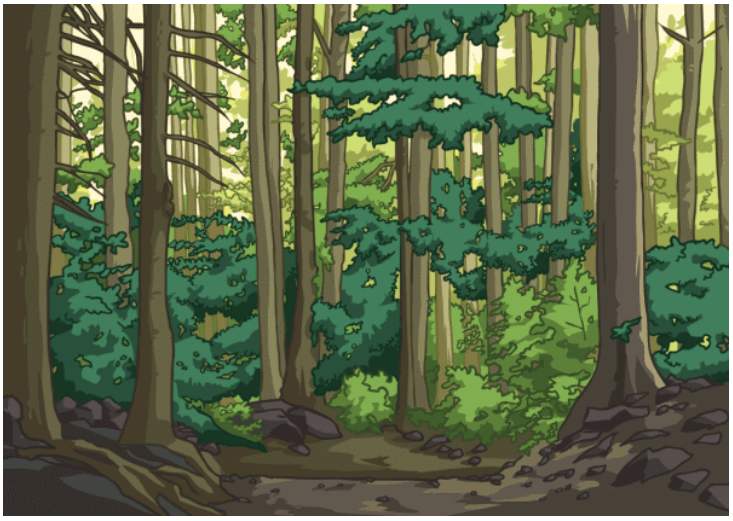
Kirkcaldy High School



S2 Science

Unit 3 - Biodiversity

Name:_____

Class:_____

Teacher:_____

Expectations and Outcomes Learner Evaluation

Topic: Biodiversity

Experience and Outcomes	Date Completed (dd/mm/yy)	Evaluation How happy are you with it? (☺ ? ☹)
I can describe an ecosystem		
I can identify a habitat and the community within it		
I can use the terms predator and prey		
I can name examples of carnivores, herbivores and omnivores		
I understand the meaning of the term biodiversity		
I can state the importance of biodiversity to the environment		
I can describe how energy flows between organisms		
I can make a simple food chain		
I can label a food chain		
I can select a food chain from a food web		
I can predict what might happen if an organism is added or removed from a food chain		
I can sample living things using a quadrat		
I can measure factors that affect ecosystems		
I can sample living things using a pit fall trap		
I can identify living things using a biological key		
I can state what an abiotic factor is		
I can name an abiotic factor		
I have investigated an abiotic factor		

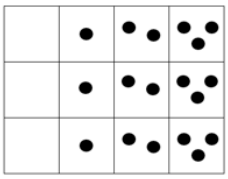
I can describe features of plants and animals to identify them from each other		
I can use a biological key to identify living things		
I can make my own biological key		
I can state why plants are vital to life on earth		
I can describe photosynthesis in terms of raw materials and products		
I can describe photosynthesis in terms of raw materials and products		
I can test leaves for starch		
I can state the effect of fertilisers on crop growth		
I can suggest how global food production may be improved		

Look:

Please note…. The experiment on Page 23 needs to be started at the beginning of the topic.

Method:

1. Collect a seed tray propagator.
2. Add an equal mass of soil mix to each pot.
3. Add fertiliser to each compartment as shown in the diagram:
4. Add a radish seed to each compartment.
5. Harvest your radish seedlings after 2-3 weeks.
6. Place in a drying oven for 48 hours
7. Record the dry mass of each seedling and work out an average.



● = one fertiliser pellet

Date: _____

Lesson 1: Introduction to the environment

Starter

In the box below, write down living things that might live in this woodland ecosystem

Learning Intentions

1. To understand and explain what an ecosystem is
2. To define key biological words

Tick me at the end if ***you can*** …

Success Criteria

- ❑ I can describe an ecosystem
- ❑ I can use the biological words in the word bank

Word bank			
predator	***prey***	***carnivore***	***herbivore***
producer	***consumer***	***habitat***	***population***
ecosystem	***omnivore***	***community***	

Ecosystems

An **ecosystem** is made up of both _____ and _____ parts.

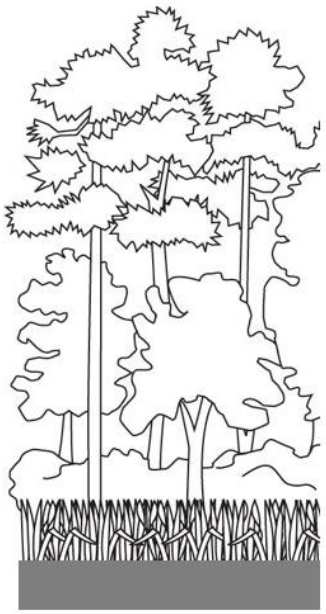
It is made up of a number of _____ and _____ .

A **habitat** is the _____

A **community** is _____ the living organisms that live in a specific _____

A community contains lots of different species.

Layer of Ecosystem	Example of plant	Example of animal
Canopy		
Sub-canopy		
Overground		
Herb layer		
Ground layer		
Underground		



Ecosystems are stable if they have large **biodiversity**

This means that there are _____ living in the ecosystem.

Key term	Definition
Predator	
	An organism that is hunted and killed
Carnivore	
	An organism that only feeds on plants
Omnivore	
	An organism that produces its own food.
Consumer	
	The place where and organism lives
Population	
	All the living organisms in a habitat
Ecosystem	

Date: _____

Lesson 2: Food Chains

Starter

Correct the following statements

1. An omnivore is an organism that eats only plants.
2. A producer gets its energy from consuming other organisms.
3. A population is all the living organisms in a habitat.

Learning Intentions

1. To describe how energy flows between organisms in ecosystems
2. To construct and analyse food chains
3. To label our food chains with the key terms producer, consumer, herbivore, omnivore, carnivore

Success Criteria

- ❑ I can describe how energy flows between organisms
- ❑ I can make a simple food chain
- ❑ I can label a food chain
  (with the terms producer, consumer, herbivore, omnivore, carnivore)

Tick me at the end if ***you can*** …

Interactions in an Ecosystem

Ecosystems survive through the interactions between plants and animals. Without these interactions, ecosystems risk being broken down.

The interactions between plants and animals in an ecosystem can be displayed using _____ and _____.

