system, b) stem and leaves, and c) a **reproductive part** made up of flowers, fruits and seeds.

The seed. A seed must be looked upon as an **embryonic** plant of the new generation with enough stored food to start it off in life and seed coats for protection. Thus a seed consists of: a) an embryo or a **germ**, b) the food supply stored either inside the **embryo** or, as with cereals, around it on the outside, in which case it is called the **endosperm**, c) one or more seed coats surrounding and protecting the other parts. Some seeds as those of legumes do not contain an endosperm, the entire supply of food in them being stored inside the embryo in its seed leaves or **cotyledons**. Thus, in the seed the plant stores up food to be used at some future time. It is on this stored food that a young plant feeds until it is sufficiently developed to provide food for itself.

Germination. The dry seeds being placed under favourable conditions, the young dormant plant begins to grow. This change from a **dormant state** to one of activity is known as germination. For seeds to **germinate** well they should be well developed and have high **viability**. The length of time during which the seed remains viable depends on the species and the storage conditions as well, the maximum period for most species varying from 2 to 10 years. The main factor affecting the viability of seeds is their moisture content. For seeds to retain their

vitality well they should be thoroughly air-dried as soon as mature and kept in a dry place.

For germination to occur three conditions are necessary: sufficient heat, moisture and air should be present. Unless all three of these conditions are met, the seed will not germinate properly. The amount of required heat will vary with the kinds of seeds. Some seeds, as those of clover and **oats**, will grow at a rather low temperature while the temperature requirement of corn seeds is higher.

The moisture absorbed by the seed causes the entire seed to **swell**. This along with the beginning of the growth of the embryo results in ever-increasing pressure on the **seed coat**. The pressure having become sufficiently great, coat bursts and the embryo sends its first root down into the soil and its first stem up into the air. Since growth during the early stages is greater in the root, it is usually the first part of the plant to break through the seed coat.

3. Answer the questions on the text.

1. How is a plant ordinarily divided?
2. How is a seed looked upon?
3. What does a seed consist of?
4. What is an endosperm?
5. What is a cotyledon?
6. When does a young dormant plant begin to grow?
7. What is called germination?
8. What is the length of time during which the seed remains viable?
9. What is the main factor affecting the viability of seed?
10. What conditions are necessary for germination to occur?
11. Is the amount of required heat the same for all kinds of seeds?

4. Insert the following prepositions: *of, with, at, under, in, on, inside, during*.

1. A seed must be looked upon as an embryonic plant ... the new generation ... enough stored food to start it off ... life.
2. ... legumes the entire supply of food is stored ... the embryo ... its seed leaves or cotyledons.
3. ...the seed the plant stores up food to be used ... some future time.
4. When dry seeds are placed ... favourable conditions, they begin to grow.
5. The length ... time ... which the seed remains viable depends on the species and the storage conditions as well.

5. Match the two parts to make up a sentence.

1. The plant is divided into ...
2. A seed is ...
3. Germination is...
4. For seeds to germinate well they should be ...
5. The main factor affecting the viability of seeds is ...
6. For germination to occur three conditions are necessary: ...

- a. ... an embryonic plant of the new generation.
- b. ... the root system, stem and leaves, and the reproductive part.
- c. ... sufficient heat, moisture and air should be present.
- d. ... their moisture content.
- e. ... well developed and have high viability.
- f. ... a change from a dormant state to one of activity is known.

6. Make up a plan and retell the text.

TEXT 2. Seeds of hybrid broccoli

1. Before you read the text «Seeds of hybrid broccoli», talk about these questions.

1. How do farmers plant seeds?
2. What do seeds need to grow?

2. Scan the text «Seeds of hybrid broccoli» and find the meaning of the underlined words.

3. Read the page from the Gardener's Seed catalog and translate.

Seeds of hybrid broccoli

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 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

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

4. Read the text «Seeds of hybrid broccoli». 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.

5. Match the words 1-6 with the definitions (a-f).

1. ___ hard coats
2. ___ germinate

3. ___seedling
4. ___seed vigor
5. ___hybrid
6. ___sow

- a. the firm outer layer of seeds
- 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

6. 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 _ m _ _ _ _ _ y
3. Some plants require special ways in which seeds are planted.
_ ow _ _ _ me _ _ _ _
4. To plant a large crop, you need a large quantity order of seeds.
b _ _ k
5. Some plants produce seeds that pass the winter in an inactive state.
_ or _ _ _ _ y

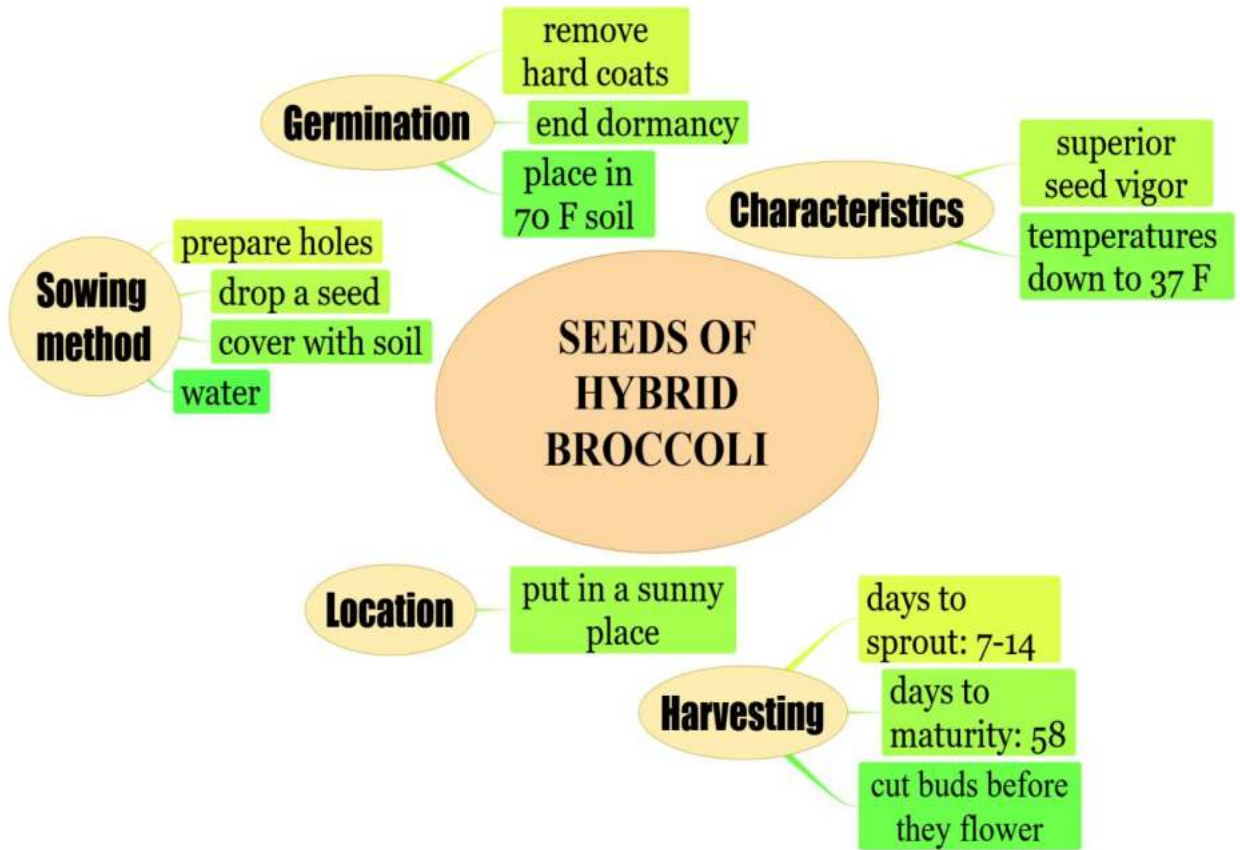
7. Translate the following words and their derivatives.

- seed (*n*) – seedling (*n*)
 germinate (*v*) – germination (*n*)
 sow (*v*) – sowing (*n*)
 dormant (*adj*) – dormancy (*n*)
 sprout (*n*) – sprout (*v*)
 mature (*adj*) – maturity (*n*)
 active (*adj*) – inactive (*adj*)
 place (*n*) – place (*v*)
 survive (*v*) – survivability (*n*)

8. Translate the following sentences from Russian into English.

1. Почему ты замачиваешь семена?
2. Когда они посеяли пшеницу?
3. Почему вы делаете лунки?
4. Что дают сеянцы?
5. Какой метод посадки вы используете?
6. Какое покрытие имеют семена?
7. Когда они замочат семена?
8. Где они посеют пшеницу?

- 9. Write the theses on the content of the text.
- 10. Highlight a subproblem for each problem.
- 11. Retell the text using a mind-map.



