

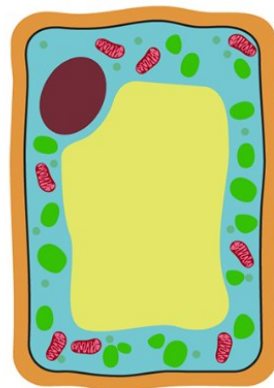
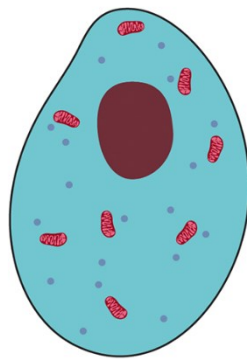


Holly Lodge High School

Name _____

Class _____

Teacher _____



Bridging Curriculum – Science Year 7 Cells

	Lesson Title
1	Animal Cell Structure
2	Organelle Function
3	Plant Cells
4	Microscopes – Observing cells
5	Specialised Cells
6	Size and Scale
7	Movement In and Out of Cells
8	Investigation Diffusion

Core Questions

	Core Question:	Answer:
1	What is a cell?	The building blocks of living things.
2	What is bigger, a cell or an atom?	A cell.
3	What are the parts inside a cell called?	Organelles.
4	What is the function of the nucleus?	Controls the cell and contains DNA.
5	What is the function of the cell membrane?	Controls what moves into and out of the cell.
6	What is the function of the cytoplasm?	Where chemical reactions happen.
7	What is the function of the ribosomes?	Make proteins for the cell.
8	What is the function of the mitochondria?	They transfer energy to the cell.
9	What is the function of the cell wall?	Give the cell strength and support.
10	What is the function of the vacuole?	Filled with cell sap to keep the cell firm.
11	What is the function of the chloroplast?	Makes food for the plant.



12	What does magnify mean?	To make something appear bigger.
13	What equipment can be used to look at cells and other small things?	Light microscope.
14	What is a specialised cell?	A cell that has its own job/function.
15	How many millimetres fit into 1 centimetre?	10
16	How many micrometres fit into 1 millimetre?	1000
17	What does a red blood cell do?	Carry oxygen around the body.
18	What does a sperm cell do?	Carries DNA to the egg cell.
19	What does a root hair cell do?	Absorbs water and nutrients from the soil.
20	What is high concentration?	When there is a lot of substance in an area.
21	What is low concentration?	When there is a few of a substance in an area.
22	What is diffusion?	The movement of particles from an area of high concentration to an area of low concentration.
23	Which two factors can change how fast diffusion happens?	Temperature and surface area



Lesson 1 – Animal Cell Structure

Learning purpose: To be able to recognise the key parts of an animal cell.

Key words:

cell		ribosomes	
cell membrane		mitochondria	
cytoplasm		nucleus	

Last topic we learnt about the parts which make up an organism. We learnt about different tissues, organs and organ systems.

But there are things smaller than these...

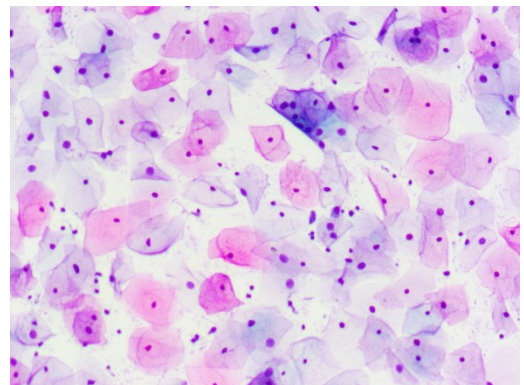
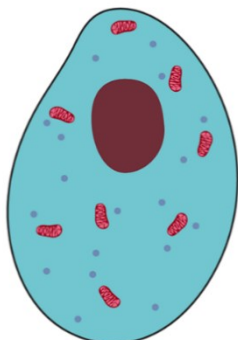
Cells

What are cells?

Cells are the building blocks of living things.

