

ACTIVITY BOOK

Natural Science

Natural Science 5 is a collective work, conceived, designed and created by the Primary Education department at Santillana, under the supervision of **Antonio Brandi Fernández**.

WRITER

Belén Garrido

MANAGING EDITOR

Sheila Tourle

PROJECT EDITOR

Geona Edwards

EDITOR

Beatriz Bejarano del Palacio

ILLUSTRATIONS

Alademosca il·lustració

Digitalartis

José Santos

5
PRIMARY

Contents

Unit	Topics
1 The human body 4	<ul style="list-style-type: none"> Cells in the human body Tissues and organs Systems and organisms The locomotor system
2 Sensitivity 8	<ul style="list-style-type: none"> Sensitivity The sense organs The central nervous system The peripheral nervous system
3 Health and health risks 12	<ul style="list-style-type: none"> Injuries to the nervous system Injuries to the locomotor system Diet and physical exercise Rest and free-time activities
4 Plant growth and nutrition 16	<ul style="list-style-type: none"> What plants need Plant nutrition Photosynthesis Plant respiration
5 Ecosystems 20	<ul style="list-style-type: none"> Components of ecosystems Nutrition in ecosystems Mutualism and commensalism Parasitism and competition
6 People and the environment 24	<ul style="list-style-type: none"> Terrestrial ecosystems Aquatic ecosystems Dangers to the environment Protecting the environment
7 Matter 28	<ul style="list-style-type: none"> Properties of matter Mass, volume and density Floatability Solids, liquids and gases
8 Energy 32	<ul style="list-style-type: none"> Forms and properties of energy Renewable and non-renewable energy sources Power plants Consequences of energy use
9 Forces and machines 36	<ul style="list-style-type: none"> Forces and movement Friction, speed and gravity Inside a machine Technological advances

1 Unscramble the words and complete the sentences.

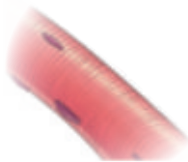
- a. All living things are made up of (llesc) _____.
- b. Cells are the basic (sniut) _____ of life.
- c. (liliruculen) _____ living things are made up of a single cell.
- d. Human beings are (litlrmlueclua) _____ living things, made up of millions of cells.
- e. Living things carry out three basic life processes: nutrition, sensitivity and (nrcouteropdi) _____.
- f. Most cells can only be seen through a (sirmpoccoe) _____.

2 Match and complete the sentences. Then, name the life processes: *nutrition*, *sensitivity* or *reproduction*.

Cells produce	what they perceive around them.	_____
Cells obtain	new cells identical to themselves.	_____
Cells react to	nutrients and energy from food.	_____

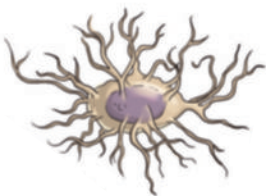
3 Label the human cells.

liver cell - intestine cell - muscle cell - blood cells - bone cell - neuron











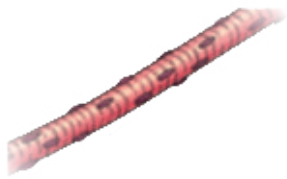


1 Read and complete the sentences.

- a. Groups of the same type of cells join together to form _____.
- b. Tissues join together to form _____.
- c. Organs join together to form _____.
- d. All the different types of systems form an _____.

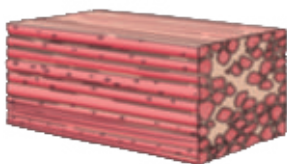
2 Label the levels of organization. Number them in order, from the simplest to the most complex.