WATER

TEXT 1. Water for soil

VOCABULARY

1. **deprive** (*v*) – лишать
2. **lack** (*v*) – испытывать недостаток, нуждаться, не иметь
3. **wilt** (*v*) – вянуть
4. **cease** (*v*) – прекращать, переставать
5. **means** (*n*) – средство
6. **failure** (*n*) – неудача
7. **arid** (*adj*) – сухой
8. **crucial** (*adj*) – критический
9. **moderate** (*adj*) – умеренный
10. **humid** (*adj*) – влажный
11. **scant** (*adj*) – скудный, недостаточный, ограниченный
12. **prevent** (*v*) – предотвращать
13. **capillary rise** – капиллярный подъём (воды в почве)
14. **moisture conservation** – накопление влаги
15. **constitute** (*v*) – составлять
16. **stir** (*v*) – рыхлить, разрыхлять почву
17. **saturated soil** – насыщенная почва
18. **soil mulch** – мульчирующий слой почвы
19. **check** (*v*) – задерживать, препятствовать
20. **precipitation** (*n*) – выпадение атмосферных осадков
21. **secure** (*v*) – обеспечивать
22. **free water surface** – свободная водная поверхность
23. **growing season = vegetational season** – период вегетации

1. Read and translate the following words.

Deprive, cease, yield, particular, determine, moisture conditions, carefully, thoroughly, failure, crucial, during, moderate, humid, absolutely, previously, sufficient, evaporation, surface, air humidity, altitude, evaporation, arid, surface, saturated soil, disturbed area, quantity, securing.

2. Read and translate the text «Water for soil».

Water for soil

Should a plant be **deprived** of food, it would live for considerable time, but should **lack** water, it would very soon **wilt** and **cease** to grow. The yield of crops during any particular year is usually determined by the moisture conditions during the period of growth.

Among the factors connected with agriculture the water in the soil is one to be most carefully studied and most thoroughly understood.

The control of moisture through known **means** may determine the success **Failure** of crops in arid regions during a **crucial** period, and during the other periods of their growth it means the difference between a **moderate** and a good yield.

Even in **humid** climates it is absolutely necessary to store as much as possible of the water that falls because rainfall may be often **scant** during some parts of the **growing seasons**, and as plants draw heavily upon the water **previously** stored in the soil, there may not be sufficient moisture to produce crops.

Evaporation from the soil is affected by the same factors as that from a water surface. Heat, wind, sunshine, air humidity, and altitude all play their part.

Evaporation from a **free water surface** in **arid** and semi-arid regions ranges from about 35 to 60 inches during the growing seasons whereas the total yearly rainfall in these regions is only from 3 to 30 inches. Should this rainfall be allowed to remain near the surface of the soil, it would evaporate at about the same rate as from a free water surface. The problem of **moisture conservation** is that one must prevent the **capillary rise** and consequent evaporation of the water. The former is very slow in dry soil and taking advantage of this fact **constitutes** the most practical means for preventing the latter.

Having **stirred** the upper three inches of a **saturated soil**, one may cause the disturbed area to form a **soil mulch** which effectively **checks** further loss of moisture from below.

The quantity of moisture in the soil is largely due to the nature of the soil as well as to the **precipitation** of that region. The rainfall cannot be influenced by the man, but one can do much to save water after it falls.

Thus, it is highly important that a farmer pay proper attention to **securing** the best possible moisture conditions when raising his crops.

3. Answer the questions on the text.

1. What happens if a plant lacks water?
2. What is the yield of crops usually determined by?
3. What may the control of moisture determine?
4. Why is it necessary to store as much water as possible even in humid climates?
5. What influences evaporation from the soil?
6. How much does the evaporation range from a free water surface in arid and semi-arid regions?
7. What is the total yearly rainfall in these regions?
8. What does moisture conservation consist of?
9. What is the role of soil mulch?
10. What does a quantity of moisture in the soil depend on?
11. What is highly important when raising crops?

4. Insert the following prepositions: *of, in, by, near, through, upon, at, from, during.*

1. Should this rainfall be allowed to remain ... the surface ... the soil, it would evaporate ... the same rate as ... a free water surface.
2. Evaporation ... the soil is affected ... the same factor as that... a water surface.
3. The yield ... crops is usually determined ... the moisture conditions ... the periods of growth.
4. The control ... moisture ... known means may determine the success or failure ... crops.
5. Plants draw heavily ... the water previously stored ... the soil.

5. Match the two parts to make up a sentence.

1. Evaporation from the soil is affected ...
 2. The yield of crops during any particular year is usually determined ...
 3. Even in humid climates it is absolutely necessary to store ...
 4. The problem of moisture conservation is that ...
 5. It is highly important that a farmer pay proper attention to ...
 6. The quantity of moisture in the soil is largely due to ...
- a. ... one must prevent the capillary rise and consequent evaporation of the water.
 - b. ... securing the best possible moisture conditions.
 - c. ... by the moisture conditions during the period of growth.
 - d. ... water as much as possible.
 - e. ... the nature of the soil.
 - f. ... heat, wind, sunshine, air humidity, and altitude.

6. Make up a plan and retell the text.

TEXT 2. Drought in the Italian region Calabria

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

1. Where do farmers get water?
2. How do water shortages hurt farmers?

2. Scan the text «Drought in the Italian region Calabria» and find the meaning of the underlined words.

3. Read the article from the San Fernando Sun newspaper. Then, choose the correct answers.

Drought continues

SAN FERDINANDO – 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 farmers 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 these crops.

4. 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.

5. 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_____.

6. 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

7. Translate the words and their derivatives.

dry (*adj*) – dryness (*n*)

rain (*n*) – rainy (*adj*)

rain+fall=?

water + cycle =

irrigate (*v*) – irrigation (*n*)

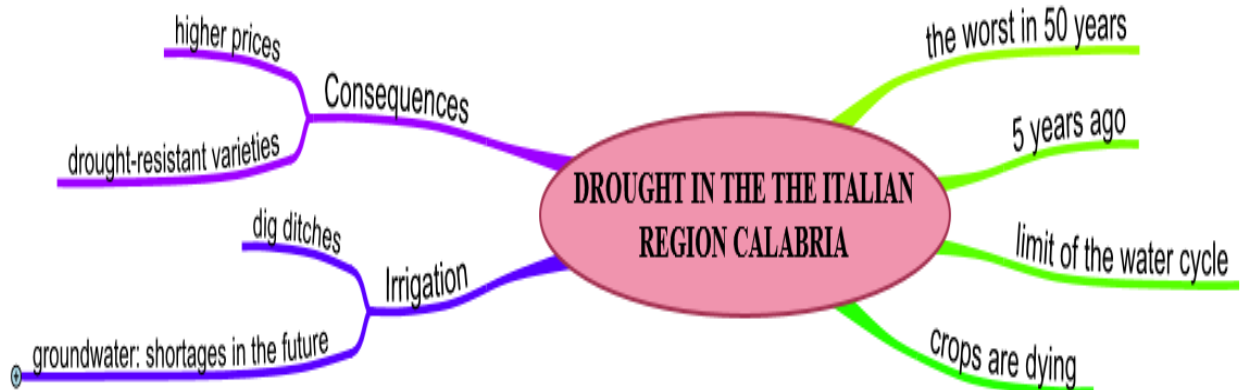
ground + water=

short (*adj*) – shortage (*n*)

8. Write the theses on the content of the text.

9. Highlight a subproblem for each problem.

10. Retell the text using a mind-map.



CEREAL CROPS

TEXT 1. Wheat: species, texture, harvesting

VOCABULARY

1. **grain** (*n*) – зерно
2. **grind (ground)** (*v*) – МОЛОТИТЬ
3. **flour** (*n*) – мука
4. **approximately** (*adv*) – приблизительно
5. **species** (*n*) – вид
6. **genus** (*n*) – род, сорт, вид
7. **grass family** – семейство злаковых
8. **slender** (*adj*) – тонкий
9. **variety** (*n*) – вид, разновидность
10. **hollow** (*adj*) – полый
11. **stem** (*n*) – ствол, стебель
12. **top** (*v*) – венчать
13. **spike** (*n*) – колос
14. **aggregation** (*n*) – скопление, масса
15. **flower cluster** – соцветие
16. **spikelet** (*n*) – колосок; вторичный колосок (у злаков)
17. **fertilized flower** – оплодотворенный цветок
18. **edible** (*adj*) – съедобный
19. **germinate** (*v*) – прорасти
20. **seedling** (*n*) – сеянец, саженец
21. **mature** (*adj*) – зрелый, созревший
22. **sickle** (*n*) – серп
23. **chaff** (*n*) – мякина
24. **reaper** (*n*) – жатка
25. **discharge** (*v*) – выгружать
26. **self-propelled** (*adj*) – самодвижущийся

1. Read and translate the following words.

Ground, mature, species, variety, fertilized flower, aggregation, spikelet, germinate, grind, cluster, bread, discharge, edible, hollow.