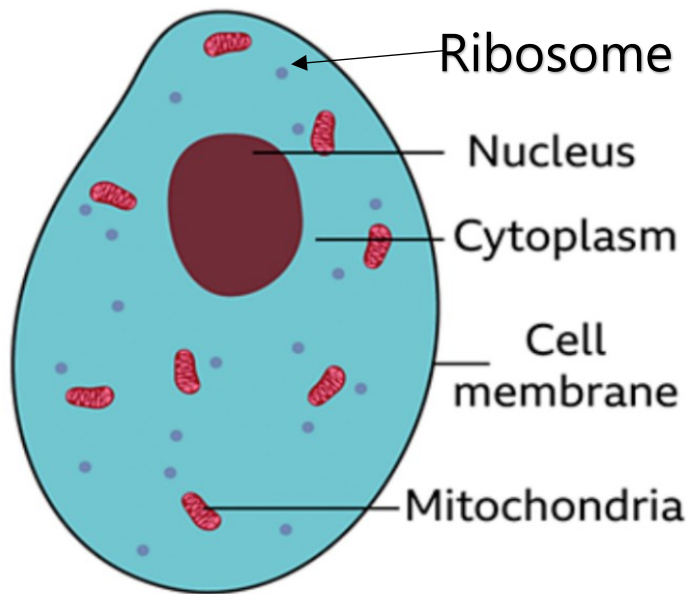
Almost all cells are so small that you need a microscope to see them.

All cells look different, but we are going to focus on one type of cell.





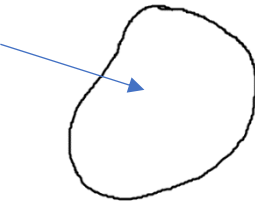


Animals are made up of cells. The cells then make tissues, and the tissues make up organs.

This is a type of **animal cell**. Cells are made up of even smaller parts.



What does each part look like?

		
1) Cell Membrane	2) Nucleus	3) Mitochondria
		
4) Ribosomes	5) Cytoplasm	



Learning activity – Draw each part for yourself:

Ribosomes	Cell Membrane	Nucleus
Cytoplasm	Mitochondria	

Drawing a cell

I do:

1	Draw the cell membrane	
2	Add the nucleus	
3	Add some mitochondria	
4	Add some ribosomes	
5	Label the cell. Don't forget the cytoplasm.	



We do:

1	Draw the cell membrane	
2	Add the nucleus	
3	Add some mitochondria	
4	Add some ribosomes	
5	Label the cell. Don't forget the cytoplasm.	

You do:

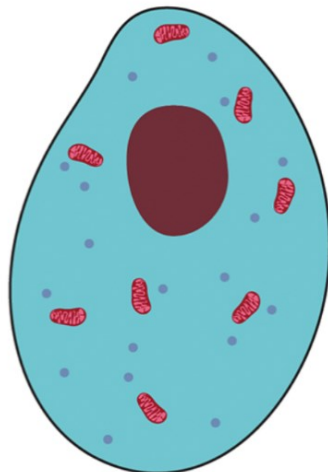
1	Draw the cell membrane	
2	Add the nucleus	
3	Add some mitochondria	
4	Add some ribosomes	
5	Label the cell. Don't forget the cytoplasm.	



You do:

1	Draw the cell membrane	
2	Add the nucleus	
3	Add some mitochondria	
4	Add some ribosomes	
5	Label the cell. Don't forget the cytoplasm.	

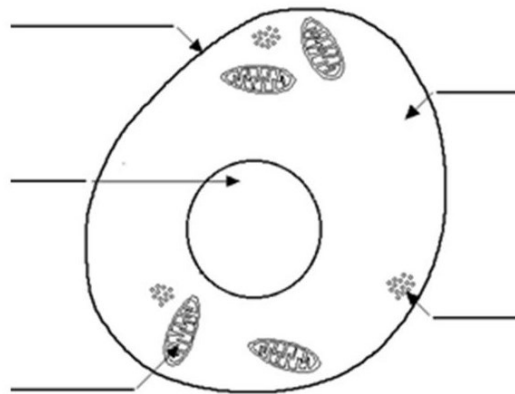
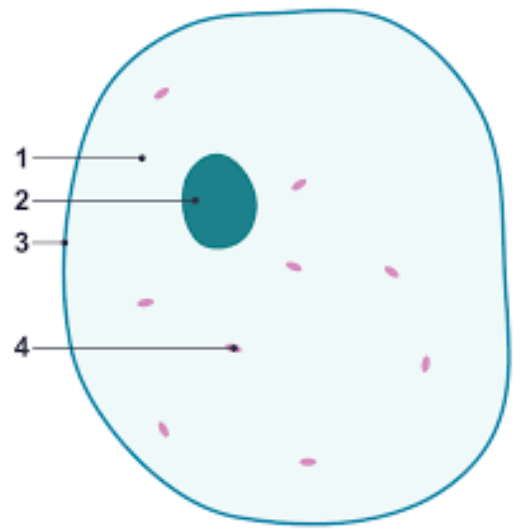
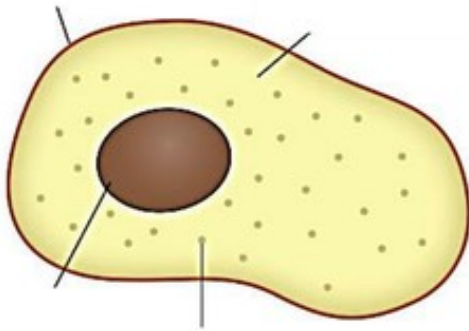
Label the animal cell below:




Sometimes cells look different, but they are still made up of the same parts.







