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Фахова англійська мова
навчально-методичний посібник

(для здобувачів вищої освіти першого (бакалаврського) рівня спеціальностей «Садівництво, плодоовочівництво та виноградарство» і «Садово-паркове господарство»)

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Фахова англійська мова: Навчально-методичний посібник (для здобувачів вищої освіти першого (бакалаврського) рівня, спеціальностей «Садівництво, плодоовочівництво та виноградарство» і «Садово-паркове господарство») / Надія Попель. Кам'янець-Подільський: Заклад вищої освіти «Подільський державний університет», 2026. – 129 с.

Навчально-методичний посібник з англійської мови для здобувачів першого бакалаврського рівня вищої освіти створено з метою формування у здобувачів професійної мовної компетенції, яка дозволить вільно оперувати термінологією, читати спеціалізовану літературу та здійснювати комунікацію в межах професійної діяльності.

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Вступ

Стрімка глобалізація аграрного сектору та вихід українських сільськогосподарських підприємств на міжнародні ринки висувають високі вимоги до мовної компетенції майбутніх фахівців.

Для фахівців галузі «Садівництво, плодоовочівництво та виноградарство» і «Садово-паркове господарство» знання англійської мови є не просто додатковою перевагою, а необхідним інструментом для вивчення міжнародних стандартів, роботи з інноваційними матеріалами та обміну досвідом із закордонними колегами.

Відповідно до навчальних програм, дисципліна «Іноземна мова за професійним спрямуванням» є обов'язковою у підготовці здобувачів вищої освіти першого (бакалаврського) рівня спеціальностей «Садівництво, плодоовочівництво та виноградарство» і «Садово-паркове господарство». Зміст навчальної програми «Іноземна мова за професійним спрямуванням» передбачає систематичне опанування здобувачами базовими мовленнєвими навичками, що включають читання, письмо, активне спілкування та аудіювання. Крім того, основними завданнями вивчення дисципліни є набуття навичок практичного використання іноземної мови в різних видах мовленнєвої діяльності в обсязі тем, обумовлених міжкультурними та професійними потребами. Для досягнення вищезгаданих цілей та розширення базових професійних компетентностей пропонується представлений навчально-методичний посібник.

Посібник розроблений відповідно до сучасних вимог вищої школи та охоплює ключові тематичні блоки галузі. У змісті й обсязі обов'язкових лексичних одиниць окреслено логіку й послідовність їх засвоєння здобувачами відповідно до вимог навчальної програми. Робота структурована на тематичні блоки з базовим текстом, лексикою для засвоєння та вправами. Навчально-методичний посібник має також практичний курс граматики у таблицях, зразок тесту, для самоконтролю набутих знань та англо-український словник фахових

термінів, що використовуються у курсі. Належний рівень англomовного фахового матеріалу вдало поєднується з його доступністю.

Пропонований автором навчально-методичний посібник базується на найновіших здобутках мовознавчої, педагогічної, методичної та психологічної наук, враховує положення компаративної лінгвістики, забезпечує дотримання принципів особистісно-орієнтованого навчання, комунікативного підходу з урахуванням індивідуальних особливостей здобувачів вищої освіти першого (бакалаврського) рівня спеціальностей «Садівництво, плодоовочівництво та виноградарство» і «Садово-паркове господарство».

Навчально-методичний посібник розрахований на здобувачів закладів вищої освіти, а також спеціалістів-практиків, які прагнуть розширити свої знання та вийти на міжнародний рівень діяльності.

Topic 1. Gardening

1. Read and learn unknown words.

fulfill – виконувати

dye – забарвлення

saleable goods – товари для продажу

partake in gardening – займатись садівництвом

to differentiate – відрізнити

gardener – садівник

conservatory – оранжерея, зимовий сад

native plants – місцеві рослини

intent – намір

pool - басейн

pond – ставок

bog gardens – болотяні сади

solely – виключно

tub – ванна, діжка

aquascaping – акваскейпінг(підводний ландшафт)

hanging baskets - підвісні кошики

planters – кашпо

patios – внутрішні дворики

rooftop – дах

2. Read and translate the text.

Gardening

Gardening is the process of growing plants for their vegetables, fruits, flowers, herbs, and appearances within a designated space. Gardens fulfill a wide assortment of purposes, notably the production of aesthetically pleasing areas, medicines, cosmetics, dyes, foods, poisons, wildlife habitats, and saleable goods (see market gardening).

People often partake in gardening for its therapeutic, health, educational, cultural, philosophical, environmental, and religious benefits.

Gardening varies in scale from the 800 hectare Versailles gardens down to container gardens grown inside. Gardens take many forms; some only contain one type of plant, while others involve a complex assortment of plants with no particular order.

Gardening can be difficult to differentiate from farming. They are most easily differentiated based on their primary objectives. Farming prioritizes saleable goods and may include livestock production, whereas gardening often prioritizes aesthetics and leisure. As it pertains to food production, gardening generally happens on a much smaller scale with the intent of personal or community consumption. There are cultures which do not differentiate between farming and gardening.

Residential gardening takes place near the home, in a space referred to as the garden. Although a garden typically is located on the land near a residence, it may also be located on a roof, on a balcony, in a window box.

Gardening also takes place in non-residential green areas, such as parks, public or semi-public gardens (botanical gardens or zoological gardens), amusement parks, along transportation corridors, and around tourist attractions and garden hotels. In these situations, a staff of gardeners or groundskeepers maintains the gardens.

□ Indoor gardening is concerned with the growing of houseplants within a residence or building, in a conservatory, or in a greenhouse. Indoor gardens are sometimes incorporated as part of air conditioning or heating systems. Indoor gardening extends the growing season in the fall and spring and can be used for winter gardening.

□ Native plant gardening is concerned with the use of native plants with or without the intent of creating wildlife habitat. The goal is to create a garden in harmony with, and adapted to a given area. This type of gardening typically reduces water usage, maintenance, and fertilization costs, while increasing native faunal interest.

□ Water gardening is concerned with growing plants adapted to pools and ponds. Bog gardens are also considered a type of water garden. These all require special conditions

and considerations. A simple water garden may consist solely of a tub containing the water and plant(s). In aquascaping, a garden is created within an aquarium tank.

□ Container gardening is concerned with growing plants in any type of container, either indoors or outdoors. Common containers are pots, hanging baskets, and planters. Container gardening is usually used on balconies, patios, and rooftops.

Exercise 3: Choose the best answer for each question based on the text.

1. What is the primary objective used to differentiate gardening from farming?
 - A. The inclusion of livestock production.
 - B. The scale of food production (small vs. large).
 - C. The main goals: saleable goods (farming) vs. aesthetics and leisure (gardening).
 - D. Whether it takes place near a residence.
2. According to the text, what is not listed as a purpose or benefit of gardening?
 - A. Producing medicines and cosmetics.
 - B. Providing materials for construction.
 - C. Offering therapeutic and educational benefits.
 - D. Creating wildlife habitats.
3. Which characteristic is typical of Native Plant Gardening?
 - A. It requires specialized heating and air conditioning systems.
 - B. It usually reduces water usage and maintenance costs.
 - C. It is solely focused on creating complex assortments of plants.
 - D. It is only concerned with plants adapted to pools and ponds.
4. Where is Container Gardening most commonly used, according to the text?
 - A. In large public parks and botanical gardens.
 - B. As part of a hotel's tourist attraction.
 - C. On balconies, patios, and rooftops.
 - D. Inside a residence as part of air conditioning systems.

Exercise 4: Match the words from the text (Column A) with their definitions or closest synonyms (Column B).

Column A (Word from Text) Column B (Definition/Synonym)

- | | |
|------------------|---|
| 1. Differentiate | A. Recreational time; relaxation |
| 2. Designated | B. Adapted to a specific place or environment |
| 3. Aesthetics | C. A person who maintains gardens for others |
| 4. Leisure | D. To distinguish or show the difference between things |
| 5. Adapted | E. Concerned with beauty or the appreciation of beauty |
| 6. Groundskeeper | F. Set apart for a specific purpose |

Exercise 5: Answer the following questions in complete sentences based on the text.

1. List three non-residential green areas where gardening takes place, according to the text.
2. Explain two ways Indoor Gardening is beneficial, as mentioned in the text.
3. Besides the scale and primary objectives, what is one other potential distinction between gardening and farming mentioned in the text?
4. If a person is growing plants in a small tub of water on their apartment balcony, which two types of gardening (from the bulleted list) are they likely engaging in?

Exercise 6: Use the words provided in the box to fill in the blanks in the summary below. Not all words will be used.

aesthetic ornamental residential philosophical aquascaping indoors
greenhouse person

Gardening Summary

Gardening is the process of growing plants for various products and purposes, including producing areas that are (1) _____ pleasing. People often

partake in gardening for its therapeutic, health, and (2) _____ benefits. While farming prioritizes saleable goods, gardening generally focuses on aesthetics and leisure. When it involves food production, gardening is typically on a smaller scale for (3) _____ or community consumption. (4) _____ gardening takes place near the home, but may also occur on a balcony or rooftop. Indoor gardening is concerned with growing houseplants (5) _____ or in a conservatory or (6) _____.

Exercise 7. Find antonyms.

To appear, inside, easy, small, near, indoor, heating systems, to reduce, simple.

Exercise 8: Find synonyms.

Fulfill, purpose, dye, to involve, to take place, gardener, goal, type, to require.

Topic 2. Organic gardening

1. Translate and learn words:

to avoid -

to create -

composting –

crop rotation -

healthy soil -

pest and disease management –

reduce environmental impact –

straw –

to retain moisture –

control pests –

variety of plants –

ecological approach –

synthetic products –

2. Read and translate the text:

Organic gardening

Organic gardening is an ecological approach to cultivation that avoids synthetic pesticides and fertilizers, instead nurturing soil health and biodiversity to create a self-sustaining ecosystem. It relies on natural methods such as composting, crop rotation, and companion planting to build healthy soil, control pests, and grow robust plants while supporting environmental health.

Key Principles of Organic Gardening

- **Healthy Soil:** Healthy soil is the foundation of organic gardening. It is rich in organic matter, with good structure, drainage, and water retention.
- **Natural Fertilizers:** Instead of synthetic products, organic gardeners use materials like compost, animal manure, and plant litter to provide nutrients for plants.
- **Pest and Disease Management:** The focus is on preventing problems by promoting a balanced ecosystem rather than chemical eradication. Techniques include hand-picking pests, using physical barriers, attracting beneficial insects, and planting disease-resistant varieties.
- **Biodiversity:** Organic gardens encourage a variety of plants, insects, and other wildlife, which contribute to a more resilient ecosystem and natural pest control.
- **Sustainability:** Practices like composting, mulching, and using rainwater help to conserve resources and reduce environmental impact.

Common Organic Practices

- **Composting:** Creating nutrient-rich compost from kitchen scraps, yard waste, and other organic materials to enrich the soil.
- **Mulching:** Adding a layer of organic material, such as leaves or straw, to the soil surface to retain moisture, suppress weeds, and regulate soil temperature.
- **Companion Planting:** Growing different plant species together that benefit each other, for example, by attracting beneficial insects or deterring pests.

- Crop Rotation: Changing the types of crops grown in a particular area each season to prevent the buildup of soil-borne diseases and nutrient depletion.
- Water Conservation: Using methods like drip irrigation or soaker hoses, watering at the right time (morning or evening), and applying mulch to reduce water evaporation.
- Physical Barriers: Using row covers, netting, or copper tape to protect plants from specific pests like slugs and snails.

Exercise 3: Read the statements below and mark them as True (T) or False (F) based on the text.

1. Organic gardening relies on synthetic pesticides and fertilizers to nurture soil health. (T/F)
2. Composting is mentioned as a natural method to build healthy soil. (T/F)
3. Healthy soil in organic gardening should have poor drainage and low water retention. (T/F)
4. Organic gardeners primarily focus on chemical eradication for pest control. (T/F)
5. Mulching helps to suppress weeds and retain soil moisture. (T/F)
6. Crop rotation is a practice used to prevent the buildup of soil-borne diseases. (T/F)

Exercise 4: Match the term in the left column with its correct definition in the right column.

| Term | Definition |
|------------------|---|
| 1. Crop Rotation | A. Growing different plants together that benefit each other. |
| 2. Composting | B. Changing the types of crops grown in an area each season. |
| 3. Biodiversity | C. Creating nutrient-rich material from organic waste to enrich soil. |

| Term | Definition |
|-----------------------|--|
| 4. Companion Planting | D. Adding a layer of organic material to the soil surface. |
| 5. Mulching | E. Encouraging a variety of plants, insects, and other wildlife. |

Exercise 5: Complete the sentences using words from the text.

1. Organic gardening is an approach to cultivation that avoids pesticides and fertilizers.
2. The focus of pest management in organic gardening is on problems by promoting a ecosystem.
3. Instead of synthetic products, organic gardeners use materials like,, and plant litter to provide
4. Practices like using or soaker hoses and applying help with

Exercise 6: Answer the following questions in one or two complete sentences.

1. What is the primary goal of organic gardening, according to the text?
2. Name three materials an organic gardener might use as a natural fertilizer.
3. Give two examples of physical barriers mentioned for pest protection.
4. How does biodiversity contribute to an organic garden's resilience?

Exercise 7: Group the following organic practices into their primary function (some may fit into more than one, but choose the best fit based on the text's context):

Practices: Composting, Mulching, Crop Rotation, Attracting beneficial insects, Drip Irrigation, Using row covers.

| Function | Organic Practices |
|--------------------------------|---------------------------|
| Soil Health/Fertility | Composting, Crop Rotation |
| Pest/Disease Management | |

Function

Organic Practices

Attracting beneficial insects, Using row covers, Crop Rotation

**Water/Resource
Conservation**

Mulching, Drip Irrigation

Topic 3. Gardening in Ukraine

Exercise 1. Read, translate and learn unknown words.

fertile –

urban –

garden –

horticulture –

well-being –

soil tilling –

crop rotation –

abundance –

crop –

fungal –

diseases -

application –

soil structure –

contamination –

increase –

offer –

Exercise 2. Read and translate the text.

Gardening in Ukraine

Gardening in Ukraine is a traditional practice that benefits from the country's fertile chernozem (black earth) soils, and it has seen a recent rise in urban and community gardens. While large-scale horticulture is a major part of the agricultural sector, urban dwellers are increasingly involved in community gardens for food security, community building, and well-being. Routine tasks include fall preparations like soil tilling, composting, and crop rotation, which are essential for maintaining soil health and preparing for the next season.

Ukraine, famously known as the "Breadbasket of Europe," possesses an abundance of highly fertile **chernozem (black earth)** soil, covering a significant portion of the country. This natural resource, combined with a generally temperate continental climate, creates excellent conditions for diverse crop cultivation.

Ukraine's climate varies from north to south, influencing the regional specialization of gardening:

| Zone | Typical Garden/Agricultural Crops |
|--|---|
| Polissia (Northern) & Forest-Steppe (Central/West) | Potatoes, Cabbage, Carrots, Legumes (peas, beans), Winter Wheat, Rye, Flax, and fruit/berries. |
| Steppe (Southern/Eastern) | Sunflower, Maize (Corn), Sugar Beets, Spring Wheat, Barley, Millet, Melons (Watermelons, Gourds), and Wine Grapes (historically, especially in Crimea). |
| Carpathians (Western) | Hayfields, pastures, potatoes, and native forest products (e.g., beech, fir). |

Key Crops in Home Gardens

While industrial agriculture focuses on grains and oilseeds for export, small-scale household gardening primarily focuses on vegetables and fruits for domestic consumption:

- **Vegetables:** Potatoes, cabbage, tomatoes, cucumbers, beets, carrots, onions, and squash/pumpkins are staples.
- **Fruits & Berries:** Apples, pears, cherries, plums, raspberries, currants, and strawberries are common in home orchards and plots.
- **Herbs:** Dill (krip), parsley, and sorrel are almost universally grown.

Ukrainian gardeners employ a mix of traditional and modern techniques:

Crop Rotation: Carefully planned crop rotation is a vital practice to maintain soil health, prevent fungal diseases, and manage pests. Gardeners often rotate crops like late cabbage with potatoes or legumes, or cucumbers with cauliflower/garlic.

Soil Preparation: Deep digging or cultivating the land in autumn, often accompanied by the application of organic matter (compost, humus) and mineral fertilizers (potassium and phosphorus).