2. Read and translate the text « Wheat: species, texture, harvesting».

Wheat: species, texture, harvesting

Wheat is one of the oldest and most important cereal crops. Wheat is grown for its **grain**, which is **ground** into **flour** used to make breads and pastas. Wheat consists of **approximately** 20 **species** in the **genus** Triticum of the **grass family** (Poaceae). The most important wheats are: Triticum aestivum, used to make

bread; *T. durum*, used to make pasta; and *T. compactum*, used to make softer cakes, crackers, cookies, and pastries.

Wheat plants have **slender** leaves and, in most **varieties**, long **hollow stems**. Each stem is **topped** by a single head or **spike**, which is an **aggregation** of 20-100 individual **flower clusters** called **spikelets**. Each **flower cluster** may contain up to six flowers, and each **fertilized flower** produces a single, **edible** grain.

Winter wheats are planted in the fall and **germinate** before winter. The **seedlings** can survive cold winter temperatures – in fact, the low temperatures are needed for proper growth and development of the grain. The **seedlings** start growing again in the spring as soon as the frost is out of the ground, and by late spring the **mature** plants are ready for harvest. In contrast, spring wheats are planted in the spring and harvested in the fall.

For thousands of years, wheat was harvested using a **sickle**, and then threshed, or beaten, to separate the grains from the heads and flower parts (**chaff**). In the first half of the 1800s, the **reaper** was developed, which mechanized cutting and greatly reduced the amount of labor required. Nowadays, cutting the standing plants, threshing the heads, separating the grain from the **chaff**, cleaning the grain, and **discharging** it into bags, are all combined in a large, **self-propelled** machine called a combine.

3. Answer the questions on the text.

1. Which cereal crop is the oldest and most important?
2. Why do farmers grow wheat?
3. How many species of wheat are there?
4. What are the most important wheats?
5. What does a wheat plant look like?
6. Are winter wheats planted in the fall or in the spring?
7. How could ancient farmers harvest wheat?
8. How do modern farmers harvest wheat?

4. Insert the adequate prepositions: *for, of, by, up, in, before*.

1. Each flower cluster may contain ... to six flowers.
2. Each stem is topped ... a single head.
3. Wheat consists ... approximately 20 species.
4. Wheat is grown ... its grain.
5. Winter wheats are planted ... the fall and germinate ... winter.

5. Match the two parts to make up a sentence.

1. *Triticum aestivum* is used to
2. *T. durum* is used to ...
3. The reaper was developed ...
4. Nowadays all harvesting operations are operated by ...
5. *T. compactum* is used to make ...
6. Spring wheats are planted ...

- a. ... in the spring and harvested in the fall.
- b. ... a large, self-propelled machine called a combine.
- c. ... make bread.
- d. ... make pasta.
- e. ... softer cakes, crackers, cookies, and pastries.
- f. ... in the first half of the 1800s.

6. Make up a plan and retell the text.

TEXT 2. Farmer's diary

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

1. What cereal crops do you usually grow in your region?
2. Do you get yield once or twice a year?

2. Scan the text «Farmer's diary» and find the meaning of the underlined words.

3. Read the text «Farmer's diary» and get ready to do post-reading exercises.

Farmer's diary

- September starts with **presowing treatment** of wheat seeds, **soil cultivation (plowing with cultivation or disking)**.
- In the 3rd decade of September or October farmers sow wheat.
- Late October-November, there **takes place emergence of seedlings depending on** the presence of **moisture** in the soil
- November and December are **characteristic of tillering**.
- January and February are **characteristic of yarovization of seed**, wheat plants do not grow.
- The end of February **is characteristic of spring vegetative reproduction, tillering**.
- At the end of March there appears the first **internode**. But it depends on the weather.
- At the beginning of April there **takes place** the first **herbicide treatment**. The wheat plant develops the second **internode**.
- The 3rd decade of April is characteristic of **initial stem elongation**.
- May is characteristic of winter wheat treatment on the **flag leaf**.
- June (the first or the second decades) is characteristic of **milky-wax ripeness** of wheat.
- At the end of June-July farmers harvest winter wheat.
- After harvesting farmers do disking the soil to **preserve** soil moisture.

4. Read the text «Farmer's diary». Then, mark the following statements as true (T) or false (F).

1. ___ Soil cultivation includes plowing with cultivation or disking.
2. ___ Yarovisation of seed takes place in the wintertime.
3. ___ Milky-wax ripeness appears in July.

5. Place the following agricultural activities in the correct order.

1. emergence of seedlings
2. presowing processing of wheat seeds
3. tillering
4. spring vegetative reproduction
5. the first herbicide treatment
6. the first internode
7. yarovization of seed
8. using herbicides, fungicide, urea
9. the second internode

6. Match the two parts to make up a sentence.

1. In September ...
 2. In the 3rd decade of September or October ...
 3. Late October – November ...
 4. November and December ...
 5. January and February ...
 6. The end of February ...
 7. In March ...
 8. At the beginning of April ...
 9. May ...
 10. June is characteristic of ...
- a. ... there takes place the emergence of seedlings
 - b. ... there takes place sowing wheat seeds.
 - c. ... farmers are busy with presowing processing of wheat seeds
 - d. ... are characteristic of tillering.
 - e. ... is characteristic of winter wheat treatment on the flag leaf.
 - f. ... is characteristic of spring vegetative reproduction.
 - g. ... milky-wax ripeness of wheat.
 - h. ... there appears the first internode.
 - i. ... are characteristic of yarovization of seed.
 - j. ... using herbicides, fungicide, urea
 - k. ... the wheat plant develops the second internode.

7. Translate the words and their derivatives

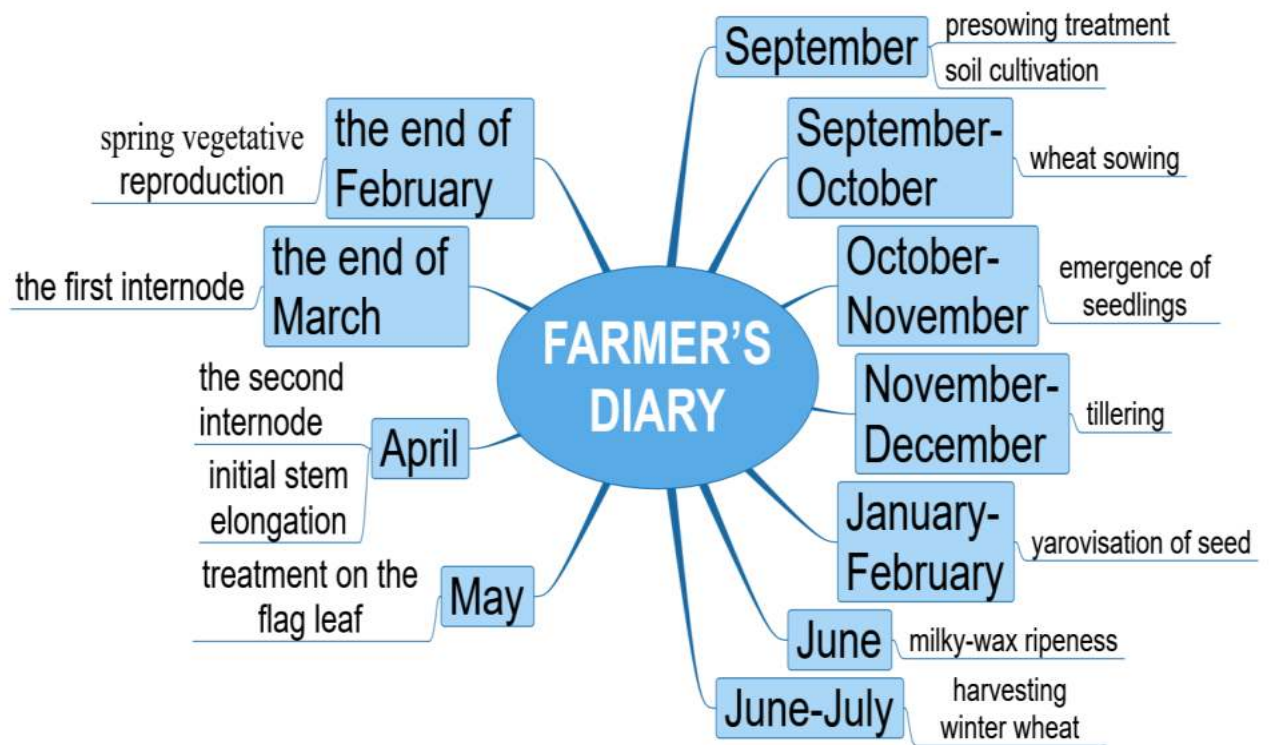
sow (*v*) – sowing (*n*) – presowing (*n*)
 prepare (*v*) – preparation (*n*)
 plow (*v*) – plowing (*n*)
 disk (*n*) – disking (*n*)
 fertilize (*v*) – fertilizer (*n*)
 emerge (*v*) – emergence (*n*)
 seed (*n*) – seedling (*n*)
 moist (*adj*) – moisture (*n*)
 till (*v*) – tillering (*n*)
 reproduct (*v*) – reproduction (*n*)
 freeze (*v*) – frozen (*adj*)
 feed (*v*) – feeding (*n*)
 treat (*v*) – treatment (*n*)
 grow (*v*) – overgrow (*v*) – overgrown (*adj*)
 restore (*v*) – restoration (*n*)

8. Translate the following sentences from Russian into English.

1. Первое междоузлие появляется в марте.
2. Вспашка произошла вчера.
3. Фермеры посеют пшеницу в третьей декаде сентября.
4. Когда появляется второе междоузлие?
5. Растение не развивается до второго междоузлия.
6. Для мая не характерно появление молочно-восковой спелости у пшеницы.
7. Фермеры посеяли яровую пшеницу весной.
8. Фермеры будут обрабатывать семена пшеницы?
9. Рост пшеницы будет зависеть от погоды.
10. Февраль характеризуется яровизацией семян.

