

Biology

Delprov A

Årskurs

6

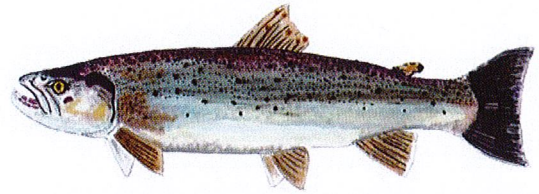
Elevens namn och klass/grupp

Hoki



Åsa Arvidsson

Salmon



Åsa Arvidsson

This task is about how the environment and people are affected by which fish we choose to eat.

You and your family are buying fish for dinner. You are choosing between two common kinds of fish, salmon and hoki. Today, the price per kilo is the same for both kinds of fish.



Åsa Arvidsson

In order to decide which fish to choose, you need to know more about these kinds of fish. On the next page there are eight questions that you could ask in order to find out more.

1. How are salmon and hoki caught?

5. How large is a salmon?

2. Where do hoki live?

6. Which fish is most plentiful:
salmon or hoki?

3. Which fish is more nutritious:
salmon or hoki?

7. Are salmon and/or hoki cultivated?

4. Which fish tastes the best:
salmon or hoki?

8. How fast do salmon and hoki grow?

Your task is to **choose two of the questions**, which can help you in choosing fish.

The questions need to provide **information about how people and the environment** are affected by which fish you buy.

Say why these questions are important to pose. Give several reasons if you can.

Do not forget:

- to **broaden and deepen** your reasons.
- to use your **knowledge of science**.
- you are **not** supposed to answer the questions.

I choose question number _____

because

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I choose question number _____

because

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In many places around the world the temperature drops below zero degrees Celsius several times a year. Many animals are adapted for living in cold mountain areas, glacial seas and the Polar Regions.

Karl and Samira are writing a presentation about the Mountain hare. They want to tell their class **how the Mountain hare benefits from changing the colour of its fur in the winter**. They have found some information about the Mountain hare which they are thinking about using in their presentation.

Start by reading the information which Karl and Samira have gathered.

- Source 1:** Changing the colour of its fur in the winter helps the Mountain hare to hide in the snow. This makes it harder for predators to find the hare.
- Source 2:** Many animals that live in cold areas have a thick layer of fat under the skin. This helps keep the animal warm.
- Source 3:** The winter fur is almost twice as thick as the summer fur and the white hairs are hollow. The winter fur is better for protecting the animal from the cold.
- Source 4:** Individuals that have fur which provides camouflage during all seasons are not as easily spotted by predators. As a consequence, they have a greater chance of survival and can pass their genes on to the next generation to a greater extent. Individuals changing their fur later in the autumn and losing the white colour earlier in the springtime will therefore have an advantage during winters with less snow.
- Source 5:** The Mountain hare and the Brown hare look very similar but the tail and the ears are different. Moreover, the Mountain hare changes its fur in the winter.
- Source 6:** The winter fur of the Mountain hare varies from white to light grey, depending on where in the country the hare lives.



A. Explanations to how the Mountain hare benefits from changing the colour of its fur in the winter can be found in the sources. There are two different explanations.

Which are these two explanations?

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The explanations are found in **three sources**.

The three sources are _____ and _____ and _____

B. Now you have found **three sources**. If you were allowed to use only **two of these sources** for the presentation, which would you choose?

I would use source _____ and source _____
because

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I would **not** use source _____
because

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We can make use of nature in many different ways. **Ecosystem services** is one way of describing how we benefit from the nature.

Read the information about ecosystems and ecosystem services. Then make a slideshow presentation describing different kinds of ecosystem services. A power-point presentation is an example of a slideshow.

Ecosystem

An ecosystem is made up of all of the living organisms in a specific area and their environment.

Ecosystem services

Ecosystem services are benefits provided by nature, which are advantageous to people. The services are favours, given to us “for free” by nature. Examples of ecosystem services may be wild-caught fish, pollinating insects, water purification and fertile soil.

Other examples are plants, animals and micro-organisms (bacteria and fungi), which perform a number of tasks that we need in order to live and keep healthy. For instance, trees provide us with both oxygen and wood.

Many people also feel better when they spend time outdoors, either exercising or simply enjoying the landscape.

Example:

The earthworms do us a favour

The work that earthworms do is an example of **ecosystem services**.

Earthworms and other decomposers (such as insects, fungi and bacteria) transform leaves and other plant litter to soil.

The earthworms dig tunnels in the ground, which provide more oxygen to plant roots.

The faeces from the earthworms (i.e., the worm poo) makes the soil more nutritious and useful for agriculture.