Siderates: The use of cover crops, known as siderates (like white mustard or clover), is common to improve soil structure and fertility.

Focus on Local Seeds: There is a strong preference for locally adapted and heirloom varieties, contributing to resilience and flavor.

For ornamental or ecological gardening, Ukraine offers a variety of native plants:

- **Trees:** European Beech (*Fagus sylvatica*), Silver Fir (*Abies alba*), European Hornbeam (*Carpinus betulus*), and various species of Oak, Ash, and Maple.
- **Shrubs:** Willow (*Salix* species, often used for basketry), and in the Carpathian region, native Rhododendron species.
- **Wildflowers and Herbs:** Common Yarrow, various Irises, and medicinal herbs have been part of the landscape for centuries.

Challenges and Resilience in the Modern Context

While blessed with fertile land, gardening and agriculture in Ukraine face significant challenges:

Impact of Conflict: The ongoing war has caused immense destruction, including:

- Contamination of agricultural land with unexploded ordnance.
- Destruction of agricultural equipment, infrastructure (storage, irrigation), and disruption of supply chains (seeds, fertilizer, fuel).
- Displacement of farmers and gardeners.

Climate Change: Warming and drier conditions, especially in the south, increase the frequency of droughts, requiring more sophisticated water management and shifting cultivation zones for some crops.

The Rise of Urban Gardening: In the face of food insecurity and displacement, household and urban gardening (e.g., in Lviv, Poltava) has experienced a resurgence. This trend provides food, offers therapeutic benefits, and strengthens community ties, with people planting vegetables on every available plot of land for self-sustenance and hope.

Exercise 3. Choose the best answer for each question based only on the text provided.

1. What is the primary natural advantage that benefits gardening in Ukraine?
 - A) An abundance of native Rhododendron species.
 - B) Its generally temperate continental climate.
 - C) The fertile chernozem (black earth) soils.
 - D) A focus on local seeds and heirloom varieties.
2. Which crops are typically associated with the Steppe (Southern/Eastern) gardening zone?
 - A) Potatoes, Cabbage, and Winter Wheat.
 - B) Hayfields, pastures, and Silver Fir.
 - C) Sunflower, Maize (Corn), and Melons.

- D) Apples, pears, and strawberries.
3. What are siderates primarily used for in Ukrainian gardening?
- A) For basketry and making ornamental gardens.
 - B) To improve soil structure and fertility.
 - C) As a type of mineral fertilizer.
 - D) To help manage unexploded ordnance.
4. Which two issues are listed as major challenges facing Ukrainian gardening and agriculture in the modern context?
- A) Over-reliance on industrial agriculture and lack of native plants.
 - B) Conflict-related destruction and Climate Change (droughts).
 - C) Lack of community building and not enough fruit/berry crops.
 - D) Too much focus on export grains and a need for new home garden staples.

Exercise 4. Match the term from the text with its correct definition.

| Term | Definition |
|-------------------------|---|
| 1. Chernozem | A) The use of cover crops (like white mustard or clover) to enrich the soil. |
| 2. Horticulture | B) The process of plowing or turning over the soil, especially in preparation for planting. |
| 3. Siderates | C) Extremely fertile, dark-colored soil, famously found in Ukraine. |
| 4. Tilling | D) The practice of moving a farmer's plot or field each season to different crop types. |
| 5. Crop Rotation | E) The science and art of cultivating and managing gardens, especially for food production. |

Exercise 5. Answer the following questions in one or two complete sentences, using information from the text.

1. Explain two routine **fall preparations** mentioned in the text that are essential for maintaining soil health.
2. How has the **ongoing conflict** impacted agricultural land in Ukraine, according to the text?
3. Besides providing food, list two other benefits of the **rise in urban and community gardening** in Ukraine.
4. According to the text, what is the main difference in focus between industrial agriculture and small-scale household gardening in Ukraine?

Topic 4. Growing flowers

Exercise 1. Translate and learn the words.

floriculture –

branch –

cut flowers –

potted plants –

field –

edible –

knowledge –

indoor –

greenhouse –

protect –

crop –

controlled-environment agriculture –

value –

cost –

fertilization –

industry –

Exercise 2. Read and translate the text

Floriculture

Floriculture is the branch of horticulture concerned with the commercial and ornamental cultivation of flowers and other ornamental plants. This industry includes the production of cut flowers, potted plants, and foliage, and extends to their processing, marketing, and distribution. It's a significant global industry with various practices ranging from field cultivation to high-tech greenhouse growing.

Floriculture is the study of the efficient production of the plants that produce showy, colourful and even edible flowers and foliage. Efficient production practices have been developed over the years, for the hundreds of plant taxa used in the floral industry, increasing the overall knowledge of whole plant biology. Plant breeding and selection have produced tens of thousands of new genotypes for human use.

Flowers are an important part of human society that are often used at times of joy and sadness, and as a part of everyday life. Flowers and plants may be indoors in a sunny window, as part of the landscape in the front yard or on the patio or deck in the back yard. People have been studying flowers and plants and their interaction with humans and how to produce these flowers and plants so all humans can enjoy them. Floriculture scientists throughout the world to do this work.

Floriculture crops include cut flowers and cut cultivated greens, bedding plants (garden flowers or annuals, and perennials, houseplants (foliage plants and flowering potted plants). These plants are produced in ground beds, flower fields or in containers in a greenhouse. Protected cultivation is often used because these plants have a high value to humans.

Flower crops are grown in simple to highly sophisticated ways. These crops can be grown in soil in farm fields or in field soil in inexpensive high tunnel greenhouses. For years, flowers were grown, seasonally for the specific crop, close to the market in

Europe, North America and Asia. However, many crops of the floral industry have moved to a specific climate, typically in the mountains of South America, Africa and China, so certain plants can be grown year around where hand labor is available.

Protected horticulture (greenhouses) has developed simultaneously with the continued changes in the flower crops and markets. Floriculture is a major component of controlled-environment agriculture (CEA). Floriculture crops have a high value to humans, so the cost of an expensive production system - greenhouses, automated environmental control, automated irrigation and fertilization, robotic seed, transplant and container handling, supplemental photosynthetic lighting - is necessary to produce these plants efficiently for the world-wide markets. Some are irrigated manually, but most are irrigated with drip irrigation, boom irrigation or flood floors. Hydroponics can be used for many cut flower crops.

Exercise 3. Answer these questions:

1. What is **Floriculture** defined as, and what is its relationship to **Horticulture**?
2. Name three primary products or categories of plants included in the floriculture industry.

Exercise 4. Match the following terms with their correct description:

- **Floriculture Scientist**
- **Bedding Plants**
- **Protected Cultivation**
- **CEA (Controlled-Environment Agriculture)**
- **Genotypes**
- *Descriptions:*
 - A method of growing plants, often in greenhouses, due to the high value of the crops.

- The use of expensive production systems like automated environmental control for efficiency.
- New genetic variations of plants produced through breeding and selection.
- An expert who studies flowers, plants, and their interaction with humans to improve production.
- Garden flowers, annuals, and perennials used for planting in the landscape.

Exercise 5. True or False: (Correct the statement if false)

1. Floriculture only concerns the production of cut flowers.
2. The study of floriculture has contributed to the overall knowledge of whole plant biology.
3. Historically, flower crops were grown year-round, regardless of location.
4. Hydroponics can be used for some cut flower crops.

Exercise 6. Use words from the text to complete the sentences.

1. Floriculture is a major component of _____ (CEA).
2. Flower crops can be grown in simple ways, such as in farm fields, or in highly sophisticated ways, such as in _____ with automated control.
3. Besides cut flowers and potted plants, the floriculture industry also includes the production of _____ .
4. Protected cultivation is often used because floriculture plants have a _____ to humans.
5. Common irrigation methods mentioned include drip irrigation, boom irrigation, and _____.

Exercise 7. Give Short Answer / Write essay

Discuss the evolution of flower growing practices, contrasting the traditional seasonal, local-market approach with the modern globalized, high-tech approach. Include specific examples of technology and location shifts mentioned in the text.

Exercise 8. Read the text. Choose the title of the text.

To grow flowers, choose a suitable location with the right amount of sun and good soil, plant according to the flower's needs, and water them properly. Providing nutrients and protection from elements like wind will also help ensure a healthy and beautiful bloom.

Whether growing flowers or vegetables, you need to prepare the soil for the plants you wish to grow.

For a garden that stays colorful for multiple seasons, start with a few favorite perennials and build from there. Check bloom charts in catalogs to find varieties that bloom in the spring, summer, fall, and even winter, keeping in mind that bloom times aren't always exact. Mixing different timing varieties will keep the flowers coming. When planting, go for groupings of three to five instead of single plants—it'll look fuller and more natural.

1. Choose a Planting Spot

Do the plants you've picked need sun, shade, or a combination? Start by arranging your plants so they'll get the kind of light they prefer (plants that like the sun should be out in the open, and plants that need shade should go in a spot where they'll have some cover).

Some overlooked spots that can use a bit of color include under a large tree, along the bottom of a privacy fence or gated area, or where the porch base meets the ground.

2. Add Compost to the Soil

One important step in how to plant flowers for a beautiful flower garden is to start with healthy soil. Generally, most flowering plants do best in loose and well-drained soil with plenty of organic material. You don't need to dig a large area for flower planting,

but you should dig enough soil to add some compost to improve the soil structure and add nutrients.

3. Dig a Hole

Planting a flower garden from seeds differs slightly from using nursery plants. Follow the directions on the seed packet to know how deep and far apart each seed should be planted. With potted garden plants, you should usually plant with the soil at the same level as the soil in the pot, but read the plant tag to be sure.

4. Plant Your New Flowers

Sow flower seeds according to package directions. For potted plants, gently remove each plant from its container. If roots are tangled, tease some or all of the soil from the roots before settling the root ball into the hole you've prepared.

5. Firm Soil Around Plants

Cover seeds or push the soil you dug out back into the hole, firming it gently around your plant but not packing it down. Remember that the plant should be at the same depth in the ground as it was in its pot.

6. Water Deeply

Thoroughly soak the soil around your newly planted flowers. Garden flowers generally need 1 to 2 inches of moisture every week to perform well, so water if you don't receive enough rain. When learning how to plant flowers, water deeply but less often. This allows the roots to grow deeper, making plants stronger and more resilient. Avoid keeping soil waterlogged, or the roots of your flowering plants may rot.

7. Add Mulch

Spread a layer of mulch, such as shredded bark, around your new plants to help slow evaporation and reduce how often you need to water.

Topic 5. Cultivation and Selection of Flowers

Exercise 1. Translate and learn the words:

cultivation –

successful –

selection –

goal –

soil preparation –

profit –

pleasure –

outcome –

horticulture –

careful –

execution –

involve –

soil management –

cut –

harvesting –

maintain –

fertile soil –

choose –

sufficient –

moisture –

sow –

pruning –

Exercise 2. Read and translate the text:

Cultivation and Selection of Flowers

Successful flower cultivation and selection depend on matching plant needs to site conditions, including sun and soil, while also considering your goals, such as growing for profit or pleasure. Key cultivation steps include soil preparation, proper watering, and appropriate care techniques. Selection involves choosing suitable varieties based on your climate, available light, and desired outcome, using resources like local garden centers for guidance.

Flower cultivation and selection are practices that combine horticulture, aesthetics, and increasingly, commercial strategy. Whether for a small home garden or a large commercial operation, success relies on careful planning and execution.

Flower cultivation involves techniques like proper soil management, propagation methods (seed, cutting, tissue culture), watering and nutrient delivery, pest and disease control, and optimizing environmental conditions like light and temperature. For cut flowers, specific practices include harvesting at the right time, pre-cooling, and careful handling to maintain quality

Soil and environment

- **Soil preparation:** Use well-drained, fertile soil. Dig or plough the soil, remove weeds, and let it sit open to the sun. Maintain a consistent soil health program based on regular analysis.
- **Light:** Most flowers need at least six hours of sunlight per day. Choose a location that receives sufficient sun and avoid planting during the hottest part of the day.
- **Watering:** Water consistently, especially during dry periods. Water deeply to allow the soil to soak up moisture, but avoid overwatering, which can cause root rot.

- **Temperature and humidity:** Use greenhouses with controlled temperature and humidity for high-quality cut flowers. Harvested flowers should be cooled quickly to preserve their quality.

Propagation and planting

- **Propagation methods:** Create new plants through methods like seeds, cuttings, layering, division, grafting, budding, or tissue culture.
- **Seed planting:** Sow seeds in cups with soil, cover with soil, and water. Place cups in a warm, sunny spot and water them whenever the soil looks dry.
- **Planting seedlings:** For larger plants, dip seedlings in a solution (like 0.2% Bavistin for roses) before planting. Plant in holes or trenches in a zigzag pattern, ideally in the morning or evening.

Pest and nutrient management

- **Integrated Pest Management (IPM):** Use a combination of methods to manage pests, including biological controls and organic pesticides if necessary.
- **Fertilization:** Use appropriate fertilizers, which can include organic options. Foliar sprays made from plant ferments, kelp, or fish emulsions can also be used to encourage healthy growth.

Techniques for enhancing growth and quality

- **Pruning:** Pruning and leaf trimming can be used to improve the shape and quality of the plant.
- **Mechanical forcing:** Techniques like ringing, budding, and breaking dormancy can be used to force flowering in cut flower production.
- **Harvesting and handling:** For cut flowers, harvest at the optimum stage. After harvesting, remove field heat by cooling them as quickly as possible to the correct temperature (e.g., 33°F for most flowers, 41-43°F for some, or 50°F for chilling-sensitive flowers).

Flower Selection Criteria

The process of selection is critical and determines the potential for a successful harvest, both in terms of beauty and profitability.

General Selection Considerations

- **Adaptability:** Choose varieties that thrive in your **local climate, soil type, and sunlight conditions** (e.g., full sun, partial shade).
- **Purpose:** Determine the flower's use/
- **Cut Flowers:** Prioritize **long stem length**, good post-harvest **vase life** (ideally ≥ 7 days), transport qualities, and high production per unit area.
- **Garden/Landscape:** Focus on continuous bloom, plant habit, and overall aesthetic appeal.
- **Pest and Disease Resistance:** Select cultivars with proven **tolerance to common pests and diseases** to minimize chemical inputs and crop loss.
- **Market Demand (Commercial Growers):** Study the market for preferred **colors** (e.g., red and yellow often have high demand), bloom types (focal, filler, spike), and peak demand periods.

Flower Breeding and Selection for Novelty

Flower breeding is a process of selection and controlled cross-pollination aimed at developing new cultivars with improved characteristics.

- **Breeding Goals:** Breeders select for improved traits such as:
 - Novelty (unique color, shape, size).
 - Enhanced **disease resistance**.
 - Improved **vase life** and durability.
 - Specific stem qualities (length, rigidity).
 - Increased fragrance (though often inversely related to vase life).
- **The Selection Process:**

- **Selection of Parents:** Choose two parent plants that each possess a desired trait (e.g., a fragrant flower and a disease-resistant flower).
- **Controlled Pollination:** Transfer pollen from the male part (stamen/anther) of one plant to the female part (pistil/stigma) of the other, often requiring the isolation of the flowers to prevent random cross-pollination by insects.
- **Seed Collection and Growing:** Harvest the resulting seeds and grow them out.
- **Ruthless Selection:** Observe the offspring and **discard those that do not meet the predetermined selection criteria.** This process can take multiple generations (often 5-7 years) and involves rigorously testing the stability of the new traits under various conditions.

Exercise 3: Select the best answer

1. What is one of the main factors successful flower cultivation depends on, according to the text?
 - a) Only commercial strategy
 - b) Matching plant needs to site conditions (sun and soil)
 - c) Using only tissue culture for propagation
 - d) Planting only during the hottest part of the day
2. Which of the following is **NOT** listed as a key cultivation step?
 - a) Soil preparation
 - b) Proper watering
 - c) Appropriate care techniques
 - d) Mechanical forcing (unless producing cut flowers)
3. How much sunlight do most flowers need per day?