9. Write the theses on the content of the text.**10. Highlight a subproblem for each problem.**

11. Retell the text using a mind-map.



FERTILIZERS

TEXT 1. Fertilizers for small grains

VOCABULARY

1. **nitrogen** (*n*) – азот
2. **phosphorus** (*n*) – фосфор
3. **potassium** (*n*) – калий
4. **in the band at planting** – ленточно при посеве
5. **variety** (*n*) – сорт
6. **rate** (*n*) – норма
7. **yield** (*n*) – урожайность
8. **long-season crop** – позднеспелая культура
9. **small grains** – мелкозернистые культуры
10. **barley** (*n*) – ячмень
11. **remainder** (*n*) – остаток
12. **tillering stage** – стадия кущения
13. **obtain** (*v*) – получать
14. **topdress** (*v*) – подкармливать
15. **soil pH** – pH почвы

1. Read and translate the following words.

Nitrogen, variety, phosphorus, potassium, yield, manure, efficient, remainder, forage, require.

2. Read and translate the text «Fertilizers for small grains».

Fertilizers for small grains

Small grains should have some **nitrogen**, most of the **phosphorus**, and possibly some **potassium** in the fertilizer **band at planting**. The higher nitrogen rate is for the shorter **varieties**; use the lower nitrogen rate on the taller **varieties**. When farmers want to get maximum **yields** of wheat or **barley**, the **nitrogen rates** can be increased to 80 to 90 pounds per acre.

When considering **manure** application options, the nitrogen from manure is generally more effectively used when applied for corn, sorghum, or other **long-season crops** than for small grains.

Winter wheat and barley should have 10 to 20 pounds of nitrogen applied in the band at planting, and the **remainder** should be applied in early spring after the crop has begun to grow and is in the **tillering stage**.

Spring oats or barley can be seeded with all the nitrogen in the band, but more efficient use of the nitrogen can be **obtained** if some is **topdressed** in late May or early June.

If the small grains are to be forage seeded, a larger quantity of phosphorus and potassium is required.

The **soil pH** for oats should be about 6.0, whereas the pH for wheat and barley should be 6.3 or above.

3. Answer the questions on the text.

1. What fertilizers do you know?
2. What varieties should get the higher nitrogen rate?
3. What varieties should get the lower nitrogen rate?
4. What crops is the nitrogen from manure generally more effectively used for?
5. How many pounds of nitrogen should winter wheat and barley have?
6. What are the methods of applying fertilizers when seeding spring oats or barley?
7. How much phosphorus and potassium is required for small grains?
8. What is the soil pH for oats?
9. What is the soil pH for wheat and barley?

4. Insert the adequate prepositions: *per, of, to, in, with, in, in, above.*

1. Spring oats or barley can be seeded ... all the nitrogen ... the band.
2. The crop has begun to grow and is ... the tillering stage.
3. The pH for wheat and barley should be 6.3 or
4. The remainder should be applied ... early spring.
5. When farmers want to get maximum yields ... wheat or barley, the nitrogen rates can be increased ... 80 to 90 pounds ... acre.

5. Match the two parts to make up a sentence.

1. The higher nitrogen rate is ...
2. The lower nitrogen rate is ...
3. There are such fertilizers like ...
4. The fertilizer is applied in ...
5. A larger quantity of phosphorus and potassium is required for ...
6. The soil pH for oats should be ...

- a. ... about 6.0.
- b. ... nitrogen, phosphorus, potassium, manure.
- c. ... for the shorter varieties.
- d. ... for the taller varieties.
- e. ... the band at planting.
- f. ... small grains to be forage seeded.

6. Make up a plan and retell the text.

TEXT 2. Fertilizer application

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

1. What fertilizers do you know?
2. When do farmers start applying fertilizers?

2. Scan the text «Fertilizer application» and find the meaning of the underlined words.

3. Read the text «Fertilizer application» and get ready to do post-reading exercises.

Fertilizer application

– In the 3rd decade of September or at the beginning of October farmers sow wheat with fertilizers – **ammophos** or **diammophoska**.

– At the end of February there takes place the first **ammonium nitrate topdressing** in frozen and thawed soil.

– In March farmers deal with the second nitrate topdressing.

– At the beginning of April there takes place the first herbicide treatment. When there are **overgrown** plants, farmers do not have to use any herbicides. If autumn and winter are warm, then a **fungicide** (against diseases) should be added to the herbicide. A complex of amino acids and microelements is also added to restore plants after stress and frost.

– In April farmers apply a **fungicide** if it wasn't used at the tillering stage. And then they add 10 kg of urea per hectare and foliar application. The urea rate is less than the first time in order not to burn the plants. Sulfur is added because it affects the quality of the planted crop. But sulfur only works with a high nitrogen rate. Each crop has microelements. Its **deficiency** leads to a decrease in yield and product quality: farmers apply sulfur for wheat, boron for sunflower and zinc for beetroot.

– In May farmers apply a fungicide to protect the **spike** from disease, and an insecticide to protect the grain from pests. 5-10 kg of urea per hectare is added to decrease nitrogen deficiency and foliar application (amino acids and microelements).

– In June farmers apply insecticides if there are many pests, such as a corn bug or a leech. In this phase 10 kg of urea per ha **increase** in wheat protein.

– At the end of June or at the beginning of July farmers harvest winter wheat.

– After harvesting farmers do disking the soil to preserve soil moisture.

4. Read the text «Fertilizer application». Then, mark the following statements as true (T) or false (F).

1. ___ Ammophos or diamphoska are seeded at planting in the 3rd decade of September or at the beginning of October.
2. ___ If winter is cold, a fungicide must be added to the herbicide.
3. ___ Insecticides are applied against pests.

5. Place the following farm activities in the correct order.

1. the second nitrate topdressing
2. a fungicide application at the tillering stage
3. sowing wheat with fertilizers – ammophos or diamphoska
4. the first herbicide treatment
5. the first ammonium nitrate topdressing
6. an insecticide application
7. a fungicide application

6. Match the two parts to make up a sentence.

1. In September ...
 2. At the end of February ...
 3. In March ...
 4. At the beginning of April ...
 5. In May ...
 6. June is characteristic of ...
 7. The end of June and the beginning of July are characteristic of ...
- a. ... farmers are busy with sowing wheat with ammophos or diamphoska
 - b. ... harvesting winter wheat.
 - c. ... takes place a fungicide application.
 - d. ... there takes place the second nitrate topdressing.
 - e. ... there takes place the first ammonium nitrate topdressing
 - f. ... using herbicides, fungicide, urea.
 - g. ... there takes place the first herbicide treatment

7. Translate the words and their derivatives.

- fertile (*adj*) – fertilizer (*n*)
 freeze (*v*) – frozen (*adj*)
 topdress (*v*) – topdressing (*n*)
 treat (*v*) – treatment (*n*)
 overgrow (*v*) – overgrown (*adj*)
 frost (*n*) – frosty (*adj*)
 till (*v*) – tillering (*n*)
 apply (*v*) – application (*n*)
 deficient (*adj*) – deficiency (*n*)
 increase (*n*) – increase (*v*)
 moist (*adj*) – moisture (*n*)

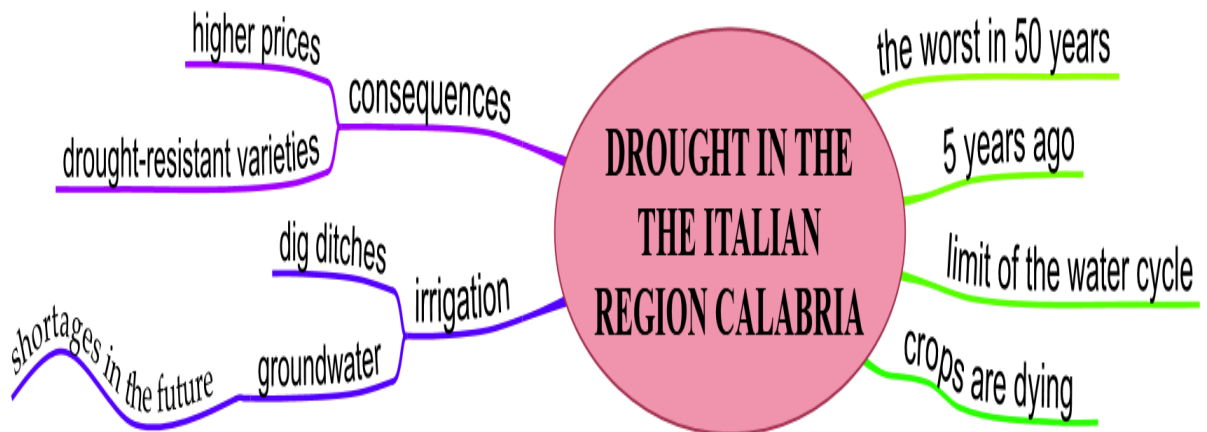
8. Translate the following sentences from Russian into English.

