Forestry Botany

We cannot imagine our world without plants. There are about 300,000 species of plants.

Plants can have the form of : flower, herb, tree, liana, bush, grass, moss, vegetable or fruit.

Fill in the missing letters:

You can see them in:

area of land with grass and trees: **p**_ _ _ _
a large area of water surrounded by land**:** **l** _ _ _ _
a field with grass and wild flowers in it: _ _ **a** _ _ _ _
a piece of land with flowers next to a house: _ _ _ _ _**n** _
a large area of land covered with trees: _ _ _ _ _ **t** _
sandy area with very little rain: _ _ _ _ _ _ **s**

Rearrange the letters and write the words correctly:

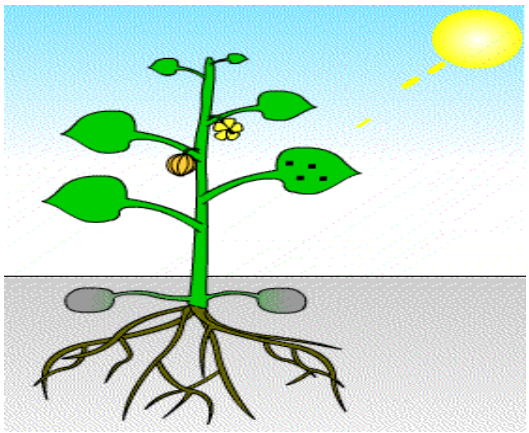
Plants can grow in: ilos _ _ _ _, ands _ _ _ _, retaw _ _ _ _ _ and even on corks _ _ _ _ _ .

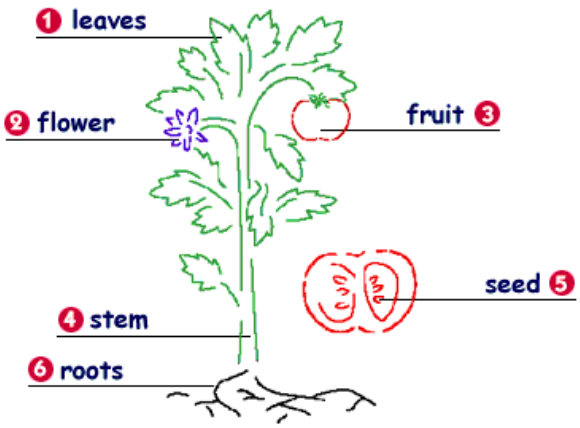
The best friends of plants are: wind, water, sun, fresh air, bee and fertile soil.

Most plants have…6… basic parts:

Identify and write down the parts of the plant:

root **flower** **leaf** **bud**
seed **root hairs** **fruit** **stem**





The parts of a plant can be divided into two groups:

1. Reproductive parts which are involved in the production of seeds.
2. Vegetative parts produce and support plant's feeding and growth.

Choose which words belong to reproductive and vegetative part of a plant. Write them down:

flower buds stems flowers roots leaves fruit seeds leaf buds

reproductive part of a plant **vegetative parts of a plant**.

……. ……

Read the text and answer the questions:

1. Flower

Flower produces seeds.
Flower can have: a. the male parts called the **stamen**
b. the female parts called the **pistil**
c. combination of male and female parts

The **sexual condition of flower** can be described in three ways:
A flower that is missing one part, either pistil or stamen is called **imperfect or incomplete**.
e.g. maize, begonia, cucumber

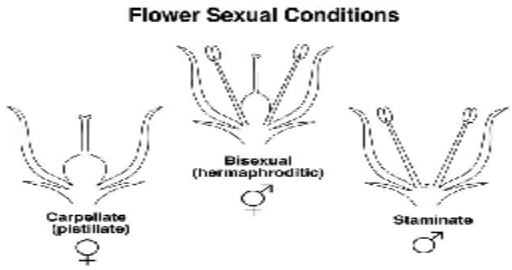
1. **Staminate flowers/ "male flowers":** Flowers contain only male sex parts. They produce pollen.
2. **Carpellate Flowers/"female flowers":** Flowers contain only female sex parts. They produce fruit.

A flower that contains both male and female reproductive parts is **called perfect or complete.** Most plants have perfect flowers.
e.g. rose, lily, apple flower

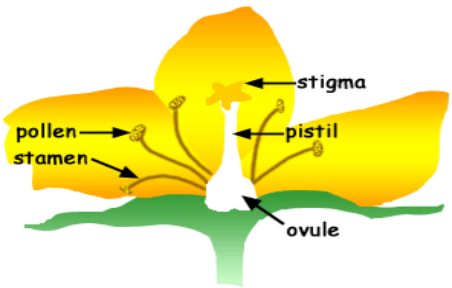
3. **Hermaphhrodites:** Flowers contain both male and female sex parts. They produce fruit.

1. How is called male and female part of flower?
…….
2. What is the difference between perfect and imperfect flower?
……
3. What is the typical sign of staminate flower and carpellate flower?
……
4. Give some examples of imperfect and perfect flowers?
……
5. What are the other names of imperfect and perfect flower?
……
6. What do male flowers and female flowers produce?
.....

Identify the type of flower:



Identify the parts of the flower parts:



Petals are usually colorful and pretty parts of a flower that attract insects for pollination. They may contain perfume as well as nectar glands. **Sepals** are green leaflike parts at the base of a flower. They protect the flower bud before it opens.

Chyba! Záložka nie je definovaná.

2. Leaf

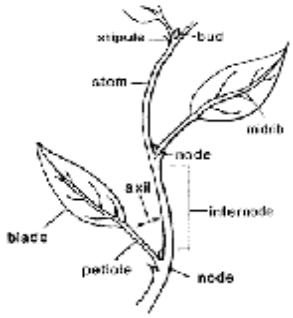
The broad, flat part of the leaf is called the **blade. The petiole** is a **leaf stalk** that supports the blade and connects the stem with the blade. **Veins** are pipes inside the leaf and the main, center vein is called the **midrib.**

Identify the parts of the leaf parts:

3. Stem

From the **main stem** grows the **secondary stems.** The place on a stem where a leaf, branch or root is attached is called **node.** From node develops a **bud** which produces leaves and flowers.