- a) At least three hours
 - b) At least six hours
 - c) Only morning sun
 - d) Only sun during the hottest part of the day
4. Why is quick cooling important for cut flowers after harvesting?
- a) To enhance their color
 - b) To encourage new growth
 - c) To maintain quality by removing field heat
 - d) To make them chilling-sensitive

Exercise 4: True or False

1. Flower selection involves choosing suitable varieties based on your climate and available light. (T/F)
2. Overwatering is encouraged because it allows the soil to soak up more moisture. (T/F)
3. Integrated Pest Management (IPM) relies on using only organic pesticides. (T/F)
4. Seedlings should ideally be planted in the middle of the day when the sun is strongest. (T/F)

Exercise 5: Match the term on the left with its definition or related concept on the right.

| Term | Definition/Concept |
|-----------------------|---|
| 1. Propagation | A. Techniques like ringing or breaking dormancy to induce blooms. |

| Term | Definition/Concept |
|--|--|
| 2. Well-drained soil | B. A combination of methods for managing pests, including biological controls. |
| 3. Integrated Pest Management (IPM) | C. Creating new plants from seeds, cuttings, or tissue culture. |
| 4. Mechanical forcing | D. Soil that allows water to pass through freely, preventing root rot. |

Exercise 6: Answer the following questions concisely, using information from the text:

1. List three key steps in the soil preparation process mentioned in the text.
2. What is the main risk of overwatering?
3. Name three different methods of flower propagation mentioned.
4. Besides aesthetic goals, what is one other major goal for growing flowers mentioned in the text?
5. What is the purpose of pruning and leaf trimming?

Exercise 7: Application and Analysis

1. **Scenario Analysis:** You live in an area that gets only three hours of direct sunlight per day. Based on the text, what challenge does this present, and where might you go for guidance on selecting appropriate flower varieties?
2. **Process Comparison:** Briefly explain the difference in handling between a flower grown for a home garden (where quality maintenance isn't explicitly mentioned) and a flower grown for the cut flower market. Focus on the post-harvest stage.

3. **Horticultural Strategy:** The text suggests maintaining a consistent soil health program based on regular analysis. Why is **regular analysis** more beneficial than just applying a standard amount of fertilizer once a year?
4. **IPM Rationale:** Explain why using an **Integrated Pest Management (IPM)** approach is often considered better than solely relying on chemical pesticides, based on the text's description.

Exercise 8: Cultivation Plan Outline

Imagine you are starting a small commercial operation to grow high-quality cut flowers in a greenhouse. Create a brief outline of the steps you would take, organized by the following categories, drawing specific techniques from the text:

- **A. Site/Environment Control (Greenhouse)**

- *Soil:*
- *Light:*
- *Temperature/Humidity:*

- **B. Planting & Growth**

- *Propagation Method:*
- *Pest Management:*
- *Quality Enhancement Technique:*

- **C. Post-Harvest Handling**

- *Harvest Timing:*
- *Initial Cooling:*

Topic 6. Ornamental grasses

Exercise 1. Translate and learn the words:

ornamental grasses –

include –

sedges –

rushes –

restios –

cattails –

monocotyledons –

evergreen –

tussock grasses –

pampas grass –

appear –

leaf –

increase –

extensive –

develop –

woody tissues –

root –

quantity –

reach –

Exercise 2. Read and translate the text:

Ornamental grasses

Ornamental grasses are grasses grown as ornamental plants. Ornamental grasses are popular in many colder hardiness zones for their resilience to cold temperatures and aesthetic value throughout fall and winter seasons.

Along with true grasses, several other families of grass-like plants are typically marketed as ornamental grasses. These include the sedges, rushes, restios, and cat-tails. All are monocotyledons, typically with narrow leaves and parallel veins. Most are herbaceous perennials, though many are evergreen and some develop woody tissues. They bring striking linear form, texture, color, motion, and sound to the garden, throughout the year.

Almost all ornamental grasses are perennials, coming up in spring from their roots, which have stored large quantities of energy, and in fall or winter go dormant. Some, notably bamboos, are evergreen, and a few are annuals. Many are bunch grasses and tussock grasses, though others form extensive systems of many-branched rhizomes. The bunching types are often called "clump-forming" or "clumping", distinct from the rhizomatous types, called "running". Sizes vary from a few centimeters up to several meters; the larger bamboos may reach 20 m or more tall. Some ornamental grasses are species that can be grown from seed. Many others are cultivars, and must be propagated by vegetative propagation of an existing plant.

Pampas grass is easily recognizable, with semi-dwarf to very large selections for the landscape. Deer grass and canyon prince wild blue rye are popular in larger settings, natural landscaping, and native plant gardens. There are *Miscanthus* grasses whose variegations are horizontal, and appear even on a cloudy day to be stippled with sunshine. Many *Miscanthus* and *Pennisetum* species flower in mid or late summer, and the seed heads are long lasting, often remaining well into the winter. Some *Stipa* species flower in the spring, the inflorescence standing almost two metres above the clumps of leaves, and again the seed heads last late into the winter.

When gardening near natural Wildland–urban interfaces, one should take care to avoid planting invasive species, such as *Cortaderia jubata* (native to Argentina and the Andes), *Pennisetum setaceum* (native to northeastern Africa and western Asia), and *Nassella tenuissima* (native to New Mexico, Texas, and South America). Not only do invasive species compete with native plants, but they may also increase the risk of wildfires, especially in areas such as California.

Exercise 3. Answer the questions below

1. What is the primary reason ornamental grasses are popular in many colder hardiness zones?
2. Name at least four other families of grass-like plants that are typically marketed as ornamental grasses besides true grasses.
3. List three characteristics of the grass-like plants mentioned (sedges, rushes, etc.) regarding their leaves, veins, and general life cycle.
4. How do most perennial ornamental grasses survive through the fall and winter seasons?
5. Differentiate between "clump-forming" (bunching) and "running" (rhizomatous) types of ornamental grasses.
6. Give an example of a very tall ornamental grass mentioned, and state approximately how tall it can grow.
7. Explain the difference in propagation methods for species that can be grown from seed versus cultivars.
8. Identify two examples of ornamental grasses known for having long-lasting seed heads, often remaining well into the winter.
9. What is a significant concern mentioned when gardening near natural Wildland–urban interfaces regarding the planting of certain ornamental grasses?
10. Name one invasive ornamental grass species mentioned in the text and its native region.

Exercise 4. True or False Statements

- T / F: All plants marketed as ornamental grasses are true grasses.
- T / F: Ornamental grasses are valued for their aesthetic appeal only during the summer.
- T / F: All plants considered ornamental grasses are herbaceous perennials.
- T / F: Clump-forming grasses are also known as rhizomatous types.
- T / F: The larger bamboos can grow up to 20 meters or more tall.
- T / F: *Nassella tenuissima* is an invasive species native to California.

Exercise 5. Match the term on the left with its definition or description on the right.

| Term | Description/Definition |
|-------------------|--|
| 1. Monocotyledons | A. Plants that form extensive systems of many-branched underground stems. |
| 2. Perennials | B. Ornamental grasses that grow in dense tufts or clusters. |
| 3. Cultivars | C. A class of flowering plants typically having one embryonic leaf and leaves with parallel veins. |
| 4. Bunch Grasses | D. Plants that must be propagated by vegetative means rather than from seed. |
| 5. Rhizomatous | E. Plants that live for more than two years, typically dying back to the roots in winter. |

Exercise 6. Write a Short Essay : “Ornamental Grasses and Landscape Design”

Based on the text, describe the striking features (form, texture, etc.) that ornamental grasses bring to a garden. Additionally, explain why their year-round aesthetic value, including their resilience and appearance in fall/winter, makes them a particularly popular choice for colder climates. Finally, discuss the critical gardening decision a homeowner must make when choosing ornamental grasses near a Wildland–urban interface, referencing the concepts of competition and wildfire risk.

Topic 7. Ornamental Trees

Exercise 1. Translate and learn the words:

ornamental trees –

flowers –

value –

enjoyment –

framework –

provide –

crabapple –

shade –

require –

maintenance –

care –

offer –

shrub –

bloom –

dry –

attractive –

Exercise 2. Read and translate the text

Ornamental Trees

With beauty that endures through all seasons, ornamental trees have a lot to offer in the home landscape. Whether you are looking for flowers, fall color, or fruit to keep the garden interesting over the winter months, you have lots of trees to choose from. Read on for help in selecting ornamental trees for the landscape.

What is an Ornamental Tree?

Ornamental trees are grown for their aesthetic value and the sheer enjoyment of having them in the garden. They may have outstanding flowers and fragrance, an interesting shape, colorful or unusual bark, excellent fall color, or a combination of these and other features. Most gardens have room for at least one small ornamental tree, and some can accommodate two or three. They add framework and structure to the garden and provide at least a little shade. They also make great background plants for shrub and flower borders. There are many types of ornamental trees to choose from. Here are just a few that you might want to consider:

- Flowering pears bloom in early spring with fragrant, white blossoms. Two of the most popular are Callery, which grows 30 feet (9 m.) tall, and Bradford, which reaches heights of up to 40 feet (12 m.).
- Crabapple is the most popular type of ornamental tree in many parts of the country, and also one of the most labor-intensive to grow. The trees need a good spraying program to prevent pests and disease, and they also need a good bit of pruning. There are over 200 varieties to choose from. Select one that is resistant to apple scab.
- Eastern redbud has purplish-pink flower clusters in spring, yellow fall foliage, and dark brown pods in fall and winter.
- Crepe myrtle bursts into showy blooms every summer. A mainstay of southern gardens.

- Weeping cherry is a graceful tree with early spring flowers. Songbirds love to visit this tree.
- Flowering dogwood has lovely white or pink flower bracts that appear before the tree begins to leaf out. Many varieties have good fall color and glossy red fruit. It needs watering during dry spells.
- Flowering plum has attractive flowers but the varieties that have reddish-purple foliage are the most popular.

How to Use Ornamental Trees

Ornamental trees make great specimen or stand-alone plants. This is especially true if they have features that make them interesting when there isn't much else going on in the garden. You can also plant them in small clumps so that they make a garden all their own. Small ornamental trees and those with loose canopies that allow lots of sunshine through make good garden trees. The more sunshine they let through, the more options you'll have in the plants that you grow under them. A pattern of shifting light and shade throughout the day allows you to grow sun-loving shrubs and perennials under their canopy. Here are some things to consider in the selection of ornamental trees:

- **Size** - Do you have room for the tree? Will it be out of scale in your landscape?
- **Bloom season and duration** - If you are selecting a tree for its flowers, you want them to last as long as possible.
- **Location requirements** - Make sure your soil is right for the tree and you can give it the right amount of sun or shade.
- **Surface roots** - Roots that rise above the soil can lift sidewalks and make lawn maintenance difficult.
- **Litter** - Some trees seem to always have something falling from their branches. This is especially true of fruit trees.

Ornamental Tree Care

Ornamental tree care depends on the type of tree. There are many ornamental trees that require very little maintenance. Pruning raises the bar on tree maintenance, so look for those that grow well without extensive pruning. Most ornamental trees look their best with a regular program of fertilization, usually in spring, and some require water during dry spells.

Exercise 3. Answer the following questions based *only* on the text provided.

1. What is the primary reason ornamental trees are grown?
2. List three aesthetic features mentioned in the text for which ornamental trees are valued.
3. According to the text, what structure and function do ornamental trees add to a garden besides their aesthetic value?
4. Which type of ornamental tree is described as the **most popular** in many parts of the country, but also **labor-intensive**?
5. Name two varieties of **Flowering Pears** mentioned, along with the height each can reach.
6. The text suggests that planting ornamental trees in small clumps can create what?
7. What kind of lighting pattern, provided by a tree's canopy, allows for growing sun-loving shrubs and perennials underneath it?
8. Identify two issues that can be caused by a tree having **surface roots**.
9. When is the recommended time for a regular program of **fertilization** for most ornamental trees?
10. Which type of ornamental tree mentioned is a "mainstay of southern gardens" and "bursts into showy blooms every summer"?

Exercise 4. Match the words from the text in the left column with their correct definitions in the right column.

| Word | Definition |
|--------------|--|
| 1. Aesthetic | A. Lasting or continuing for a period of time. |
| 2. Endures | B. The outer layer of a tree trunk. |
| 3. Fragrance | C. A framework or supporting structure. |
| 4. Bark | D. Dealing with the nature of beauty and art. |
| 5. Framework | E. A small or representative part of a larger whole. |
| 6. Duration | F. A pleasant, sweet smell. |
| 7. Specimen | G. To continue to exist; to withstand hardship. |

Exercise 5. Determine if the following statements are True (T) or False (F) based on the text.

1. Ornamental trees only provide beauty during the spring and summer.
2. The text states that all gardens have room for at least one small ornamental tree.
3. Crabapples need pruning and a good spraying program to prevent pests and disease.
4. Flowering dogwood's flower bracts appear *after* the tree begins to leaf out.
5. Trees with loose canopies are discouraged for use as garden trees because they let too much sunlight through.
6. Looking for trees that grow well without extensive pruning can **reduce** tree maintenance.

Exercise 6. Identify which specific ornamental tree(s) in the list match the following descriptions.

1. Has purplish-pink flower clusters in spring and dark brown pods in fall and winter: _____
2. Attractive flowers, but is most popular for its reddish-purple foliage:

3. A graceful tree that songbirds love to visit: _____

4. Two of the most popular varieties are Callery and Bradford:

5. Needs watering during dry spells and may have glossy red fruit:

Topic 8. Plant protection methods

Exercise 1. Translate and learn the words

crop protection –

research –

opportunities –

pesticides –

herbicides –

involve –

netting –

traps –

hand-picking –

crop rotation –

plant breeding –

genetic enhancement –

regulate pest populations –

maintain ecological balance –

induced Resistance –

foster natural pest control –

minimize environmental impact –

encompass –

Exercise 2. Read and translate the text

Plant protection methods

Crop protection methodologies are constantly evolving, driven by societal pressures and the ever-evolving needs of agricultural practitioners. The nexus of innovation within the farming sector, facilitated by industry-driven initiatives and rigorous research conducted by universities and research institutions, offers many opportunities for enhancing crop protection techniques. Plant protection methods include **biological, chemical, and mechanical/physical controls**. Biological methods use living organisms to manage pests, while chemical methods involve pesticides like herbicides and insecticides. Mechanical and physical methods include barriers such as netting, traps, hand-picking, and crop rotation.

Some are presented below.

1. **Mechanical Techniques:** Mechanical methods involve the physical manipulation of crops to mitigate pest and disease pressures. These techniques include using barriers, traps, and machinery to deter and manage crop threats.
2. **Plant Breeding:** The discipline of plant breeding focuses on the genetic enhancement of crop varieties, fostering innate resistance to pests and diseases. Through selective breeding, cultivars with improved natural defenses are developed.
3. **Biocontrol:** Biocontrol strategies harness the potential of beneficial organisms to regulate pest populations. Predators, parasitoids, and microorganisms are deployed to maintain ecological balance within agricultural systems.
4. **Induced Resistance:** Inducing resistance within crops through biostimulants or elicitors activates the plant's innate defense mechanisms. This method enhances the crop's ability to fend off pathogenic intruders.
5. **Applying Ecological Principles in Diversified Systems:** Incorporating ecological principles into farming systems involves the creation of diverse agroecosystems. These systems foster natural pest control and reduce the reliance on synthetic inputs.
6. **Precision Agriculture (PA) and AI:** Precision agriculture employs advanced technologies, including remote sensing and data analytics, to optimize resource allocation, enhance crop health, and minimize environmental impact.

7. Plant Protection Products (PPP): Plant protection products encompass a range of substances, including agrochemicals, organic compounds, and their combinations. These substances can comprise soaps, fungicides, repellents, and botanical compounds.

Exercise 3. Ask questions about the text

Exercise 4. Define and Differentiate: Briefly define the three main categories of plant protection methods mentioned in the introduction. Give one example for each.

- **Biological Methods:** (Definition)
- **Chemical Methods:** (Definition)
- **Mechanical/Physical Methods:** (Definition)

Exercise 5. Match the crop protection methodology (Column A) with its primary mode of action or defining characteristic (Column B).

Column A (Methodology) Column B (Primary Action)

- | | |
|--------------------------------------|---|
| 1. Biocontrol | A. Using remote sensing and data analytics to optimize resource allocation. |
| 2. Plant Breeding | B. Using barriers, traps, or machinery to physically manage pests. |
| 3. Precision Agriculture (PA) | C. Enhancing crop varieties to have innate resistance to pests. |
| 4. Mechanical Techniques | D. Deploying beneficial organisms (e.g., predators, parasitoids) to regulate pests. |

Exercise 6. Determine if the following statements are True or False based on the text. Correct the False statements.