This is a service given to us for free.

Imagine that you were to explain how nature does us favours. To help you with the task you need to make a slideshow presentation. The slideshow should include pictures and short texts.

On the next page you will find the beginning of a presentation. The first slide of the presentation is an example of what it may look like. On slide 2 there is a picture and the beginning of a text.

Your task is to write the text to slide **number 2** in the slideshow.

For **slides number 3, 4 and 5** you need to choose **three of the pictures A-F** below, which you think show **other types** of eco-system services. Write the texts to these slides as well.

The texts in the slideshow should describe **in what way** the picture illustrates an **ecosystem service** and how this service **may benefit people**.

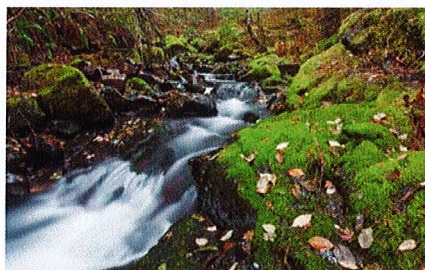
Any one of the pictures may show several ecosystem services, but you should only describe one service for each of the pictures you have chosen.

Choose three of these pictures for your slideshow



Damian Gadal
<https://www.flickr.com>

Picture A: Fishing in the ocean



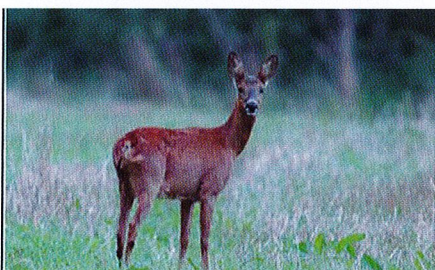
Ian Sane
<https://www.flickr.com>

Picture B: By a spring in the forest



TexasEagle
<https://www.flickr.com>

Picture C: Field of sunflowers



Arend
<https://www.flickr.com>

Picture D: Deer on a field



Picture E: Bee on a flower



Hans Kylberg
<https://www.flickr.com>

Picture F: Morning in a pine forest

Do not forget:

- to use the information on the previous page.
- all slides must show **different** ecosystem services.
- write **short** texts.



Slide 1
(Example)



The picture shows children riding bikes in the forest.

Spending time outdoors, either exercising or simply enjoying the landscape, is an ecosystem service provided by the forest.

Exercising in the forest is good for your health and it is free of charge.

Slide 2



The picture shows earthworms in the ground

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Slide 3

Choose one of the pictures
A-F

Picture __

The picture shows

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Slide 4

Picture __

The picture shows

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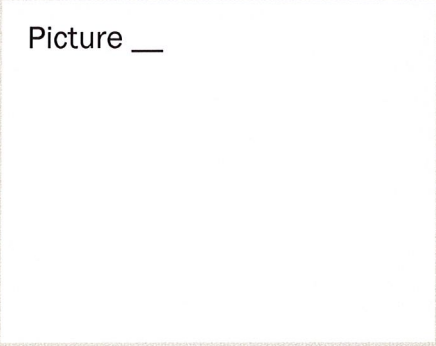
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Picture __



The picture shows

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Biology

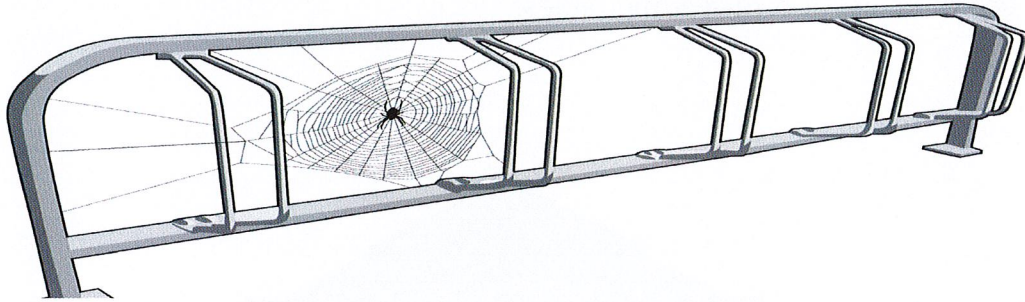
Delprov B

Årskurs

6

Elevens namn och klass/grupp

The spider is a creature most of us recognize. However, perhaps we don't know much about the life of a spider.