1. Фермер посеял пшеницу в сентябре.
2. Мы используем первую подкормку из нитрата аммония в феврале.
3. Зачем фермеры используют фунгициды в апреле?
4. Фермеры не применили кислоты и микроэлементы.
5. Дефицит азота привел к снижению урожайности.
6. Когда фермеры применяют сульфат?
7. Фермеры не применяют бор для подсолнечника.
8. Сколько мочевины нужно фермерам на гектар?
9. Фермеры применяют пестициды в мае.
10. Когда фермеры убирают озимую пшеницу?

9. Write the theses on the content of the text.

10. Highlight a subproblem for each problem.

11. Retell the text using a mind-map.



PLANTING

TEXT 1. Planting the seed

VOCABULARY

1. **plant food** – пища растения, питательные вещества для растения
2. **sow** (*v*) – высевать
3. **store** (*v*) – запасать
4. **rot** (*n, v*) – гниль, гниение, гнить, портиться
5. **oats** (*n*) – овёс
6. **small grains** – зерновые культуры
7. **seedbed** (*n*) – почва, приготовленная для посева, семенное ложе, грядка, лунка
8. **mellow** (*adj*) – рыхлый, плодородный, жирный
9. **coarse seeds** – крупные семена
10. **exclude** (*v*) – исключать
11. **cause** (*v*) – вызывать

1. Read and translate the following words.

Useless, germinate, depth, sufficient supply, moisture, surface, coarse seeds, clover, alfalfa, moisture, undesirable, exclude, moist.

2. Read and translate the text «Planting the seed».

Planting the seed

Planting the seed is usually useless until the soil and the air are warm enough.

There is no growth below the freezing point, and most seeds germinate very slowly below 3–5 °C. The optimum temperature, or that at which seeds germinate best, varies with different kinds of seeds. The optimum temperature for most of the **small grains**, is about 24–28 °C. Cotton and corn germinate best at about 35 °C. For this reason **sowing oats** and wheat are to begin much earlier than we have to plant cotton or corn.

The Depth of Planting. The soil we use as a **seedbed** should be fine and **mellow**, and the planting of seed must not be done too deeply. The depth of planting the seed depends largely on its size and the **store** of **plant food** the seed contains.

Planting the seed, the farmer should keep in mind two things. On one hand, seed must be planted deep enough to have a sufficient supply of moisture after its germination. On the other hand, fine seed must not be planted too deeply, for the young plant will have some difficulty in reaching the surface.

The **coarse seeds** of corn and peas are to be planted much deeper than those of clover or alfalfa.

The Soil Moisture. On one hand, too much water is undesirable, for it **excludes** the air from the soil and **causes rotting** of the seed. On the other hand, a dry soil does not contain moisture enough to cause the germination of the seed.

The right kind of preparing a seedbed is to have a fine, moist and mellow soil; it should not dry out rapidly and must allow the air to reach the germinating seeds.

3. Answer the questions on the text.

1. When is it necessary to plant the seed?
2. Is there growth below the freezing point?
3. What is the optimum temperature at which seeds germinate best?
4. What is the optimum temperature for most of the small grains?
5. Is it a good practice to plant seeds too deeply?
6. What does the depth of planting depend on?
7. Which two things should the farmer keep in mind, planting the seed?
8. Why is too much water in the soil undesirable?
9. Does a dry soil contain moisture enough to cause the germination of the seed?
10. What is the right kind of preparing a seedbed?

4. Insert the adequate prepositions: *with, on, at, of.*

1. The optimum temperature, or that ... which seeds germinate best, varies ... different kinds ... seeds.
2. Cotton and com germinate best... about 35 °C.
3. The depth ... planting the seed depends largely ... its size and the store... food the seed contains.
4. ... the other hand. fine seed must not be planted too deeply.
5. The right kind ... preparing a seedbed is to have a fine, moist and mellow soil.

5. Match the two parts to make up a sentence.

1. The optimum temperature for most of the small grains, is....
 2. There is no growth below ...
 3. Too much water is ...
 4. The depth of planting the seed depends largely on ...
 5. The coarse seeds of corn and peas are to be planted much deeper than ...
 6. The soil we use as a seedbed should be ...
- a. ... its size and the store of plant food.
 - b. ... the freezing point.
 - c. ... fine and mellow.
 - d. ... those of clover or alfalfa.
 - e. ... about 24–28 °C.
 - f. ... undesirable.

6. Make up a plan and retell the text.

TEXT 2. Quinoa on the rise

1. Before you read the magazine article, talk about these questions.

1. How do plants change as they grow?
2. What function does each part of a plant serve?

2. Scan the magazine article «Quinoa on the rise» and find the meaning of the underlined words.

3. Read the magazine article «Quinoa on the rise».

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 seed heads will remain. These can be stripped from the branches with little effort. Remove and dry the seeds for your first quinoa harvest.

4. 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.

5. 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

6. Fill in the blanks with the correct words and phrases from the word bank:
roots, growth chart, leaves, buds, flowering, seedhead.

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

7. Translate the words and their derivatives.

grow (*v*) – growth (*n*)

garden (*n*) – gardener (*n*)

conduct (*v*) – conductor (*n*)

provide (*v*) – provider (*n*)

harvest (*n*) – harvest (*v*)

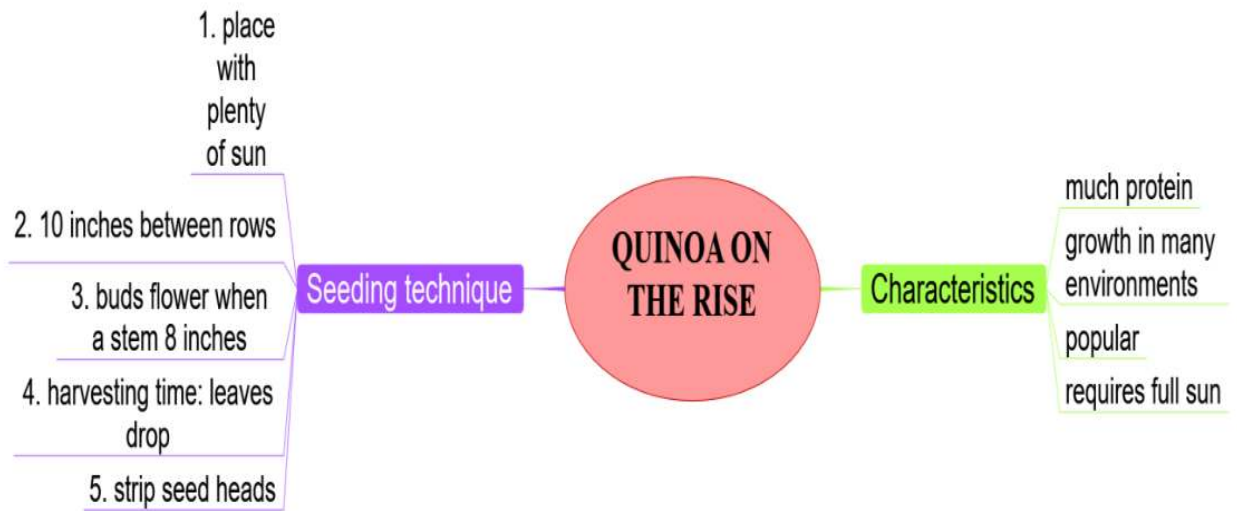
8. Translate the following sentences from Russian into English.