- a) Plant Protection Products (PPP) only include synthetic agrochemicals.
- b) Induced Resistance works by physically manipulating the crop.

- c) Crop rotation is an example of a mechanical/physical control method.

Exercise 7. Give short answer

1. **Method Selection:** A farmer is struggling with a specific insect pest. They want to avoid synthetic pesticides. Propose two different, non-chemical methods from the text that they could consider. Explain how each method would work to control the pest.
2. **Explain the "Why":** Why is **Applying Ecological Principles in Diversified Systems** considered a strategy that reduces the reliance on synthetic inputs?
3. **Role of Technology:** How does **Precision Agriculture (PA)** and **AI** contribute to the efficiency and environmental goals of crop protection? What type of data might a PA system use?
4. **Induced Resistance:** Explain the process of **Induced Resistance** in your own words. What is the role of **biostimulants or elicitors** in this process?

9. Write short answer.

1. **Synergies:** Imagine a comprehensive crop protection strategy for a high-value crop. Propose how **Plant Breeding** and **Biocontrol** could be used together to create a more robust defense system than using either method alone.
2. **Societal Drivers:** The text mentions that "Crop protection methodologies are constantly evolving, driven by **societal pressures**." What do you think are some of the key societal pressures influencing the shift towards methodologies like Biocontrol and Applying Ecological Principles?
3. **The Future of Farming:** Discuss the potential for **Precision Agriculture (PA)** and **AI** to integrate and optimize the use of **Plant Protection Products (PPP)**. How could AI ensure that PPPs are applied only when and where they are truly needed, minimizing environmental impact?

Topic 9. Landscape design

1. Translate and learn the words

Landscape –

Independent –

Environmental sustainability –

Landscape architecture –

Skill –

Setting a plan –

Irrigation –

Focus on –

Diverse soil conditions –

Depend on –

Offer –

Professional gardener –

Desirable –

Guide –

Different –

Feature –

2. Read and translate the text

Landscape design

Landscape design is the art and practice of planning and arranging the physical features of an outdoor area to create spaces that are both functional and aesthetically pleasing. It involves balancing hardscape elements like patios and walls with softscape elements such as plants, trees, and shrubs, considering factors like climate, soil, and

topography. The process results in a landscape plan, which is a scaled diagram used as a guide for construction and installation.

Landscape design is an independent profession and a design and art tradition, practiced by landscape designers, combining nature and culture. In contemporary practice, landscape design bridges the space between landscape architecture and garden design.

Landscape design focuses on both the integrated master landscape planning of a property and the specific garden design of landscape elements and plants within it. The practical, aesthetic, horticultural, and environmental sustainability are also components of landscape design, which is often divided into hardscape design and softscape design. Landscape designers often collaborate with related disciplines such as architecture, civil engineering, surveying, landscape contracting, and artisan specialties.

Design projects may involve two different professional roles: landscape design and landscape architecture.

- Landscape design typically involves artistic composition and artisanship, horticultural finesse and expertise, and emphasis on detailed site involvement from conceptual stages through to final construction.
- Landscape architecture focuses more on urban planning, city and regional parks, civic and corporate landscapes, large-scale interdisciplinary projects, and delegation to contractors after completing designs.

There can be a significant overlap of talent and skill between the two roles, depending on the education, licensing, and experience of the professional. Both landscape designers and landscape architects practice landscape design.

The landscape design phase consists of research, gathering ideas, and setting a plan. Design factors include objective qualities such as: climate and microclimates; topography and orientation, site drainage and groundwater recharge; municipal and resource building codes; soils and irrigation; human and vehicular access and

circulation; recreational amenities (i.e., sports and water); furnishings and lighting; native plant habitat botany when present; property safety and security; construction detailing; and other measurable considerations.

Design factors also include subjective qualities such as *genius loci* (the special site qualities to emphasize); client's needs and preferences; desirable plants and elements to retain on site, modify, or replace, and that may be available for borrowed scenery from beyond; artistic composition from perspectives of both looking upon and observing from within; spatial development and definition – using lines, sense of scale, and balance and symmetry; plant palettes; and artistic focal points for enjoyment. There are innumerable other design factors and considerations brought to the complex process of designing a garden that is beautiful, well-functioning, and that thrives over time.

The up-and-coming practice of online landscape design allows professional landscapers to remotely design and plan sites through manipulation of two-dimensional images without ever physically visiting the location. Due to the frequent lack of non-visual, supplementary data such as soil assessments and pH tests, online landscaping necessarily must focus on incorporating only plants that are tolerant across many diverse soil conditions.

Many landscape designers have an interest and involvement with gardening, personally or professionally. Gardens are dynamic and not static after construction and planting are completed, and so in some ways are "never done". Involvement with landscape management and direction of the ongoing garden direction, evolution, and care depend on the professional's and client's needs and inclinations. As with the other interrelated landscape disciplines, there can be an overlap of services offered under the titles of landscape designer or professional gardener.

3. Match the Term to its Definition: Draw a line connecting the term on the left with its most accurate definition based on the text on the right.

| Term | Definition |
|----------------------------------|--|
| 1. Hardscape | a. The design and planning of landscapes on a large scale, often involving urban areas and civic projects. |
| 2. Softscape | b. The art and practice of planning and arranging the physical features of an outdoor area. |
| 3. Landscape Plan | c. Elements like patios, walls, and paving. |
| 4. Landscape Design | d. The special atmosphere or protective spirit of a place. |
| 5. Landscape Architecture | e. A scaled diagram used as a guide for construction and installation. |
| 6. Genius Loci | f. Elements like plants, trees, and shrubs. |

4. Choose the best answer for each question based *only* on the provided text.

1. Landscape design is described in the text as bridging the space between which two disciplines?

- a) Civil Engineering and Architecture
- b) Landscape Architecture and Garden Design**
- c) Horticulture and Surveying
- d) Urban Planning and Construction Detailing

2. Which of the following is explicitly listed as a **hardscape** element in the text?

- a) Plants
- b) Trees
- c) Patios**

d) Shrubs

3. According to the text, a key difference in the focus of **Landscape Architecture** is its emphasis on:

a) Detailed site involvement from conceptual stages through to final construction.

b) Horticultural finesse and expertise.

c) **Urban planning, city and regional parks, and large-scale projects.**

d) Online, remote design without site visits.

4. The practice of **online landscape design** necessarily focuses on plants that are tolerant across many diverse soil conditions primarily due to:

a) The desire to simplify the process for the client.

b) **The frequent lack of non-visual, supplementary data like soil assessments.**

c) Building codes restricting plant choices.

d) The need to use fewer plant types.

5. Find a word or phrase in the text that means:

1. Combining two or more different professional fields or subjects. (Paragraph 2)
2. The management or guidance of the ongoing changes and development of a garden. (Paragraph 6)
3. The ability to grow or thrive in many different environmental conditions, particularly soil. (Paragraph 5)
4. The study of plants and plant life. (Paragraph 4)

5. Give the short answer

1. **List three** objective qualities (measurable considerations) that are included as design factors.
2. **List three** subjective qualities that influence the design process.
3. What are the two main types of elements that a landscape designer must balance to create both functional and aesthetically pleasing spaces?
4. Why are gardens considered "never done"?

Topic 10. Planting and transplanting plants

Exercise 1. Translate and learn the words:

space –

shrub –

estimate –

pest-free plants –

branch –

root –

resist –

avoid –

establish –

protect –

damage –

soil condition –

improve –

fertilizers –

wild –

quickly –

Exercise 2. Read and translate the text:

Planting and transplanting trees and shrubs

Look at the space where you intend to plant the tree or shrub. Estimate the height and diameter of a tree or shrub that will fit there. Check to see if the soil stays wet, or if it drains quickly. Figure out how much space the roots will have. Look for healthy, disease- and pest-free plants with well-formed root and branch systems. Resist any temptation to dig your own tree or shrub from the wild. Wild-dug plants often die after transplanting because they lose many roots. If the site sometimes holds standing water, avoid plants that can't stand "wet feet" .

You should plant most trees and shrubs early in the spring, just before or as new growth starts. Certain tree species essentially demand spring planting, because they establish new roots very slowly . Most trees and shrubs can also be planted in fall . If you've bought plants in containers or balled and burlapped, you're even less time-bound. Because the soil stays with the roots, you can plant them any time the soil can be worked. Try to buy plants just before you intend to put them in the ground. Until they're planted, you'll need to protect the roots from damage, such as drying and overheating.

You're preparing a spot where a tree or shrub may stand for decades, so be sure it is well-drained and well-aerated. Roots need water and air to grow properly. Soil types vary not only between regions, but also between two spots in a yard. Know your soil conditions before you plant. Check subsurface drainage by digging a hole and filling it with water. If the water doesn't drain away within two hours, you either need to improve the subsurface drainage or select only those plants that can tolerate wet soil.

In loose, well-drained soil, dig the hole two times the width of the root spread, soil ball, or container size of the plant. Dig as deep as the root system, but not much deeper, so that when you have finished planting the tree or shrub is just as deep in the new location as in the old. Flatten the bottom of the hole and stand in it to firm the soil so that the plant doesn't settle in deeper later. If your plant is bare-root, you can make the shape of the bottom of the hole fit the shape of the root system. In most cases, use the same soil that came out of the hole to backfill; mix topsoil and subsoil together. To avoid

burning roots, do not add dry fertilizers or fresh manure to the backfill mix. (If you mix on a sheet of plastic or canvas next to the hole, it's easier to clean up after-wards.) If you are planting shrubs or small trees in very well- drained or light, droughty soils, thoroughly mix in one part of a good grade sphagnum peat moss with two parts soil. Such soil amending only marginally helps large trees with extensive root systems. Do not amend backfill soil on a heavy soil site. If you plan to stake the tree, pound stakes into the ground now, before you plant, to avoid damaging roots. Once the hole is dug, planting instructions will vary according to the type of root preparation your tree or shrub got from the nursery.

Exercise 3. Answer the following questions based only on the text provided.

1. What three key environmental factors should you assess at the planting site before buying a plant?
2. According to the text, what are the characteristics of healthy plants to look for in a nursery?
3. When is the ideal time to plant most trees and shrubs? What is the advantage of planting containerized or balled and burlapped plants?
4. When digging the planting hole, how deep should it be, and why is this depth important?
5. Describe the process for checking subsurface drainage. What action should you take if the test indicates poor drainage?
6. Name two substances the text explicitly advises against adding to the backfill soil and why.

Exercise 4. Match the vocabulary word from the text (A-F) with its definition (1-6).

| <i>Word</i> | <i>Definition</i> |
|------------------------|--|
| A Drainage | 1 To make a soil mixture better by adding substances like peat moss or compost. |
| B Aerated | 2 To pound supports (like wooden posts) into the ground to help stabilize a newly planted tree. |
| C Transplanting | 3 The movement of water through the soil. |
| D Amending | 4 The act of moving a plant from one location to another. |
| E Droughty | 5 Having sufficient circulation of air or oxygen. |
| F Stake | 6 Lacking sufficient water or prone to dryness. |

Exercise 5. Read each statement. Write True if the statement is correct according to the text. Write False if it is incorrect, and then correct the statement to make it accurate.

1. Bare-root plants, containerized plants, and balled and burlapped plants are all equally less time-bound for planting.
2. Mixing topsoil and subsoil together to create the backfill mix is generally recommended.
3. The hole should be dug significantly deeper than the root system to prevent the plant from settling too low.
4. Wild-dug plants are often a good alternative to nursery-bought plants because they are fully accustomed to local conditions.
5. If you are planting a small tree in light, droughty soil, you should thoroughly mix in one part sphagnum peat moss with two parts soil.

Exercise 6. Apply the information from the text to the following scenarios.

1. **Scenario: "Wet Feet"** Your planting site often holds standing water after a rain shower. What is the immediate concern described in the text, and what action does the text recommend to address this issue?
2. **Scenario: Post-Hole Digging** You have dug a planting hole in loose, well-drained soil that is twice the width of the root ball. Before you put the tree in, the text instructs you to "Flatten the bottom of the hole and stand in it to firm the soil." Explain the **purpose** of this specific step.
3. **Scenario: Staking** You decide your new tree will need staking for stability. When should you pound the stakes into the ground, and why?

Exercise 7. Read the text and write a title for the text.

Sometimes you must move a small tree or shrub from one spot to another in a yard. (Leave relocation of large trees to landscape professionals.) It's best to think ahead. Two years before the move, start pruning roots in early fall while trees are still growing. This gives the plant the best chance for survival following the move. If you don't root-prune the plant before the move, it may still survive, but the chances of success are reduced. To prune roots of small trees, first measure the trunk diameter at your waist height. Then, measure out 9 inches from the trunk for each inch of diameter. For example, a tree with a diameter of 1-1/2 inches should be root pruned 13-1/2 inches from the trunk. For shrubs, make the root-pruning cut half the distance of the radius of the branch spread of the shrub. For example, a shrub with a spread of 36 inches from the center to the outer-most branches should be root pruned to 18 inches. When plants are dormant during the first year, cut straight down around two quarters of the plant on two opposite sides. Use a sharp spade to cut 18 inches deep. During the second year, cut around the remaining two quarters of the perimeter of the dormant plant. This two-year process cuts off many long roots and encourages new roots to grow in the soil ball. Move the plant during the third season. When you're ready to move a plant, tie the branches to the central trunk. Then start digging 6 inches further away from the trunk than the root-pruning line. Dig a hole 18 inches deep. When the circular hole is

completely finished, gently rock the plant (with the soil ball attached) from side to side. Cut the roots on the bottom of the soil ball and slide burlap under the ball. Grasp all four corners of the burlap, and lift the soil ball out of the hole. Wrap the burlap tightly around the soil ball. Tie the burlap so it cannot get loose in handling. Handle the plant carefully, by lifting the soil ball, not the trunk. Do not break the soil ball! Plant as described .above

Watering

If you want your newly planted trees and shrubs to survive their first year, you've got to be sure they get the right amount of water. Overwatering is just as harmful as underwatering. How often and how much you water depends upon your soil type and the amount of rainfall.

Exercise 8. Read the text and write an essay on the topic: "Plant transplantation".

Topic 11. Landscape interior design

Exercise 1. Translate and learn the words:

landscape –

indoor –

enhance –

improve air quality –

reduce stress –

boost productivity –

environment –

choose –

faux plants –

noise reduction –

difference –

huge –

performance –

prefer –

attract –

crucial –

irrigation systems –

modern artificial plants –

Exercise 2. Read and translate the text:

What is Interior Landscaping?

Landscape interior design, or interiorscaping, brings nature indoors by strategically placing plants, water features, and natural elements (like rocks) within buildings to enhance aesthetics, improve air quality, reduce stress, boost productivity, and create a more vibrant, healthy, and inviting environment for homes, offices, hotels, and public spaces. It uses principles like unity, balance, and focal points, applying them to indoor environments with plants, textures, colors, and lighting to mimic outdoor beauty.

The Basics of Interior Landscaping

It's easy to get started with interior landscaping with so many elements and concepts to choose from. Here are a few of the core elements:

Live plants

Faux plants

Water features

Stonework

Containers

Those ingredients open up a vast new world of visually pleasing interior designs. Beauty isn't all you get, though. There's improved air quality, noise reduction, and a welcoming environment for guests, visitors, and employees.

Exterior and interior landscaping have similarities. However, there are key differences and challenges. Watering is a major difference indoors, as hand watering is usually required instead of automatic irrigation. Then, you have natural light challenges. The biggest difference is the preventive maintenance to avoid plant loss since disease treatments are not an option inside buildings.

Benefits of Interior Landscaping

There's a long list of impressive benefits to adding interior greenery, blooms, and trees. Many Yellowstone clients say interiorscaping has been a huge upgrade to their building without overspending. Furthermore, businesses feel the extra value of a nicer environment can incentivize their best employees to return to the office from remote-only work.

Quality interior landscaping is proven to reduce stress (even without 100% natural plants). And stress is a huge reason much of today's workforce would prefer to keep working from home. Less stress, better air quality, and quieter work environments attract new employees and help bring remote staff back in the office.

Plus, interior landscapes enhance employee satisfaction and performance. That's a good return on investing in something as simple as a green wall—or new faux plants, which have come a long way with realistic options that use subtle color blends.

Creative mixtures of live plant materials with faux plants also conceal artificial elements.

Planters are a vital part of green interior designs, while soil considerations and access to natural light are crucial to plant health. Irrigation systems exist for interior landscaping, but we highly recommend hand watering (more precise and removes indoor water damage worries).