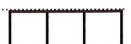
a. Look at the questions below. Which of these could you answer just by looking at a spider webs and the spider? Remember that this task has to be finished in one day. You can use a magnifying glass. **Put crosses in the table to answer the questions.**

	Able to answer the question	Unable to answer the question
How many legs does the spider have?	<input type="checkbox"/>	<input type="checkbox"/>
What is the most common species of spider?	<input type="checkbox"/>	<input type="checkbox"/>
What does the spider use the web for?	<input type="checkbox"/>	<input type="checkbox"/>
How old is the spider?	<input type="checkbox"/>	<input type="checkbox"/>
How many spiders in Sweden are hairy?	<input type="checkbox"/>	<input type="checkbox"/>

b. Imagine you are standing beside a spider's web, looking at a spider. You have a magnifying glass with you. You have one day to do a task; imagine that you know nothing about spiders.

Write down three questions you would be able to answer (different questions from task a above). Do *not* ask questions that can be answered *yes* or *no*.

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The great tit is a common bird in Sweden and you can often see them eat at bird-feeding tables.



You can answer some questions by studying great tits that visit bird feeding tables.

a. If you looked at great tits for about an hour each day for a month, which of the following questions could you answer?

Put crosses in the correct boxes.

	Yes, I can answer this with an investigation like this at a bird feeding table.	No, I cannot answer this with an investigation like this at a bird feeding table.
How old can great tits become?	<input type="checkbox"/>	<input type="checkbox"/>
How often do great tits visit the feeding table?	<input type="checkbox"/>	<input type="checkbox"/>
Why do great tits like the seeds?	<input type="checkbox"/>	<input type="checkbox"/>
Do the great tits always take the same type of seed?	<input type="checkbox"/>	<input type="checkbox"/>
How does the great tit build its nest?	<input type="checkbox"/>	<input type="checkbox"/>

b. Write two suggestions of your own for questions that could be answered through an investigation at the feeding table.

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Number of the plate:.....

a) Similarities

You have in front of you half a tomato and half a pepper. Write down **three similarities** between the inside of the tomato and the inside of the pepper. Make sure you look carefully at the inside.

I can see these **similarities**:

- Example: *They are both red.*

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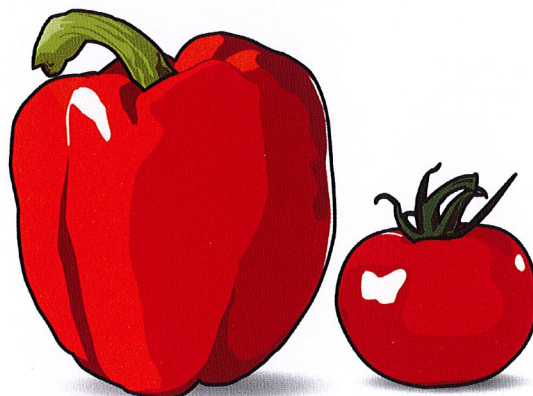
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b) Differences

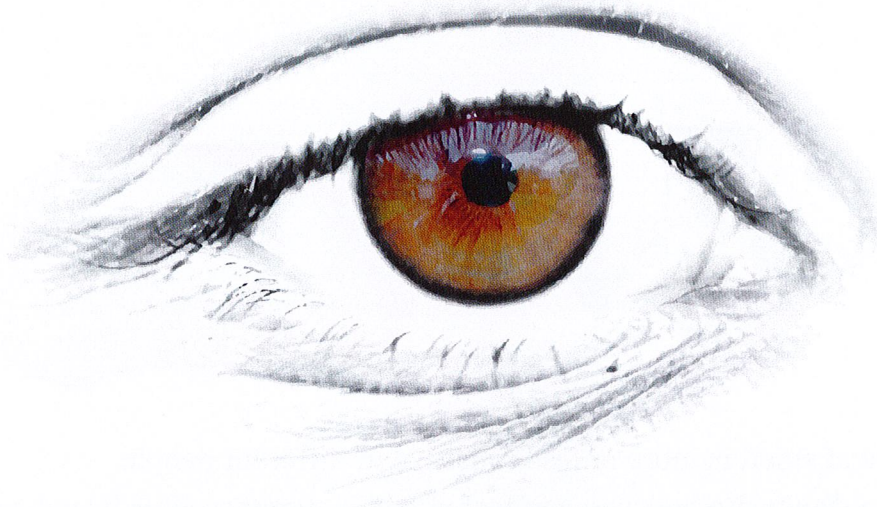
There are differences between the seeds of a tomato and the seeds of a pepper. Describe carefully the **differences** you can see. You can see an example below. Write down three more **differences** between your tomato and your pepper **seeds**.