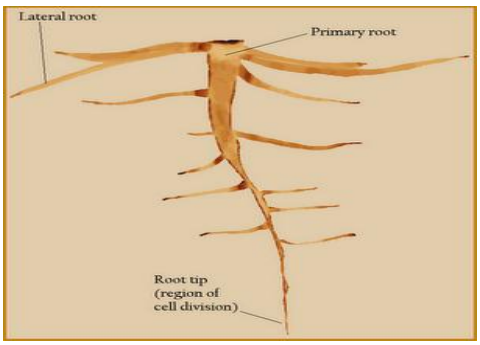
Identify the parts of the stem parts:



4. Roots

The first part which grows from a seed plant is called the **primary root.** The **primary root** produces smaller **lateral** or **secondary roots.** The **root hairs** develop on the primary and lateral or secondary roots. The **root hairs** increase the surface area for more water absorption. The protecting and covering part at the tip of the root is called the **root cap.**

Identify the parts of the roots parts:



5. Bulb

Some plants produces **bulb** (e.g. tulips, lilies, daffodils and onions) which is located at the tip of the stem Bulbs plants are usually perennials. They have a period of growth and flowering. This is followed by a period of sleep when they die back to ground level at the end of each growing season.

Each part of the plant has an important function.

Read the text about the functions of some plant parts. Then describe some functions to your partner who will guess the referring part of the plant.

1. Flower

Flower is the organ of reproduction of most plants. Flower plays the key role in pollination and fertilization, leading to the formation of the seeds. Flower produces fruit to protect, nourish and carry seeds.

2. Leaf

The main function of leaf is the chemical process of **photosynthesis**. Photo means light, synthesis means combine with light. Photosynthesis takes place in the leaf of the plant. Leaf cells must contain

chlorophyll which captures the sun's energy which is necessary for the photosynthesis. It is the process of producing sugar and oxygen from carbon dioxide, water and the energy from the sun.

Fill in the missing letters in these words (the process of photosynthesis) :

_a _ _ _ _ d_ _ _ _ d _ + _ _ t _ _ + _i _ _ _ and _ n _ _ _ _ / ch _ _ _ _ _ _ _ _ _ l = sugar + oxygen

Transpiration is the loss of water from the leaf. This helps to draw water up through the plant from the roots.

3. Stem
Stems support branches, buds, leaves, flowers and fruits. The stem moves water and minerals from roots up to the leaves and moves food from the leaves down to the roots.

4. Roots
Roots anchor the plant in the soil. They absorb water and nutrients from the soil to furnish the plant. They serve as food storage organs and physical support for the stem. They are the organs of asexual reproduction in some plants.

5. Bulb
They store nutrient reserves to ensure the plants' survival.

6. Fruit
The function of fruit is to protect the seeds and may also play a part in their distribution. Animals eat the fruit and then disperse the seeds.

Plants can be classified in many different ways.

1. Plants can be classified according to their **habitat**.

*Which plants belong to **terrestrial, aquatic and aerial plants**? Write them to the right column:*

pine tree lichen seaweed corn orchid green ivy green algae
cabbage lotus passion flower papaya water lily

Terrestrial plants live on land.	**Aquatic** plants live in water	**Aerial** plants live in air

2. We can classify plants according to the **type of stem** they have:

Woody plants have hard, rough and brown stem. The stem remains above ground during the winter. There are different kinds: tree, shrub and undershrubs**.**

A. Tree is a large plant with a single main trunk or stem.
e.g. oak and spruce

B. Shrubs are smaller that trees, they grow low or close to the ground. They have several main stems that can be branched. Some shrubs have thorns to protect them especially from hostile animals. They prevent shrubs from eating or destroying them.
e.g. rose, rosemary and elder

C. Semi-shrub- a small shrub with stems only woody at the base. The woody stems only partially die back each year.
e.g. lavender and asparagus

Non-woody plants or **herbaceous plants** have soft, smooth and green stems. The stem dies back to the ground each year. They are grouped into annuals, biennials, and perennials.

Correct the wrong information in these sentences:

1. According to the type of flower we recognize woody and aerial plants.
……
2. Shrubs are bigger and taller than trees.
……..
3. Shrubs have only one main stem that can not be branched.
……..
4. Semi-shrub is a big tree with stems woody at the top.
……..
5. Non-woody plants have woody, tough and red stems. They are grouped into terrestrial and herbaceous.
……
6. Lavender and asparagus are typical trees.
……

3. We can classify plants also according to their **life cycle**:

Annual plants require only one growing season to complete their growing cycle. They grow from seed and blooms, produce seed and then die. Summer annuals complete their life cycle during spring and summer; winter annuals complete their growing season during autumn and winter. They need to be replanted every year.
e.g. tomato, petunia

Biennial plants require two growing seasons to complete their growing cycle. They grow and produce leaves during the first year, bloom and produce seeds during the second year.
e.g. carrot, parsley

Perennial plants require at least three growing seasons to complete their growing cycle. They can grow, flower and produce seeds for many years.

They are divided into two types:

Herbaceous perennials have soft, nonwoody stems that generally die back to the ground each winter.
e.g. rose, daisy, grass

Woody perennials have woody stems that survive over the cold winter temperatures.
e.g. trees and shrubs

Are these sentences true or false **T/ F?** *If they are false, correct them.*

1. Annual plants need at least two growing seasons to produce seeds.
……
2. Biennials produce leaves and flowers during the first year.
……..
3. Woody perennials are able to live in cold climate.
……..
4. Summer annual plants complete their life cycle during spring and winter.
……
5. Woody perennials have soft stems and herbaceous perennials have hard stems.
.....
6. The examples of herbaceous perennials are daisy, rose and grass.
……

Find more examples to each type of plants. Use your dictionary or the internet.

Annual plants: ……..
Biennial plants: …….
Perennial plants: ……

4. Plants are further classified according to whether they **have flowers and bear seeds** or not:

We have two types of plants: **Flowering** and **Non-flowering plants.**

Flowering plants have flowers and bear seeds. They can produce flower with male and female reproductive parts that develop into fruits after fertilization. Most of them live on dry land. They have systems that transport food and water throughout their bodies.