Label the animal cells below:



Ramped Questions

<p>Name the 5 organelles found in animal cells.</p>	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.
<p>State what part of the cell the picture is showing...</p> 	



<p>State what part of the cell the picture is showing...</p> 	
<p>State what part of the cell the picture is showing...</p> 	
<p>State what part of the cell the picture is showing...</p> 	
<p>State what part of the cell the picture is showing...</p> 	
<p>What are cells? (fill in the gap)</p> <p>Cells are the _____ blocks of living things</p>	
<p>What are cells?</p>	
<p>What makes up living things?</p>	
<p>Draw and label an animal cell.</p>	



Lesson 2 – Cell Organelles

Learning purpose: To state what each organelle does to help the cell.

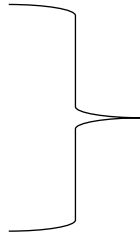
Key words:

organelle		ribosomes	
cell membrane		mitochondria	
cytoplasm		nucleus	

Last lesson we looked at the different parts of the cell.

The name for these parts is **organelles**.


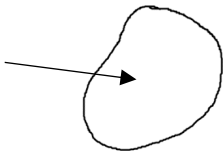

- cell membrane
- cytoplasm
- nucleus
- ribosomes
- mitochondria





These are all **organelles**.

The word organelle means 'mini organs'.

Just like organs help the body to function, each organelle has a different job to do to help the cell. Another word for job is **function**.

Organelle	Job/Function
Cell membrane 	Controls what goes in and out of cell.
Cytoplasm 	Chemical reactions happen here.
Nucleus 	Controls the cell and contains DNA



Mitochondria 	Transfers energy to the cell.
Ribosome 	Makes protein for the cell.

Learning Activity – match the name of the organelle to its function.

Organelle		Function
Mitochondria		Chemical reactions happen here.
Cell Membrane		Controls the cell and contains DNA
Cytoplasm		Transfers energy to the cell.
Nucleus		Controls what goes in and out of the cell.
Ribosomes		Makes protein for the cell.

Learning Activity – fill in the gaps. Choose from the words below.

The cell membrane is on the outside of the cell. It controls what goes ____ and ____ of the cell.

The cytoplasm is the middle of the cell, and _____ reactions happen here.

The nucleus _____ the cell and contains _____.

Mitochondria transfer _____ to the cell.

Ribosomes make _____ for the cell.

protein	in	controls	out	energy	chemical	DNA
---------	----	----------	-----	--------	----------	-----






Learning Activity – Answer the questions below.

1	Which organelle makes protein for the cell?
2	Which organelle controls the cell?
3	Which organelle transfers energy to the cell?
4	Which organelle controls what goes in and out of the cell?
5	Which organelle do the chemical reactions happen in?
6	Which organelle contains DNA?

Ramped Questions –

1	Name the 5 organelles found in animal cells.	1. 2. 3. 4. 5.
2	The name for all of the parts of the cell is o_____.	



3	State what part of the cell the picture is showing... 	
4	State what part of the cell the picture is showing... 	
5	State what part of the cell the picture is showing... 	
6	What is the job of the cell membrane?	
7	What is the job of the nucleus?	
8	What is the function of the mitochondria?	
9	What is the function of the cell wall?	
10	What is the job of the cytoplasm?	



Lesson 3 – Plant Cells

Learning purpose: To be able to recognise the key parts of a plant cell.

Key words:

organelle		chloroplast	
function		vacuole	
cell wall		mitochondria	

In the last two lessons we have looked at an animal cell.