The seeds of the tomato	The seeds of the pepper
<i>smaller seeds</i>	<i>larger seeds</i>



Teacher's signature to certify completed investigation
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You are to **plan** an investigation. You are to describe how you would investigate the way the pupil of an eye changes from **being in darkness** to being in **bright light**. **Write down your plan** step by step and **in the correct order**.

Keep in mind that someone else should be able to do the investigation again in the same way by following your plan.

User these words in your text: size, light, darkness och pupil.

Please note! You don't need to answer what happens to the eye. Your task is to **plan** the investigation

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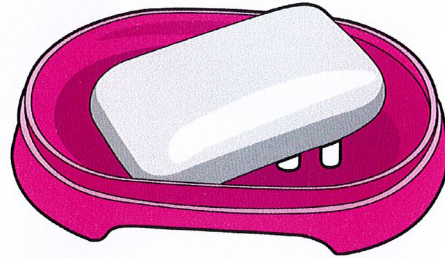
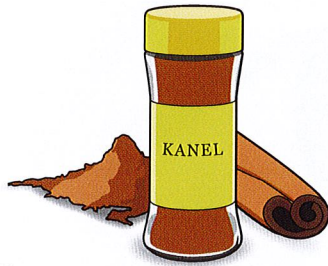
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Our sense of smell is more or less sensitive in different people.

You are to **describe** how you can test at which distance your friend can recognize a particular smell.

Choose cinnamon or soap for the test, but don't tell your friend which.

Your description should be so careful that someone else should be able to follow it to repeat the investigation.

This is how you can test at what **distance** a friend can **recognize** a particular smell:

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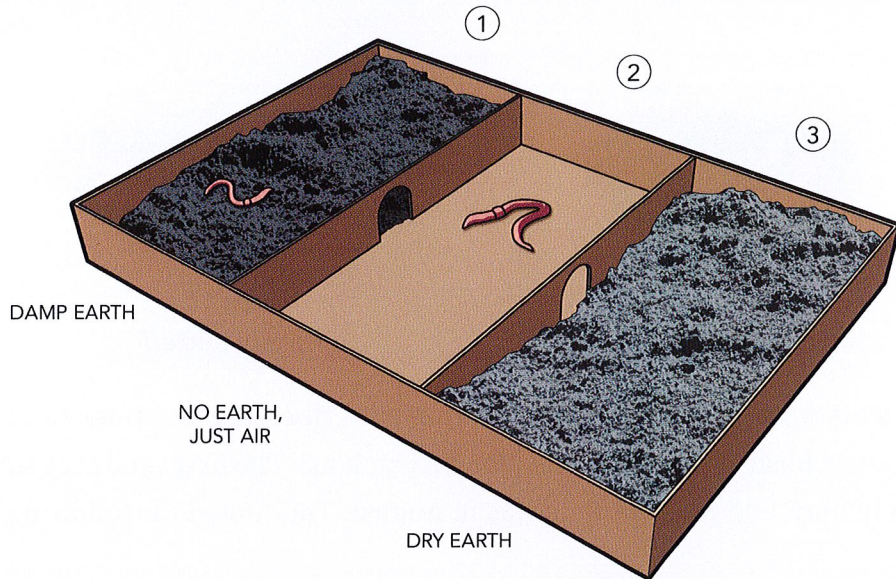
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Earthworms are decomposers and live in the earth. A group of students are to investigate if earthworms thrive best in dry or damp earth. They have built a container for their investigation and dug up some worms. The container is divided into sections, numbered 1, 2 and 3. There are small openings between the divisions. You can see the container in the picture above.

This is what they did:

- They made a container with three sections.
- They dug up two worms from the garden.
- They put damp earth into section 1; dry earth into section 3 and section 2 remained empty.
- They put one worm in section 1 and 1 worm in section 2.
- They waited to see what would happen.

This investigation could be done better: better ways so that they could answer the question, and better so that the class could rely on the results.

Suggest three ways in which they can make their investigation better when they do it again.

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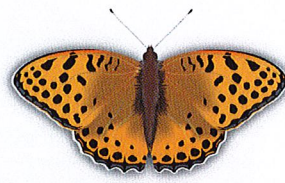
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Tortoiseshell butterfly



Fritillary butterfly

Four students were given the task of studying butterflies. All the students sat at the same buddleia bush at the same time, for half an hour. The first time they sat by the bush was in May, and the next time was in August. They noted the following results:

Student and position	Number of butterflies noted in May	Number of butterflies noted in August
Maria sat right in front of the bush	1 Tortoiseshell butterfly	3 Tortoiseshell butterflies, 4 Fritillary butterflies
Ali sat to the left of the bush	1 Tortoiseshell butterfly	4 Tortoiseshell butterflies, 3 Fritillary butterflies
Zara sat directly behind the bush	1 Tortoiseshell butterfly	4 Tortoiseshell butterflies, 2 Fritillary butterflies
Robin sat to the right of the bush	none	3 Tortoiseshell butterflies, 4 Fritillary butterflies

a. Look at the number of butterflies for **August**. Even though the **students** sat by the bush at the same time and were observant, they **didn't have the same results**.