organ - cell - organism - tissue - system











3 Write two examples of each level of organization in the human body.

- cell: _____
- tissue: _____
- organ: _____
- system: _____

1 Write the letter and the name of each part of the locomotor system.

head

☐ _____

☐ _____

arms

☐ _____

☐ _____

☐ _____

trunk

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

☐ _____

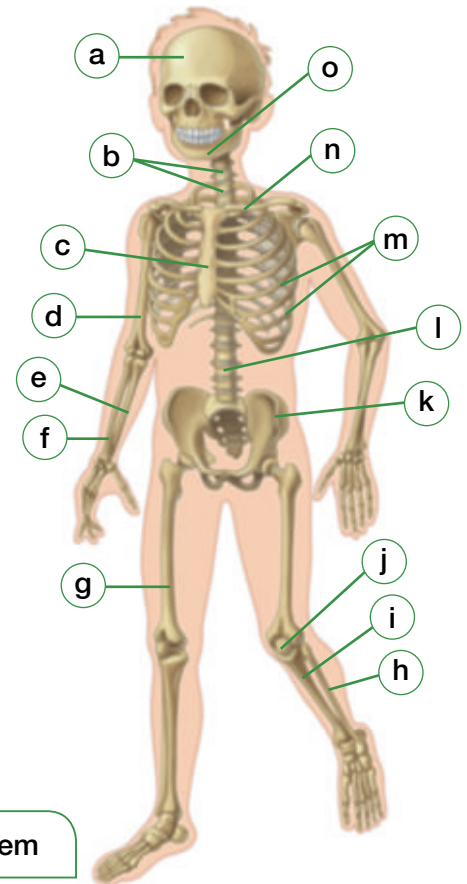
legs

☐ _____

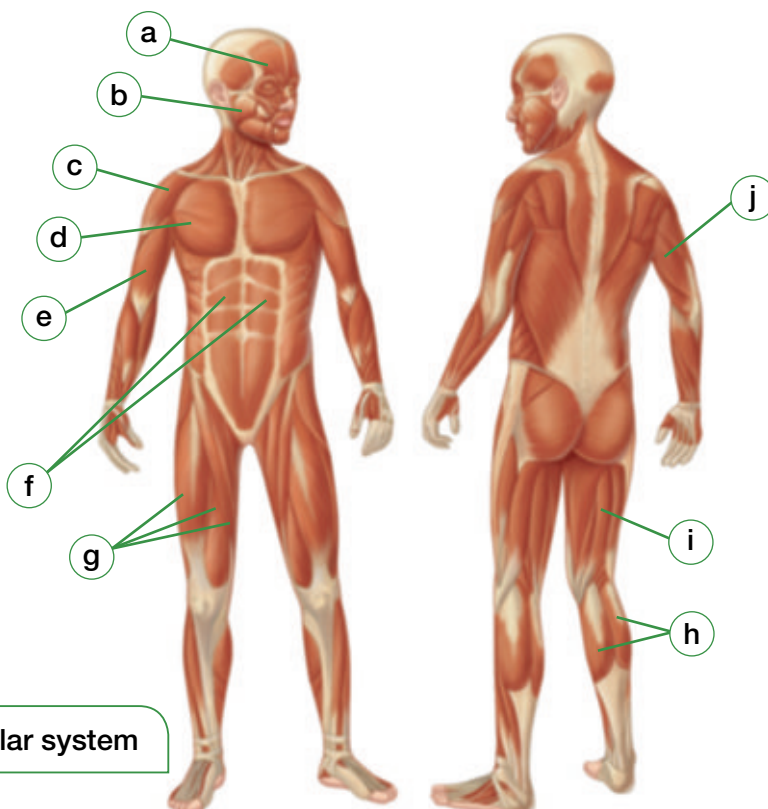
☐ _____

☐ _____

☐ _____



the skeletal system



the muscular system

a. _____

b. _____

c. _____

d. _____

e. _____

f. _____

g. _____

h. _____

i. _____

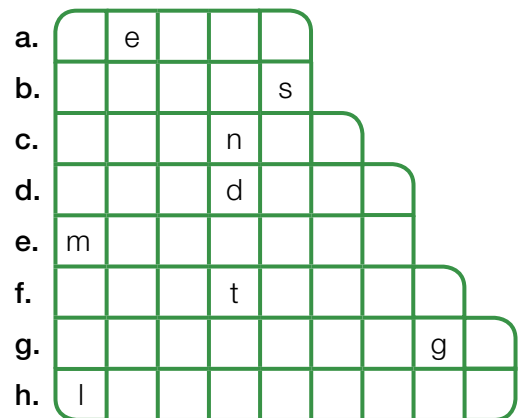
j. _____

1 Complete the paragraphs about the locomotor system.

- a. The _____ system is made up of all the bones. It gives our body its _____. It protects delicate organs, like the _____, _____ and _____. All bones are _____ and rigid, and can have different _____.
- b. The _____ system consists of all the muscles in the body. Muscles are _____ which can change in _____ and _____.