Faux greenery requires minimal upkeep and is ideal for buildings lacking enough sunlight. Modern artificial plants have more “life” to them, especially when you enhance their “real” appeal by:

- Using planters crafted with natural materials like terracotta.
- Adding natural soil, rocks, or preserved moss to planters.
- Misting faux flowers adds a life-like look.

Exercise 3. Select the best answer for each question based *only* on the text provided.

1. What is the primary purpose of interiorscaping?
 - a) To replace all exterior landscaping.
 - b) To bring nature indoors using elements like plants and water features.
 - c) To only use faux plants in office buildings.
 - d) To install automatic irrigation systems indoors.
2. Which of the following is *not* listed as a core element of interior landscaping?
 - a) Live plants
 - b) Stonework
 - c) Exterior lighting
 - d) Containers
3. According to the text, what is considered the biggest difference between exterior and interior landscaping?
 - a) The use of faux plants.
 - b) The challenge of natural light.

- c) The need for preventive maintenance to avoid plant loss indoors.
 - d) The cost of the elements.
4. Which of these is a proven benefit of quality interior landscaping, even without 100% natural plants?
- a) Complete elimination of remote work.
 - b) Reduction of stress.
 - c) Automatic irrigation.
 - d) Complete noise cancellation.

Exercise 4. Based on the text, indicate whether the following statements are True (T) or False (F).

- 1. ____ The text suggests that disease treatments are a viable option for plants inside buildings.
- 2. ____ Faux plants are ideal for buildings that lack sufficient sunlight.
- 3. ____ The principles of unity, balance, and focal points apply only to exterior landscaping, not interiorscaping.
- 4. ____ Hand watering is highly recommended over interior irrigation systems to prevent water damage worries.
- 5. ____ Creative mixtures of live and faux plants can help conceal artificial elements.

Exercise 5. Complete the following sentences using words or phrases directly from the text.

- 1. Interiorscaping enhances aesthetics, improves air quality, reduces stress, _____ boosts, and creates a more vibrant, healthy, and inviting environment.

2. The text suggests that for watering indoors, _____ is usually required instead of automatic irrigation.
3. Besides beauty, benefits of interior landscaping include improved air quality, _____, and a welcoming environment.
4. Modern artificial plants have more “life” to them, especially when you enhance their “real” appeal by using planters crafted with _____ like terracotta.
5. _____ and access to natural light are crucial to plant health.

Exercise 6. Answer the following questions in one to three complete sentences, citing the text where necessary.

1. List three key benefits of interior landscaping for a business or office environment.
2. What three specific techniques does the text recommend for making faux greenery look more realistic?
3. Explain the key difference and challenge regarding **watering** in interior landscaping compared to exterior landscaping.
4. How can interiorscaping act as an incentive for employees to return to the office from remote work?

Topic 12. Growing grapes

Exercise 1. Translate and study the words:

grow –

grape –

disease-resistant –

cold-hardy –

support –

encourage –

purpose –

protection –

soak –

establish –

allow –

choose –

carefully –

seeds –

moist –

root system –

produce –

obtain –

trim off –

spread –

soil surface –

Exercise 2. Read and translate the text:

Growing grapes

Grape vines not only produce sweet and versatile fruits, but they also add an element of drama to a garden or landscape. They are vigorous growers, and with the proper pruning, they will produce fruit with ease within a few years and last for 30 years or more! For home gardeners, there are three main types of grapes to consider: American (*Vitis labrusca*), European (*V. vinifera*), and French-American hybrids. American grapes are the most cold-hardy, while European grapes—usually better for wine than the table—do well in warm, dry, Mediterranean-type zones. Hybrids tend to be both cold-hardy and disease-resistant, but are not as flavorful as European grapes. Another

type that is grown in the U.S. is the Muscadine (*V. rotundifolia*), which is native to the southern United States. The Muscadine grape's thick skin makes it best suited for use in jams, wine, or other processed grape products.

Make sure you purchase grape vines from a reputable nursery. Vigorous, 1-year-old plants are best. Smaller, sometimes weaker, 1-year-old plants are often held over by the nursery to grow another year and are then sold as 2-year-old stock. Obtain certified virus-free stock when possible.

Grape Growing involves choosing a sunny spot with well-drained soil, providing strong support like a trellis, planting in early spring, watering well (especially when fruiting), and performing hard annual winter pruning to encourage a strong root system and good fruit production over a few years. Key steps include site prep (sun, drainage, pH 6.5), support installation before planting, initial pruning to just a few buds, and ongoing training and watering for a bountiful, flavorful harvest.

Growing grapes for many uses

Do you want to grow grapes primarily to cover an arbor? Then you can choose just about any grape variety that is hardy and reasonably healthy.

Do you hope to make grape juice and jelly? Several dependable easy-care varieties will fit this purpose. Juice and jelly grapes are traditionally some of the most winter-hardy varieties.

Do you want seedless grapes for fresh eating? Some seedless varieties are being grown in Minnesota now, but, except in far southern Minnesota, all of these varieties will need some winter protection. Seeded table grapes are generally more cold-hardy and vigorous than newer seedless varieties.

Grapes for wine

Many excellent cold-hardy wine grape varieties are available for commercial and hobby winemakers in northern climates. Several of these have been developed specifically for our harsh climate.

For winemaking you will need to choose the variety more carefully, considering what varieties will make the type of wine you want, and what training and pruning they will need.

While wine grapes can be eaten fresh, they generally have higher acid, higher sugar, higher skin-to-pulp ratio, and more seeds than table and juice grapes.

In Minnesota, spring planting is recommended to give the young vines the most time to get established before their first winter.

If you order from catalogs or online sources your plants will arrive as dormant, bare-root plants. Keep the plants in a cool place with the root system moist. Plant the vines as soon as possible.

Before planting bare-root vines

- Soak the roots in water for 3 to 4 hours.
- At planting, remove all canes except the most vigorous one.
- Plant vines with the lowest bud on the cane just above the soil surface.
- Trim off any broken or excessively long roots.
- Dig a hole large enough to spread the root system out.
- Cover the roots completely with soil.

Mulching is not usually recommended for grapes because mulch will keep the soil temperature too cool. Grape vines grow best in warmer soil.

Initial watering

After planting, water the vines regularly throughout the first year. The root system must grow and establish to allow shoot growth in the first year.

Support

Grapevines need support or they will trail along the ground. The support can be an arbor covering a patio for shade or as simple as a post in the ground to support the trunk of the vine.

Grapevines can also be grown along an existing fence. Virtually any type of support structure will do, provided it is sturdy. Grape vines grow quickly and get quite heavy.

Grapevines can be trained and pruned to just about any form and shape.

Exercise 3. Choose the best answer for each question based *only* on the text provided.

1. Which type of grape is generally described as being the most cold-hardy?
 - a) European (*Vitis vinifera*)
 - b) French-American hybrids
 - c) American (*Vitis labrusca*)
 - d) Muscadine (*V. rotundifolia*)

2. What quality makes Muscadine grapes best suited for processed products like jam or wine?
 - a) Their higher acid content
 - b) Their thick skin
 - c) Their superior flavor
 - d) Their seedless nature

3. When is the recommended time to plant grape vines in a climate like Minnesota?
 - a) Late summer

- b) Early fall
 - c) Early spring
 - d) Mid-winter
4. Why does the text generally advise against mulching for grape vines?
- a) Mulch can introduce viruses.
 - b) Mulch keeps the soil temperature too cool.
 - c) Mulch interferes with the necessary annual winter pruning.
 - d) Mulch attracts pests that damage the fruit.
5. What is the recommended condition of grape stock to purchase from a nursery?
- a) Small, 2-year-old plants
 - b) Certified virus-free, vigorous 1-year-old plants
 - c) Smaller, weaker 1-year-old plants
 - d) Dormant, bare-root plants that have not been soaked

Exercise 4. Determine whether the following statements are True or False based on the text.

1. Grape vines, with proper care, can last for 30 years or more. (T/F)
2. European grapes are better for wine than the table and thrive in warm, dry zones. (T/F)
3. For winemaking, a grape variety's acid, sugar, and seed content are generally lower than in table grapes. (T/F)
4. Grapes grown primarily to cover an arbor require a very specific, high-flavor variety. (T/F)

5. Grapevines do not require strong support because their quick growth allows them to stand on their own. (T/F)

Exercise 5. Complete the following sentences or answer the questions with information from the text.

1. A sunny spot with well-drained soil and a pH of is ideal for growing grapes.
2. The two primary care activities needed over the first few years to encourage a strong root system and good fruit production are watering well and performing .
3. When planting a dormant, bare-root vine, you should remove all canes except .
4. Before planting a bare-root vine, you should soak the roots in water for .
5. If you want seedless grapes for fresh eating in far northern climates, they will likely need

Exercise 6. Answer the following questions using the information provided in the text.

1. A home gardener in a cold, northern region wants to grow grapes for making juice and jam, prioritizing easy care and cold-hardiness. What general type of grape (American, European, French-American hybrid, or Muscadine) would be the best fit, and why?
2. Imagine a gardener ordered bare-root vines and left them exposed in a warm, dry area for three days before planting. Which specific preparation step *before* planting did they likely compromise, and what is the potential consequence based on the text's advice?

Topic 13. Vegetables

Exercise 1. Translate and study the words:

vegetable –

root –

stem –
leaf –
flower –
fruit –
seed –
tomatoes –
potatoes –
vitamins –
fiber –
antioxidants –
legumes –
harvest –
crops –
fat –
carbohydrates –
consume –
eat –
cook –
crucial –
healthy diet –
edible –
beetroot –
carrot –
cabbage –
onion –
cucumber -
garlic –

Exercise 2. Read and translate the text:

Vegetables

A vegetable is an edible part of a plant—like roots, stems, leaves, flowers, or even fruits and seeds—eaten as food, usually savory, not sweet. While botanically complex (tomatoes are fruits, potatoes are tubers), in cooking, vegetables are nutrient-rich (vitamins, fiber, antioxidants) foods crucial for a healthy diet, categorized by subgroups like dark green, red/orange, or legumes.

Vegetable growing involves choosing a sunny spot, preparing nutrient-rich, well-draining soil, planting appropriate varieties for your climate and season, and providing consistent water, fertilizer, and mulch for maintenance, leading to a harvest of fresh produce. Key steps include planning for sunlight (6-8 hours for most), improving soil with compost, controlling weeds, and watering based on soil moisture. Start small, plant what you'll eat, and consider raised beds for poor soil.

Vegetables are edible parts of plants that are consumed by humans or other animals as food. This original meaning is still commonly used, and is applied to plants collectively to refer to all edible plant matter, including flowers, fruits, stems, leaves, roots, and seeds. An alternative definition is applied somewhat arbitrarily, often by culinary and cultural tradition; it may include savoury fruits such as tomatoes and squash, flowers such as broccoli, and seeds such as pulses, but exclude foods derived from some plants that are fruits, flowers, nuts, and cereal grains.

Originally, vegetables were collected from the wild by hunter-gatherers and entered cultivation in several parts of the world, probably during the period 10,000 BC to 7,000 BC, when a new agricultural way of life developed. At first, plants that grew locally were cultivated, but as time went on, trade brought common and exotic crops from elsewhere to add to domestic types. Nowadays, most vegetables are grown all over the world as climate permits, and crops may be cultivated in protected environments in less suitable locations. China is the largest producer of vegetables, and global trade in agricultural products allows consumers to purchase vegetables grown in faraway countries. The scale of production varies from subsistence farmers supplying the needs

of their family for food, to agribusinesses with vast acreages of single-product crops. Depending on the type of vegetable concerned, harvesting the crop is followed by grading, storing, processing, and marketing.

Vegetables can be eaten either raw or cooked and play an important role in human nutrition, being mostly low in fat and carbohydrates, but high in vitamins, minerals and dietary fiber. Many nutritionists encourage people to consume plenty of fruit and vegetables, five or more portions a day often being recommended.

Exercise 3: Read the following statements and decide if they are True (T) or False (F) based only on the provided text.

1. A vegetable is defined botanically as only a root, stem, or leaf. (T/F)
2. Tomatoes are always considered vegetables, even botanically. (T/F)
3. Vegetables are generally high in fat and carbohydrates. (T/F)
4. The text suggests that most vegetables require 6-8 hours of sunlight daily for growth. (T/F)
5. In the culinary definition, fruits like apples and bananas are often included as vegetables. (T/F)
6. Vegetable cultivation began relatively recently, only about 1,000 years ago. (T/F)
7. China is mentioned as the largest consumer of vegetables globally. (T/F)
8. Nutritionists often recommend consuming at least five portions of fruits and vegetables a day. (T/F)

Exercise 4: Complete the Sentences. Choose the best word or phrase from the list below to complete each sentence. Use each option only once.

- well-draining soil
- savory
- legumes

- agribusinesses
- compost
- antioxidants
- cultivation
- grading

1. Vegetables are usually eaten as food that is _____, not sweet.
2. Vegetables are categorized into subgroups like dark green, red/orange, or _____.
3. Key steps in growing vegetables include improving the soil with _____ and providing consistent water.
4. For growing vegetables, the soil should be nutrient-rich and _____.
5. In addition to vitamins and fiber, vegetables are rich in health-boosting _____.
6. The practice of growing vegetables, known as _____, probably began around 10,000 BC to 7,000 BC.
7. Production scales range from subsistence farmers to _____ with vast acreages of crops.
8. After harvesting, the crop is followed by _____, storing, processing, and marketing.

Exercise 5: Match the word or phrase from the text (1-5) with its correct definition (A-E).

Word/Phrase

Definition

- | | |
|-----------------------|---|
| 1. Edible | A. Relating to cooking or the kitchen. |
| 2. Tuber | B. Suitable or safe to be eaten. |
| 3. Culinary | C. A thick, fleshy, underground stem, like a potato. |
| 4. Arbitrarily | D. The process of developing and preparing land for growing crops. |

Word/Phrase**Definition**

- 5. Cultivation** E. Based on random choice or personal whim, rather than any reason or system.

Exercise 6: Answer the following questions briefly, using information from the text.

1. What are four examples of edible plant parts that can be considered a vegetable?
2. What is the recommended range of hours of sunlight needed for most vegetable plants?
3. What are the two main steps mentioned for maintaining a vegetable garden after planting?
4. According to the text, what country is currently the largest producer of vegetables?

T 14 Organic Vegetable Growing

Exercise 1. Translate and learn the words

organic matter –

vegetable –

crop rotation –

sustainable –

interdependent –

include –

key steps –

rich soil –

weeds –

genetically modified organisms –

companion planting –

biological pest control –

maintain –

fertility –

approach –

ensure –

consumer –

ban –

impact –

protect –

enhance –

damage –

Exercise 2. Read and translate the text

The Organic Vegetable Growing

Organic vegetable growing focuses on building healthy soil with compost and organic matter, using organic seeds, avoiding synthetic pesticides/fertilizers, practicing crop rotation, and conserving water with mulch to create a sustainable, interdependent garden ecosystem. Key steps include choosing a sunny spot, preparing rich soil, planting wisely (seeds or seedlings), consistent watering, feeding with compost/teas, mulching for weeds, and rotating crops to prevent disease and build fertility naturally.

Organic vegetable farming is cultivating vegetable crops through sustainable agricultural techniques without using herbicides, synthetic pesticides, chemical fertilizers, or genetically modified organisms (GMOs). Instead, it produces genuine

vegetables using only organic fertilizers and natural processes like crop rotation, companion planting, or biological pest control.

It's all about embedding agricultural practices in natural cycles to maintain soil fertility and support biodiversity in the long run. It's a holistic approach that can produce chemical-free vegetables at scale and keep the soil healthy for future generations.

In the United States and the European Union, organic vegetable farming is subject to precise standards and certifications that ensure organic food authenticity and quality. Regulatory bodies develop and enforce these standards to meet the increasing demand for organic products while maintaining consumer trust.

The USDA National Organic Program and EU Organic Regulation maintain lists of banned substances, including synthetic pesticides, herbicides, and chemical fertilizers, that are incompatible with organic production. Farmers practicing sustainable agriculture must adhere to these lists and use natural pests, disease management alternatives, and other organic methods to have their healthy food certified as organic.

Organic farms counter the negative impacts associated with conventional farming systems. The natural processes used for producing organic vegetables preserve soil health, reduce water pollution, and protect biodiversity. Moreover, as organic farming practices maintain the soil healthy, they contribute to carbon sequestration, countering climate change.