Suggest 2 likely reasons for these differences.

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b. A sure sign of spring is that you see the first butterflies flying about. Different species of butterfly spend the winter in different ways: as adult butterflies, as eggs, larvae or pupa.

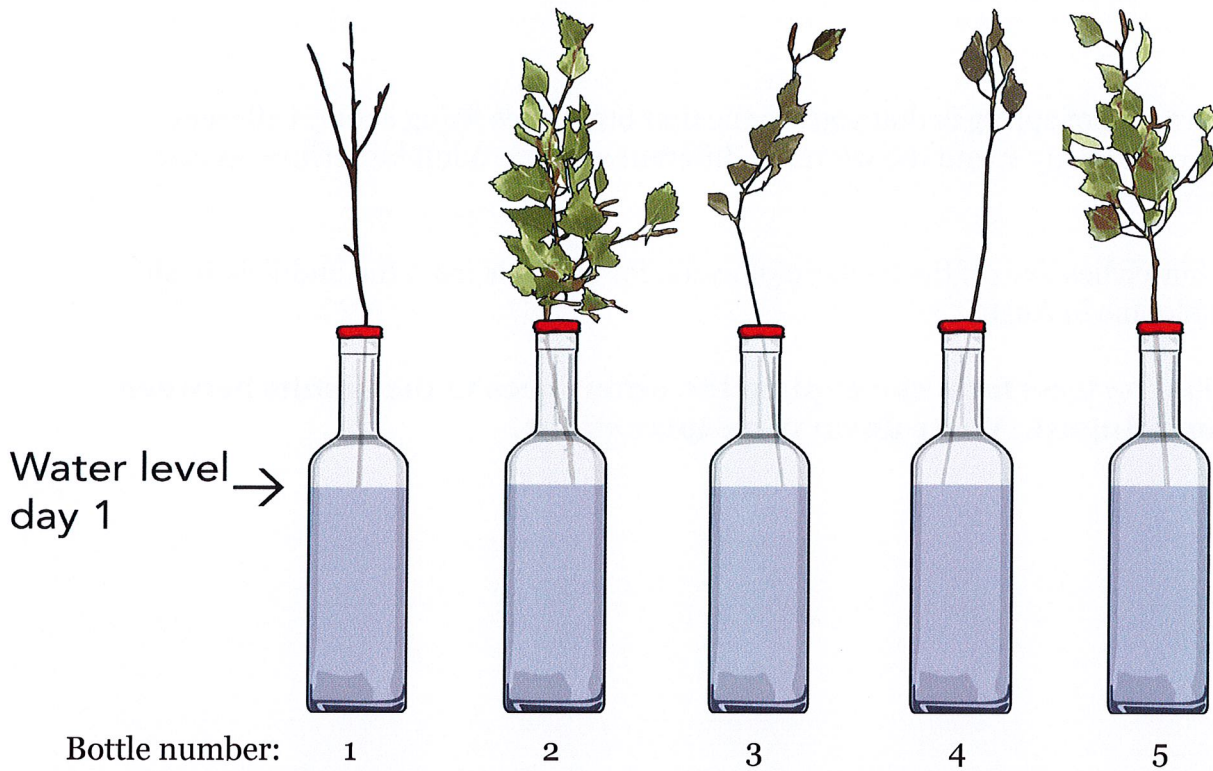
Adult butterflies live off the nectar of flowers, for example from the buddleia bush which blooms in August.

Describe how these **facts can explain the differences in the results between May and August. Write down two explanations.**

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Bottle number:

1

2

3

4

5

What role do leaves play in how much water a twig sucks up?

To investigate this, a group of students put twigs into bottles with the same amount of water in them, and covered the mouths of the bottles.

They marked the water level in each bottle each day. After one week, they made a table of how much the water levels had sunk. The result for the third bottle are missing.

a. How much should the water level have sunk in bottle 3?

Write an approximate result in the table, in cm.

Bottle	The water level had sunk by this much
1	0 cm
2	10 cm
3	
4	3 cm
5	6 cm

b. What connection is there between the leaves of the twig and how much the water level sank?