Non-flowering plants do not have flowers and do not bear seeds. They reproduce by producing spores or cones. Most of them live in water or in moist places. They do not have systems that transport nutrients and water throughout their bodies.

Which description is for flowering and non-flowering plants.
Write **F** *for flowering plants and* **NF** *for non-flowering plants:*

1. ……. …are the oldest plants on Earth.
2…….. have less species than……..
3…….produce flowers and seeds**.**

4…….are the most common plants
5. Most of the …….live in water.
6…… can transport nutrients through their bodies.
7 Most of the……..live on dry land.

Circle the correct answer:

Which of the following is not a characteristic of **flowering plant**?

a. They bear seeds.
b. Most live on land.
c. They have roots, stems and leaves.
d. They do not have systems that transport food around their bodies

Which of the following are examples of **non-flowering plants?**
a. ferns, horsetail
b. sunflower, daisy,
c. fungi, mosses
d. bamboo, fir tree
e. magnolia, hibiscus

Underline the flowering plants:

forget-me-not pine-tree violet fir tree daisy fern oak tree blue bell mosses rose mushrooms tulip daffodil

Plant reproduction

Plants can reproduce **asexually** through **vegetative propagation**. They make use of their stems, roots or leaves.

Other plants, especially flowering plants can reproduce **sexually** through **pollination** and **fertilization**

Fill in the correct word, according to the cues in brackets:

There are four types of reproduction:

Plant can reproduce from 1**. .....** (a baby plant of coniferous tree) and 2**.....** (there are two main types: onion and lily).

Pollen can be transferred by: insects, birds, mammals, wind, water, gravity and humans.

Read the text and fill the words into the gaps:

V d v lkkcdrbdnad sv n sxodr mnv -

seeds insects pistil pollen nectar stigma stamens scent pollen stigma wind pollinate fertilize flowers

3. **Insect pollination**

Bees, bumblebees, hoverflies and butterflies collect ……and ……..which stick on their legs and body.

Cross-pollination
Plants are usually brightly coloured with a strong smell.
Flowers have the male organs of a plant= **…….**that produce the male sex cells in the form of sticky powder=…….. Then they have the female organ of a plant= …… and it's top is called …….**=** sticky part where insects leave pollen. ……. transfer pollen onto the next flower of the same species. For example, only pollen from a rose can ……..another rose.
When pollen comes into contact with the stigma, insects ……flower and plants produce……..
e.g. daisy, lily, apple tree
.

Self-pollination
The transfer of **pollen** from one flower to the same or other ……' **stigma** on the same plant is called self-pollination.
e.g. tomato, lettuce, pea

4. **Wind pollination**
Plants do not produce **nectar** and they do not have any……. The pollen from a plant is blown away and carried by the…….. Wind helps to fertilize plant when **pollen** lands on other plant and reaches……... Then new plant can grow.
e.g. sweet corn, dandelion, grass

How many flowers can you find in this line?

ENDANDELIONLOPRIMROSEYHLOTUSZILORCHIDPLILYWADAISYOTBLUEBELLDOTULIP

Circle the correct answer:

1. What do you call **sexual reproduction** in plants?
a. vegetative propagation
b. pollination
c. fertilization
d. asexual reproduction

2. Which is true about **asexual reproduction**?
a. Pollinators help transfer pollen from one flower to another.
b. A plant uses its leaf, stem or root to reproduce.
c. Sperm cells from the pollen fertilize egg cells in the ovule.
d. The flower is the most important part of the plant in reproduction

3. Which part of the plant produces **pollen**?
a. stigma

b. sepal
c pistil
d. petal

4. What is **pollination**?
a. It is the asexual reproduction in plants.
b. It is the union of the sperm cell and the egg cell.
c. It is the process through which pollen moves from the anther to the stigma.
d. It is the use of stems, leaves or roots in producing new plants.

5. When does **fertilization** occur?
a. when a sperm cell unites with the egg cell
b. when pollen moves from the anther to the stigma
c. when the stems of a plant give rise to new plants.

Fruits

Fruits have many different forms, some are fleshy, dry, heavy and some are light.
But, basically they are all the containers where plants put its seeds.

We recognize two types of fruits: **dry** fruits and **fleshy** fruits.
In fleshy fruits, all or most of the ovary wall= pericarp is soft and fleshy at maturity.
In dry fruits, the ovary wall= pericarp becomes dry and often hard at maturity.

There are fruits with different mechanism of seed distribution: **dehiscent** and **indehiscent** fruits. Dehiscent fruit splits open when it is ripe causing the dispersal of its seeds.
Indehiscent fruits do not split when they are ripe, seeds stay within the fruit.

1. Dry fruits

A. Inndehiscent

Achene is single seeded fruit with the seed attached to the inner wall at only one point. The seed of a sunflower is an achene.
e.g. dandelion, sunflower

Nut is a large single achene with a hard cover.
e.g. chestnut, hazel, oak

Caryopsis is one seeded fruit, it develops from one ovary and does not split open to release the seed. The outer coat is often indistinguishable from the seed.
e.g. grass, barley, rice

Samara has part of the fruit wall extended to form a wing. They are winged achenes. The shape of a samara enables the wind to carry the seed away from the parent tree.
e.g. maple, ash, elm

B. Dehiscent fruits

Legume is a fruit that splits on two sides.
e.g. peanut, runner bean, pea

Silique is long and thin, splits along the two long sides and has a papery membrane between the two halves.
e.g. cabbage, radish

Capsule is a fruit which splits open from the tip or side, or by holes or pores to release the seeds.
e.g. poppy, primrose

Follicle is a fruit which splits only on one side. It may contain one or many seeds.
e.g. peony, larkspur

2. Fleshy fruits

Berry is a fleshy fruit without a stone that contain a number of seeds.
e.g. blueberries, banana, kiwi, avocado, grapes, pepper, tomato, coffee

Drupe is a fleshy fruit with a hard stone containing the single seed.
e.g. cherry, plum, coconut, olive, peach, apricot

Aggregation of Drupes is made up of many drupes, each containing one seed.
e.g. raspberry, blackberry

Pome is a fleshy fruit with a thin skin, the seeds are contained in chambers in the centre of the fruit.
e.g. apple, pear

How many fruits can you find in this crossword?