2 Write the words.

- a. This is what muscles do when they get long and thin.
- b. You have over 200 of them in your body.
- c. These are where bones meet.
- d. These join muscles to bones.
- e. You have about 640 of them in your body.
- f. This is what muscles do when they get shorter and thicker.
- g. This soft, elastic tissue covers the ends of bones.
- h. These hold the bones of a joint together.

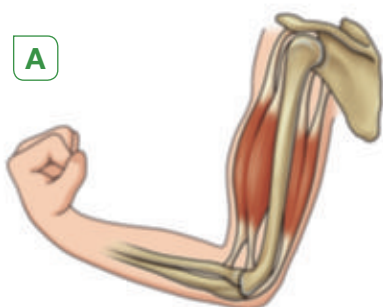


3 Look at the pictures. Use the words to write about how the arm moves.

relaxes - contracts - biceps - triceps - ulna

- a. Flexing movement: _____

- b. Extending movement: _____



1 Explain the stimulus and response in each situation.



Stimulus: _____

Response: _____

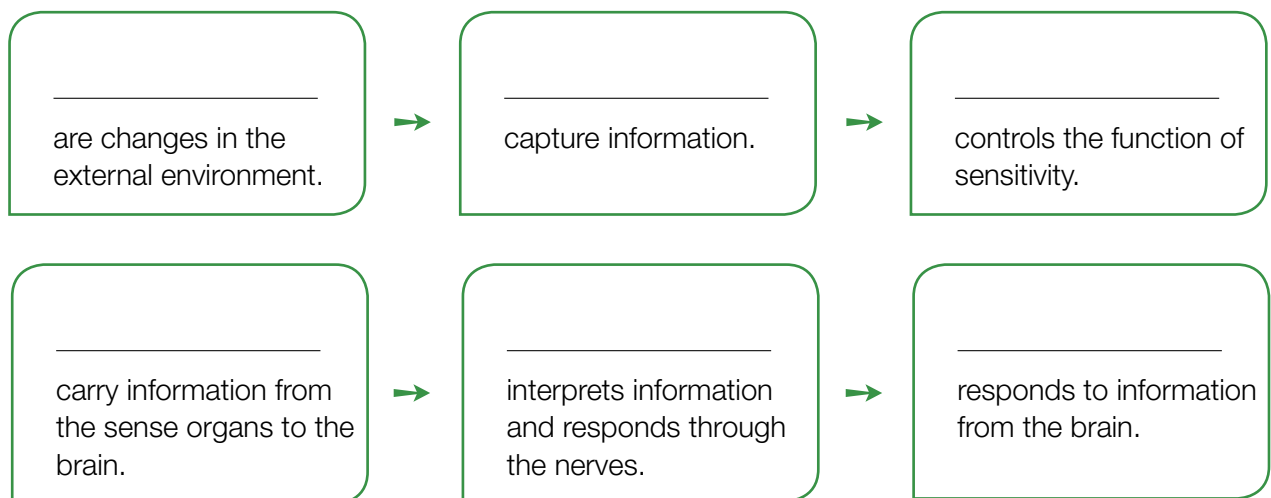


Stimulus: _____

Response: _____

2 Complete the diagram about the function of sensitivity.

the locomotor system - the nervous system - stimuli - the brain - sense organs - the nerves



3 Unscramble the words. Then, read and complete the text about internal coordination.

unosrev mestys - getodinis - tysinitevis - crespeso

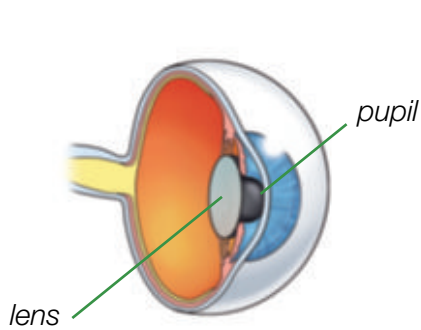
Internal coordination is part of the function of _____. The _____