Food Chains Example

The arrows in a food chain show the _____.

For example, energy flows <u>from</u> the grasshopper <u>to</u> the frog.

Producers and Consumers

Plants are known as _____. This is because they create their own food using a process called *photosynthesis*. Producers are at the bottom of the food chain and serve as the foundation for all food chains. We always draw the producer at the **start** of our chain.

EXTRA

Predator:

Prey:

All other organisms in a food chain must eat other organisms to get their energy. They are _____.

PRODUCERS	CONSUMERS

A food chain shows which _____ eat each other within an ecosystem. It starts at the beginning with _____ which are referred to as a _____ because they make their own food.

The first animal in the food chain only eats plants and so it is referred to as a _____. The other animals in the food chain that only eat other animals are known as a _____. The animals, including humans, that eat plants and other animals are known as an _____.

The animals in the food chain which prey on other animals are called _____.

The animals that get hunted by the other animals are called _____.

Food Chain Examples

Producers	1st Consumer	2nd Consumer	3rd Consumer

More Food Chain Examples

Draw food chains for the examples on the powerpoint:

1.

2.

3.

4.

Plenary

Unscramble to reveal some of today's terms!

cup order	green wolfy	mon curse	teardrop	pyre

Date: _____

Lesson 3: Food Webs

Starter

1. Does a grasshopper only eat carrots? Does a snake only eat frogs?

   What other things might these organisms eat?

2. How could we display this information?

Learning Intentions

1. To be able to select food chains from a food web
2. To explain what happens when an organism is added or removed from a food web

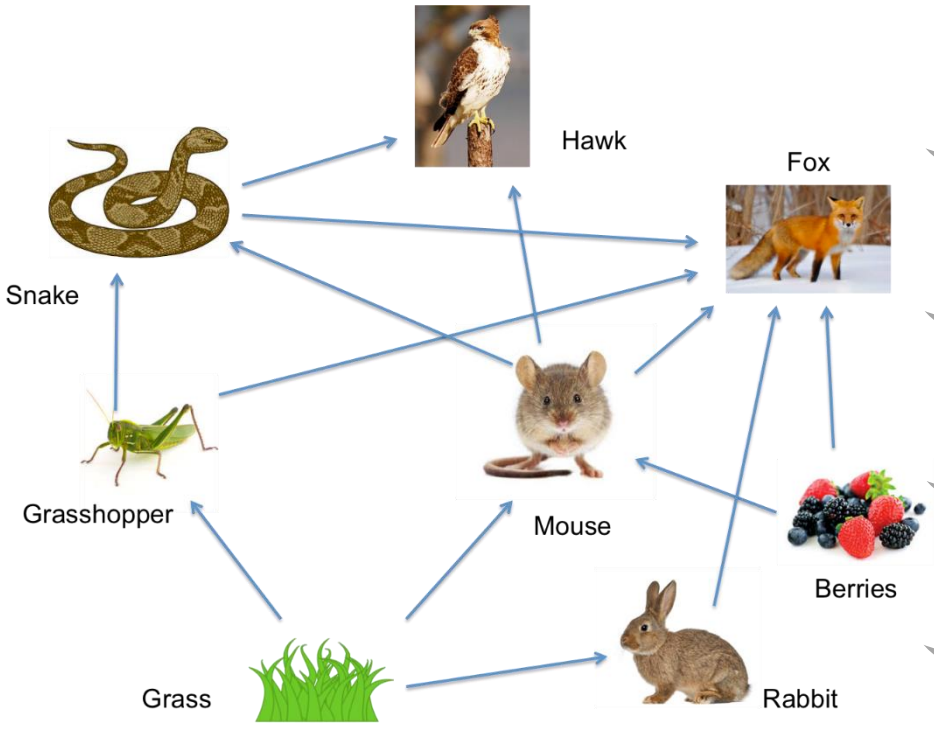
Success Criteria

- ❑ I can select a food chain from a food web
- ❑ I can predict what might happen if an organism is added or removed from a food chain

Tick me at the end if ***you can*** …

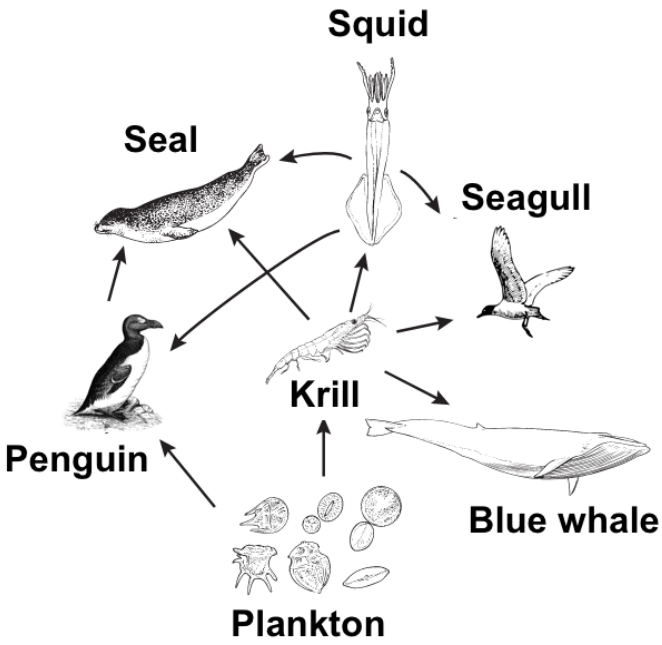
Consumers can't rely on just one food source. For this reason, food chains tend to overlap.

This can be shown using a _____.



- The _____ gets its energy by eating BOTH grass and berries.
- The ____ gets its energy by eating snakes, grasshoppers, mice, rabbits AND berries.
- The _____ gets its energy by consuming mice and snakes.
- The _____ gets its energy by consuming grasshoppers and mice.
- The _____ and the _____ only eat grass.

Aquatic Food Web



This is an example of an aquatic food web.

