

Task Booklet
Year 7 Science



Variation

and



Ecosystems



Student Name:
Science Teacher

Core

Adaptations

1. In the desert it sometimes doesn't rain for years, although there can be a lot of water when it does rain. There can be very strong winds that whip up the sand and make it drift. Although the days are very hot, the nights can be cold and in the morning there is often dew on the ground. Some plants in the desert have shallow roots that spread just below the surface, but others have very long roots that reach deep underground.

(a) How is the long deep root adapted to get water for the plant?

(b) How do the spreading shallow roots get water for the plant?

Standard

2. Explain how each of the features below help the plants be adapted for life in the desert:

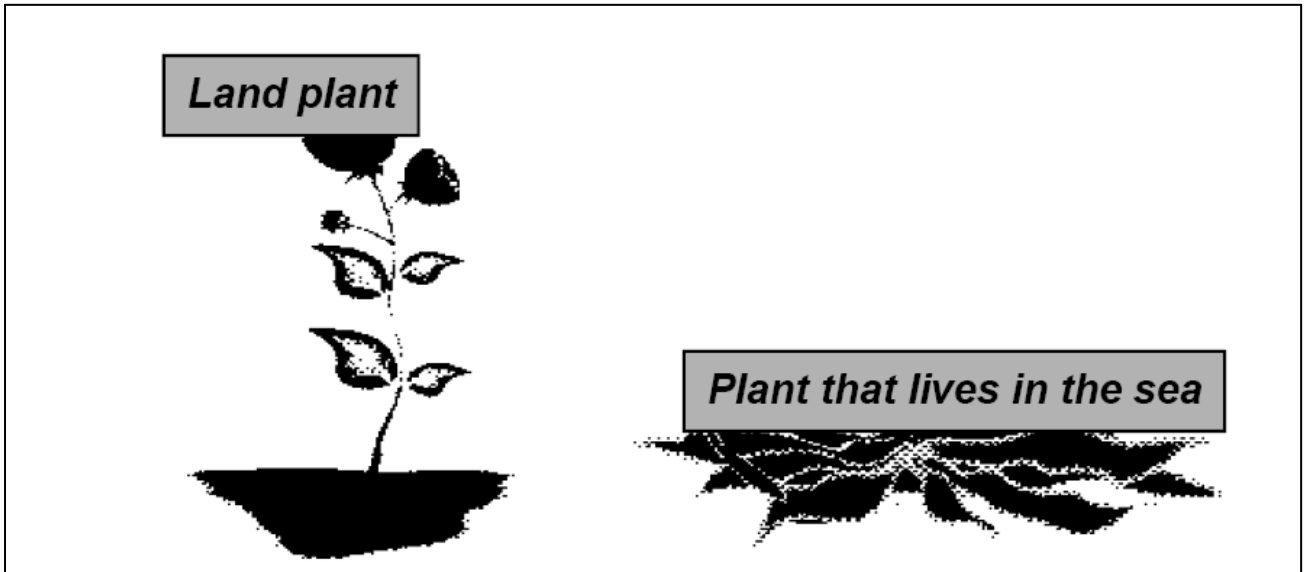
(a) Succulent plants store water in their leaves, stems and roots

(b) Desert plants usually have small leaves or leaves that are spines

(c) Seeds can stay in the sand for years until the rains come.

Standard

3. The picture below shows a land plant and one that lives in the sea (bladder wrack).



- (a) How are they similar to each other?

- (b) Land plants have sturdy stems to allow them to stay upright.
Why does the plant need to stay upright?

- (c) When the bladder wrack is uncovered by the tide it flops to the ground.
Why does this happen?

Extension

- (d) It is called bladder wrack because it has little air bladders (like bubbles) on its fronds. What do you think these might be for?

Think about what happens when the tide comes in and the plant is covered by water.

Food Chains and Webs

Core

1. A class of pupils studied an oak woodland for several months. They observed many animals and their feeding habits. Here is some of the information that they collected:

Foxes feed on mice.