_____ is responsible for coordinating many _____ inside our body,

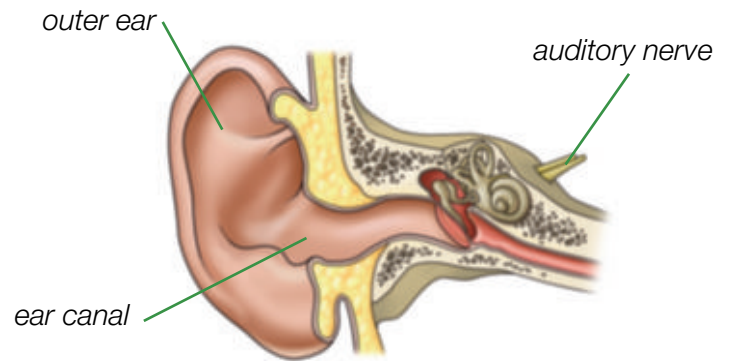
such as _____ and blood circulation.

1 Name the sense for each sense organ. Then, add more labels to each diagram.

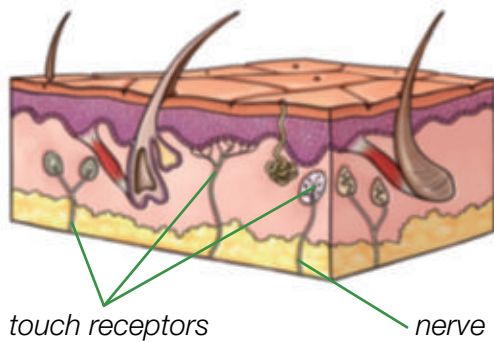
optic nerve - nostril - hair - cornea - ossicles - taste buds - cochlea - iris -
sweat gland - ear canal - retina - nasal cavity - pore - eardrum - olfactory nerve



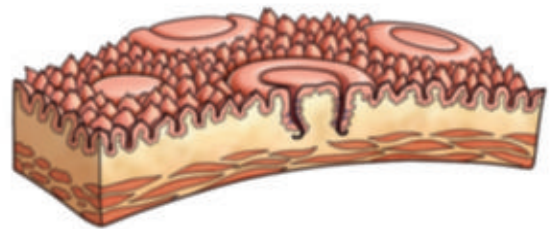
The eye: _____



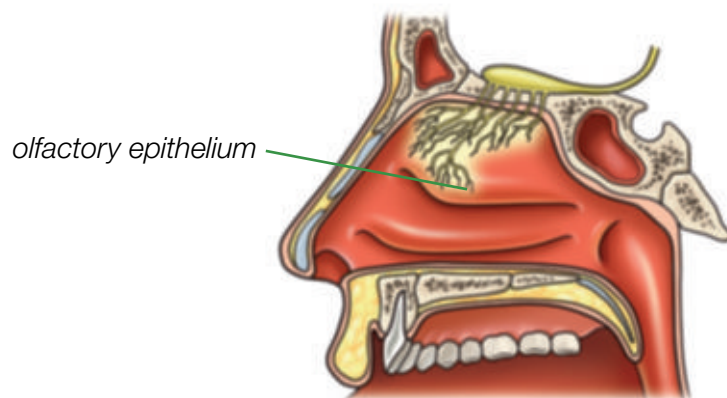
The ear: _____



The skin: _____



The tongue: _____



The nose: _____

1 Study the diagrams on page 9. Use the words to write one sentence about each sense.

- Sight: _____
- Hearing: _____
- Touch: _____
- Taste: _____
- Smell: _____

2 Look at the photographs. Write sentences to describe how these people's senses are at work.



3 Read the sentences and circle the correct words. Then, write the corresponding sense organ.

- a. Receptors in the taste buds detect *temperature* / *flavours*. _____
- b. Receptors in the *eardrum* / *cochlea* detect sounds. _____
- c. Touch receptors detect *pain* / *light*. _____
- d. Receptors in the *olfactory epithelium* / *nasal cavity* detect odour. _____
- e. Receptors in the *retina* / *cornea* detect light. _____

1 Match each action with the corresponding task of the nervous system.

She feels hungry.

It controls and coordinates organs and systems.