Organic farming systems produce nutrient-rich, chemical-free produce, allowing communities to access fresh and nutritious food. This accessibility encourages healthier eating habits within communities, improving overall community health.

Benefits of Organic Farming

- Organic vegetable farming produces food rich in essential vitamins and minerals.
- Agriculture without synthetic pesticides, herbicides, and fertilizers reduces the risk of chemical exposure for consumers.

- Organic farming practices enhance soil fertility and structure, contributing to the long-term health and sustainability of the soil.
- Organic farming helps maintain a balanced ecosystem, promoting the health of beneficial insects, birds, and other wildlife.
- It minimizes soil erosion, promotes water conservation, and helps mitigate climate change through carbon sequestration in the soil.
- Participating in organic farming can stimulate economic growth within communities, create jobs, and support local businesses.
- Over time, organic farming methods make crops more resilient to pests and diseases.
- Organic vegetables offer superior taste and quality compared to conventionally grown produce.
- Organic certification standards empower individuals to make informed food choices aligned with their values and health preferences.

Organic farming has a significantly slow start due to a 3-year transition from conventional agriculture. Lower yields are typical during this period as the soil adjusts to organic practices. Additionally, the costs associated with organic certification, including inspection fees and record-keeping, can be burdensome for smaller-scale farmers.

Navigating these challenges requires strategic planning, financial management, patience, and a solid commitment to sustainability.

Another significant hurdle is the management of pests and diseases without the use of synthetic pesticides. Natural methods, like integrated pest management and companion planting, can be labor-intensive and may offer little targeted control, leading to potential crop damage and yield losses.

Exercise 3. Choose the best answer for each question based *only* on the text provided.

1. What is the central focus of organic vegetable growing, according to the text?

- a) Achieving the highest possible yields through any means necessary.
- b) Building healthy soil with compost and organic matter.
- c) Exclusive use of chemical fertilizers for rapid growth.
- d) Growing vegetables solely for export to the European Union.

2. Which of the following is explicitly BANNED in organic vegetable farming by regulatory bodies in the US and EU?

- a) Crop rotation.
- b) Natural pest control.
- c) Companion planting.
- d) Synthetic pesticides.

3. What is one of the *negative impacts* of conventional farming systems that organic farms are said to counter?

- a) Increased biodiversity.
- b) Water pollution.
- c) Superior taste and quality of produce.
- d) Carbon sequestration.

4. What is a typical challenge for farmers transitioning to organic methods during the initial 3-year period?

- a) Excessively high crop yields.
- b) A need to use GMOs.

- c) Lower yields and costly certification.
- d) Lack of any government standards.

5. How does organic farming contribute to countering climate change?

- a) By exclusively focusing on exotic crops.
- b) By reducing the need for manual labor.
- c) Through carbon sequestration in the soil.
- d) By utilizing synthetic herbicides.

Exercise 4. Read each statement and determine if it is True or False based on the text. If it is False, briefly explain why.

1. **Statement:** Organic farming primarily relies on synthetic pesticides and chemical fertilizers to manage pests and feed crops.
 - o **Answer:**
2. **Statement:** One key step in organic growing is conserving water with mulch.
 - o **Answer:**
3. **Statement:** Organic certification in the US and EU aims to ensure organic food authenticity and quality.
 - o **Answer:**
4. **Statement:** Organic vegetables require little or no watering compared to conventionally grown produce.
 - o **Answer:**
5. **Statement:** Organic farming practices can stimulate economic growth within communities.
 - o **Answer:**

Exercise 5. Match the term on the left with its correct definition or synonym on the right, as used in the context.

| Term | Definition/Synonym |
|------------------|---|
| 1. Holistic | a) The capture and long-term storage of carbon dioxide. |
| 2. Synthetic | b) A plant or substance added to soil to increase its fertility. |
| 3. Sequestration | c) Resistant; able to withstand difficult conditions. |
| 4. Fertilizer | d) Manufactured or artificial, not natural. |
| 5. Resilient | e) Characterized by the belief that the parts of something are intimately interconnected and explicable only by reference to the whole. |

Exercise 6. Answer the following questions in 1-3 complete sentences, using your own words where possible.

1. List three specific practices organic vegetable growers use *instead* of synthetic chemicals.
2. Explain the concept of "crop rotation" and its dual purpose in organic growing.
3. Besides providing food, list three long-term benefits of organic farming for the environment.
4. What are the two main types of costs associated with organic certification that pose a challenge to small-scale farmers?
5. How do organic standards and certifications help consumers?

Exercise 7. Write a summary of the text.

In a single paragraph (4-6 sentences), summarize the core principles and challenges of organic vegetable growing described in the text. Focus on defining the practice, listing its main benefits, and identifying the key hurdles for farmers.

T 15. Environment

Exercise 1. Translate and learn the words

environment –

to surround –

natural forces -

to interact –

fields of knowledge –

radio waves –

conditions of interstellar medium –

person's behavior –

abiotic elements –

predation –

protect the natural environment –

natural resources –

renewable resources –

non-renewable resources –

Exercise 2. Read and discuss.

Environment

Environment means anything that surrounds us. It can be living (biotic) or non-living (abiotic) things. It includes physical, chemical and other natural forces. Living things live in their environment. They constantly interact with it and adapt themselves to conditions in

their environment. In the environment there are different interactions between animals, plants, soil, water, and other living and non-living things.

Since everything is part of the environment of something else, the word *environment* is used to talk about many things. People in different fields of knowledge use the word environment differently. Electromagnetic environment is radio waves and other electromagnetic radiation and magnetic fields. The environment of galaxy refers to conditions of interstellar medium.

In psychology and medicine, a person's environment is the people, physical things and places that the person lives with. The environment affects the growth and development of the person. It affects the person's behavior, body, mind and heart.

The living conditions of living organisms in an environment are affected by the weather or climate changes in the environment.

In biology and ecology, the environment is all of the natural materials and living things, If those things are natural, it is a natural environment.

Environment includes the living and non-living things that an organism interacts with, or has an effect on it. Living elements that an organism interacts with are known as biotic elements: animals, plants, etc., abiotic elements are non living things which include air, water, sunlight etc. Studying the environment means studying the relationships among these various things. An example of interactions between non-living and living things is plants getting their minerals from the soil and making food using sunlight. Predation, an organism eating another, is an example of interaction between living things.

Some people call themselves environmentalists. They think we must protect the natural environment, to keep it safe. Things in the natural environment that we value are called natural resources. For example; fish, insects, and forests. These are renewable resources because they come back naturally when we use them. Non-renewable resources are

important things in the environment that are limited for example, ores and fossil fuels after a few thousand years. Some things in the natural environment can kill people, such as lightning.

- Ecological units which are natural systems without much human interference. These include all vegetation, microorganisms, soil, rocks, atmosphere, and natural events.
- Universal natural resources and physical phenomenon which lack clear-cut boundaries. These include climate, air, water, energy, radiation, electric charge, and magnetism.

Exercise 3. Read the text and mark the following statements as T (true) or F (false).

- Environment includes only non-living things.
- The environment affects the growth and development of the person.
- In the environment there are different interactions between animals, plants, soil, water.
- Renewable resources are important things in the environment that are limited for example, ores and fossil fuels.

Exercise 4. Fill in the blanks with the correct words and phrases:

to preserve, environment, renewable energy, to protect, fields of knowledge

1. _____ can be living or non-living things.
2. People in different _____ use the word environment differently.
3. We're trying _____ the environment from pollution.
4. _____ is often more expensive than traditional power generated by fossil fuels, which damage the environment.
5. He tries to do what he can _____ the environment by recycling, avoiding plastic foam products, and conserving water.

Exercise 5. Match the words with the definitions.

1. environment

2. natural forces

3. abiotic

4. biodiversity

5. non-renewable resources

A - non-living (abiotic) things.

B – the existence of a variety of organisms

C – something that exists in a limited amount and cannot be reproduced

D - the air, water, and land in or on which people, animals, and plants live

E - occurrences that take place in the environment as a result of nature and which are not within human control.

Exercise 6. Discuss in groups!

What can you say about the environmental problems in your country?

| | | | |
|---------------|-------------|-----|---------------------------------|
| | the forests | | cut down |
| | the rivers | | polluted |
| In my country | the seas | are | destroyed |
| | the animals | | killed |
| | the birds | | captured and sold in pet stores |

Tests Samples

Task 1. Read the text below. Match choices (A - H) to (1-5). There are three choices you do not need to use. Write your answers on the separate answer sheet.

The Most Endangered Wolf in the World

1. _____

From 2002 to 2014, the wild red wolf population consistently numbered over 100 animals. But starting in 2012, the population began to decline due to actions taken by the North Carolina Wildlife Resources Commission (NCWRC). By 2015, the population had declined to between 50 and 75 animals, and by 2016 it had dropped to between 25 and 48 animals. It is widely believed that there are now fewer than 30 red wolves living in the wild. Scientists have warned that if current management practices continue, red wolves could once again be extinct in the wild by 2024.

2. _____

Throughout most of the recovery program's history, shooting by hunters was the leading cause of red wolf deaths, a fact attributed to the similarity in appearance between coyotes and red wolves. Despite this, in 2012 the NCWRC approved a temporary rule allowing the hunting of coyotes at night using artificial lights on public and private lands throughout North Carolina, including in the recovery area. In 2013, the NCWRC adopted a permanent rule that allowed coyote hunting without a permit during the daytime and with a permit at night-time in the recovery area. In response, in 2012 and 2013, AWI and others filed two lawsuits that successfully cancelled both these rules.

3. _____

The threat connected with gunshot mortality (deaths) soon became less important than the numerous threats related to the US Fish and Wildlife Service's (USFWS's) own shifting red wolf management practices. In 2013, the recovery program was transferred

from the jurisdiction of the National Wildlife Refuge System (NWRS) to the Ecological Services Program, 600 miles away from the recovery area.

4. _____

As a result, starting in 2014, the USFWS not only began to neglect its red wolf recovery and management duties, but also started issuing permits allowing landowners to kill red wolves on private land. In 2015, one of the animals killed was a female red wolf, known to be exhibiting denning behaviour, who had previously mothered a total of 16 pups through four separate litters.

5. _____

Given the small and declining number of red wolves, losing even one wolf has a huge influence on the species. The impacts are particularly dire when a mother wolf is lost, because it not only orphans her pups and likely leads to their deaths, but also eliminates the possibility for that particular wolf to contribute more litters to the population. Although red wolves tend to form pair-bonds for life, red wolves may interbreed or hybridize with coyotes, particularly when an adult is lost from a breeding pair close to the mating season.

- A The malpractice of the environmental agency
- B The legislative battle for the red wolf recovery
- C The way endangered species affect humans
- D Maintaining biodiversity in today's world
- E The causes of the red wolf species becoming endangered
- F Significance of female species for the whole population of the red wolf
- G Habitat loss of the red wolf in North Carolina
- H The current population of the red wolf

Task 2. Read the text below. For questions (6-10) choose the correct answer (A, B, C or D). Write your answers on the separate answer sheet.

Wordsworth's Lake District

Two hundred years ago the English poet William Wordsworth wrote a poem that expresses a basic spirit of early English Romanticism. It was Thursday, 15 April 1802. William and Dorothy Wordsworth, the poet's devoted, journal-writing sister, were walking home to Dove Cottage in the Lake District. The wind was fierce, but the Wordsworth siblings were used to striding long distances in foul weather. They were in the woods close to the water side when they first clapped eyes on a field of daffodils 'fluttering and dancing in the breeze'.

What makes this poem an example of Romantic thinking? It isn't just that Wordsworth chooses to write about a natural scene: it is the way he describes the scene as if it had human emotions. For him, nature is not merely a neutral mixture of scenery, colours, plants, rocks, soil, water and air. It is a living force that feels joy and sadness, shares human pain and even tries to educate us human beings by showing us the beauty of life.

Wordsworth's home, Dove Cottage, is now one of the most popular destinations in the Lake District. You can go on a tour of the garden which William planted with wild flowers and which survived in his backyard even after they disappeared from the area. 'He always said that if he hadn't been a poet, he would have been a terrific landscape gardener,' says Allan King of the Wordsworth Trust, the organisation that looks after the cottage and gardens.

The Lake District in the north-west of England becomes particularly crowded during the summer months with tourists and ramblers eager to enjoy the region's majestic valleys, hills and sparkling lakes. Wordsworth himself was far from keen on tourists, *which* was quite apparent. He wanted outsiders to admire the local sights he enjoyed so much, but was afraid the district might be 'damaged' by too many visitors. He opposed the coming of the trains, and campaigned in the 1840s against a plan to link the towns in the area - Kendal, Windermere and Keswick - by rail.

The place near Ullswater, where Wordsworth saw the daffodils, is at the southernmost end of the lake. The lake is wide and calm at this turning point. There's a bay where

the trees have had their soil eroded by lake water so that their roots are shockingly exposed. You walk along from tree to tree, hardly daring to breathe, because you are walking in the footprints of William and Dorothy from two centuries ago. The first clumps of daffodils appear, but they aren't tall yellow trumpets proudly swaying in the breeze. They're tiny wild daffodils, most of them still green and unopened, in clumps of six or seven. They are grouped around individual trees rather than collecting together.

6. According to the article, Wordsworth's poem

- A started the Romantic movement
- B was based on actual experience**
- C was written while he was visiting his sister
- D was written after he had been lonely

7. What was the poet's attitude to nature?

- A He believed nature had a character of its own
- B He felt nature was human**
- C He thought nature could talk to people
- D He believed that we could influence nature

8. According to the text Dove Cottage

- A has gardens designed by a landscape gardener
- B has a wide range of flowers in its garden**
- C receives a lot of visitors
- D has a very large garden

9. What does 'which' in paragraph 4 refer to?

- A the number of tourists who come to the Lake District
- B Wordsworth's desire for outsiders to admire the local sights**
- C the fact that Wordsworth was keen on tourists from far away
- D Wordsworth's dislike of tourists

10. In what way is the scene different from what Wordsworth described?

A All the daffodils are green and small

B There are no daffodils by the lake

C The daffodils are fewer and smaller

D There are no daffodils around trees

Task 3. Read the texts below. Match choices (A - H) to (11-16). There are two choices you do not need to use. Write your answers on the separate answer sheet.

Environmental Awareness Day

11. Plumpton High School. This school decided to arrange a variety of activities, some aimed at achieving a better understanding of environmental problems, and others designed to be of practical help. For instance, the school magazine brought out a special edition on the subject, full of articles and stories where pupils expressed their feelings about the threats facing our environment. The school also held a sponsored walk and handed over nearly £1000 to the World Wide Fund for Nature.

12. Cresswell College. The staff and students at Cresswell College held a meeting and discussed a number of suggestions. The most popular suggestion turned out to be the most practical one; it was decided that the local environment should be brightened up. Teams were sent out to plant flowers and young trees on areas of land in the neighbourhood. Senior students monitored the progress of species threatened with extinction and prepared a report on their findings. It was hoped that this would help publicise the problem.

13. Grayner Institute. This school had already been involved in some projects connected with the environment, though naturally efforts were increased for Environmental Awareness Day. For the last two years the school had been studying the effects of variations in climatic patterns around the world and how these can affect wildlife. A leading expert on wild birds was invited to come and give a talk about the

dangers faced by these creatures. He explained the importance of the food chain and asked people to support local wildlife reserves.

14. Halliwell Academy. The pupils at this inner-city secondary school felt that the best way to mark Environmental Awareness Day would be to help people in the area understand how important the environment is to them. One suggestion that was greeted with enthusiasm was to measure the levels of noise in Stanley Road, a busy local shopping street. The information was then placed on a website that the school had started. In order to give them a chance to see for themselves the problems facing some local species, the school took pupils to the coastal marshes of Easton. Many pupils reported afterwards that they had never realised how terrible the effects of pollution could be on coastal wildlife.

15. Albion High School. In an attempt to find out for themselves how serious environmental threats really are, the pupils decided to study the problem of pollution by making a survey, run by the science department, into air pollution in the local shopping centre. Pupils also prepared a campaign to ban cars from the city centre and reduce traffic congestion. They gained a lot of publicity for the school by cycling through the city and handing out brochures about the benefits of cycling and walking.