Blue tits feed on caterpillars.

Tawny owls feed on mice, blue tits and shrews.

Shrews feed on earthworms.

Caterpillars feed on green oak leaves.

Mice feed on acorns from oak trees.

Earthworms feed on dead oak leaves.

- (a) Complete these food chains using the information above.

Acorns -> _____ -> _____ .

Dead oak leaves -> _____ -> _____ .

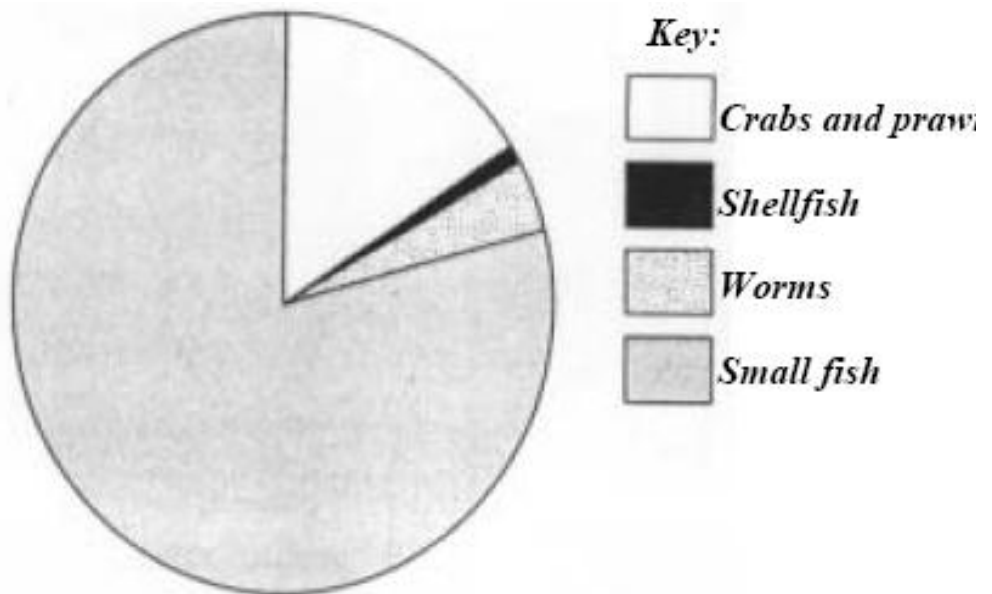
- (b) There is one producer for both these food chains. What is it?

- (c) Name two animals that are in competition for the same food.

_____ and _____

2. The pie chart shows the food eaten by a cod

Standard



- (a) What is the main food eaten by a cod? _____

- (b) A food chain ending with a cod is:

Tiny plant -> Tiny animal -> Smallfish -> Cod

What is the producer in this food chain?

- (c) A cod eats other animals that live in the sea. What do you call an animal that catches and eats other animals?

Food Chains and Webs 2

Core

1. The drawings show four living things:



(a) Write out a food chain that includes these four organisms.

Standard

(b) Which organism is the producer in the food chain?

(c) From your food chain above give the names of two predators and their prey.

Predator 1 _____ .