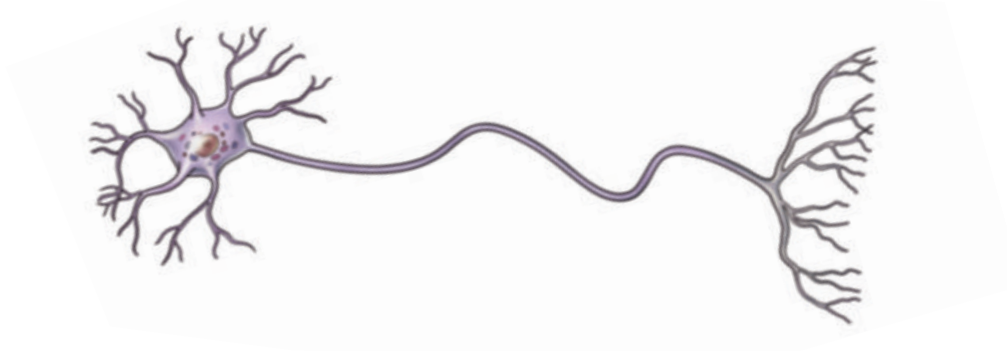
She eats a sandwich.

It produces the appropriate response.

She digests the sandwich.

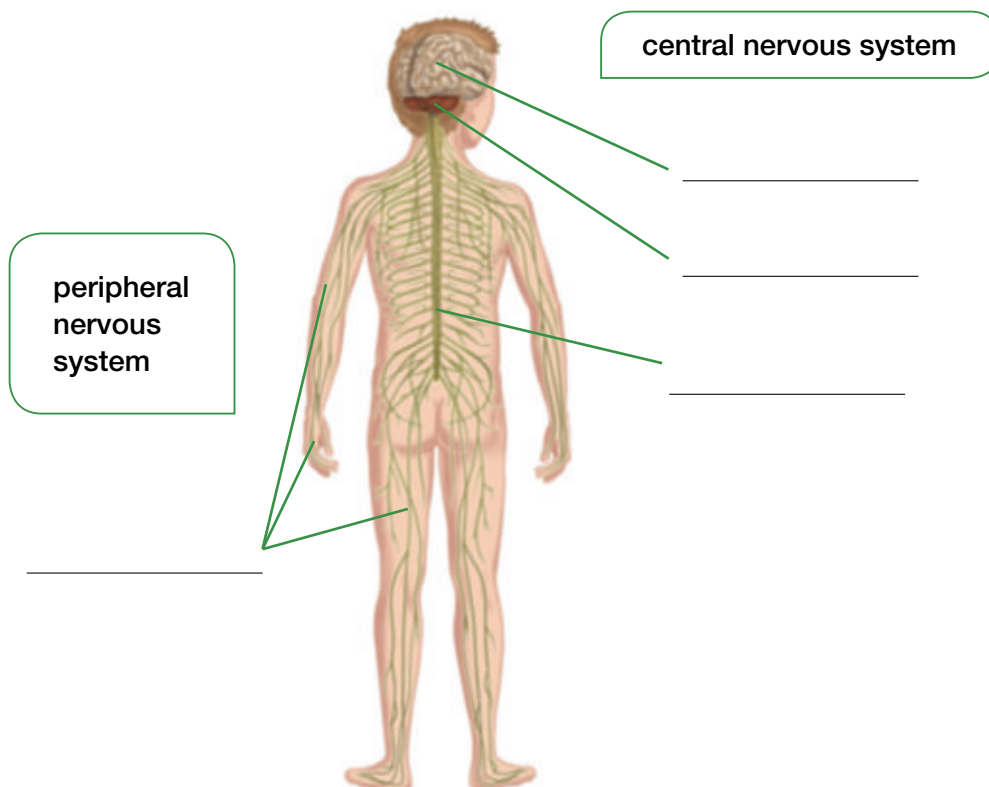
It receives and interprets information.

2 Label the parts of a neuron. Then, use the words to complete the text.



Neurons are nerve cells which form the nervous tissue. The _____ receive messages from the sense organs. These messages pass through the widest part of the neuron, the _____. Then, the _____ transmits the messages to other neurons.