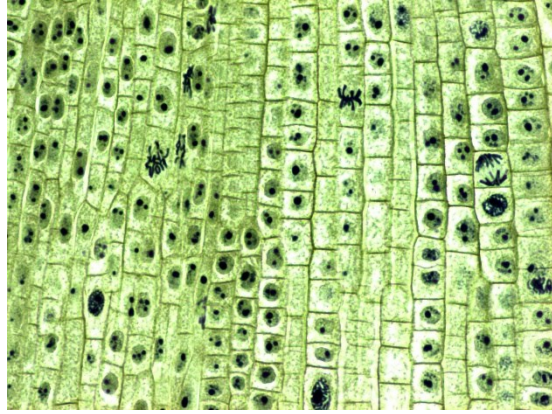
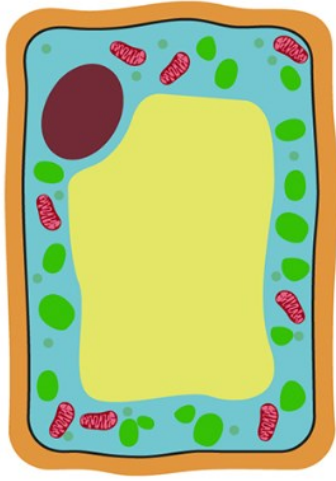
Cells are the building blocks of all living things. This means plants are made of cells too.

Plants come in all different shapes and sizes.



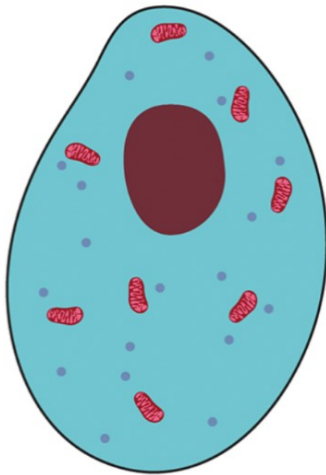
Plant cells look different to animal cells.



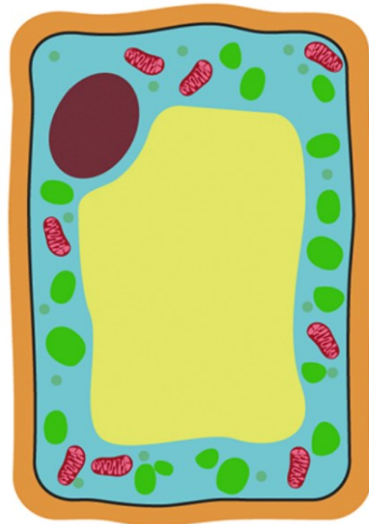


Learning activity – What differences can you see between the animal and plant cell?

Animal cell



Plant cell



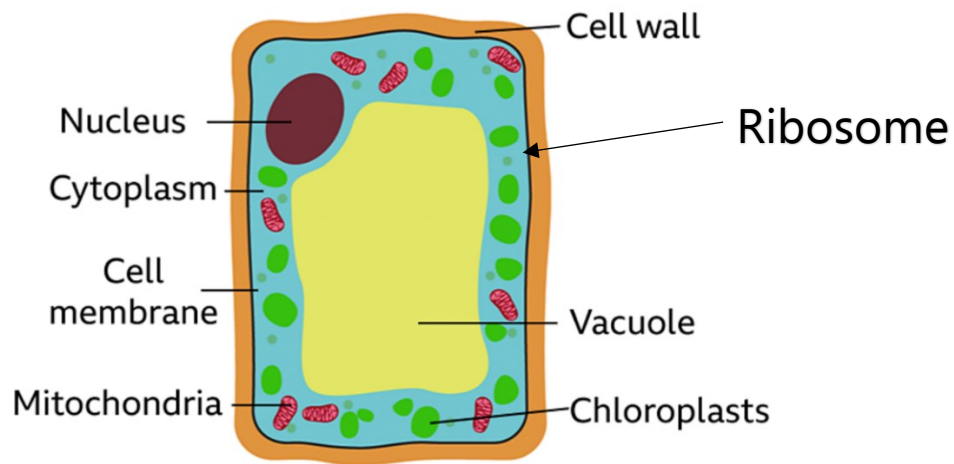
Write your ideas in the box...

Plant cells often have a regular shape. They often look similar to a rectangle.

They have the same organelles as animal cells: a **nucleus**, **cell membrane**, **cytoplasm**, **ribosomes** and **mitochondria**.



There are also three extra parts. Can you circle them on the diagram below?



Learning activity – recall of organelles

Organelle	Function
Mitochondria	Transfers energy to the cell.
Cell Membrane	Makes protein.
Cytoplasm	Where chemical reactions happen.
Nucleus	Controls what goes in and out of the cell.
Ribosomes	Controls the cell and contains DNA.

They also have an extra cell parts. What do they look like?