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Biology

Delprov C

Årskurs

6

Elevens namn och klass/grupp

1

The text below is about fuels. Fill in the gaps to make the sentences correct.

Choose words/expressions from the yellow box.

Some words/expressions may be used several times, and some may not be used at all.

Write one word/expression in each gap.

plants and animals ozone firewood coal and oil oxygen carbon dioxide district heating

Fossil fuels like _____ , are made from _____ that have been dead for thousands of years.

When fossil fuels are used, _____ is released and gathers in the atmosphere. This affects the climate and may cause problems for us human beings.

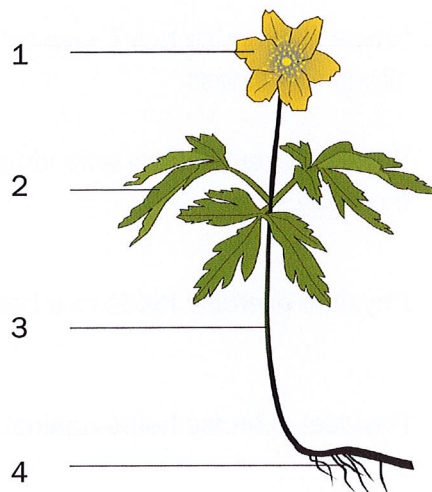
Biofuels like _____ , are made from living plants and don't cause these problems. This is because plants take up _____ from the atmosphere while living and growing.

□ □ □

2

This is a picture of a flowering anemone. Four parts of the plant are numbered.

Write the name and function of each part in the chart below.



Number	Name of the part	Function of the part
1		
2		
3		
4		

□ □ □

3

Growers of apples have noticed that the more bees and bumble-bees there are, the more apples there are.

Why is it that the number of bees and bumble-bees affects the number of apples?
Mark **one** alternative.

Bees and bumble-bees eat the seeds of weeds, which leads to less weed.

Bees and bumble-bees enable the pollination of the apple trees.

Bees and bumble-bees eat aphids and other noxious insects. .

Bees and bumble-bees keep things clean so the apple trees don't get sick.



4

Regular physical exercise gives a lot of benefits.

Mark each statement true or false.

true

false

Physical exercise helps prevent cardiac and circulatory illness.

Physical exercise prevents virus from entering the body.

Physical exercise leads to a healthy diet.

Physical exercise helps against overweight.

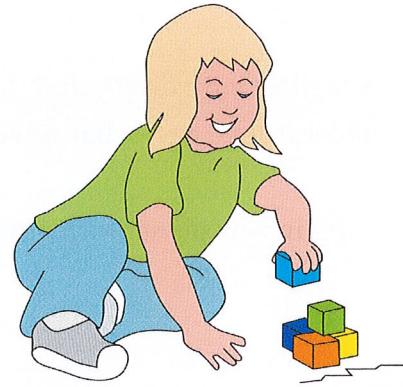


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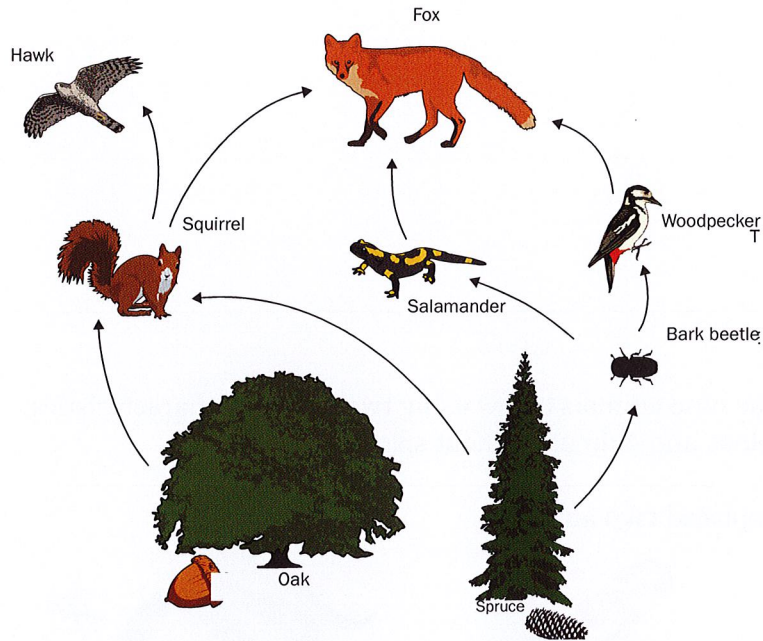
Harriet grows two centimeters in a month.
To grow, it's important for Harriet to eat
food containing calcium.