3 Label the parts of the nervous system.



1 Complete the sentences about damage to the nervous system.

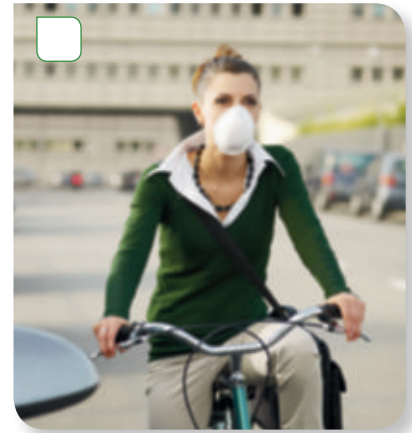
alcohol - muscle - injuries - chronic - Alzheimer's - tremors -
memory - spinal cord - brain - reflexes - paralysis - alcoholism

- a. Accidents can damage the _____ and _____.
- b. Spinal cord _____ may lead to total or partial body _____.
- c. _____ disease involves a loss of _____.
- d. Parkinson's disease causes involuntary _____ due to lack of _____ control.
- e. _____ intoxication can cause blurred vision and loss of _____.
- f. Alcohol abuse can lead to a _____ illness, called _____.

2 Decide if the people are taking a health risk, and mark the incorrect behaviour with a cross (X). Then, explain your answers.







3 Match the diseases with the affected skills. Then, write one way that we can help people with each type of disease.

Alzheimer's disease

mental skills

Parkinson's disease

motor skills

- Alzheimer's disease: _____
- Parkinson's disease: _____

- 1 Use the code to find the slogan. Then, explain why alcohol intoxication makes driving dangerous.

● = A ♣ = D ★ = E ♠ = I ♦ = K
♥ = N ♠ = O ■ = R ▲ = T * = V

♣ ♠ ♥' ▲ ♣ ■ ♠ ♥ ♦ ● ♥ ♣ ♣ ■ ♠ * ★

_____ , _____ .

■ _____

- 2 Match the words and write sentences about injuries to the locomotor system.

sprain

bone fracture

muscle strain

involuntary and prolonged muscle contraction

damage to a ligament

breaking or cracking of a bone

- 3 Write the correct letter. Then, write the complete sentence.

- a. A ... may be caused by excessive effort.
b. In order to heal properly, a ... needs to be held in place with a plaster cast.
c. Ankle ... are usually caused by twisting.



- a. _____
b. _____
c. _____

1 Write a healthy daily habit for each category. Then, tick (✓) the most important habit for a healthy nervous system.

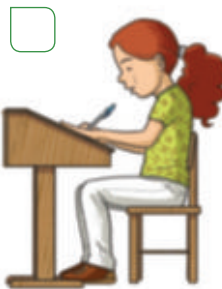
- Physical activity: _____ ☐
- Good posture: _____ ☐
- Healthy diet: _____ ☐
- Sleep and leisure: _____ ☐

2 Complete the table about the benefits of healthy habits.

healthy habits	benefits
physical activity	
good posture	
diet rich in calcium and vitamin D	
sleep and leisure	

3 Read and write *T* (true) or *F* (false). Correct the false sentences, and write the corresponding letter in each picture.

- a. Sleep on your back with your legs straight. ☐
- b. Sit down to get dressed and put on your socks. ☐
- c. Carry your schoolbag over one shoulder. ☐
- d. Pick things up with your knees bent and your back straight. ☐
- e. Sit up straight and rest your back against the chair. ☐



1 Tick (✓) the foods that are good for bone growth. Then, answer the questions.



- Why are some foods good for bone growth? _____
- _____
- Name a non-food source of vitamin D. _____

2 Unscramble the words and complete the sentences.

sorbab - rinlame - nerhda - nimDavit

- Calcium is a _____ which helps bones to _____.
- _____ helps the body to _____ calcium.

3 Read the text and circle the correct words.

Sleep is important for our *digestive* / *nervous* system. It allows our body to rest and our *brain* / *spinal cord* to sort and store *emotions* / *information*. Sleep can also improve our *sensory* / *memory* skills. Sleep needs vary with *size* / *age*. Children need to sleep between *8 and 10* / *10 and 12* hours per day. *Sufficient* / *Insufficient* sleep can affect growth and *cause* / *prevent* illness.