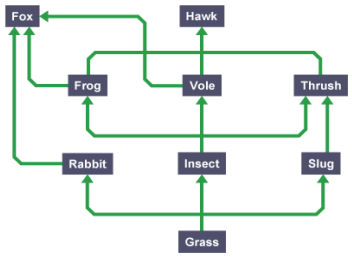
Can you identify and write down a food chain with **3 organisms only?**

Can you identify and write down a food chain with **4 organisms only?**

What is the **maximum number** of **different** food chains in this food web?

Food Webs

A _____ shows the feeding relationships among different species within a habitat. The _____ in a food chain and food web show the direction that the energy is flowing.



Can you complete the food chains in this food web?

grass → insect → _____ → _____

grass → insect → _____ → _____

grass → slug → _____ → _____

Look at the food web above (or on the screen)

1. What would happen if the grass died?

   _____

2. If the population of slugs decreased, what would happen to the population of

   a) grass? _____ b) thrush? _____

3. Challenge: a large population of bears were introduced to the ecosystem. Bears prey on foxes.

   Predict what would happen to

   a) the fox population? _____ b) the rabbit population? _____

Date: _____

Lesson 4/5: Sampling

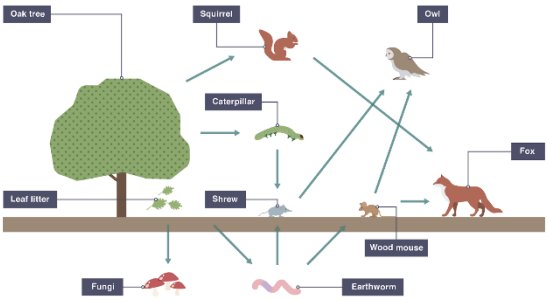
Starter

What would happen if the wood mouse was removed from the food web?

a. To the fox population?

b. To the shrew population?

c. To the red squirrel population?



Learning Intentions

1. To explain why we need to take samples
2. To describe how to measure living and non-living factors

Success Criteria

- ❑ I can sample living things
- ❑ I can measure factors that affect ecosystems

Tick me at the end if ***you can***

Why do we need to sample?

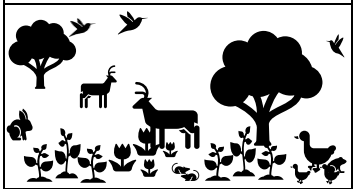
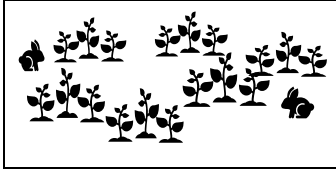
It is **impossible** for us to count each and every kind of plant and animal in a habitat. It would be like trying to count different grains of sand on the beach!

The _____ (how many different species) and _____ (how many individuals in a population) tells us about the level of biodiversity. The level of biodiversity tells us how healthy an ecosystem is.

*lots of species + lots of individuals = **high biodiversity***

*few species + few individuals = **low biodiversity***

*few species + lots of individuals = **unstable biodiversity***

Ecosystem	Variety	Abundance	Biodiversity level
	How many different species	*How many of each species*	*Low / high / unstable*
			
			
			

Sampling Ecosystems: Quadrats Date: _____

We can investigate an ecosystem by using _____ _____ .
We can sample variety and abundance of plants and animals:
_____ _____ .
We can also measure _____ - _____ _____ such as temperature, soil pH and light intensity.

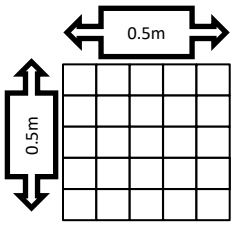
How to use a quadrat:

1. **Identify** a plant (daisies/clover/etc.)
2. **Record** the name of your plant in the table
3. Throw the quadrat randomly
4. **Count the number of squares** that have **your plant**
5. Record the abundance score in the table
6. **Repeat** another 9 times
7. Take an average of the ten throws

Quadrat	Number of _____
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
Average _____ per quadrat	

Numeracy extension:

1. Our quadrat measures 0.5 metres by 0.5 metres.
   What is the area of ONE quadrat?
   space for working



Answer = _____ m^2

2. What was the **average** abundance score *(from table)*?

   Answer = _____ plants

3. The area we sampled was 20 metres by 60 metres
   Work out the area of our sample?
   space for working

   Answer = _____ m^2

4. What is our estimate of the total number of plants in our sample area?
   space for working

   Answer = _____ estimated plants in area.

Hint: *Divide the total area (qn 3) by the area of one quadrat (qn 1)*
Then, multiply this by our average abundance score (qn 2)

Sampling Ecosystems: Pitfall traps

Date: _____

Starter

1. State the piece of equipment that can be used to sample plants

2. Three quadrats were thrown. The results were as follows:

Quadrat Number	Abundance of daisies
1	12
2	10
3	5

Calculate the average number of daisies per quadrat.

3. The area of the quadrat is **1 m²** and the area of the whole field is **100 m²**. Calculate the estimated number of daisies in the **whole field**.

Learning Intentions

1. To sample invertebrates using a pit fall trap
2. To identify some invertebrates using a biological key

Success Criteria

- ❑ I can sample living things using a pit fall trap
- ❑ I can identify some invertebrates using a key

Tick me at the end if ***you can***

Pitfall traps are used to sample the _____ that live in the _____.

How to set up a pitfall trap:

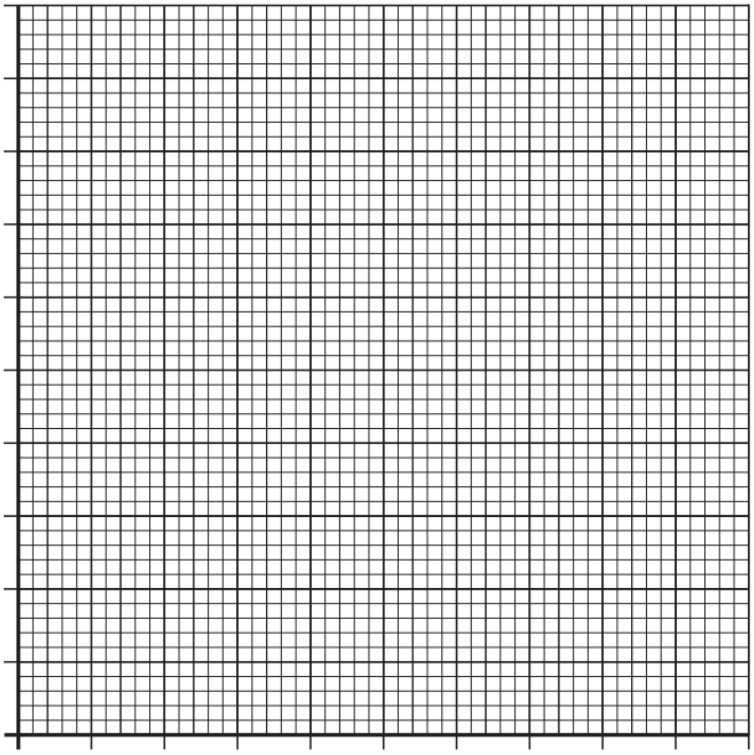
1. Dig a hole in the soil
2. Pierce drainage holes in the bottom of the pitfall trap
3. Place the pitfall trap into the soil, level with the ground
4. Cover the trap with a leaf

The pitfall trap was checked after 4 days and the following organisms counted:

Organism	Number of individuals
Ladybird	6
Ant	10
Butterfly	0
Woodlouse	4
Centipede	3

Activity: Construct a graph using this information

Results:



Conclusion:

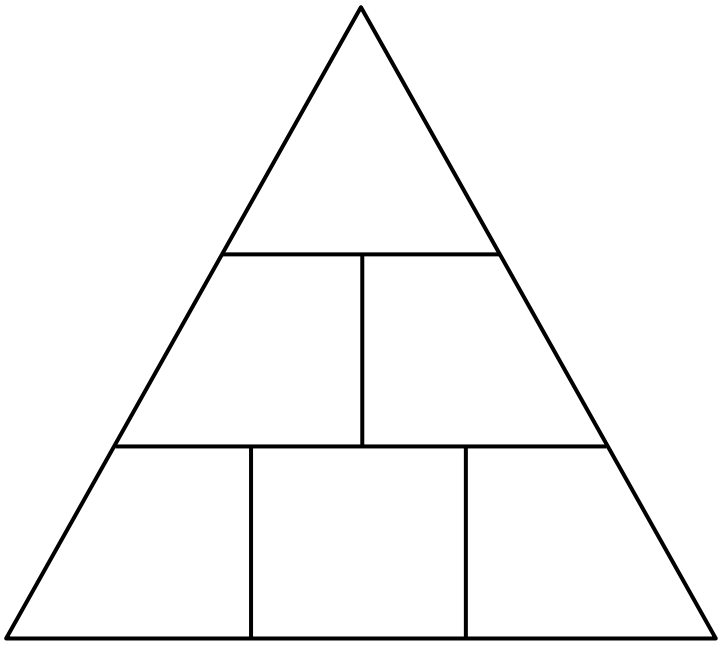
_____

_____

_____

_____

Plenary:



Measuring Abiotic Factors Date: _____

Starter

Write down the names of as many measuring devices as you can and/or what factor they can be used to measure

Learning Intentions

1. To state what an abiotic factor is
2. To name some examples of abiotic factors
3. To investigate an abiotic factor
4. To explain why measuring abiotic factors might be important

Success Criteria

- ❑ **I can state what an abiotic factor is**
- ❑ **I can name an abiotic factor**
- ❑ **I have investigated an abiotic factor**

Tick me at the end if ***you can***

Word bank: ***abiotic*** ***factor*** ***measure*** ***specific***

_____ factors are non-living factors such as temperature, soil pH and light intensity. Other examples include wind speed, carbon dioxide/oxygen levels, humidity, rainfall and air pressure but there are MANY MORE!

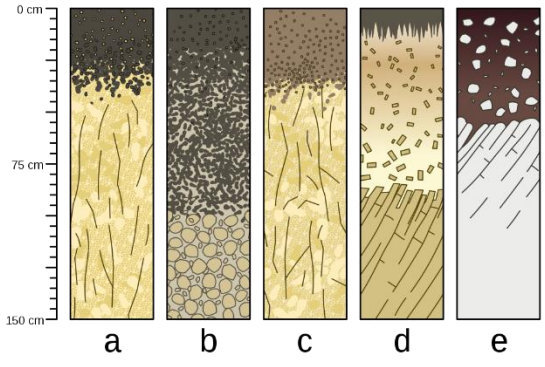
Living things need _____ environmental conditions to survive.

For example:
_____ need water, oxygen and a suitable temperature to germinate.
When the _____ comes through the soil it needs water, carbon dioxide, a suitable temperature and _____ to carry out photosynthesis (we will be learning about this soon!).

Plants need moisture to grow. You can use a _____ _____ to measure soil moisture in the garden. You can also carry out an experiment to measure the _____ in soil samples:

The picture shows 5 soil samples and the different compositions they have.
What do you think the y-axis scale shows?
How might soil type affect living things?

On the next page you will be carrying out an experiment on some different soil samples.



Experiment: Moisture Content in different soil samples

Aim: _____

_____

Method:

1. Use a large spatula to take soil samples from different areas in the school grounds.
2. Put each sample in a labelled sample bag
3. In the lab, weigh an EMPTY crucible and record the mass in your results table.
4. Transfer your soil sample to the crucible and re-weigh. Record the mass in your results table.
5. Place the crucibles in a warm place (your teacher may put them in an oven until next lesson)
6. Next lesson, re-weigh the crucible and work out how much water has evaporated.

Results:

Sample Number	Sample location	Mass of empty crucible (g)	Mass of crucible + "wet soil" (g)	Mass of "wet soil" (g)	Mass of crucible + "dry soil" (g)	Mass of "dry soil" (g)	Mass of water evaporated (g)	Percentage water content of sample %
		a	**b**	**c** (b – a)	**d**	**e** (d - a)	**f** (c – e)	$\frac{f}{c}$ x 100
example	*playing field*	*0.2*	*2.4*	*2.4 – 0.2 = 2.2*	*0.8*	*0.8 – 0.2 = 0.6*	*2.2 – 0.6 = 1.6*	$\frac{1.6}{2.2}$ x 100 *= 73 %*
1								
2								
3								

Conclusion: _____

_____

_____

Evaluation: _____

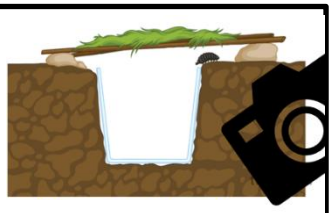
_____

_____

Identifying Plants and Animals: Keys

Date: _____

Starter



Did you take any pictures of the insects you found in your pitfall traps?
If yes, draw them here!
If no, draw a few of the insects below!