What is calcium used for in the body?

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6



This is a food web in a Swedish forest.
The direction of the arrows is **from** what's being eaten **to** what's eating it.
For example, the food web shows that salamanders are eaten by foxes.

Use the food web to answer questions 6a and b.

a) Name **one** organism in this food web that **only** consumes **plants**.

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b) One year a lot of squirrels died due to a disease. When the number of squirrels
decreased, the number of salamanders also decreased.

How come the number of salamanders also decreased?
Use the information in the food web in your answer.

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Scientists have discovered that there are often creatures such as crickets, bats and snakes in underground caves, but **never** any plants with green leaves.

Explain why plants with green leaves **cannot** live in underground caves.

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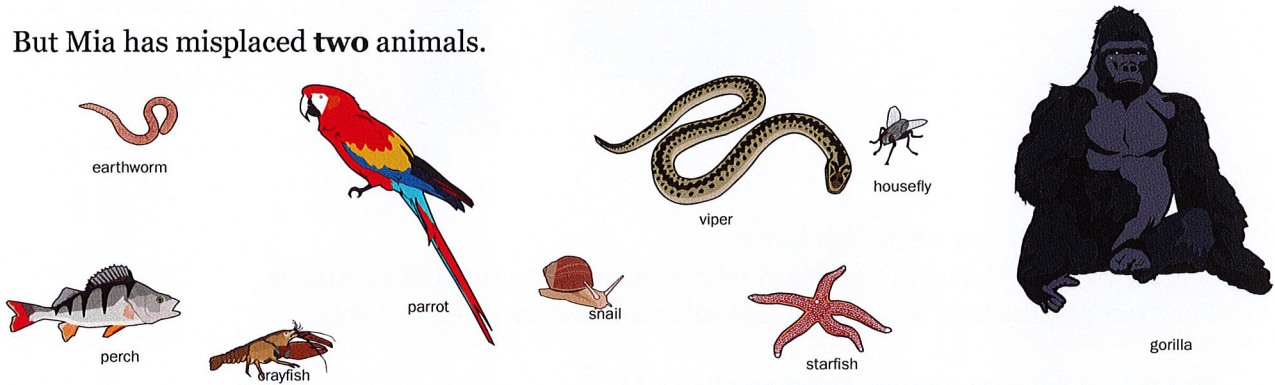
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□ □ □

Mia classified the nine animals below using two different characteristics: **Animals with spines** and **Animals without spines**.

But Mia has misplaced **two** animals.



Animals with spines according to Mia	Animals without spines according to Mia
gorilla	snail
parrot	housefly
earthworm	starfish
perch	viper
	crayfish

Mia has misplaced:

.....

□ □ □

9

Fill in the species belonging to the group of animal. Write **one** species in each gap.
Choose from the species in the yellow box.

Group of animal	Species
<i>Insects</i>	
<i>Mammals</i>	
<i>Birds</i>	
<i>Amphibians</i>	
<i>Reptile</i>	

- garden toad*
- garden spider*
- sand lizard*
- freshwater pearl mussels*
- blue whale*
- brimstone butterfly*
- ostrich*
- earth worm*



10

A deciduous tree is exposed to a larvae infestation. The larvae eat up all the leaves on the tree. The larval infestation also affects **other creatures and plants** as well as the larvae and the tree!

a) Explain how creatures or plants can **be advantaged by** the larval infestation.

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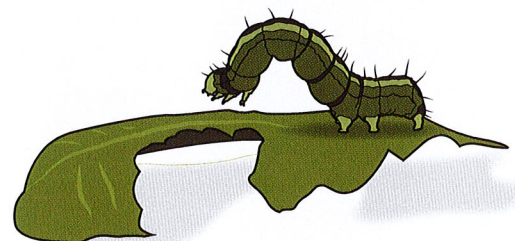
b) Explain how creatures or plants can be **disadvantaged by** the larval infestation.

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11

Plants are very important in nature. Explain why plants are important.

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12

Spiders are predators and regarded as useful by farmers.

In particular, farmers who grow organic crops usually talk about spiders as useful and important for a good harvest.

Which is the best explanation about how spiders contribute to a good harvest?

Mark **one** alternative.

Spiders eat the seeds of weeds which leads to less weed.