A	Y	**Y**	**R**	**R**	**E**	**B**	**P**	**S**	**A**	**R**
U	B	**T**	I	**O**	**L**	**I**	**V**	**E**	**I**	**B**
F	J	**U**	**A**	**P**	**P**	**L**	**E**	**C**	**A**	I
S	**U**	**N**	**F**	**L**	**O**	**W**	**E**	**R**	A	**R**
S	G	**T**	P	**CH**	**P**	L	**L**	U	H	E
A	A	**S**	**A**	T	**P**	**E**	**O**	**N**	**Y**	G
R	**B**	**E**	**A**	**N**	**Y**	T	**P**	**L**	**U**	**M**
G	**P**	**CH**	D	M	**P**	**E**	**A**	**N**	**U**	**T**

1……. 5 …… 9 …… 13……...
2 ……. 6…….. 10…… 14……
3…….. 7…… 11…… 15……
4……. 8…… 12…….

Fill in the right letters and translate the words (kind of fruit) into Slovak.
Write at least two examples to each kind of fruit.

	Slovak translation	*examples*
1. _ A_ _O_ _ _ S	……..	……
2. _ O _ L _ _ _ _	…….	……
3. _ O _ _	……..……	……..
4. _ _ H _ N _	……	……..
5. _ I _ I _ _ _	…….	……..……..
6. _ R _ _ E	……	……
7. _ U _	……..	…….
8. _ _ P _ _ L_	……	…….
9. B _ _ R _	……	……
10. C _ _ Y _ _ S _ _	……	……..

Why are plants so important?

Write the reason of plant importance to the right explanation:

Air quality Medicine Water quality Climate Source of food
Erosion control Industrial products Ecosystem Aesthetics Animal habitat

…….. - plants beautify surroundings and perfume the air
…… - plants provide food to people and animals
……. -plants provide home to wildlife animals
……. - herbs help to cure some illnesses
……. -clothes are made from fibers of plants
……. - the oxygen comes from photosynthesis of plants
……. - plants filter sediments and keep the soil in place
……. - plants help to stabilize Earth's atmosphere
……. - plants protect nature from wind and water erodes
……. -plants help to balance nature and human life.

Vocabulary

plant	forest	meadow
lake	desert	fertile soil
root hairs	flower	leaf
stem	bud	seed
bulb	fruit	reproductive
vegetative	feed	grow

male
pistil
perfect
begonia
carpellate
hermaphhrodite
blade
vein
secondary stems
secondary root
reproduction
photosynthesis
carbon dioxide
furnish
terrestrial
lichen
orchid
cabbage
papaya
shrub
trunk
branched
rosemary
asparagus
annual
petunia
parsley
grass
produce
cone
horsetail
mosses
magnolia
violet
mushroom
coniferous tree
pollen
scent
bee
stick
transfer
pea
dandelion
sperm cell
fleshy
recognize
maturity
indehiscent
dispersal
nut
caryopsis
rice
carry
elm

female
imperfect
complete
cucumber
rose
petal
petiole
midrib
node
lateral root
pollination
chlorophyll
transpiration
store
aquatic
seaweed
green ivy
lotus
water lily
undershrub
oak
thorn
elder
non-woody
bloom
biennial
perennial
flowering
reproduce
moist
sunflower
bamboo
hibiscus
oak tree
tulip
onion
nectar
pollinate
hoverfly
cross-pollination
self-pollination
wind pollination
propagation
egg cell
dry
ovary
distribution
split
achene
chestnut
release
samara
maple
legume

stamen
incomplete
maize
staminate
lily
sepals
leaf stalk
main stem
primary root
root cap
fertilization
oxygen
nutrients
habitat
aerial
corn
green algae
passion flower
woody
pine tree
spruce tree
prevent
lavender
herbaceous
tomato
carrot
daisy
non-flowering
spore
fern
fungi
fir tree
forget-me-not
blue bell
daffodil
insect- pollination
stigma
fertilize
butterfly
smell
lettuce
sweet corn
ovule
anther
container
pericarp
dehiscent
ripe
shell
hazel
barley
enable
ash
peanut

runner bean	silique	belong
cabbage	radish	capsule
poppy	primrose	follicle
peony	larkspur	berry
blueberry	banana	kiwi
avocado	grapes	pepper
coffee	drupe	cherry
plum	coconut	olive
peach	apricot	aggregation
raspberry	blackberry	pome
skin	contain	chamber
apple	pear	climate
source	erosion	industrial
ecosystem	aesthetics	beautify
surrounding	provide	wildlife
cure	illness	fiber
sediment	stabilize	Earth
protect	erode	balance

TREES

There are two basic types of trees:

a. **coniferous** (from the Latin word conifer meaning cone-bearing)
They are also referred to **as: softwood or evergreen.**

b. **deciduous** (from the Latin word decidere, meaning to fall off)

They are also referred to **as: hardwood or broadleaved**.

Read the text and fill the words into the gaps:

cedars wind forest branches deserts seeds berries needles

Trees grow almost everywhere on the Earth. Only polar areas and ……..don't have trees. Slovakia is the country of forests. In our country we can find both of them. Sometimes the woods are mixed

Coniferous trees live higher in the mountains, where there is less rainfall. They prefer climates that are typical for a long, cold winter season. Trees are tall and narrow, so snow will slide off the ……without breaking them. The trees grow close together for the protection from the…….

Coniferous have cones and needles. Coniferous trees have their seeds formed in a cone. The cones are formed in a variety of shapes and sizes. Some evergreens like yews, junipers and ……do not have cones. They have fleshy …….. Coniferous trees reproduce by forming ……..inside of cones, which are spread throughout the …….. by the wind and animals. Most coniferous trees lose …….little by little all year long and are again replaced. The trees are never completely bare and they look like they never lose their needles.