- 1 Unscramble the words and complete the sentence. Then complete and label the picture to show what plants need to grow.

ira - ralnime stasl - trewa - thilg

- In order to make their own food,
plants need _____,
_____, _____
and _____.



- 2 Look at the photos. Where does each plant grow? Explain your answers.



- a. _____

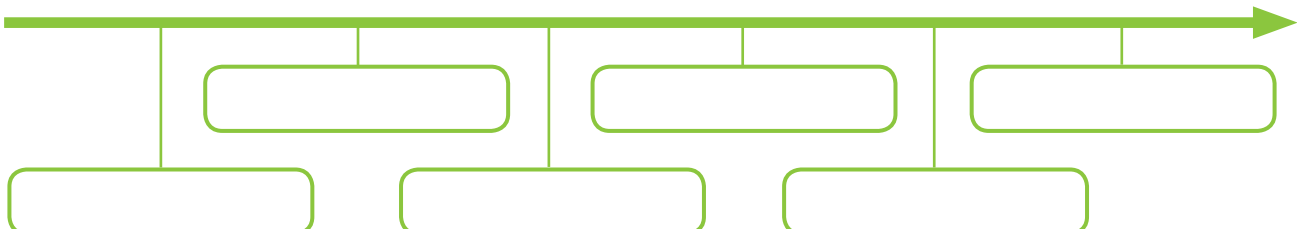
b. _____

- 3 Write these plants in the correct order according to their water needs.

elm trees - water buttercups - willows - poplar trees - reeds and bulrushes

needs least water

needs most water



1 Write three gases found in air. Then, tick (✓) the gas that plants use to make their food.

_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>

2 Match the columns. Write a complete sentence under each photograph.

poor soil
fertile soil

high in water and mineral salts
low in water and mineral salts





3 Read and write *T* (true) or *F* (false). Correct the false sentences.

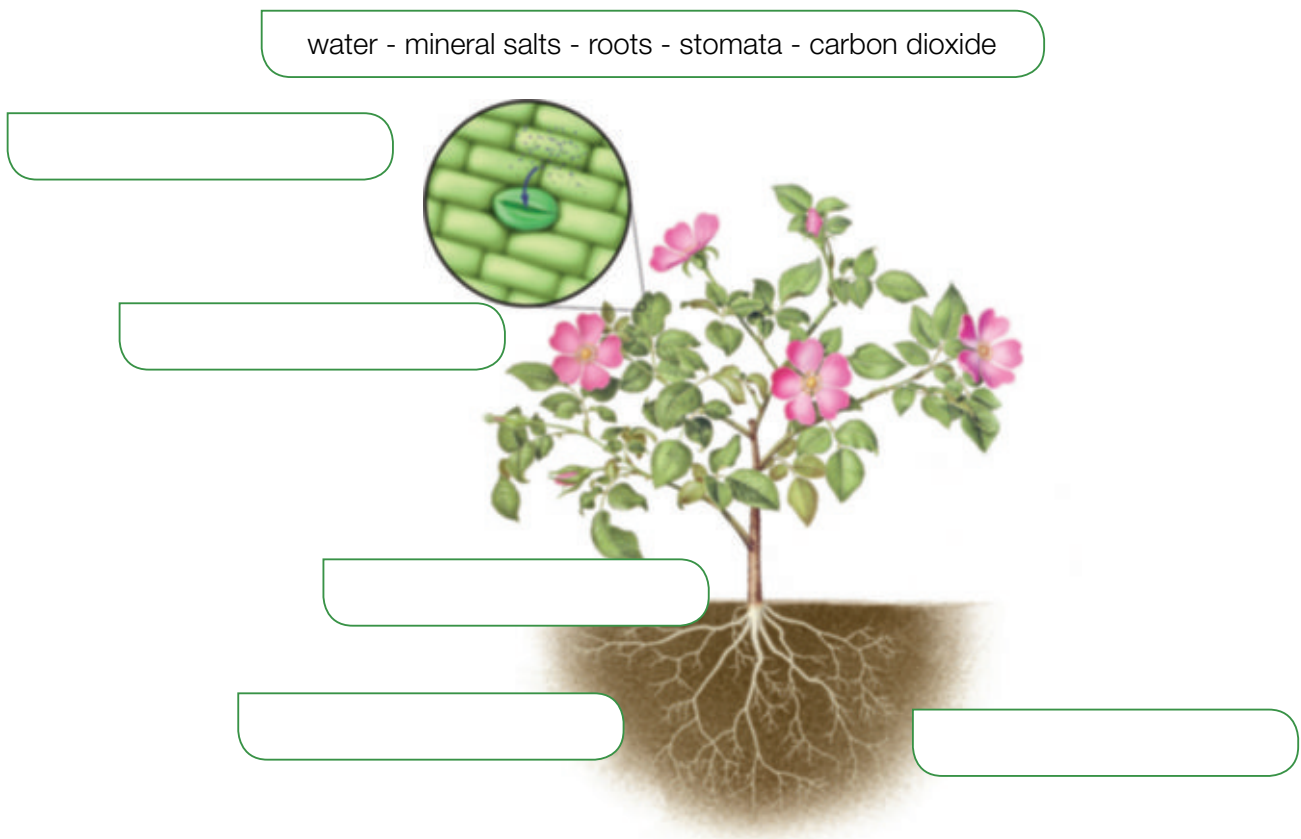
- a. Plants get light from the Sun. ☐
- b. Some plants can survive without water. ☐
- c. Plants take in oxygen to make their food. ☐
- d. Roots absorb mineral salts from the air. ☐
- e. Most plants can grow in poor soil. ☐