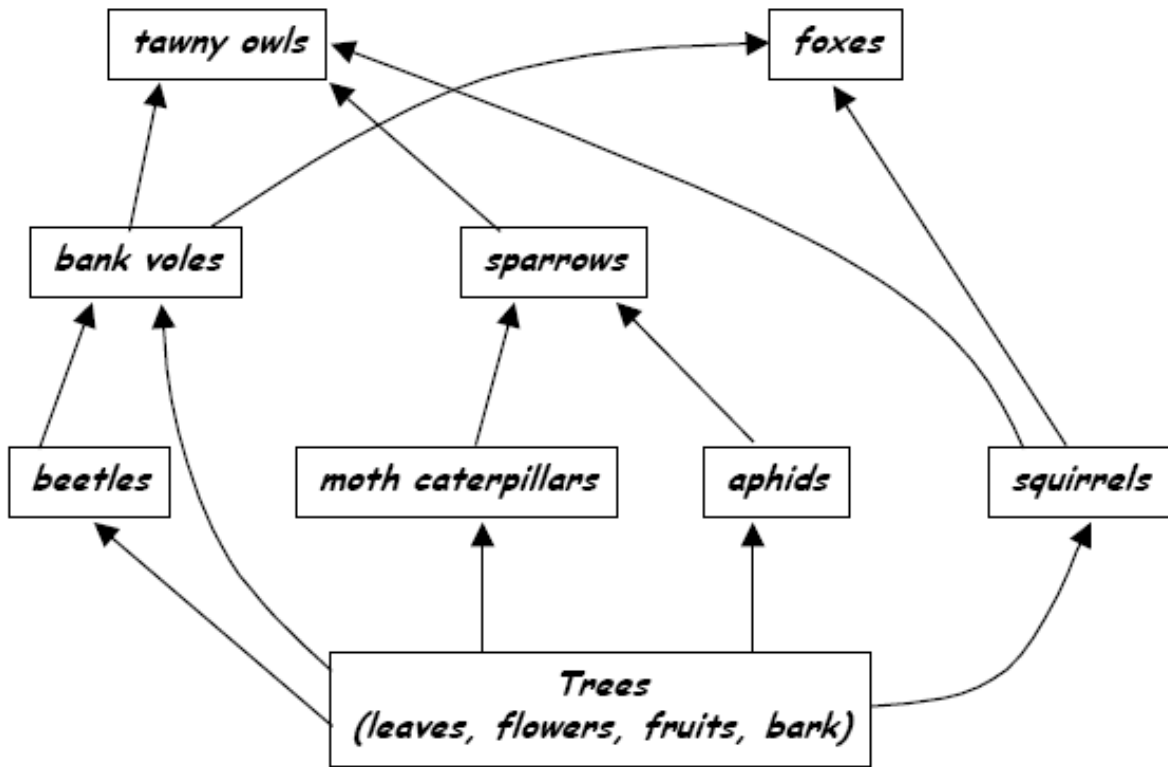
Prey 1 _____ .

Predator 2 _____ .

Prey 2 _____ .

Extension

2. A group of young people studied the living organisms in a wood.
From their notes one of them drew this food web:



(a) The number of foxes in the wood increases.
How will this affect the numbers of tawny owls? Explain your answer

(b) The number of moth caterpillars in the wood increases.
How will this affect the numbers of sparrows? Explain your answer

(c) At the same time as the number of moth caterpillars increases the number of bank voles decreases. Suggest a reason why.

Core

Food Chains and Webs 3

1. Join up the words with their meanings.

<i>carnivores</i>	animals that can eat both plants and other animals
<i>omnivores</i>	animals that eat plants
<i>herbivores</i>	animals that eat other animals
<i>consumers</i>	organisms that can make their own food
<i>producers</i>	organisms that rely on other organisms for their food

Standard

2. Look at this food chain:

Tiny plants -> Squid -> Whale

Write down the name of the herbivore, the carnivore and the producer in this food chain.

Herbivore _____

Carnivore _____

Producer _____

3. Food chains always start off with a certain kind of living thing, (a) What kind of living thing is it that starts off food chains?

(b) Give two examples of this kind of organism.