1) Cell wall	2) Chloroplasts	3) Vacuole



Drawing a plant cell

I do:

1	Draw the cell wall	
2	Draw the cell membrane	
3	Add the nucleus	
4	Add the vacuole	
5	Add some chloroplasts	
6	Add some mitochondria	
7	Add some ribosomes	
8	Label the cell. Don't forget the cytoplasm.	

We do:

1	Draw the cell wall	
2	Draw the cell membrane	



3	Add the nucleus	
4	Add the vacuole	
5	Add some chloroplasts	
6	Add some mitochondria	
7	Add some ribosomes	
8	Label the cell. Don't forget the cytoplasm.	

You do:

1	Draw the cell wall	
2	Draw the cell membrane	
3	Add the nucleus	
4	Add the vacuole	
5	Add some chloroplasts	
6	Add some mitochondria	

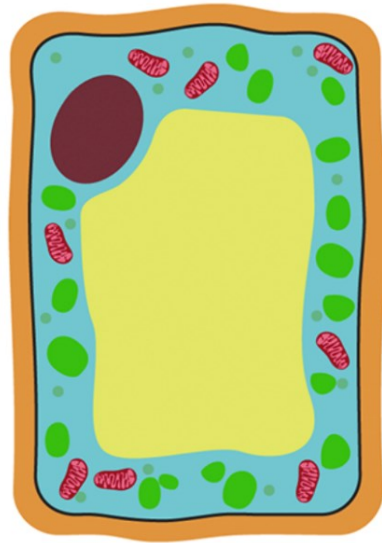


7	Add some ribosomes	
8	Label the cell. Don't forget the cytoplasm.	



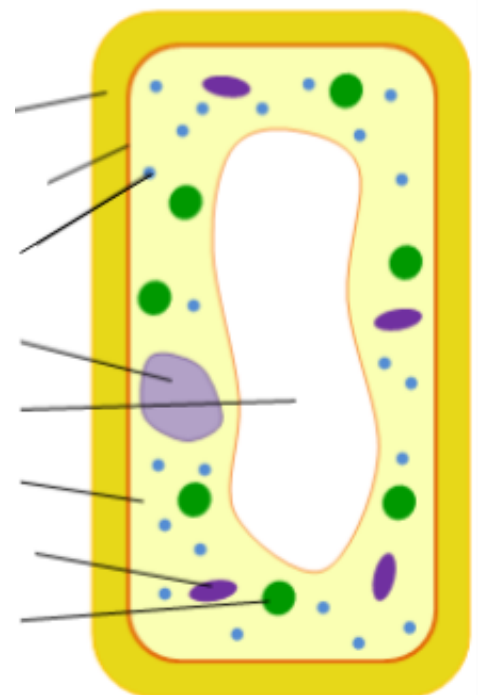
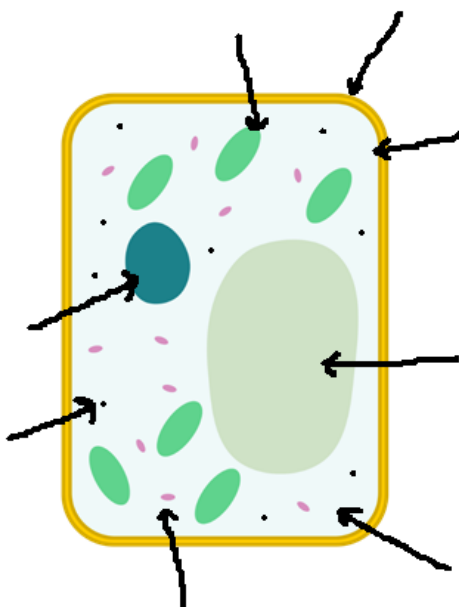
Learning Activity: Label the plant cell below.

vacuole, mitochondria, cell wall, nucleus, cell membrane, chloroplast, cytoplasm, ribosomes

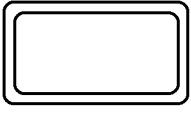
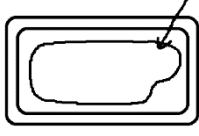



Sometimes plant cells look will different, but they are still made up of the same parts.

Label the plant cells below:



What do the three extra parts do for the plant?

		Function
Cell wall		Give the cell strength and support.
Vacuole		Filled with cell sap to keep the cell firm.
Chloroplasts		Makes food for the plant.

Learning Activity: Match the name of the organelle to its function.