1. Мы оцениваем семенные головки.
2. Они провели фотосинтез.
3. Температура упала.
4. Они ведут таблицы роста.
5. Стебель достигает 12 дюймов.
6. Семенные головки остаются.
7. Я оценила семенные головки.
8. Они не провели фотосинтез.
9. Температура упадет.
10. Они ведут таблицы роста?
11. Стебель достигнет 12 дюймов?
12. Семенные головки не остались.
13. Температура падает?
14. Она будет вести таблицы роста?
15. Они не оценили семенные головки.

9. Write the theses on the content of the text.

10. Highlight a subproblem for each problem.

11. Retell the text using a mind-map.



HARVESTING**TEXT 1. Harvesting cereal crops****VOCABULARY**

1. **harvesting** (*n*) – уборка
2. **remove** (*v*) – убирать
3. **grow** (*v*) – расти
4. **move** (*v*) – перевозить
5. **secure** (*adj*) – безопасное
6. **processing** (*n*) – переработка
7. **consumption** (*n*) – потребление
8. **storage** (*n*) – хранение
9. **ripen** (*v*) – зреть, созревать
10. **mature** (*v*) – достигнуть зрелости, созреть (о плодах)
11. **maturity** (*n*) – спелость
12. **picker** (*n*) – плодосборник; комбайн для уборки плодов (определённых видов); початкосрыватель
13. **storage facilities** – склады
14. **cereal crops** – зерновые культуры
15. **primarily** (*adv*) – в первую очередь, главным образом
16. **starchy** (*adj*) – крахмалистый
17. **wheat** (*n*) – пшеница
18. **rye** (*n*) – рожь
19. **oats** (*n*) – овёс
20. **barley** (*n*) – ячмень
21. **millet** (*n*) – просо
22. **depend on** (*v*) – зависеть от
23. **amount** (*n*) – количество
24. **technique** (*n*) – метод
25. **promote** (*v*) – способствовать
26. **variety** (*n*) – сорт
27. **oscillating sieve** – вибрационное сито
28. **revolving cylinder** – вращающийся барабан
29. **combine harvester** – уборочный комбайн

1. Read and translate the following words.

Secure, consumption, quality, ripen, mature, livestock feed, cereals, wheat, rye, oats, barley, sorghum, millets, amount, oscillating sieves, unsuited, preliminary treatment.

2. Read and translate the text «Harvesting cereal crops».

Harvesting cereal crops

Harvesting is the act of **removing** a crop from where it was **growing** and **moving** it to a more **secure** location for **processing**, **consumption**, or **storage**. Most crops reach a period of maximum quality – that is, they **ripen** or **mature**. The major factor for harvesting is the maturity of the crop. Other factors such as weather, harvest equipment, **pickers**, packing and **storage facilities**, and transport are also important.

Cereal farming, growing of **cereal crops** for human food and livestock feed are of great importance. **Cereals**, or grains, are members of the grass family (Poaceae) cultivated **primarily** for their **starchy** dry fruits.

Wheat, rice, corn (maize), **rye**, **oats**, **barley**, sorghum, and some of the **millets** are common cereals.

The cultivation of cereals varies widely in different countries and **depends on** many factors. They include the economic development, the nature of the soil, the **amount** of rainfall, and the **techniques** applied to **promote** growth. Winter wheat is usually harvested in July. Winter **varieties** of barley and rye are usually harvested in June. Modern cleaning methods employ such devices as **oscillating sieves** or **revolving cylinders**.

3. Answer the questions on the text.

1. What is harvesting?
2. When do farmers realize that it is time to harvest?
3. Name the factors for harvesting.
4. Why do farmers cultivate cereals?
5. Name the common cereals.
6. When is winter wheat harvested?
7. What equipment is used to harvest cereals?

4. Insert the adequate prepositions: *to, for, of, in, with*.

1. Growing of cereal crops for human food and livestock feed is ... great importance.
2. The cultivation of cereals varies widely ... different countries.
3. Seed obtained ... a combine harvester is often unsuited for use.
4. The major factor ... harvesting is the maturity of the crop.
5. A crop is moved ... a more secure location.

5. Match the two parts to make up a sentence.

1. Cereals, or grains, are members of ...
2. The major factor for harvesting is ...
3. Winter wheat is usually harvested in ...

4. Most of them are used directly as food for people, others are used in ...
5. Harvesting is the act of removing a crop from where ...
6. The cultivation of cereals depends on ...
 - a. ... the maturity of the crop.
 - b. ... it was growing and moving it to a more secure location.
 - c. ... the grass family (Poaceae).
 - d. ... July.
 - e. ... ripen or mature.
 - f. ... the economic development, the nature of the soil, the amount of rainfall, and the techniques.

6. Make up a plan and retell the text.

TEXT 2. Report on harvest

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?

2. Scan the magazine article «Report on harvest» and find the meaning of the underlined words.

3. Read the harvest summary report.

Report on harvest

Reynolds harvesting		Harvest summary report			Farm: 0024
Crops: Hay and Wheat					
Harvest day	Field # / Crop	Yield	Package Type	Package Weight	Rained On
02/29	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	16000 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.

4. 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

5. 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 many more _____ of hay this year
 - b. How many _____ of wheat were harvested?

6. 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 _ _ _

7. Translate the words and their derivatives

- report (*n*) – report (*v*)
 experience (*n*) – experience (*v*)
 reap (*v*) – reaper (*n*)
 thresh (*v*) – threshing (*adj*)
 acceptable (*adj*) – unacceptable (*adj*)
 mature (*adj*) – mature (*v*)
 harvest (*n*) – harvest (*v*)
 success (*n*) – successful (*adj*)
 farm (*n*) – farming (*n*) – farmer (*n*)
 separate (*v*) – separation (*n*) – separator (*n*)

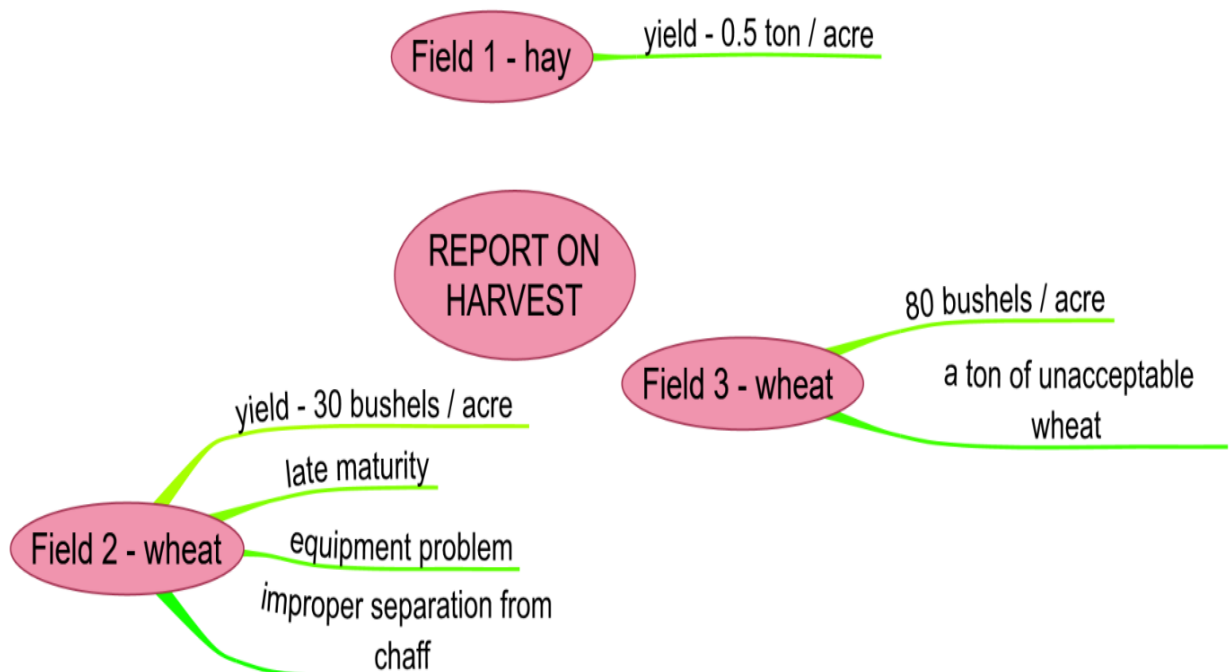
8. Translate the following sentences from Russian into English.

1. Мы делаем краткий отчет.
2. Она отмечает день урожая.
3. Они получают сено и пшеницу.
4. Мы получили высокий урожай.
5. Пшеница созрела.
6. Мы не испытываем трудности с оборудованием.
7. Она сделала краткий отчет.
8. Они не будут отмечать день урожая.
9. Вы не получили сено и пшеницу.
10. Они получили высокий урожай?
11. Пшеница созрела?
12. Мы будем испытывать трудности с оборудованием.
13. Ты будешь делать краткий отчет?
14. Пшеница не созрела.
15. Мы получаем высокий урожай каждый год.