Learning Intentions

1. To identify differences between species of **plants**
2. To identify differences between species of **animals**
3. To **use** a biological key

Tick me at the end if ***you can***

Success Criteria

- ❑ I can describe features of plants and animals to identify them from each other
- ❑ I can use a biological key to identify living things
- ❑ I can make my own biological key

Word bank: ***feature*** ***characteristic*** ***key*** ***differences*** ***similarities***

A biological ____ is use to identify living things by the features they have. There are so many different living things on Earth that it is IMPOSSIBLE for anyone to learn them all!
Over **one million** species of insects have been discovered and described but it is estimated that there may be as many as **10 million** species on earth.

What percentage of insect species have still to be discovered??
Space for working

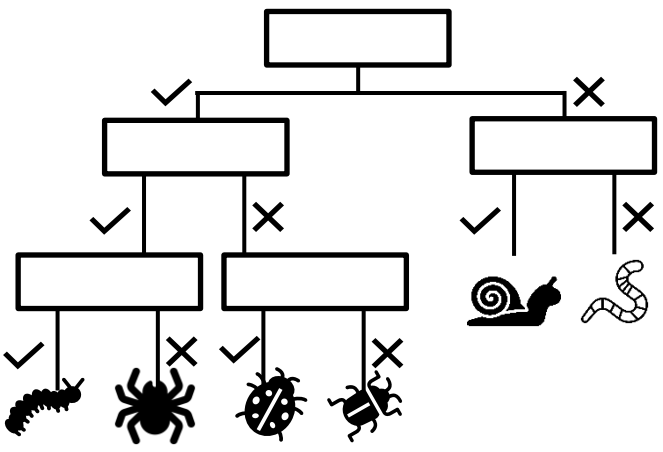
_____%

There are two main types of biological key:

A paired statement key

1. *Insect has legs……* *Go to 2*
   Insect has no legs…. *Go to 3*
2. *Insect has 8 or more legs…..* *Go to 4*
   Insect has less than 8 legs…. *Go to 6*
3. *Insect has a shell…..* *SNAIL*
   Insect has no shell….. *WORM*
4. *Insect has antennae….* *CATERPILLAR*
   Insect has no antennae… *SPIDER*
5. *Insect has spots…* *LADYBIRD*
   Insect has no spots…. *BEETLE*

A branching key



Use the paired statement key 👆..... to complete the branching key 👆

Identifying Plants: Keys Date: _____

Starter

Pick your favourite leaf. Write down two characteristics that you like:

Learning Intentions

1. To identify differences between species of **plants**
2. To **construct** a biological key

Tick me at the end if ***you can***

Success Criteria

- ❑ I can describe features of plants to identify them from each other
- ❑ I can <u>make</u> my own biological key

Word bank: *variegated* *serrated* *lobular* *pinnate* *venation* *needle* *spiny*

Identifying animals seems straightforward…… but what about plants?
The features that plants have include leaf colour, leaf shape, leaf arrangement, leaf surface, leaf edges, vein patterns, etc.

Leaf Term	Description	Sketch
variegated		
serrated		
lobular		
pinnate		
venation		
needle		
spiny		

Plants Date: _____

Starter

Pick your favourite leaf.
Write down two characteristics that you like about it!
Use the words from Pg 17

Learning Intentions

Tick me at the end if **you can** …

1. To identify why plants are vital to sustaining life on earth.
2. To describe the process of photosynthesis in terms off raw materials and products

Success Criteria

- ❑ **I can state why plants are vital to life on earth**
- ❑ **I can describe photosynthesis in terms of raw materials and products**

Word bank:	**photosynthesis**	**reactants/raw materials**	**oxygen**	
	water	**carbon dioxide**	**sugars**	**starch**

Quoting the legendary David Attenborough

1

The biggest living thing that exists on this planet is a _____, like this giant sequoia tree in _____. Plants, whether they are _____, like this one, or _____, are the basis of all life, including ourselves.
We _____ upon them for every mouthful of _____ that we eat and every lungful of _____ that we breathe.

2

Throughout this forest, plants are competing ferociously with one another to claim the ____. The battle is at its fiercest on the forest floor where only ____of the sunlight filters through.

3

That fuel is created in a plant's _____, as they soak up the sun. It's a process called photosynthesis…..
A _____ _____that is the basis of all life on Earth. Leaves are covered by thousands of microscopic pores called stomata. When open, they extract _____ _____ from the air, and, using _____ from the sun, combine it with nutrients to build the plant's tissues. And critically for us, the process releases the_____that we and all animals need in order to breathe.

Missing words:

chemical reaction	*2%*				
light	*energy*	*leaves*	*California*	*depend*	*air*
microscopic	*carbon dioxide*	*plant*	*oxygen*	*enormous*	*food*

Read over the speech bubbles on page 18. Your next task will involve two skills:

1. Memorising facts
2. Understanding information (sometimes called “interpreting”)

Memorising facts:

Question 1: What is the biggest living thing that exist on our planet? _____

Question 2: Why are plants important? _____

_____

Question 3: What is the chemical process that allows plants to make food? _____

Question 4: What percentage (%) of light filters through the forest? _____

Understanding information:

Question 5: The process that plants use to make food is an example of a chemical reaction. Chemists call the materials that are needed for a chemical reaction “reactants”. Biologists sometimes call reactants “raw materials”. What might you call the reactants/raw materials in Home Economics? _____

Question 6: What are the raw materials plants use in photosynthesis?

_____

Question 7: Where does the energy come from for photosynthesis?