16. Doncaster College. A film about magnificent marine mammals, whales, which was shown to the whole school as part of Environmental Awareness Day, was received with great enthusiasm by pupils. Meredith Summers was invited to talk about how pollution can destroy buildings in the region. Following that, pupils decided to launch a campaign for the restoration of the medieval square in the city centre and asked local authorities to support them financially.

Which school _____ ?

A banned cars in the city centre and reduced traffic congestion

B raised money to help an organisation

C carried out a project about endangered animals and plants

D provided online information about the environment

E became better known after Environmental Awareness Day

F spent a huge sum on the World Wide Fund for Nature

G arranged a talk on pollution and local architecture

H is following changes in general weather conditions

Task4. Read the text below. For questions (17-26) choose the correct answer (A, B, C or D). Write your answers on the separate answer sheet.

Climate Change or Global Health Crisis?

The climate crisis is also a health crisis. The same emissions that cause global warming are also largely responsible for polluting the air we (17)_____, causing heart disease, stroke, lung cancer, and infections, and (18)_____every organ in our bodies. Air pollution is the new tobacco, causing as many deaths as cigarettes. And (19)_____it (20)_____us all, children, the elderly, pregnant women, and adults with weakened immune systems are the most (21)_____risk.

It is now common knowledge that smoking tobacco severely harms you and those around you. That is why the tobacco industry's lobbying and advertising campaigns have been regulated around the world. Globally, we have (22)_____steps to safeguard existing health policies, and to force these companies to tell the truth: that their product kills.

The choice between phasing out fossil fuels and continuing on the current path is black and white - it is a matter of life or death. We either will decide to prevent seven million premature deaths per year by (23)_____our air and providing people (24)_____clean energy sources, or we won't. We either will decide to prevent four million childhood asthma cases per year (25)_____traffic fumes, or we won't. In any case, the lifetime health of a child born today will be (26)_____affected by the decisions we make about climate change now and in the years to come. That is why the World Health Organization has made climate change a top institutional priority.

| | A | B | C | D |
|-----------|---------------|-------------|----------------|-----------------|
| 17 | breath | exhale | breathe | exhaust |
| 18 | affecting | effecting | causing | breaking |
| 19 | however | despite | besides | though |
| 20 | threats | threatens | extincts | frightens |
| 21 | in | under | at | of |
| 22 | taken | made | descended | climbed |
| 23 | cleaning out | cleaning up | cleaning after | cleaning away |
| 24 | for | with | against | to |
| 25 | by | against | from | for |
| 26 | superficially | slightly | profoundly | insignificantly |

KEYS

1 – H

2 – B

3 – E

4 – A

5 – F

6 – B

7 - A

8 - C

9 – D

10 – C

11 – B

12 – C

13 – H

14 – D

15 – E

16 – G

17 – C

18 – A

19 – D

20 – B

21 – C

22 – A

23 – B

24 – B

25 – C

26 – C

English grammar in tables

Present Simple (теперішній час)

| | Present Simple (теперішній час) | теперішній час <i>To be</i> (бути) |
|-----------------------------|--|--|
| Стверджувальна форма | <i>I</i> <i>We</i> <i>You</i> + дієслово <i>They</i> <i>He</i> <i>She</i> + дієслово <i>s</i> <i>it</i> | <i>I + am</i> <i>We</i> <i>You</i> + <i>are</i> <i>They</i> <i>He</i> <i>She</i> + <i>is</i> <i>It</i> |
| Питальна форма | <i>I</i> <i>We</i> <i>Do+ You</i> + дієслово ? <i>They</i> <i>He</i> <i>Does+ She</i> + дієслово ? <i>It</i> | <i>Am + I</i> <i>We</i> <i>Are + You</i> <i>They</i> <i>He</i> <i>Is + She</i> <i>It</i> |
| Заперечна форма | <i>I</i> <i>We</i> <i>You</i> <i>do not + дієслово</i> <i>They</i> <i>He</i> <i>She</i> <i>does not + дієслово</i> <i>it</i> | <i>I + am not</i> <i>We</i> <i>You</i> + <i>are not</i> <i>They</i> <i>He</i> <i>She</i> + <i>is not</i> <i>It</i> |

(every day (week, month, year), sometimes, always, seldom, often, usually.)

Future Simple (майбутній час)

| | |
|-----------------------------|---|
| Стверджувальна форма | <i>I</i> <i>We</i> + shall + дієслово <i>You</i> <i>They</i> <i>He</i> + will + дієслово <i>She</i> <i>It</i> |
| Питальна форма | shall + <i>I</i> + дієслово <i>We</i> <i>You</i> <i>They</i> will + <i>He</i> + дієслово <i>She</i> <i>It</i> |
| Заперечна форма | <i>I</i> <i>We</i> + shall not + дієслово <i>You</i> <i>They</i> <i>He</i> + will not + дієслово <i>She</i> <i>It</i> |

(tomorrow, next week)

Present Continuous (теперішній тривалий час)

| | Present Continuous (теперішній тривалий час) |
|-----------------------------|---|
| Стверджувальна форма | <i>I + am + дієслово ing</i> <i>We</i> <i>You + are + дієслово ing</i> <i>They</i> <i>He</i> <i>She + is + дієслово ing</i> <i>It</i> |
| Питальна форма | <i>Am + I + дієслово ing</i> <i>We</i> <i>Are + You + дієслово ing</i> <i>They</i> <i>He</i> <i>Is + She + дієслово ing</i> <i>It</i> |
| Заперечна форма | <i>I + am not + дієслово ing</i> <i>We</i> <i>You + are not + дієслово ing</i> <i>They</i> <i>He</i> <i>She + is not + дієслово ing</i> <i>It</i> |

| | |
|--|--|
| | |
|--|--|

(now, at this moment.)

Past Continuous (минулий тривалий час)

| | Past Continuous (минулий тривалий час) |
|----------------------|---|
| Стверджувальна форма | <p><i>We</i> <i>You</i> + <i>were</i> + дієслово <i>ing</i> <i>They</i></p> <p><i>I</i> <i>He</i> <i>She</i> + <i>was</i> + дієслово <i>ing</i> <i>It</i></p> |
| Питальна форма | <p><i>We</i> <i>Were</i> + <i>You</i> + дієслово <i>ing</i> <i>They</i></p> <p><i>I</i> <i>He</i> <i>Was</i> + <i>She</i> + дієслово <i>ing</i> <i>It</i></p> |
| Заперечна форма | <p><i>We</i> <i>You</i> + <i>were not</i> + дієслово <i>ing</i> <i>They</i></p> <p><i>I</i> <i>He</i></p> |

| | | |
|-----------------|-------------|--------------------------------------|
| Заперечна форма | <i>I</i> | |
| | <i>We</i> | |
| | <i>You</i> | + <i>have not</i> + дієслово III/ ed |
| | <i>They</i> | |
| | <i>He</i> | |
| | <i>She</i> | + <i>has not</i> + дієслово III/ ed |
| | <i>It</i> | |
| | | |
| | | |
| | | |

(2 times, already, yet, just, never, ever, since, for, twice 3 times, today this)

Past Perfect (минулий завершений)

| | | |
|----------------------|-------------------------|---------------------------------|
| Стверджувальна форма | <i>I</i> | |
| | <i>We</i> | |
| | <i>You</i> | |
| | <i>They</i> | |
| | | + <i>had</i> + дієслово III/ ed |
| | <i>He</i> | |
| | <i>She</i> | |
| | <i>It</i> | |
| | | |
| | | |
| Питальна форма | <i>I</i> | |
| | <i>We</i> | |
| | <i>had</i> + <i>You</i> | + дієслово III/ ed ? |
| | <i>They</i> | |
| | <i>He</i> | |
| | <i>She</i> | |
| | <i>It</i> | |
| | | |
| | | |
| | | |

| | |
|------------------------|--|
| Заперечна форма | <i>I</i> <i>We</i> <i>You</i> + <i>had not</i> + дієслово III/ ed <i>They</i> <i>He</i> <i>She</i> <i>It</i> |
|------------------------|--|

Future Perfect (майбутній завершений)

| | |
|-----------------------------|--|
| Стверджувальна форма | <i>I</i> <i>We</i> <i>You</i> <i>They</i> <i>will</i> + <i>have</i> + дієслово III/ ed <i>He</i> <i>She</i> <i>It</i> |
| Питальна форма | <i>I</i> <i>We</i> <i>will</i> + <i>You have</i> + дієслово III/ ed ? <i>They</i> <i>He</i> <i>She</i> <i>It</i> |

| | |
|----------------------------|--|
| Заперечна форма | <i>I</i> <i>We</i> <i>You</i> <i>will not + have + дієслово III/ ed</i> <i>They</i> <i>He</i> <i>She</i> <i>It</i> |
|----------------------------|--|

(by 5 o'clock, by the end of...before)

Modal verbs

Модальні дієслова

| <i>Модальне дієслово і його еквівалент</i> | <i>Що висловлює</i> | <i>present</i> | <i>past</i> | <i>future</i> |
|--|-------------------------------|----------------------------------|-----------------------------------|--------------------------------|
| can to be able (to) | могти, уміти, бути в змозі | can am/is/are able (to) | could was/were able (to) | --- will be able (to) |
| may to be allowed (to) | мати дозвіл | may am/is/are allowed (to) | might was/were allowed (to) | --- will be allowed (to) |

| | | | | |
|---|-----------------------------|----------------|---------------|----------------|
| must | бути належним, зобов'язаним | must | --- | |
| to have (to) | змушений, доводиться | have/has (to) | had (to) | will have (to) |
| to be (to) | повинен (згідно плану) | am/is/are (to) | was/were (to) | |
| ought (to) | слід, слід було б | ought (to) | --- | --- |
| Багатофункціональні дієслова в ролі модальних | | | | |
| shall | зобов'язаний, повинен | --- | --- | shall |
| should | слід, слід було б | should | --- | --- |
| will | бажати, мати намір | --- | --- | will |
| would | бажати, ймовірно | --- | would | --- |
| need | потребувати | need | --- | --- |
| dare | сміти | dare | dared | --- |

Passive voice

Пасивний стан дієслова

Simple/Indefinite Tenses - Проста (Неозначена) група часів

На прикладі дієслова *to ask* - *запитувати*

| Present | Past | Future |
|----------------------|-----------------------|--------------------------|
| I am asked | We | I |
| We | You were asked | We shall be asked |
| You are asked | They | |
| They | | |
| He | I | You |
| She is asked | He | They |
| It | She was asked | He will be asked |
| | It | She |
| | | It |

Continuous Tenses – Тривала група часів

| Present | Past | Future |
|-------------------------|--------------------------|---------------|
| I am being asked | I was being asked | I |
| | | We ----- |

| | | |
|----------------------------|-----------------------------|------------|
| He | He | He |
| She is being asked | She was being asked | She ----- |
| It | It | It |
| We | We | You |
| You are being asked | You were being asked | They ----- |
| They | They | |

Perfect Tenses – Перфектна група часів

| Present | Past | Future |
|----------------------------|---------------------------|---------------------------------|
| I | I | I |
| We | We | We shall have been asked |
| You have been asked | You had been asked | |
| They | They | |
| He | He | You |
| She has been asked | She had been asked | They |
| It | It | He will have been asked |
| | | She |
| | | It |

Matching times in indirect speech

Таблиця відповідності часів у непрямій мові

| | |
|----------------------|------------------------|
| Direct Speech | Indirect Speech |
|----------------------|------------------------|

| | |
|--|--|
| Present Simple: He said, "I am hungry!" | Past Simple: He said that he was hungry. |
| Present Continuous: She said, "I am cooking the dinner now." | Past Continuous: She said that she was cooking dinner. |
| Present Perfect: She said, "I have worked hard today." | Past Perfect: She said that she had worked hard that day. |
| Present Perfect Continuous: I said, "My colleague has only been working here for 3 months." | Past Perfect Continuous: I said that my colleague had only been working there for 3 months. |
| Past Simple: She said, "I had a cold a week ago." | Past Perfect: She said that she had had a cold a week before.. |
| Past Continuous: Tom said, "I was reading." | Past Perfect Continuous: Tom said that he had been reading. |

Контрольні завдання для виявлення рівня засвоєння знань здобувачів та з граматики, лексики та читання.

Exercise 1. Choose the correct form of the pronouns:

1. I went (my/mine) way and she went (her/hers).
2. His nature was harder than (her/hers).
3. He left (her/hers) with (their/theirs) child.
4. She put (her/hers) hand in the pocket.
5. This book is (my/mine). There is (my/mine) name on it.
6. John studies English with (we/us).

7. She is waiting for (he/him) in the reading room.

8. (I/me) am looking at him.

Exercise 2. Use the appropriate form of the adjective given in brackets

1. It was a fine house, (big) than mine.

2. It was one of the (happy) afternoons he had ever spent there.

3. The blood pressure became (bad).

4. Our lives, our family, our children are (important) than your work.

5. Who is the (old) in your class?

6. It is the (long) river in the region.

7. My bag is (heavy) than yours.

8. The 22nd of December is the (short) day of the year.

Exercise 3. Choose between Present Indefinite and Present Continuous.

1. Moral standards (decline/are declining) nowadays.

2. Jane always (has/is having) a bath in the evening.

3. Don't make any noise. He (sleeps/is sleeping).

4. My sister (tries/is trying) the dress on in the shop now.

5. They (write/ are writing) a composition now.

6. He usually (stays/ is staying) at the hotel in this city.

Exercise 4. Choose between Past Indefinite and Present Perfect

1. The rain (stopped/ has stopped) and the sun is shining in the sky again.

2. My friend knows so much because he (travelled/has travelled) a lot of.

3. I never (met/ have met) our teacher here.

4. The weather (changed/has changed), and we can go for a walk.

5. My parents (worked/have worked) in that bank last year.
6. He (passed/has passed) his final exams well last summer.

Exercise 5. Put verbs in the appropriate tense form in Active Voice.

1. I never (to live) in Washington.
2. He (to watch) TV when I phoned him.
3. I (to see) Ann at the party. She (to wear) a beautiful dress.
4. They always (to take) their exams in June..
5. He (to be) at this pub several times.
6. It (to take) me half an hour to prepare breakfast.
7. This time next week he (to fly) to South Africa.
8. At 6 o'clock on Friday they (to sing) a new song.
9. By the end of the month they (to move) into a new flat.
10. The match (to finish) by 6 o'clock yesterday.

Exercise 6. Change the following sentences into Passive Voice.

1. They will analyze all the data in their work.
2. The secretary always brings the mail.
3. The tourist asked the guide a lot of questions about the history of London.
4. I have bought this dress at the supermarket.
5. She was writing a composition the whole lesson.
6. My sister has already passed her exam in Chemistry.
7. They were reading the last issue of the journal "Economist" yesterday at 8 o'clock.
8. The policeman has shown the way to the station.

Exercise 7. Insert the necessary modal verb or its equivalent:

1. Pete.... be at the University now. They have a meeting today.
2. She meet you at the station today.
3. We ... go home before it gets dark.
4. He be angry with you.
5. He ... drive a tractor well.
6. He...finish his work next week.
7. My sister... swim very well when she was young.
8. He ... to go there tomorrow.
9. The bus... to arrive at 6 o'clock yesterday.

Exercise 8. Rewrite the following sentences in Past tenses. Observe the Sequence of tenses.

1. She says she is reading a book.
2. He is sure that Ann and Lena will be excellent students.
3. She says they she has just met my mother in the shop.
4. He says they were friends at school.
5. He says he translates texts well.
6. The teacher asks if Pete is ready to write a test.

Exercise 9. Insert the appropriate preposition in the following sentences:

Almost every nation has a reputation (1) some kind. The English are a nation of stay-at-homes. There is no place like home. The Englishman says "My house is my castle" because he doesn't wish his doings to be overlooked (2) his neighbours. It is true that English people prefer small houses, built (3) one family. The fire is the focus of the English Home. The fireplace is the natural centre of interest in the room. They like to

sit (4) the fire and watch the dancing flames, exchanging the day's experience. (5) many houses you will still see fireplaces, sometimes with columns on each side and a shelf above it on which there is often a clock or a mirror or photos. The love of gardens is deep-rooted in the British people. Most men's conversations are about gardens. It may be a discussion of the best methods (6) growing cucumbers, a talk about the plot which differs from all the others. Britain is a nation of animal lovers. They have about five million dogs, almost as many cats, 3 million parrots and other cage birds, aquarium fish - and 1 million exotic pets such as reptiles. In Britain they have special dog shops selling food, clothes and other things (7) dogs. There are special animal hotels at the airports. The English people believe that they are the only nation (8) the earth that is really kind to its animals.