Organelle	Function
Mitochondria	Controls what goes in and out of the cell
Vacuole	Gives the cell strength and support
Cell Wall	Transfers energy to the cell
Nucleus	Filled with cell sap to keep the cell firm
Ribosomes	Makes protein
Cell Membrane	Controls the cell and contains DNA.
Chloroplast	Makes food for the cell.



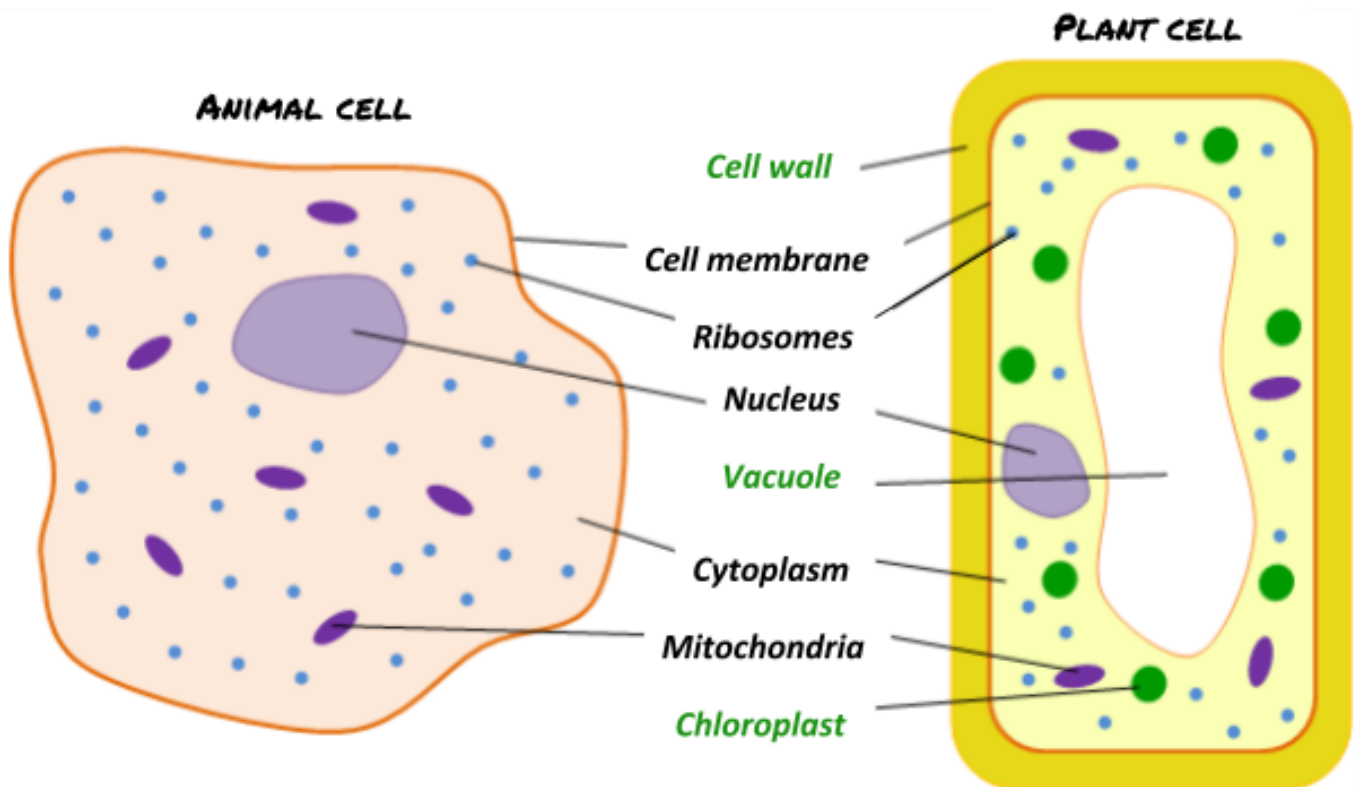
Learning activity – fill in the gaps.

A plant cell has _____ extra organelles. These are called the _____, _____, and the _____.