9. Write the theses on the content of the text.

10. Highlight a subproblem for each problem.

11. Retell the text using a mind-map.



STORAGE

TEXT 1. Storage of crops

VOCABULARY

1. **small-scale** (*adj*) – небольшой
2. **large-scale** (*adj*) – крупный
3. **proper** (*adj*) – правильный
4. **storage space** – хранилище
5. **inadequate** (*adj*) – неадекватный
6. **grain loss** – потеря зерна
7. **rodent** (*n*) – грызун
8. **fungi** (*n*) – грибы
9. **moisture** (*n*) – влажность
10. **rodent infestations** – нашествие грызунов
11. **moist** (*adj*) – сырой, влажный
12. **fungal** (*adj*) – грибковый
13. **avoid** (*adj*) – избегать
14. **drying** (*n*) – высушивание, сушка
15. **grain** (*n*) – хлебный злак, зерно
16. **fumigation** (*n*) – дезинфекция, обеззараживание
17. **gunny bag** – холщовый мешок
18. **granary** (*n*) – зернохранилище
19. **godown** (*n*) – портовый склад

1. Read and translate the following words.

Storage, fungi, fumigation, granary, go down, microbe, environmental, pesticide, chemical, inadequate, require, moist, result, moisture, infestation.

2. Read and translate the text «Storage of crops».

Storage of crops

In the case of **small-scale** cultivation, farmers use the harvested crop for themselves while **large-scale** production is mainly for marketing. Thus the cultivators have to store the grains. For this, **proper storage space** has to be arranged. **Inadequate** storage space and improper storage methods can lead to a huge **grain loss**.

In addition to pest and **rodents**, microbes like bacteria, **fungi**, and environmental conditions such as **moisture** and temperature might attack the stored grains. Therefore, proper treatment is required before the grains are stored.

Rodent infestations can be prevented by pesticides. A **moist** environment results in **fungal** growth on grains. This can be **avoided** by proper **drying** of **grains** in sunlight.

Another method is **fumigation** where chemicals are used to prevent bacteria and other microorganisms. After proper treatments, grains have to be stored in **gunny bags** or **granaries** and deposited in **godowns**.

Thus we see how harvesting and storage of **grains** form an important part of crop production.

3. Answer the questions on the text.

1. Why must farmers store the grains?
2. What must farmers do to store properly the grains?
3. What might attack the stored grains?
4. How can rodent infestations be prevented?
5. What does a moist environment result in?
6. What is another method to prevent bacteria?
7. After proper treatments, grains have to be stored in gunny bags or granaries and deposited in godowns, don't they?

4. Insert the adequate prepositions: to, for, by, in, after.

1. Farmers use the harvested crop ... themselves.
2. A moist environment results ... fungal growth on grains.
3. ... proper treatments, grains have to be stored in gunny bags.
4. Rodent infestations can be prevented ... pesticides.
5. In addition ... pest and rodents, microbes like bacteria, fungi, and environmental conditions such as moisture and temperature might attack the stored grains.

5. Match the two parts to make up a sentence.

1. In case of small-scale cultivation, ...
 2. Large-scale production is mainly ...
 3. There are microbes like ...
 4. There are rodents like ...
 5. A moist environment is avoided ...
 6. Fumigation is used to ...
- a. ... bacteria, fungi.
 - b. ... mice, rats.
 - c. ... prevent bacteria and other microorganisms.
 - d. ... for marketing.
 - e. ... farmers use the harvested crop for themselves.
 - f. ... by proper drying of grains in sunlight.

6. Make up a plan and retell the text.

TEXT 2. Storage daily routine

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?

2. Scan the magazine article «Storage daily routine» and find the meaning of the underlined words.

3. Read the email «Storage daily routine».

Storage daily routine

Mr Garcia,

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

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

Thank you,

Carla Thompson Storage Manager

4. Read the email. Then, complete the summary of the email.

Workers discovered mold in _____.

There were two causes: improper _____ and too much _____.

Most of the silage was destroyed. The rest is in _____ bags.

The workers might store silage in the _____ silos.

5. Read the sentence pair. Choose where the 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 _____.

6. Match the words (1-4) with the definitions (a-d).

1. __ leveling
2. __ moisture
3. __ tower silo

- a. flattening the top of a pile
- b. a long trench used to store grain
- c. wetness
- d. a tall storage facility

7. Translate the words and their derivatives.

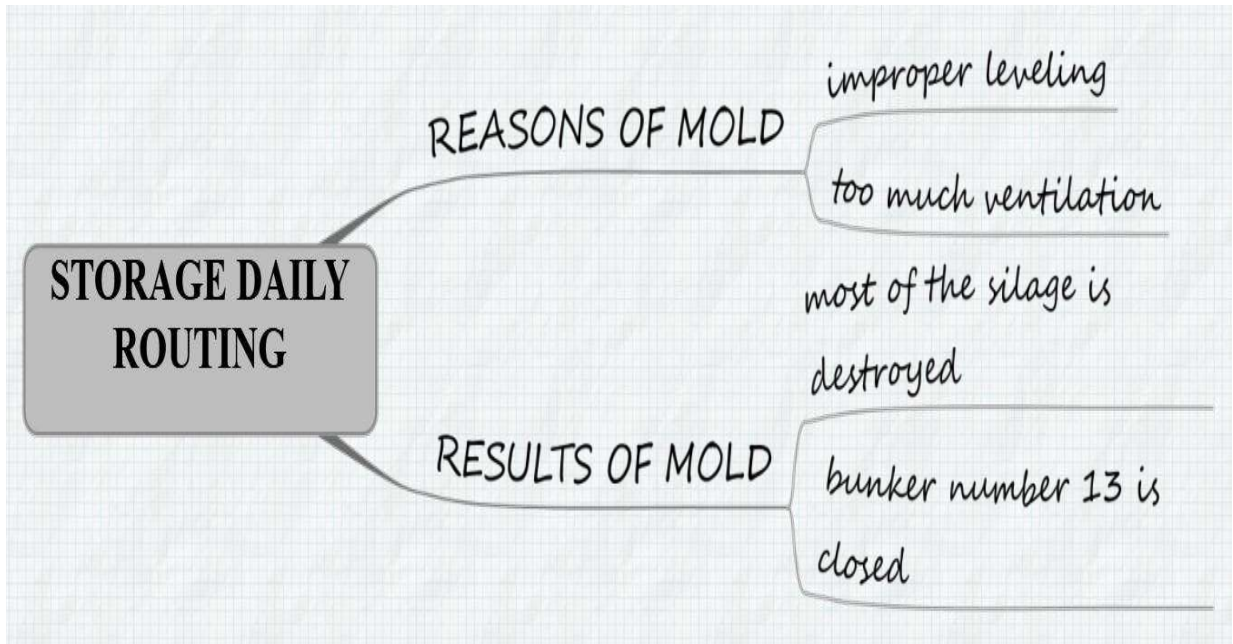
- open (*v*) – opening (*n*)
 proper (*adj*) – improper (*adj*)
 level (*v*) – leveling (*n*)
 moist (*adj*) – moisture (*n*)
 silo (*n*) – silage (*n*)
 ventilate (*v*) – ventilation (*n*)
 cool (*adj*) – cool (*v*)
 destroy (*v*) – destroyer (*n*)

8. Translate the following sentences from Russian into English.

1. Мы обнаружили проблему.
2. Плесень выросла возле двери.
3. Они не будут сушить бункер для хранения зерна.
4. Фермеры не вентилируют силосную башню.
5. Силос не испортился.
6. Плесень появится снова.
7. Почему они охладили зернохранилище?
8. Был неправильно установлен наклон.
9. Они не удалят всю плесень в бункере.
10. Что испортило зерно в зернохранилище?

9. Write the theses on the content of the text.**10. Highlight a subproblem for each problem.**

11. Retell the text using a mind-map.



AGRICULTURAL EQUIPMENT

TEXT 1. Harvest equipment

VOCABULARY

1. **harvesting** (*n*) – уборка урожая
2. **diverse** (*adj*) – разнообразный
3. **crop production** – растениеводство
4. **handling of residues** – обработка остатков
5. **primary tillage** – первичная обработка почвы
6. **secondary tillage** – предпосевная обработка почвы
7. **fertilizer distribution** – внесение удобрений
8. **fertilizer application** – внесение удобрений, применение удобрений
9. **seeding** (*n*) – внесение затравки
10. **planting** (*n*) – насаждение
11. **transplanting** (*n*) – пересаживание, пересадка
12. **premarketing processing** – предпродажная обработка
13. **drainage** (*n*) – дренирование, осушение
14. **combine harvester** – уборочный комбайн
15. **plow** (*n*) – плуг
16. **standing grain** – хлеб на корню
17. **thresh** (*v*) – молотить
18. **winnow** (*v*) – веять
19. **apply** (*v*) – применять
20. **small grains** – мелкозернистые культуры
21. **grain sorghum** – зерновое сорго
22. **seedbed preparation** – предпосевная подготовка
23. **loosen** (*v*) – рыхлить
24. **covers trash** – заделывать остатки
25. **manure** (*n*) – навоз

1. Read and translate the following words.

Manure, cover, plow, thresh, production, primary, application, erosion, residues, agricultural machinery, drainage, fertilizing, previous crops, diverse.