_____

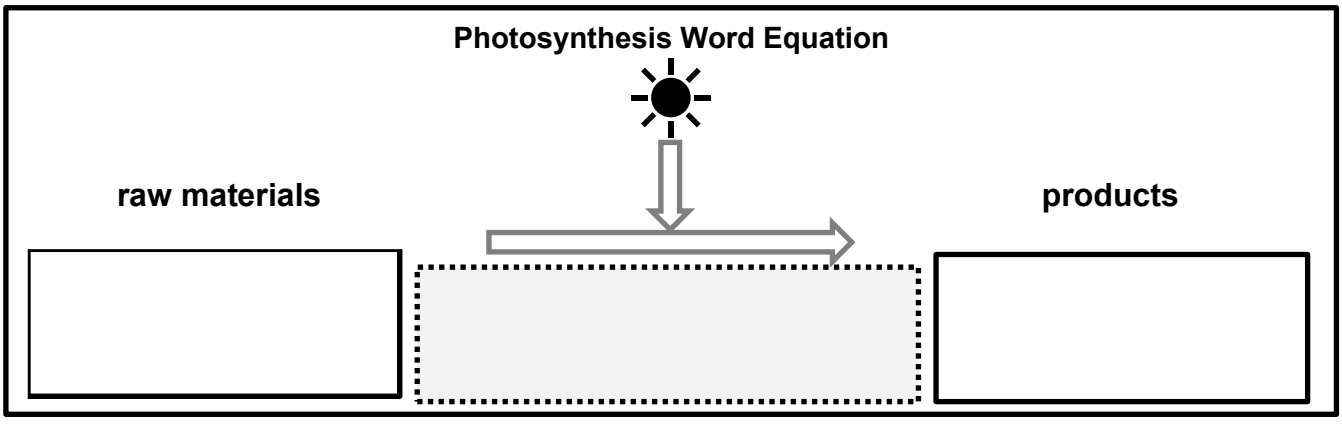
Question 8: Is energy a raw material? Why?

_____

Question 9: What we are left with after a reaction takes place is called a “product”. What are the two products of photosynthesis?

_____

Question 10: Complete the word equation below to show what you have learned about photosynthesis (the shaded box is for anything extra you want to say about photosynthesis that will impress your teacher!!):



Plants Lesson 2 Date: _____

Starter

What were your three photosynthesis facts from the post-it plenary?

1.

2.

3.

Learning Intentions

1. To describe the process of photosynthesis in terms of raw materials and products
2. To test leaves for starch

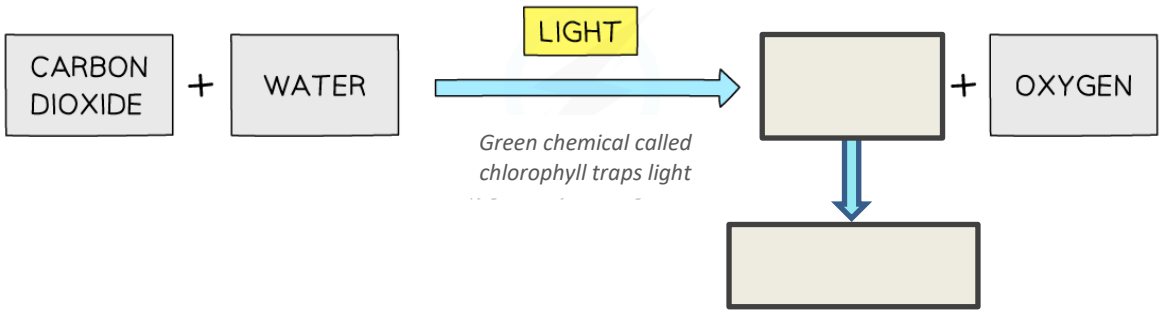
Success Criteria

- ❑ I can describe photosynthesis in terms of raw materials and products
- ❑ I can test leaves for starch

Tick me

Word bank: ***photosynthesis*** ***water*** ***glucose*** ***carbon dioxide*** ***iodine*** ***starch***

When a plant photosynthesises, it produces a sugar called _____. It can't use all of the glucose at once, so it joins the sugar molecules together to make a storage carbohydrate called _____.



<u>Testing Leaves for Starch</u>

We can prove that photosynthesis is taking part in green leaves by testing them for starch.

We use _____. Iodine goes _____-_____ when in the presence of starch.

Aim: _____

Results:

Part of leaf	Starch present? ✓ / ✗
Green	
White	

Conclusion: _____

_____

Evaluation: _____

_____

Fertilisers Date: _____

Starter

What do farmers put on fields?
Why?

Learning Intentions

1. To investigate chemical fertilisers
2. To evaluate the impact on food production

Tick me at the end if ***you can*** …

Success Criteria

- ❑ I can state the effect of fertilisers on crop growth
- ❑ I can suggest how global food production may be improved

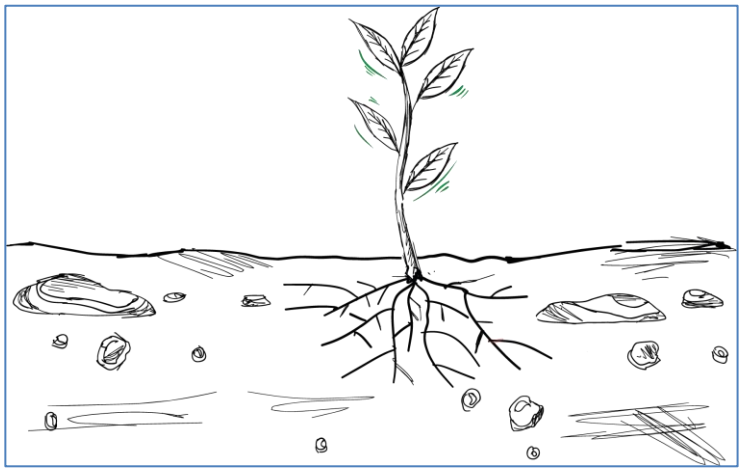
Word bank: ***photosynthesis*** ***roots*** ***manure*** ***minerals*** ***fertiliser*** ***harvest*** ***nitrogen*** ***fertile*** ***phosphorus*** ***yield*** ***potassium***

F .