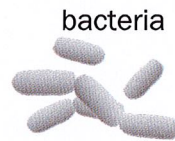
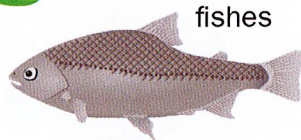
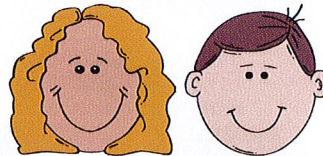
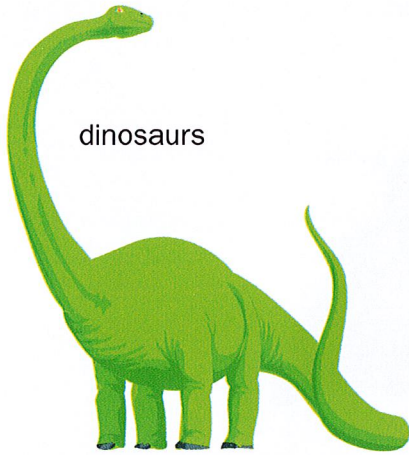
Spiders add nutrition to the soil.

Spiders eat aphids and other noxious insects.

Spiders are toxic, so birds don't eat grain where there are a lot of spiders.

Life on earth has developed over approximately 4 billion years.
Arrange the life forms below in the order they arose on earth.

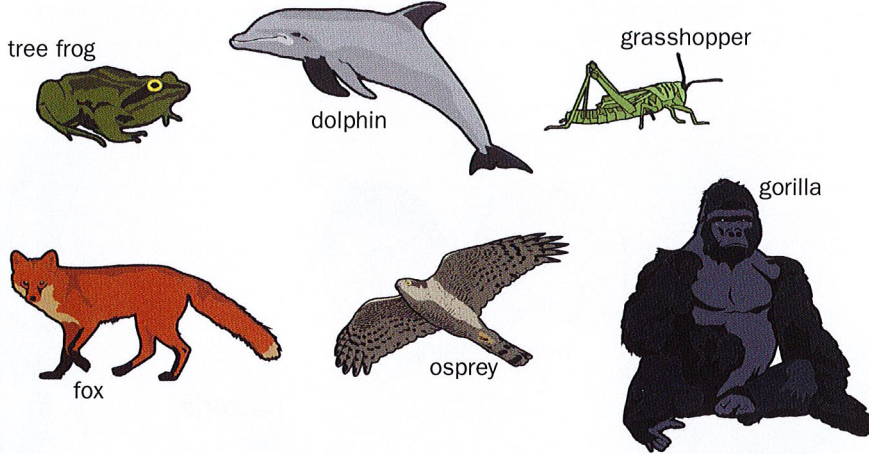
Start with the life form that arose first.



- 1
- 2
- 3
- 4
- 5



Look at the pictures below.
Which of the animals breed by laying eggs?



	lays eggs	does not lay eggs
tree frog	<input type="checkbox"/>	<input type="checkbox"/>
dolphin	<input type="checkbox"/>	<input type="checkbox"/>
grasshopper	<input type="checkbox"/>	<input type="checkbox"/>
fox	<input type="checkbox"/>	<input type="checkbox"/>
osprey	<input type="checkbox"/>	<input type="checkbox"/>
gorilla	<input type="checkbox"/>	<input type="checkbox"/>

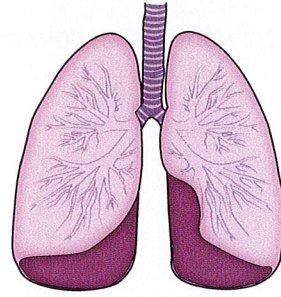


A green tree frog lives in the rainforest.
Explain how the green colour of the frog
helps the frog to survive.



In the air that you **exhale**, there is less oxygen and more carbon dioxide than in the air you **inhale**.

Explain why.



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What is true and false about the blood in the human body?

Mark each statement true or false.

The blood in our bodies

	true	false
only occurs in the blood vessels.	<input type="checkbox"/>	<input type="checkbox"/>
doesn't reach all parts of the body.	<input type="checkbox"/>	<input type="checkbox"/>
transports oxygen from the lungs.	<input type="checkbox"/>	<input type="checkbox"/>
mostly consists of water.	<input type="checkbox"/>	<input type="checkbox"/>
transports nutrients from the intestines.	<input type="checkbox"/>	<input type="checkbox"/>
passes the heart twice as often as it passes the lungs.	<input type="checkbox"/>	<input type="checkbox"/>



a) Describe a body change that occurs in **both girls and boys** at puberty.

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b) Describe a body change that occurs **only in a girl's body** at puberty.

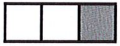
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c) Describe a body change that occurs **only in a boy's body** at puberty.

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Kristianstad

Sektionen för lärande och miljö



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Fakulteten för lärande och samhälle