1 Number the following processes of plant nutrition. Then, answer the question.

- ☐ Nutrients are transported inside plants.
- ☐ Plants take in substances from the soil and air.
- ☐ Plants make their own food using sunlight.

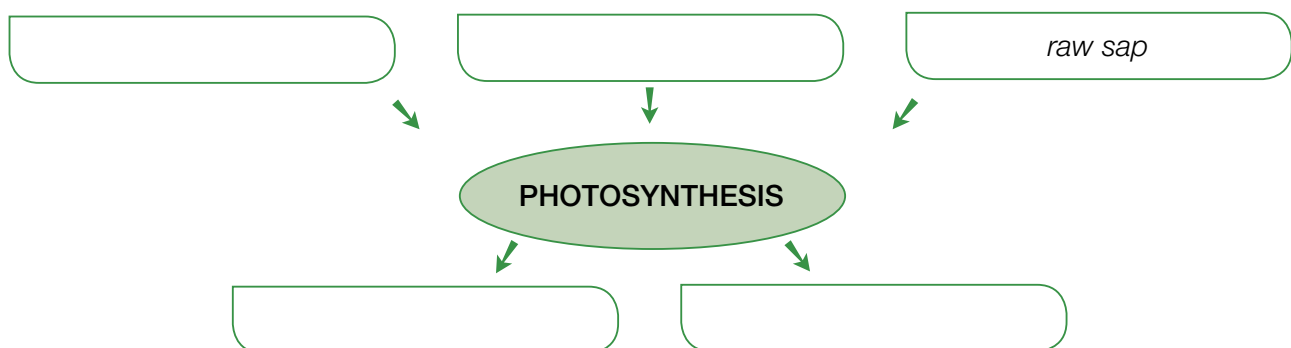
■ What other process happens in plants at the same time? _____

2 Label the diagram of how plants take in substances. Then, complete the sentence.



■ The mixture of water and mineral salts is called _____.

3 Complete the chart.



1 Look at the diagram. Then, complete the sentences about plant nutrition.

phloem - chlorophyll - carbon dioxide - raw -
energy - stomata - xylem - elaborated



- The blue arrows represent _____ sap.
- The red arrows represent _____ sap.
- Raw sap travels up through _____ vessels.
- Raw sap combines with _____ and transforms into elaborated sap.
- Elaborated sap is distributed through _____ vessels.
- A green substance in leaves and stems, called _____, traps sunlight.
- Gas exchange for photosynthesis and respiration takes place through _____.
- Plants combine oxygen with nutrients to produce _____.

2 Complete the table.

	photosynthesis	respiration
gas taken in		
day / night	day	
gas released		
day / night		

3 Complete the sentence. Then, answer the question.

Plants produce more oxygen through _____ than they take in through _____.

- Why is this important for other living things?