Answer the questions:

1. What are the other names for the coniferous tree?
…….
2. What is characteristic for the coniferous tree?
…….
3. How do the coniferous trees reproduce?
…….
4 Where we can usually find the coniferous tree?
…….
5. How can the coniferous trees protect from the wind and snow?
……
6 What climate is typical for the coniferous tree?
…….
7. Which evergreens do not have cones?
…….

Read the text and fill the words into the gaps:

leaves bark plants lowlands fruits pollination flower shrubs

Deciduous forests are typical for the ……., below the coniferous trees. They grow in areas where there is enough rainfall to support tree growth. Many different kinds of trees, …….., and herbs can be found there.

Deciduous trees have leaves and…… . Deciduous trees go through four seasons. ……. change colour and fall off in autumn. They go into a period of sleep in winter. Deciduous trees have also thick …… to protect them from the cold weather. This adaptation allows plants to survive cold winters. The growing season is about six months long. Trees…… , produce leaves and grow during spring and summer. Many deciduous plants flower during the period when they are leafless as this increases the effectiveness of……. . The absence of leaves improves wind transmission of pollen for wind-pollinated…….. , and increases the visibility of the flowers to insects in insect-pollinated plants.

Answer the questions:

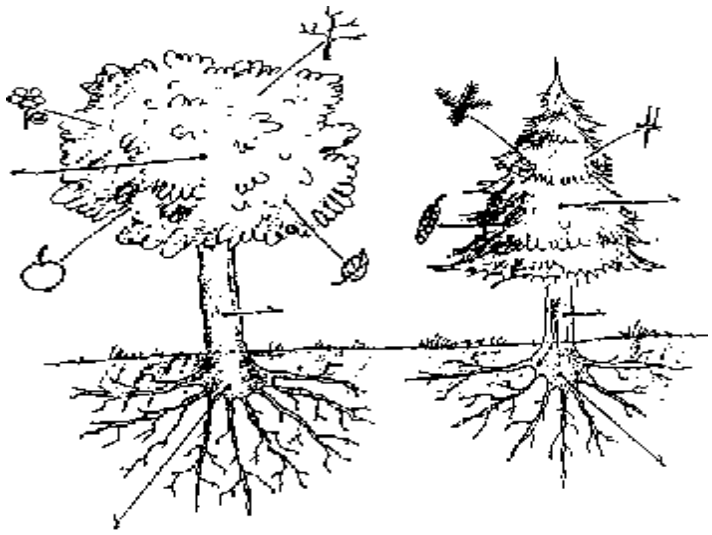
1. What are the other names for the deciduous tree?
……..
2. What is characteristic for the deciduous tree?
…….
3 What climate is typical for the deciduous trees?
…….
4. When do deciduous trees usually flower and produce leaves?
……
5. Where we can usually find the deciduous tree?
……
6. What do the deciduous trees do in winter?
…….
7. Why is the absence of leaves important for deciduous trees?
……..

Find these words in your dictionaries. Write each word in the correct column:

roots trunk boughs twigs leaves
fall down colourful blossoms
bark evergreen cones needles

deciduous trees	coniferous	both

Write the parts of the tree in the picture.



Find these trees in the wordsearch and in your dictionary.
*Write which tree is a coniferous or deciduous **C/F** .*

spruce …… oak …… pine …… maple ……. poplar …… willow ……
lime ……. birch ……. fir ……. beech ……..

A F B U L E A J S K M W I K P
U Z B R N I B E E C H B S O E
Y A I I S T B N K L T V P Z M
F Q F H R O T C L A N L U O I
I I A C A C G T I J A C S I H
R D R F H D H A M R J O J J H
I Q N M H C W A E A V L O Y M
U T J H R I V E M D P A T A I
H O T A E D K W I L L O W A C
U Q L J K I E H K O A M N P E
C R N E Y Z L S J E T I I A C
O M T O O A E M A P L E K U U
T T P G A V P Y A I D B S R R
O A K A R L N L Y N C Y K N P
L S W P R A I H R E U T R T S

Match them with the pictures:

1 2 3 4 5 6 7 8 9 10

.....

Dendrology is a forestry term used to describe the study of trees.

Silviculture or silvics is a forestry term used to describe the culture or growing of forest trees.

Deciduous trees

Deciduous trees are divided into four groups according to their **leaf type and arrangement**:

Which description belongs to each leaf type? Write them down:

Compound leaves located alternately on the twig.
Simple leaves located opposite each other on the twig.
Simple leaves located alternately on the twig.
Compound leaves located opposite each other on the twig

A. ……

……
e.g., maples and tree lilacs.

C. ……

……..
e.g., ash and buckeye.

B. ……..

……..
e.g., birch, poplars and willows.

D. ……

……
e.g., locusts and walnut.

Leaf margins are also helpful in identification of trees. They have various shapes:

Which description belongs to each margins?

Lobed Finely toothed Smooth, entire Doubly toothed, sharp pointed

Beech

A beech forest is very dark; beeches prefer some shade and may grow poorly in full sunlight.
The flowers are small catkins which appear shortly after the leaves in spring. The leaves are saw-toothed with rounded teeth. The seeds, called beechnuts, are small triangular nuts. There are two nuts in each cupule, maturing in the autumn, 5-6 months after pollination. The root system is shallow, with large roots spreading out in all directions. Beech wood is well suited for minor carpentry, particularly furniture. It is also excellent firewood. The nuts and leaves of beech trees provide food for numerous species of animals, e.g. for birds and rodents. The beech is a very popular ornamental tree in parks and large gardens.