2. Read and translate the text «Harvest equipment».

Harvest equipment

Harvesting includes many operations of farming for which **diverse** machines are used. For **crop production** they include **handling of residues** from previous crops; **primary** and **secondary tillage** of the soil; **fertilizer distribution** and **application**; **seeding**, **planting**, and **transplanting**; cultivation; pest control; harvesting; transportation; storage; **premarketing processing**; **drainage**; irrigation and erosion control; and water conservation.

The main pieces of agricultural machinery are a **combine harvester**, a **plow** and a tractor. The combine harvester is used to cut the **standing grain**, to **thresh** and **winnow** it. It is **applied** for harvesting all the **small grains**, soybean, **grain sorghum**, rice and many other crops.

A plow is used in **seedbed preparation**. It breaks and **loosens** the soil, **covers trash** or **manure**.

A tractor deals with plowing, cultivating, fertilizing and harvesting.

3. Answer the questions on the text.

1. What operations does harvesting include?
2. What are the main pieces of agricultural machinery?
3. What is a combine harvester used to do?
4. What is a combine harvester applied for?
5. Where is a plow used in?
6. What does a plow do?
7. What are the functions of the plow?

4. Insert the adequate prepositions: *from, of, with, in, for*.

1. A tractor deals ... plowing, cultivating, fertilizing and harvesting.
2. The main pieces ... agricultural machinery are a combine harvester, a plow and a tractor.
3. Harvesting includes many operations of farming ... which diverse machines are used.
4. A plow is used ... seedbed preparation.
5. For crop production they include handling of residues ... previous crops; primary and secondary tillage of the soil.

5. Match the two parts to make up a sentence.

1. A plow is used in ...
 2. A tractor deals with ...
 3. The main pieces of agricultural machinery are ...
 4. The combine harvester is used to ...
 5. It is applied for harvesting ...
 6. Operations of farming include ...
- a. ... cut the standing grain, to thresh and winnow it.
 - b. ... handling of residues from previous crops; primary and secondary tillage of the soil.
 - c. ... a combine harvester, a plow and a tractor.
 - d. ... seedbed preparation.
 - e. ... plowing, cultivating, fertilizing and harvesting.
 - f. ... all the small grains, soybean, grain sorghum, rice and many other crops.

6. Make up a plan and retell the text.

TEXT 2. Advertizing harvest equipment

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

1. What types of equipment are used in harvesting?
2. What are the challenges of harvesting crops?

2. Scan the magazine article «Advertizing harvest equipment» and find the meaning of the underlined words.

3. Read the magazine article «Advertizing harvest equipment» and get ready to do post-reading exercises.

Advertizing harvest equipment

Finneman's offers a wide range of services. We provide **custom** harvesting and grain transportation, hay baling, and more!

Services for Grain Crops – We have the best combine harvesters and **gleaners** around! If you want your grain transported we can help. **Chaser bins** or **gravity wagons** transport your grain from field to storage. We have **grain augers** and **conveyor belts** for rent too! We make moving grain easy.

Silage – Our **forage harvesters** are perfect for clearing a field. Don't waste the **plant remains** after harvest. Rent a forage harvester and make **silage**.

Hay – We provide **hay baling**! We bring our balers to you.

Bale wrappers are available upon request.

Don't wait for your hay to dry. Ask about our **hay conditioners**.

4. Read the website. Then, mark the following statements as true (T) or false (F).

1. ___ Customers can purchase grain from Finneman's.
2. ___ Silage is made from plant remains.
3. ___ Finneman's can condition wet hay.

5. Match the words (1-5) with the definitions (a-e).

1. ___ chaser bin
2. ___ baler
3. ___ gleaner
4. ___ combine harvester
5. ___ forage harvester

- a. A machine that harvests crops of grain
- b. A harvest machine that does not use gas
- c. A cart used to carry grain from a field to storage
- d. A device that bundles hay
- e. A device that cuts up plants for use as silage

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

1. Grain is easier to unload with an angled cart that is pulled behind a tractor.

g _ _ _ _ _ y w _ _ o _

2. Use the device that wraps bales to keep them dry before the rain starts.

_ a _ _ _ r _ p _ _ _

3. Don't forget the device that cuts hay so it will dry quickly.

_ _ y c _ _ _ _ _ _ _ n _ r

4 The moving strip (лента) of material that transports objects to other areas, moves grain from here to the other side of the barn.

c _ _ v _ _ _ _ b _ _ _

5. The new device that moves grain from trucks and carts into storage bins.

_ r _ _ n _ _ g _ _

7. Translate the words and their derivatives

offer (*v*) – offer (*n*)

wide (*adj*) – width (*n*)

harvest (*v*) – harvesting (*n*)

transport (*v*) – transportation (*n*)

bale (*n*) – baling (*n*) – bale (*v*)

harvest (*n*) – harvest (*v*) – combine harvester (*n*)

glean (*v*) – gleaner (*n*)

storage (*n*) – store (*v*)

silo (*n*) – silage (*n*)

remain (*v*) – remains (*n, pl*)

8. Translate the following sentences from Russian into English.

1. Мы предлагаем широкий спектр услуг.

2. Она обеспечивает уборку урожая по контракту?

3. Они перевезли зерно вчера.

4. Он будет очищать поле завтра?

5. Они не потратили впустую сено.

6. Они не уберут растительные остатки завтра.

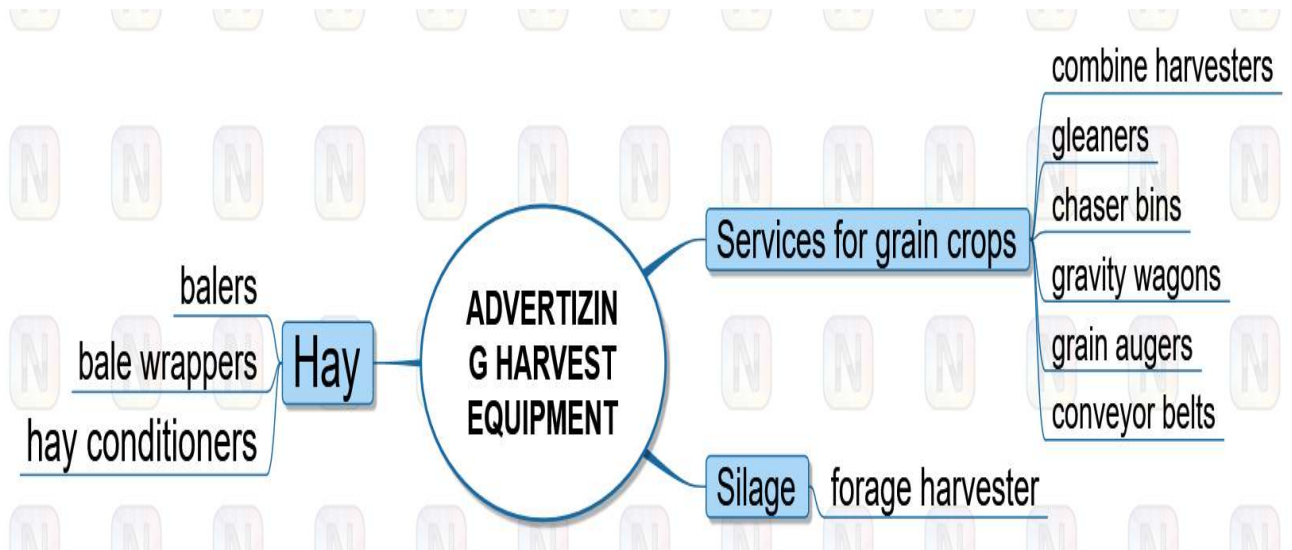
7. Они заготовили сено?

8. Они перевозят зерновые культуры.

9. Он тратит впустую своё время.

10. Вы предоставляете широкий спектр услуг?

9. Write the theses on the content of the text.**10. Highlight a subproblem for each problem.**

11. Retell the text using a mind-map.

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Учебно-методическое издание

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государственный технический университет» (ДГТУ)

Английский язык для направления «Агроинженерия»

Учебно-методическое пособие

Учебно-методическое пособие
к изданию в авторской редакции подготовили
редактор Лучинкина Н.П.
Верстка Г.С. Кудрявцева
Дизайн обложки С.П. Вдовикина

Подписано в печать 14.10.2020 г.
Формат 60×84/16. Усл. п. л. 3,37. Тираж 30 экз. Заказ № 26.

Отдел информационных технологий и издательской деятельности
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