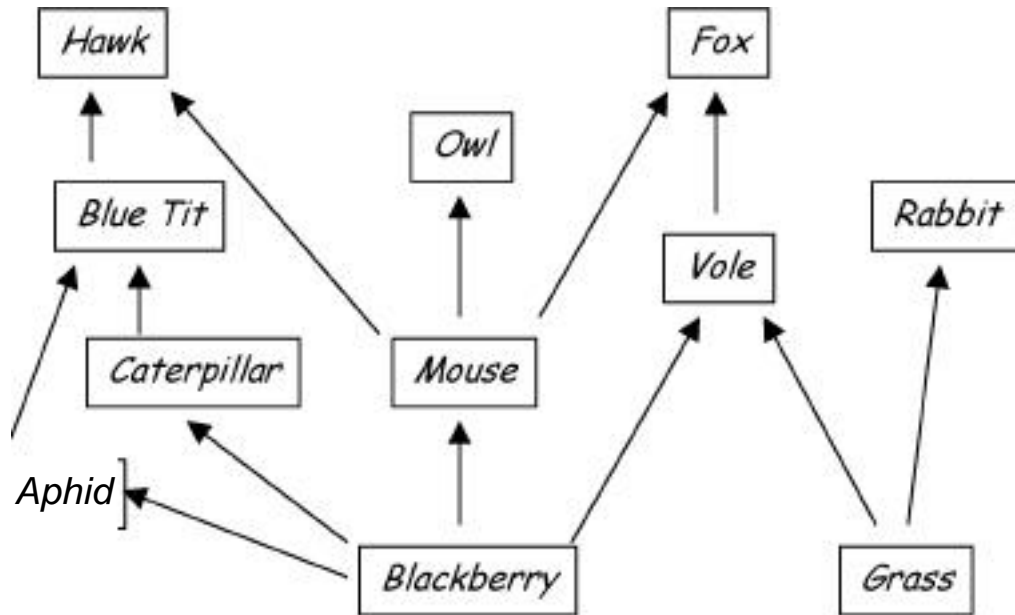
and

(c) Why do food chains always start with this type of organism?

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Standard

4. Look at this woodland food web.



(a) Name all of the carnivores.

(b) Write down all of the food chains that start with blackberry and end with hawk.

(c) Write down all of the food chains that end with owl.

Extension

(d) What might happen to the number of voles and rabbits if the amount of grass increased?

(e) What might happen to the number of owls if the amount of grass increased?

(f) Explain what might happen to the number of blue tits if the hawk dies.

Standard

Task 6 - Variation

Read the passage below:

'Differences between living things are called variations. Living things that belong to different species have so many differences that they cannot reproduce together.

Characteristics can be inherited from parents or can be caused by differences in the surroundings. Differences like the ability to roll the tongue are called discontinuous variations because you either can or cannot do it. Differences like height are called continuous variations because there are a lot of heights between the shortest and the tallest.

The place where plants and animals live is called their habitat. Living things are adapted to live in their habitat. They may be camouflaged so that they cannot be seen or insulated to stay warm.'

Use the passage and your scientific knowledge to complete the crossword on the next page.

The clues are below.