Correct the wrong information in these sentences:

1. A beech forest is light, beeches prefer sunshine and hot climate.
……
2. The flowers are small nuts, appearing in autumn.
……
3. The seeds are called catkins have rounded shape.
……
4. The nuts usually mature in the winter, 2-3 months after photosynthesis.
……
5. Beech wood is used for making musical instruments.
……

Oak

The oak is long-lived tree, with the average life between 200 and 400 years, with some known to be over 800 years old. The flowers are catkins, produced in spring. Oaks have spirally arranged leaves, with a lobed margin in many species. The fruit is called an acorn; each acorn contains one seed (rarely two or three). It is produced in a cup-like structure-cupule. It takes 6-18 months to mature, depending on species. Oak wood is used for furniture, flooring, buildings, mine timbers, tool handles, barrels, and in the past, ships. Acorns are an important source of food for many animals, and are also used for making flour or roasted for acorn coffee. The bark of the white oak is dried and used in medical preparations. Oak bark is rich in tannin that is used in leather production and some species are used for cork. Oaks are widely planted as ornamental trees for shade and aesthetic purposes.

Correct the wrong information in these sentences:

1. The flowers of oak are called acorns, appearing in summer.
…….
2. Leaves are not spirally arranged and have doubly toothed margin.
…….
3. The fruit is called cupule, produced in a cap-like structure called an acorn.
…….
4. In the past, oak wood was used for making planes.
…….
5. The bark of red oak is soaked and used in mechanical preparations.
……

Do these activities: - read the text about beech and oak again
- write it as a dictation
- correct it
-retell the text

Choose another deciduous tree and find all the important information about the tree
(e.g. the habitat, the name of flowers, the shape of leaves, the name of fruit, the usage)

Coniferous trees

Coniferous of a given type vary greatly in shape, so it is not possible to identify a tree's type by its shape. Size as well as shape can differ from tree to tree depending on many conditions.

Identification of the species is based on:

a. The size and arrangement of the leaves. The "leaves" of conifers are of course their needles
b. The size and shape of the cones.

Read the text and fill the words into the gaps:

plywood seeds cones branchlets roots pulp

Fir is the highest tree in the Slovak forests and grows up to the height of 10-80 m. Fir is not easily uprooted as it has large stable ……. resistant to wind force. The fir has it's needles attached individually to the branches and ……. , which are flat on one side. They have cylindrical and erect …….. that released at maturity the winged ……. It is often used as …….or in the manufacture of……
Fir trees are planted for screens and windbreaks.

wood uprooted needles mature paper branches

Spruce are large trees, from 20–60 m tall when…….. The needles are attached individually to the ……. and branchlets, which have rounded appearance. Spruce ……. are four-sided and sharp on the end Most spruce trees retain their cones for a few years; thus it is common to see new and old cones still attached to a tree. The spruce trees are easily damaged and …… by high winds. Spruces are also popular ornamental trees, used also as Christmas trees. The spruce's ……. is used in wooden aircraft and producing many musical instruments. It is also one of the most important woods for …… manufacture.

timber seeds parks furniture coniferous soil

Pines grow well in acid soil, most require good ……..drainage, preferring sandy soils. On pine**,** the needles are arranged in clusters, with 2, 3 or 5 needles per cluster. The pine's cones are the largest and most durable of all …… trees. A number of pines will retain their cones for many years. The ……. are commonly eaten by birds and squirrels.
Pines are among the most commercially important of tree species, valued for their …….and wood pulp. The wood is widely used in carpentry items such as……..., window frames, floors and roofing.
Many pine species are planted in ……..to make attractive surroundings, they are also grown for Christmas trees.

Which description is for fir, spruce or pine. Write the name of the right tree in the gap:

.
1…….. is planted for screens and windbreaks.
2. …… needles are four-sided and sharp on the end.
3……..has large stable roots resistant to wind force.
4…… 's cones are the largest of all coniferous trees.
5…… is used in producing many musical instruments.
6……. has the needles arranged in clusters.
7…….. is one of the most important woods for paper manufacture.
8……. is the highest tree in the Slovak forests.
9……. seeds are commonly eaten by birds and squirrels.
10…… .is easily damaged and uprooted by high winds.
11……. grows well in acid soil.
12…… has cylindrical and erect cones.

Do these activities: - read the text about fir ,spruce and pine again
- write it as a dictation
- correct it

-retell the text

Choose another coniferous tree and find all the important information about the tree (e.g. the habitat, the arrangement of needles, the shape of cone, the usage)

Vegetation stages

It is estimated that 41% of the Slovak territory is covered by forests.
According to the climatic conditions changing with the rising altitude the following eight forest vegetation stages are distinguished:

oak zone 100 - 400 m a.s.l.

beech-oak zone 200 - 550

oak-beech zone 250 - 700

beech zone 450 - 800

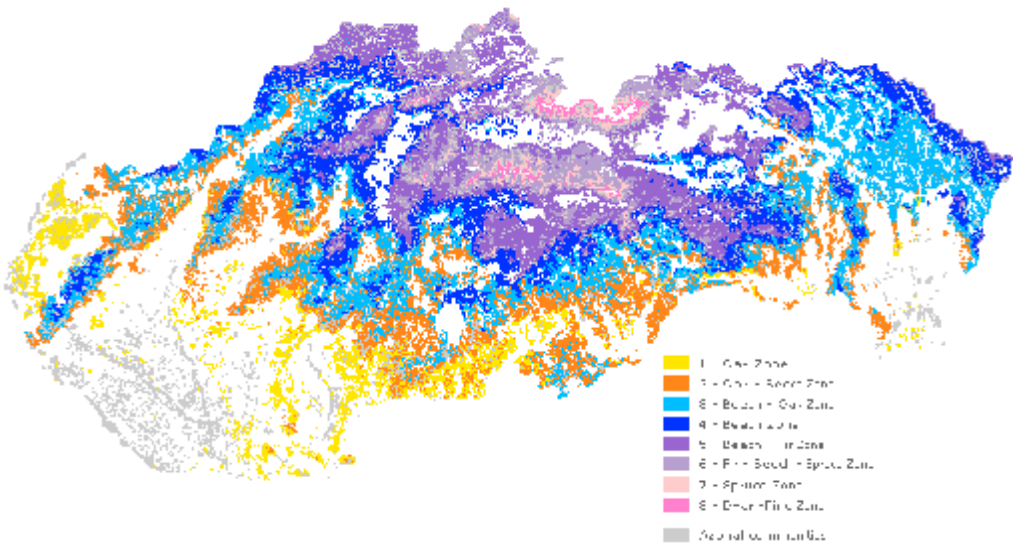
fir-beech zone 650 - 1050

beech-fir-spruce zone 850 - 1300

spruce zone 1100 - 1550

dwarf pine zone 1450 – 1900

Write the right zone according to the picture:



Sqdd rodbhdr bnl onrhshmm9

Sgd rg` qd ne **deciduous** sqldr hmsgd nudq` lkrodbhdr bnl onrhshmmhr 45+8$ +

addbg '18+5 $ (`mc n`j r '02+6$ (- g`qcv nncr 'l `okdr+`rg+dkl r+`kcdqr+kkl dr+v hkc eqt hs rodbhdr(hr 3-0$ -
Bnmhedqnt r sqddr `qhl qloqhrdmsdc ax Mnqv `x roqt bd '16+4$ (+rhkudqehq '3+5$ (`mc ohmdr '6+6$ (

Rearrange the letters and write the words correctly. Translate them into Slovak:

1. NALEP-……..
2. LEM - …….....
3. DEARC-…….
4. LOWLIW-……..
5. LOPRAP-……..
6. DAREL- …….
7. SAH- …….
8. NESTCHUT- ……..
9. RIBCH- …….
10. MELI- ……

Slovak forests

The climate of the area in the southern Slovakia of lowlands and lowest parts of the mountains is relatively warm and dry.
The forest-steppe vegetation became dominant here occupied by **oaks** and **pines**. At the same time, the occurrence of grass species is common here: **spinifex**.

The floodplain forests belong to the most threatened forest ecosystems. Danube floodplain represents the largest area of these forests in Slovakia. The dominant tree species of the floodplain forests are **willows, poplars** and **alders**. Typical herbs found in this area are: **curlyheads (clematis), stinging-nettle** and **salmon berry.**

The hard-wood forests occur in further areas from rivers that have lower and shorter floods as well as a deeper level of underground water. The dominant species of the hard-wood forests are **elm, ash, oak** and **maple**. We can find here wild flowers such as: **oxlip, bluebells** and **primrose**.

The climate of the area in the northern Slovakia of the higher mountains is a bit wetter and colder.
The majority of the forests in this area are **beech forests**. They require a humid atmosphere and well drained soil. They are often mixed with **oak** and **fir forests.** A beech forest is very dark and the sun barely reaches the ground. Only few species of plant are able to survive there: **woodruff** and **asarabacca.**

Pine forests can be found up to 2000 metres above sea level, the high concentration of them is in High Tatras.
They are accompanied by ferns and herbs: **gentian, wood sorrel** and **doronicum**, adapted to lower temperatures.

Harsh climatic conditions (cold, much wetness and less fertile soils) are suitable for **spruce forests.** Along with spruce forests**, pine** and **fir forests** become important species. They are often mixed.

In the height above the sea level of 1,500 m we find the **upper forest border** where climatic conditions are very harsh. The low temperatures, long lasting snow and short vegetation period are

typical for this area. On the little fertile soil grows **stone pine, dwarf pine, mountain ash** and **larch**.

Higher above the dwarf pine vegetation stage grow only **scrub** and **high mountain meadows**. We can find there the alpine plants: **alpine butterwort, alpine buttercup, alpine aster, edelweiss, moss campion, least primrose** and **gentian.** They are very rare and that's why protected plants. The most resistant mountain plants are **mosses** and **lichens.** The peaks of the highest Slovak mountains comprise only rocks without soil.

Are these sentences true or false **T/ F?** *If they are false, correct them.*

1. The hard-wood forests have harsh climatic conditions.
…….
2. Danube flood plain forests represent the largest area of these forests in Europe.
……..
3. The hard-wood forests have shorter and lower floods.
……
4. The beech forests need a dry atmosphere and well flooded soil.
……
5. The beech forest is very light and the sun shines there all the time.
…….
6. A lot of pine forests can be seen in Low Tatras.
……..
7. Cold and wet climate are suitable for spruce forests.
……
8. Upper forest border is characteristic of high temperatures, snow and long vegetation period.
……
9. Scrub and high mountain meadows live higher above the dwarf pine.
……

Write the right word (place or plant) in the gaps:

1. Oak lives in……
2. ……trees live in the floodplain forests.
3. Salmon berry and …….. live in …….
4. Maple and ……. live in ……
5. Oxlip, …… and …….. live in hardwood forests.
6. …….. are mixed with oak forests and …….
7. Ferns and herbs: …… and doronicum live in …….
8. Spruce forests are often mixed with …… and …….
9. Dwarf pine, mountain ash and…… ……. live in ……
10. Protected alpine plants are: alpine butterwort, aster, …….. and ……..

Fill in the right letters and translate the words (herbs and flowers):

1. _ E _T_ _ _
2. _ O _ _ C _ M _ _ O _
3. _ D _ _ W_ I _ _
4. _ A _ _ O _ B _ _ _ Y
5. _ T _ _ G _ _ G _ E _ T _ _
6. _ O _ O _ _ C _ _
7. _ P _ _ I _ _ _
8. A _ _ I _ _ _ S _ _ R
9. W _ _ _ R _ _ F
10. L _ _ S _ _ _ I M _ _ _ E

11. _ L _ E _ _ _L 12. _ O _ D _ O _ R _ _

Why are trees so important?

Match the reason of plant importance to the right explanation.