The cell wall is the outer layer of the cell. It gives the cell strength and _____. The vacuole is filled with _____, this helps to keep the cell _____. The chloroplasts make _____ for the plant cell.

food	cell sap	three	chloroplast	support	firm
vacuole	cell wall				

Comparing animal and plant cells



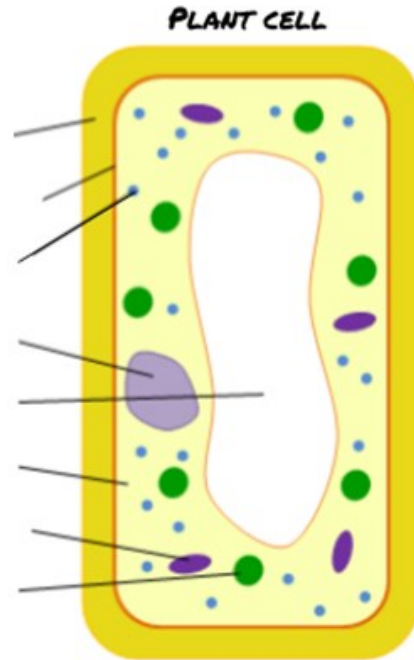
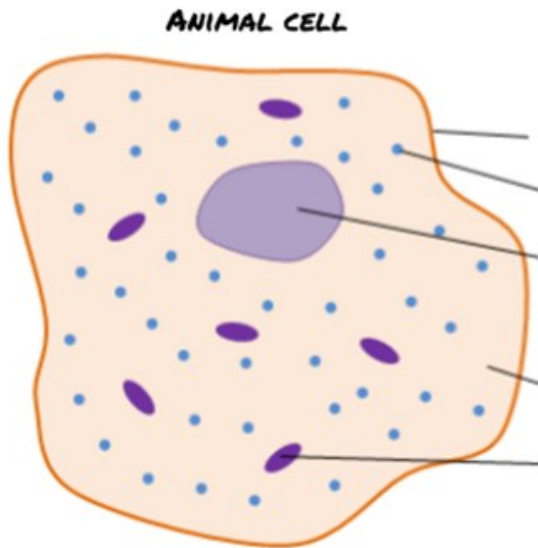
Plant cells have a more rectangular shape.

Animal cells have a more irregular shape.

Plant cells have more organelles than animal cells. The three extra organelles are the cell wall, chloroplast and vacuole.



Extra challenge – label the animal and plant cell below.



Ramped Questions –

1	Name 8 organelles.	1. 2. 3. 4. 5. 6. 7. 8
2	Name the 3 organelles that are in plant cells but not animal cells.	1. 2. 3. 4.
3	Which cell has a cell membrane? Circle one.	Animal Plant Both
4	Which cell has a cell wall? Circle one.	Animal Plant Both



5	Which cell has a cytoplasm? Circle one.	Animal Plant Both
6	Which cell has a vacuole? Circle one.	Animal Plant Both
7	Which cell has a ribosomes? Circle one.	Animal Plant Both
8	Which cell has a chloroplast? Circle one.	Animal Plant Both
9	What is the job of the cell wall?	
10	What is the job of the vacuole?	
11	What is the function of the chloroplast?	
12	Draw and label a plant cell.	



Lesson 4 – Microscopes and observing cells

Learning purpose: To be able to recognise the parts of a microscope in order to use it to look at cells.

Key words:

microscope		focus	
magnification		lens	

Cells are so small we cannot see them just using our eyes.



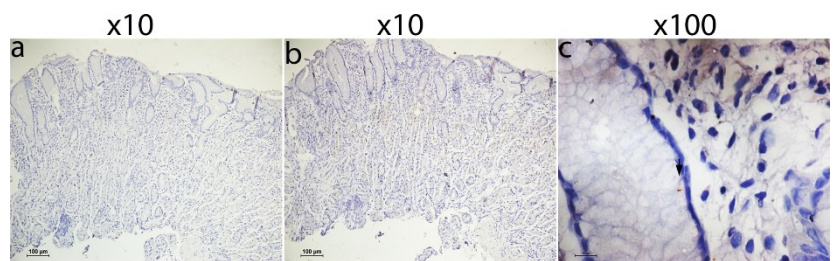
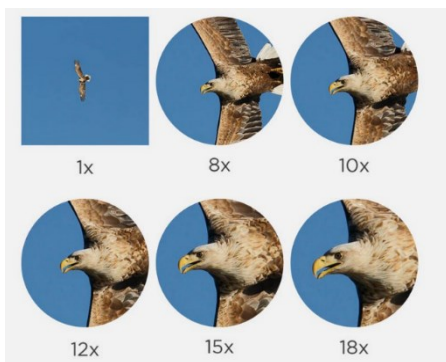
To see them we need to use something that makes objects look bigger than they really are.

A magnifying glass can make things look bigger.



A magnifying glass **magnifies** images.

Magnify means to make something appear bigger.



However, cells are so small that we cannot even see them using a magnifying glass.