Exercise 10. Read the text and choose the appropriate option of the answer.

As trees grow old they add a new ring for each year; this discovery, it seems, was first made by Leonardo da Vinci, the famous Italian painter and scientist. It took a long time, however, before the serious study of tree rings started; this was done in Arizona by Andrew Ellicott Douglas. Douglas developed a simple technique for dating trees called cross-dating and for a period of over 20 years continued the study of tree rings. He spent much of his time in logging camps near Flagstaff. The Douglas method has been used by many scientists. Some of them used it to examine logs in Indian pueblo ruins; they were able to date the buildings right back to the tenth century. Others used it to date the world's oldest living trees, the bristlecone pines.

1. What can be inferred from the first paragraph?

- (A) Leonardo made many discoveries.
- (B) Leonardo was famous as a painter.
- (C) Leonardo was interested in the aging process.
- (D) Leonardo became famous because of his tree ring discovery.

2. What also can be inferred from the first paragraph?

- (A) Leonardo started the serious study of tree rings.
- (B) Leonardo's discovery was not developed for many years.
- (C) Tree rings were studied in Arizona for a long time after Leonardo.
- (D) Douglas was a famous Arizona scientist.

3. What can be inferred from the second paragraph?

- (A) The term cross-dating was invented by Douglas.
- (B) An uncomplicated method of tree dating was discovered by Douglas.
- (C) It took Douglas 20 years to develop a tree-dating technique.
- (D) The technique of cross-dating was developed near Flagstaff.

4. What also can be inferred from the second paragraph?

- (A) Logging camps are good places for studying tree rings.
- (B) Douglas spent 20 years near Flagstaff.
- (C) Douglas spent most of his life studying tree rings.
- (D) There are courses for studying tree rings near Flagstaff.

5. What can be inferred from the last paragraph?

- (A) The Douglas method has been used since the 10th century.
- (B) Indians used the Douglas method to examine logs.
- (C) The earliest known trees can be dated by the Douglas method.
- (D) Indians used bristlecone pines to construct their buildings.

6. What also can be inferred from the last paragraph?

- (A) American Indians lived in the region investigated nearly a thousand years ago
- (B) The Douglas method can be used to date all 10th century ruins.

(C) Scientists dated the bristlecone pine to the tenth century.

(D) The Indian pueblo ruins were not as old as the bristlecone pines.

Context Vocabulary

| A | |
|----------------|--------------------------|
| a range of | діапазон |
| abroad | за кордоном |
| abruptly | раптово |
| abundance n. | надлишок |
| accumulation | накопичення |
| achieve | досягти |
| achievement n. | досягнення |
| acre | акр |
| acreage | площа |
| additional | додаткові |
| adherent a. | близький |
| advantage | перевага |
| agriculture | сільське господарство |
| agrolandscapes | агроландшафти |
| alfalfa | люцерна |
| allocation | виділення |
| allow | дозволити |
| alternating | чергуються |
| although | хоча |
| aminoacid n. | амінокислота |
| ant | мураха |
| appear | з'явитися |
| apparent | очевидний |
| application n. | внесення, застосування |
| apply to | використовувати, вносити |
| approach | підхід |

| | |
|--------------------------|-----------------------|
| arable | орний |
| arable land | орна земля |
| artificially adv. | штучно |
| ash | зола |
| aspiring | що прагне |
| attach v. | прикріпити, приєднати |
| available | доступні |
| average n. | середина |
| avoid | уникати |
| B | |
| ban | заборона |
| barley | ячмінь |
| barn n. | конюшня, корівник |
| based on | на основі |
| basis | основа |
| bear v. | переносити |
| become | стати |
| bee-hive (Pl. -hives) n. | вулик |
| bee-keeper n. | пасічник |
| begin | почати |
| biology | біологія |
| branch n. | галузь |
| bread | хліб |
| break up | розкласти (сь) |
| breathe v. | дихати |
| breed n. | порода |
| bulk n. | основна маса, об'єм |
| bulky a. | об'ємистий (корм) |
| burning | горіння |

| | |
|------------------------|----------------------|
| C | |
| capable a. | здатний |
| care | догляд |
| career in | кар'єра в |
| cattle n. | велика рогата худоба |
| cause | причина/викликати |
| cell | клітина |
| chamber n. | камера |
| cheesy a. | сирний |
| chemical fertilizers | хімічні добрива |
| circuit | ланцюг |
| climax | кульмінація |
| clothing | одяг/покриття |
| clover | конюшина |
| cockroach | тарган |
| cod | тріска |
| collection | колекція |
| combat | боротися |
| compete | конкурувати |
| composition | композиція |
| compound | з'єднання |
| comprehensive analysis | комплексний аналіз |
| concern | турбота |
| coniferous | хвойні |
| consequence | наслідок |
| communicate | спілкуватися |
| concentrate n. | концентрат |
| consider | розглядати/вважати |
| consume v. | споживати |

| | |
|----------------|----------------------|
| consumption n. | споживання |
| controversial | суперечливий |
| convert v. | перетворювати |
| corn n. | кукурудза |
| correspond v. | відповідати |
| cost | вартість / коштувати |
| coulter n. | ніж плуга, сохи |
| country | країна |
| create | створити |
| crops | с/г культури |
| culture | культура |
| cycle | цикл |
| cycling | проходити цикл |
| D | |
| daily | щодня |
| dandelion | кульбаба |
| deal with | мати справу з |
| decrease v. | зменшувати |
| decline | занепад |
| decompose | розкладаються |
| deep-rooted | глибоко вкорінені |
| define v. | визначати |
| degree | ступінь |
| demands | вимоги |
| deny | заперечувати |
| deteriorate | погіршуються |
| develop | розробляти |
| development | розвиток |
| deposit n. | вклад |

| | |
|----------------------|---------------------------------|
| different | інший /різний |
| difficult | важко |
| digestive a. | травний |
| disturb | турбувати |
| drastic measures | радикальні заходи |
| dressings g. | внесення |
| drill n./v. | сівалка, рядкова сівалка/ сіяти |
| double helix n. | подвійна спіраль |
| drive n. v. | керувати, приводити в дію |
| drought n. | посуха |
| drought-resistant a. | стійкий до посухи |
| dry rot | суха гниль |
| drying | сушіння |
| dust | пил |
| E | |
| early | рано |
| easy | легко |
| efficiency | ефективність |
| effort | зусилля |
| eliminate | видалити |
| elm | в'яз |
| enhance | посилити |
| enough | достатньо |
| ensure | забезпечити |
| emphasize | підкреслити |
| endurance n. | витривалість |
| engine n. | двигун |
| engineering n. | техніка, машинобудування |

| | |
|----------------|-----------------------------|
| enterprising | заповзятливий |
| environment n. | середовище |
| environmental | екологічний |
| equally | однаково |
| equilibrium | рівновага |
| essentially | по суті |
| exist | існувати |
| experience | досвід |
| explore | досліджувати |
| express | виражати |
| F | |
| farm n. / v. | господарство/вести справи |
| farmlands | сільськогосподарські угіддя |
| favour | користь |
| feature | риса/функція |
| feed | годувати |
| fertilize v. | удобрення |
| fibers | волокна |
| field | поле |
| film n. | плівка |
| firm a. | твердий |
| fit v. | точно підходити |
| flatfishes | плоскі рибки |
| flounder | камбала |
| flesh n. | сире м'ясо, м'язева тканина |
| flock n. | зграя птахів |
| focus on | зосередитися на |
| fodder n. | корм для худоби |
| food | їжа |

| | |
|-------------------|-----------------------|
| foodstuffs n. | продукти харчування |
| forbear n. | попередник |
| foreign | іноземний |
| framework | рамки |
| fraction | частина |
| fruits | фрукти |
| fungus (fungi pl) | грибок |
| furnish v, | постачати |
| furthermore | крім того |
| G | |
| germ | зародок |
| germination n. | проростання |
| get rid of | позбутися |
| government | уряд |
| grain n. | зерно |
| grading | сортування |
| gradually | поступово |
| grasshopper | коник |
| grammar | граматика |
| graze v. | пасти, пастися |
| greenhouse | теплиця |
| grind v. | молотити |
| grip n. | зчеплення, захват |
| grow v. | рости |
| growth n. | ріст |
| H | |
| Half | половина |
| handling | поводження/управління |

| | |
|----------------------|-----------------------|
| harmful a. | шкідливий, згубний |
| harrowing n. | боронування |
| harvest n. / v. | врожай/збирати врожай |
| hay | сіно |
| hawk | яструб |
| healthy | здоровий |
| heat v. | нагрівати / тепло |
| hemp n. | конопля |
| hence | отже |
| herring | оселедець |
| high degree | високий ступінь |
| hobby | хобі |
| horticulture | садівництво |
| however | однак |
| hull n. | лушпайка |
| hydrochloric acid n. | соляна кислота |
| hurricane | ураган |
| I | |
| implement n. | знаряддя |
| import | імпорт |
| improve | вдосконалити |
| improvement | поліпшення |
| in scale | в масштабі |
| in such a way | таким чином |
| include | включати |
| income | дохід |
| increase | збільшувати |
| independent | незалежний |
| industrial | промислові |
| infestation | зараження |

| | |
|-----------------|-------------------------------------|
| influence | ВПЛИВ |
| inflammation n. | запалювання |
| instead of | замість |
| integrated | інтегрований |
| intend for | мають намір |
| invention | винахід |
| investigative | дослідницький |
| involve | залучати |
| J | |
| journey | подорож |
| judge | оцінювати/судити |
| jug n. | банка |
| juice n. | сік |
| K | |
| kernel | ядро |
| kind n. | рід, сорт, розряд, клас |
| knowledge of | знання з |
| L | |
| lack of | недостача |
| language | мова |
| labor | праця |
| ladybug | сонечко |
| learn | вчитися |
| legume n. | бобові культури |
| lettuce n. | салат |
| linear a. | лінійний |
| livestock | скотарство/худоба, поголів'я худоби |

| | |
|---------------|-----------------------|
| load n. | вантаж |
| long | довгий |
| lush | пишний |
| M | |
| make | робити |
| maize | кукурудза |
| majority | більшість |
| mammal n. | ссавець |
| manure n. | добрива (природні) |
| marsh | болотний |
| maturity n. | стиглість |
| mature v. | дозрівати |
| mean | мати на увазі |
| means | засоби |
| measures | заходи |
| memory | пам'ять |
| mild a. | м'який |
| minority | меншість |
| mispronounce | неправильно вимовляти |
| mistake | помилка |
| mix up | змішувати |
| moist a. | вогкий, вологий |
| moisture | вологість |
| moor | болото |
| mother tongue | рідна мова |
| mouth | рот |
| muscle n. | мускул |
| multiple | множити |
| mutton | баранина |

| | |
|-------------------|----------------------|
| N | |
| necessary | необхідний |
| need | потрібно |
| nitrogen n. | азот |
| non- hierarchical | неієрархічний |
| normally | звичайно |
| nourishing a. | поживний |
| nourishment n. | споживання, їжа |
| nutrients n. | поживні речовини |
| nutritive n. | поживний |
| O | |
| oak | дуб |
| oats | овес |
| offer | пропозиція |
| options | варіанти |
| outdoor labs | відкриті лабораторії |
| outlook | світогляд |
| overall loss | загальна втрата |
| oxygen | кисень |
| P | |
| palatability n. | харчова цінність |
| pathogen | збудник |
| pathways | шляхи |
| percent | відсотки |
| percentage | процент |
| permaculture | пермакультура |
| permanent | постійний |

| | |
|-----------------------|----------------------|
| permit | дозволяти |
| pests n. | шкідники |
| pigs | свині |
| pioneer | відкривати |
| plant n. | рослина |
| plough layer | орний шар |
| plough | плуг / орати |
| poisonous | отруйний |
| politics | політика |
| pollution | забруднення |
| polyglot | поліглот |
| pork | свинина |
| potatoes | картопля |
| pound | фунт |
| position | положення |
| predict | передбачити |
| predominance | переважання |
| predominate | переважати |
| preserve soil | зберегти ґрунт |
| prevent | запобігти |
| primary duty | основний обов'язок |
| produce | виробляти |
| production | виробництво |
| production facilities | виробничі потужності |
| profitable | прибутковий |
| pronunciation | вимова |
| proper | належний |
| property | майно/власність |
| provide | забезпечити |
| protein | білок |

| | |
|------------------------|------------------------|
| pure chemical elements | чисті хімічні елементи |
| Q | |
| quality n. | якість |
| quantity n. | кількість |
| R | |
| range | діапазон |
| reach | охопити |
| read | читати |
| reclaim | повернути |
| recognize | впізнати |
| reduce | зменшити |
| reflect | відображати |
| related to | пов'язані з |
| relation | відношення |
| relevant | відповідні |
| reliance | опора |
| remain | залишаться |
| repel | відштовхувати |
| require | вимагати |
| residues n. pl. | залишки, відходи |
| resistant to | стійкий до |
| restore | відновлення |
| retarded a. | уповільнений |
| rigid a. | короткий, жорсткий |
| rot | гнити |
| rotation | обертання |
| rural | сільський |

| S | |
|--------------------|--------------------------------|
| safety n. | безпека |
| sales | продаж |
| salmon | лосось |
| schedule | розклад |
| sand | пісок |
| science | наука |
| scientists | вчені |
| scope | сфера застосування |
| scuffling n. | лущення |
| seed n. | насіння |
| seeding rate | норми висівання |
| seeking | шукати |
| sensible | розумний |
| set up | налаштовувати |
| shallow | неглибокий |
| shortage | дефіцит |
| share n. | леміш/доля |
| silage | силос |
| since | оскільки |
| skill | майстерність |
| slow | повільний |
| soil | грунт |
| soil management n. | грунтознавство |
| solution n. | вирішення, розв'язання, розчин |
| southern | південний |
| speak | говорити |
| specializing | спеціалізується |
| species n. pl. | вид |
| speed n. | швидкість |

| | |
|--------------|-------------------------------|
| spring n. | пружина, джерело |
| starch n. | крохмаль |
| stable | стабільний |
| steadily | постійно |
| store | магазин |
| stunt | трюк |
| stiff a. | негнучкий |
| stock n. | запаси, порода, поголів'я |
| straw n. | солома |
| stubble n. | стерня |
| substance | речовина |
| subtle | тонкий |
| successful | успішний |
| sufficient | достатньо |
| suitable | підходить |
| sulphur | сірка |
| sum up | підсумовувати |
| sunflower n. | соняшник |
| supervise | контролювати |
| support | підтримка |
| surface n. | поверхня |
| survival | виживання |
| sustainable | стійкий |
| swath n. | смуга прокошеної трави, валок |
| sweep | підмітати |
| sweeper n. | культиватор, розпушувач |
| synthesis n. | синтез |
| T | |
| take | приймати |

| | |
|--------------------------------|------------------------------|
| tankage n. | відходи, що йдуть на добрива |
| tasty a. | смачний |
| technology | технологія |
| techniques | техніки |
| tend | мати тенденцію до |
| tendency | тенденція |
| therefore | тому |
| tenure n. | володіння |
| the country | сільська місцевість |
| thousand | тисяча |
| thrive v. | швидко рости |
| tillage crop n. | просапна культура |
| tillage n. | обробіток землі |
| tilth n. | обробіток / глибина оранки |
| timothy hay n. | тимофіївка лучна |
| tine n. | зуб |
| tissue n. | тканина |
| totally | цілком |
| trade | торгівля |
| travel | подорожі |
| treatment n. | обробка |
| true | правда |
| typical | типовий |
| typhus | висипний тиф |
| U | |
| understand | розуміти |
| unrestricted industrialization | необмежена індустріалізація |
| use | використання |
| useful adj. | корисний |

| | |
|---------------|----------------------|
| utility v. | родючість/корисність |
| utilization | утилізація |
| V | |
| vibrant | живий |
| vocabulary | словниковий запас |
| valuable a. | цінний |
| value n. | цінність, важливість |
| valve n. | клапан |
| variety n. | сорт |
| vegetables n. | овочі |
| vegetation n. | рослинність |
| W | |
| want | хотіти |
| waste | відходи |
| waxworm | восковий черв'як |
| web | павутиння |
| weight | вага |
| wide | широкий |
| wonderful | чудовий |
| world | світ |

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