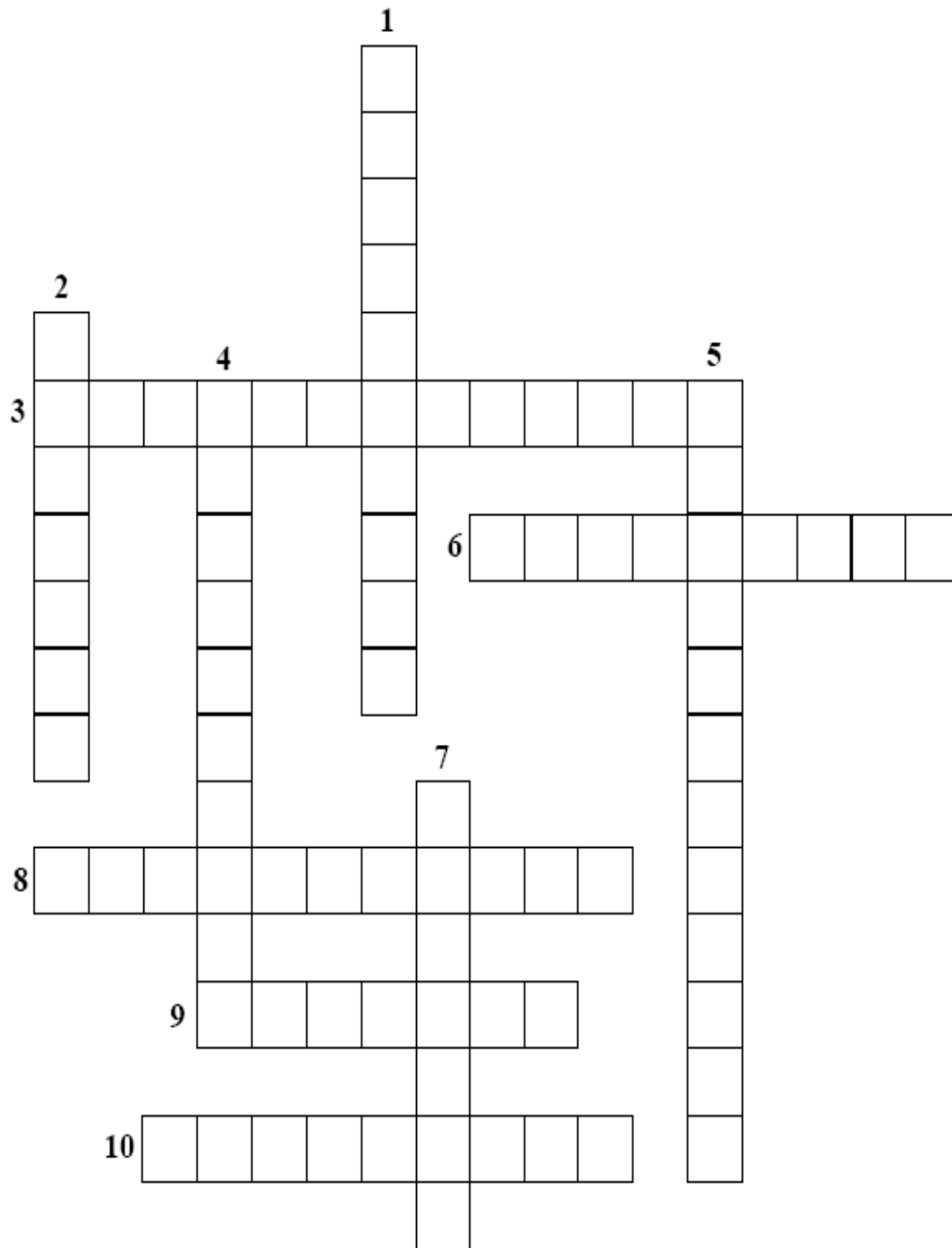
Clues Across

3. The word that describes variations such as tongue rolling
6. Some features are _____ from parents
8. A polar bear cannot be seen by its prey because it is _____
9. Animals that cannot reproduce together belong to different _____
- 10 Seals have a layer of fat to keep them warm. The fat _____ them from the cold

Clues Down

- 1 Differences between plants and animals
- 2 A word that describes how an animal is suited to its surroundings
- 4 The word used to describe differences like height or weight
- 5 Some variations are due to conditions in the _____
- 7 The place where animals or plants live is called the

Task 5



Standard

Task 8 - variation

each

1 ***Tiny stings on the leaves protect from animal attack. These stings inject poisonous chemicals into the skin. If you are stung, rub a dock leaf on the sore spot. It will stop the irritation.***

2 **Leaves float on water. They have a leathery surface so the water runs off and the leaf does not get waterlogged. Thick air filled ribs under the leaves keep them afloat.**

3 **The longest ever woolly scarf was worn by Geraldine**

**_____ .
Around her neck the scarf she wound but still it trailed upon the ground.**

4 **_____ are seldom seen,
They're red, they're orange, then they're green.
They're one of nature's strangest sights,
Their colours change like traffic lights.**

5 ***Though not a cow
I have horns;
Though not an ass
I carry a pack-saddle;
And wherever I go
I leave silver behind me.***

6 **I am a small iridescent twig,
Silver wrapped like a thin sweet.
A catch-sun, though you will not catch me,
Too quick as I skim the waters I came from.
When I pause on a reed or a lily's landing pad
I'm watching you as you marvel.
You look again: I've gone!**

continued →