As plants grow, they absorb minerals from the soil through their_____.

When crops are _____, nitrogen is removed from the soil (in the protein of the plant products). Adding fertilisers to the soil can replace soil nitrogen. This makes the soil _____ again, allows more plant growth to occur and _____ ___ _____ of the next crop.

Fertilisers can be manmade _____ or _____ organic waste materials (manure and compost).



Literacy task:

_____

_____

_____

_____

_____

_____

_____

_____

Fertiliser experiment

Aim: To investigate the effect of increasing fertiliser concentration on growth of radish seeds

Managing Variables:

Look at the **aim** and answer the questions:

What is the independent variable? _____

What is the dependent variable? _____

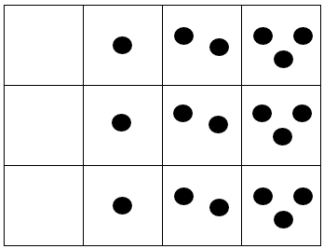
List the variables that need to be controlled for a fair experiment:

_____

_____

Method:

1. Collect a seed tray propagator.
2. Add an equal mass of soil mix to each pot.
3. Add fertiliser to each compartment as shown in the diagram:
4. Add a radish seed to each compartment.
5. Harvest your radish seedlings after 2-3 weeks.
6. Place in a drying oven for 48 hours
7. Record the dry mass of each seedling and work out an average.

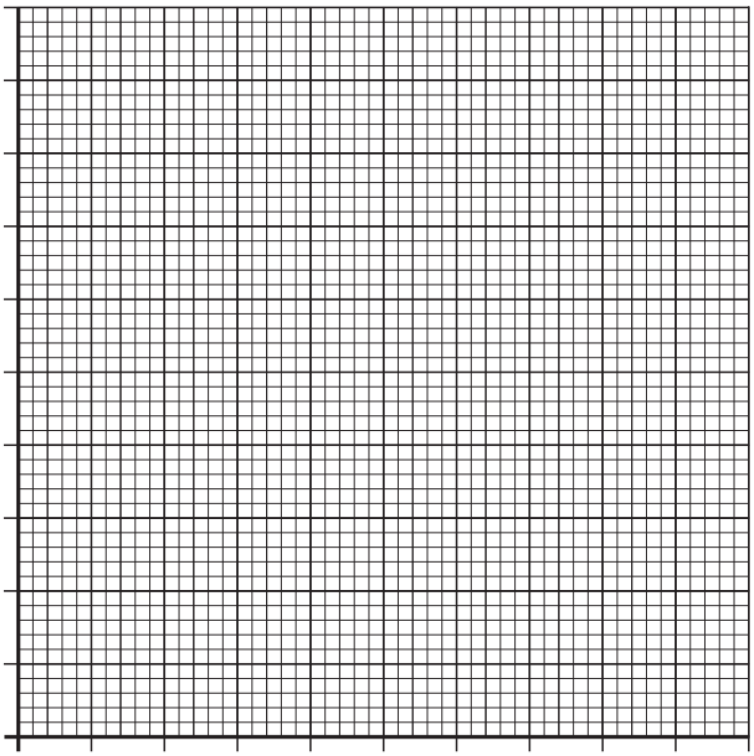


● = one fertiliser pellet

Results:

Fertiliser Number of pellets	Dry mass (grams)			
	Experiment 1	Experiment 2	Experiment 3	Average
0				
1				
2				
3				

Graph:



Conclusion:

_____

_____

_____

_____

Extension Tasks

L P H C V H E F R A Y W R W B

F S F F L F A O J S D I M U H

F A E C F F T B B M P W E T E

O R W C A A N K I P L C Q S R

T L X O D R C K H T T B H N B

A U P E B P N R K W A Q K E I

R G R M R Y I I B U O T K C V

C P E E K D V F V K U R V O O

A F Y G L Y R D N O C K I S R

F O O D C H A I N A R Q Q Y E

D Z D O S X E V Q R X E T S X

K D E J D E W Y C T W L Y T T

E P Z B Y W H J S M J W B E A

E M F Y Z I E H P Y K G O M Z

S O X L A D K B G E Z H O U V

Find these words in the word search and then use those words to fill in the gaps in the sentences below:

ecosystem **habitat** **prey** **carnivore** **herbivore** **food chain** **food web** **dry** **wet** **humid** **predator**

An _____ is where animals and plants live along with the conditions there. A small part of an ecosystem where certain animals and plants live is called a _____. We can use words to describe ecosystems, for example: _____, _____ and _____. Some animals eat other animals, they are the _____. Some animals are eaten by other animals, they are called the _____. We can show simply how animals eat other animals using a _____. A _____ is lots of food chains joined together. A _____ eats only other animals. A _____ eats only other plants.

Riddles/Word searches

Predator/Prey

Task 1:

- Unscramble the words below
- Follow the instructions in brackets.
- All six are **PREY** species

1. REDE (Take the 3rd letter) ___
2. SAVEREB (Take the 4th letter) ___
3. HERSWS (Take the 5th letter) ___
4. OSINB (Take the 4th letter) ___
5. SOMEO (Take the 4th letter) ___
6. LETANPOE (Take the 5th letter) ___

Task 2:

* Use the letters you have got from Task 1 to unscramble and find a **PREDATOR** species.

___ ___ ___ ___ ___ ___

Hints:
All of the species can be found in American forests.
Only 1, 2 and 3 can be found in the wild in Scotland
2 became extinct in Scotland in the 16th Century but was successfully reintroduced in 2009
The predator has been extinct in Scotland since 1680!
5 was successfully reintroduced to the Scottish Highlands in 2008
4 can be found in captivity in the Highland Wildlife Park
6 can be found in captivity at Blair Drummond Safari Park

Native biodiversity!