Trees clean the air **Medicine from trees** **The beauty of trees**
Trees as home **Trees control climate** **Trees as food**
Trees prevent soil erosion **Trees as sound barriers**
Practical value of trees **Trees provide oxygen**

1.…….
During the process of photosynthesis, they take in carbon dioxide and produce the oxygen we breathe.
2. ……..……
They filter air by removing dust and absorbing other pollutants. The rain washes these unhealthy particles to the ground.
3. …….
They reduce the effects of the sun, rain and wind. They lower the air temperature and the heat intensity of greenhouse effect by maintaining low levels of carbon dioxide.
4. ……..
The roots hold soil in place and leaves break the force of wind and rain on soil. Trees absorb and store rainwater and reduce water deposit after storms
5. …….
Trees can reduce noise from roads and other urban activities with pleasant natural sounds.
6. ……
Wood was the first fuel and is used to construct buildings, to make furniture, sporting equipment, wooden toys and many other things. Paper is made from cellulose, the main component of cell walls.
7. ……..
Trees provide all the tasty fruits and nuts, of course all the oils and other products are derived from these natural sources. Many animals eat also leaves and fruits
8. …….
Hundreds of living creatures use trees as their natural habitat. Leaf-covered branches keep many animals safe and protect them from predators.
9. …….
Some of the ingredients come from natural compounds produced by trees. Trees create beautiful and living environment and help to reduce stress.
10. ……..
Our streets, parks and gardens are lined with trees that create a peaceful and aesthetic environment. They serve as historic landmarks and are often a pride of the community.

Vocabulary

coniferous	softwood	evergreen
deciduous	hardwood	broadleaved
forest	branch	berry
cone	needles	yew
juniper	cedar	wood
bark	lowland	shrub

herb
bough
colourful
oak
poplar
birch
dendrology
opposite
buckeye
margin
smooth
size
rounded
cupule
species
acorn
tool handle
leather
branchlet
stable
erect
windbreak
manufacture
cluster
squirrel
dwarf pine
plane
grass
threatened
salmon berry.
oxlip
require
ground
woodruff
gentian
temperature
border
meadow
alpine aster
least primrose
protected
lichen
soil erosion
greenhouse effect
equipment
natural sources

leafless
twig
blossom
pine
willow
fir
silviculture
lilac
locusts
lobed
sharp
shape
beechnut
shallow
rodent
mature
barrel
cork
pulp
flat
release
appearance
acid soil
durable
vegetation stage
elm
chestnut
spinifex
curlyheads (clematis)
hard-wood forest
bluebells
humid
shade
asarabacca
wood sorrel
harsh
larch
alpine butterwort
edelweiss
gentian
resistant
comprise
sound barrier
reduce
cellulose
environment

trunk
fall down
spruce
maple
lime
beech
alternately
ash
walnut
toothed
pointed
catkin
triangular
carpentry
spirally
timber
tannin
plywood
uprooted
cylindrical
screen
attached
drainage
retain
altitude
alder
occurrence
floodplain forest
stinging-nettle
flood
primrose
drained
survive
fern
doronicum
suitable
scrub
alpine buttercup
moss campion
rare
moss
rock
pollutant
fuel
oil
landmark

TREES

English	**Latin**	**Slovak**
Alder	Alnus	Jelša
Black Alder	Alnus glutinosa	Jelša lepkavá
Speckled Alder	Alnus incana	Jelša sivá

Black Ash	Negundo aceroides	Javorovec jaseňolisky
Common Ash	Fraxinus excelsior	Jaseň štíhly
Mountain Ash	Sorbus aucuparia	Jarabina vtáčia
Aspen	Populus tremula	Topoľ osikový
Baldcypress	Taxodium distichum	Tisovec dvojradový
Beech	Fagus sylvatica	Buk lesný
European Birch	Betula pendula	Breza previsnutá
Moor Birch	Betula pubenscens	Breza plstnatá
Cedar	Cedrus	Céder
Chestnut	Castanea sativa	Gaštan jedlý
Horse Chestnut	Aesculus hippocastanum	Pagaštan konský
Douglas Fir	Pseudotsuga menziesii	Duglaska tisolistá
Black Elder	Sambucus nigra	Baza čierna
Red Elder	Sambucus racemosa	Baza červená
Mountain Elm	Ulmus glabra	Brest horský
White Elm	Ulmus laevis	Brest väzový
Balsam Fir	Abies balsamea	Jedľa balzamová
Blue Fir	Abies concolor	Jedľa srienistá
Caucasian Fir	Abies nordmanniana	Jedľa kaukazská
Giant Fir	Abies grandis	Jedľa obrovská
Silver Fir	Abies alba	Jedľa biela
Hawthorn	Crataegus	Hloh
Hazel	Corylus avellana	Lieska obyčajná
Hemlock	Tsuga	Jedľovec
Hickory	Carya	Orechovec
Honey Locust	Gleditscia triacanthos	Gledičia trojtrňová
Hornbeam	Carpinus betulus	Hrab obyčajný
Juniper	Juniperus communis	Borievka obyčajná
Larch	Larix deciduas	Smrekovec opadavý
Little Leaf Linden	Tilia cordata	Lipa malolistá
Broad Leaved Linden	Tilia platyphyllos	Lipa veľkolistá
Sycamore Maple	Acer pseudoplatanus	Javor horský
Norway Maple	Acer platanoides	Javor mliečny
Common Maple	Acer campestre	Javor polný
Sessile Oak	Quercus petraea	Dub zimný
English Oak	Quercus robur	Dub letný
Turkey Oak	Quercus cerris	Dub cédrový
Austrian Pine	Pinus nigra	Borovica čierna
Stone Pine	Pinus cembra	Borovica limba
Scotch Pine	Pinus sylvestris	Borovica sosna
White Pine	Pinus strobus	Borovica vejmutovka
Plum	Prunus	Slivka
White Poplar	Populus alba	Topoľ biely
Black Poplar	Populus nigra	Topoľ čierny
Coast Redwood or Sequoia	Sequoia sempervirens	Sekvoja vždyzelená
Giant Sequoia	Sequoiadendron giganteum	Sekvojovec mamutí
Mountain Ash Rowan	Sorbus aucuparia	Jarabina vtáčia
Whitebeam Rowan	Sorbus aria	Jarabina mukyňová
Serviceberry Rowan	Sorbus torminalis	Jarabina brekynová
Norway or European Spruce	Picea abies	Smrek obyčajný
Colorado Blue Spruce	Picea pungens	Smrek pichľavý
Black Walnut	Juglans nigra	Orech čierny
English Walnut	Juglans regia	Orech vlašský
White Willow	Salix alba	Vŕba biela

Goat Willow	Salix caprea	Vŕba rakyta
Common Yew	Taxus baccata	Tis obyčajný