C O S T S / N E P I	_ _ _ _ _ / _ _ _ _
C U T P E T R U B	_ _ _ _ _ _ _ _ _
H I C N E L	_ _ _ _ _ _
A K B I G S G N / K A R S H	_ _ _ _ _ _ _ _ / _ _ _ _ _
H S E N I C R O O R / E L B E T E	_ _ _ _ _ _ _ _ _ _ / _ _ _ _ _ _
E R D / L E S R I U R Q	_ _ _ / _ _ _ _ _ _ _ _
H I T O S T S C / A C I W T L D	_ _ _ _ _ _ _ _ / _ _ _ _ _ _ _
N U P F I F	_ _ _ _ _ _
R E P N E R I E G / N O L C A F	_ _ _ _ _ _ _ _ _ / _ _ _ _ _ _
C A R I C T / R E N T	_ _ _ _ _ / _ _ _ _

Draw a comic strip on one of the topics. Ask your teacher for ideas.

Aim: To produce a poster on a chosen ecosystem:

DESERT or TUNDRA or MARINE or FOREST or GRASSLAND

Success Criteria:

- **State WHERE on Earth your ecosystem can be found.**
- **Identify CLIMATE in your chosen ecosystem *(temperature range, rainfall, wind speed, etc.)***
- **Identify EXAMPLES of both plants and animals**
- **Comment on the BIODIVERSITY of your chosen ecosystem**
- **Suggest how HUMANS may impact on the BIODIVERSITY of your ecosystem**

BINGO

Colouring Sheets

British wildlife colouring page – How many plants, insects and animals can you find?

This UK nature colouring sheet is teeming with animals, birds, insects and flowers that can all be found living in Britain. Their common English names are hidden alongside them – how many of these species have you seen in the wild?

As well as a Barn Owl, see if you can find all of these animals, birds, insects and plants in the picture:

Red Squirrel	Oak tree	Foxglove
Badgers	Tawny owl	Ivy
Fox	Peacock butterfly	Bumble bee
Rabbit	Silver-washed fritillary butterfly	Dunbar caterpillar
Honeysuckle	Common Ink Cap toadstools	Banded Snail
Blue Tits	Cuckoo Pint	Primrose

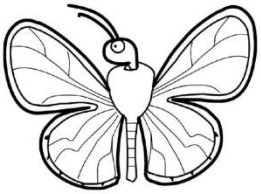
If you see a wild Barn Owl anywhere in the UK please help our research by recording it on the **Barn Owl survey website.**

(Remember never to disturb nesting birds and follow the Countryside Code.)

wildlife watch

Minibeasts


Garden Tiger Moth

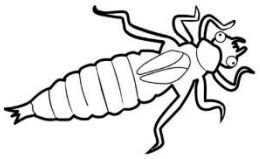


Common Blue Butterfly

Brimstone Butterfly

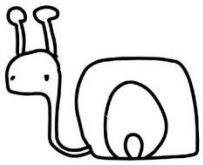

Bumblebee


Dragonfly

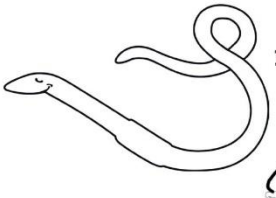

Ladybird

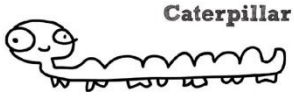

Dragonfly Nymph

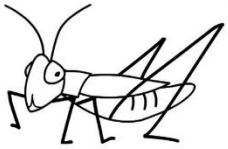

Garden Spider


Snail

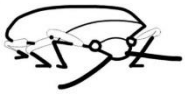

Privet Hawkmoth



Earthworm


Caterpillar


Grasshopper

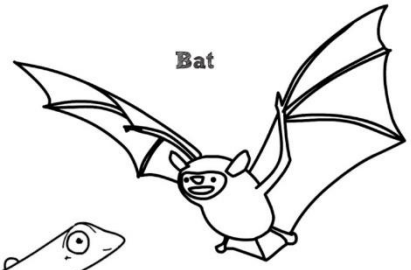
Red Admiral Butterfly


Shieldbug

Scottish Wildlife Trust

wildlife watch

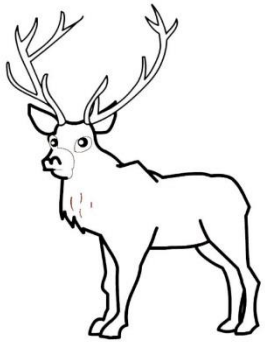
Mammals, reptiles and amphibians


Bat


Common Lizard


Red Squirrel

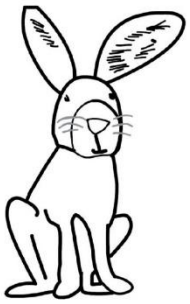

Water Vole

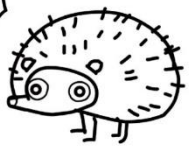

Red deer

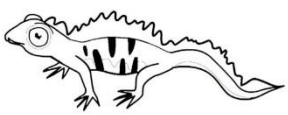

Stoat


Otter


Frog


Brown Hare


Hedgehog


Newt

Additional Activity / Cover Lesson

Poster:

Use the web links to research insects.

Success Criteria:

- Title
- Poster describes what features insects have
- Identified one insect and drawn a picture
- Included “fun facts”
- Why are insects so important?

More Fun Facts!

1. There are approximately 1.4 billion insects for every person on Earth. The total weight of all the insects is about 70 times more than all the people.
2. It takes bees about 10 million nectar-collecting trips to make one pound of honey
3. The only insect indigenous to Antarctica is the wingless midge, *Belgica Antarctica*
4. Scientists estimate that insects make up to 90% of all species of animals on the planet and more than half of all living things.
5. Insects can be found in almost every habitat, from mountain ranges covered in snow to the hottest deserts on the planet.
6. Insects have been around for more than 350 million years, longer than the dinosaurs and flowering plants.
7. The largest known order of insects is Coleoptera (beetles), some 300,000 to 400,000 species of beetle have been described to date. The next largest is the Lepidoptera (butterflies and moths), followed by the Diptera (true flies) and then the Hymenoptera (ants, bees and wasps).

https://www.royensoc.co.uk/understanding-insects/classification-of-insects/

https://www.woodlandtrust.org.uk/blog/2023/10/common-uk-insect-identification/