Scientists use a piece of equipment called a microscope.



Learning activity – label the microscope using the words in the box.



- | |
|----------------|
| Stage |
| Eyepiece lens |
| Light |
| Focus |
| Objective lens |

What do the parts on a microscope do?

Learning activity – match up the part of the microscope with its function.

Lens		Where you place the slide
Stage		Magnifies the object so you can see it
Focus		Provides the light to see the object
Light source		Makes the image look more clear



Learning activity - Using a light microscope

A light microscope uses lenses to make a magnified image of an object.

1. Place the slide on the stage with a light source below.
2. Select the smallest eyepiece lens first. Normally x10
3. Use the large focus dial to observe the object as clearly as possible
4. Use the fine focus dial to observe the object as clearly as possible
5. Select the next smallest eyepiece lens.
6. Repeat steps 3-5

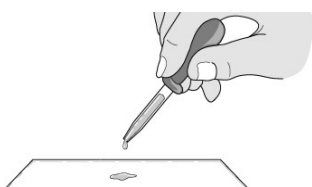
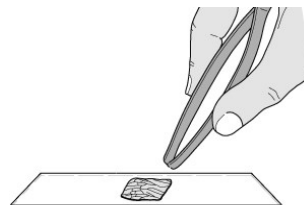
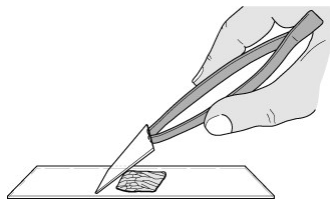
Draw the cells you have observed at two different magnifications.

Magnification x _____	Magnification x _____

Making a microscope slide


Scientists often have to make their own microscope slides from samples they have collected.

Learning activity - The drawings show a slide being made. Number the steps in the correct order.



Learning activity – Make your own slide of onion skin. Then look at this under the microscope using the same steps as before.

Ramped Questions

1	What do we use to be able to look at cells?	
2	Why do we need to use a microscope to look at cells?	
3	Magnify means to make something appear _____.	
4	Which part of the microscope makes the object appear bigger?	
5	Where do you put the microscope slide on the microscope?	
6	Which part of the microscope helps you see the image more clearly?	
7	What does magnify mean?	
6	Label the following diagram of a light microscope.	



Lesson 5 – Specialised Cells

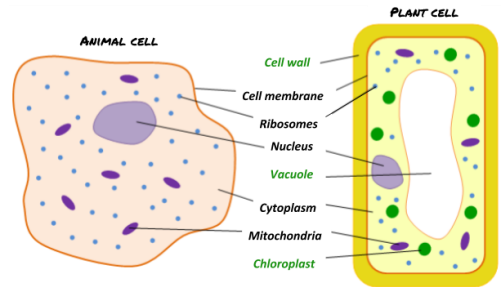
Learning purpose: To be able to recognise different types of cells.

Key words:

Red blood cell		Root hair cell	
Sperm cell		adaptations	

We have looked at both animal and plant cells.

As they have their differences we can tell them apart.



Learning activity – Retrieval. Answer the questions below.

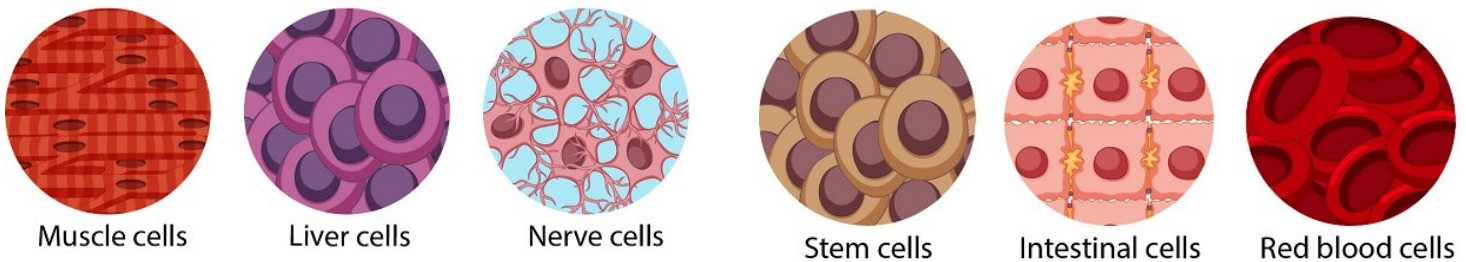
1. Which 3 organelles are found in plant cells but not animal cells?
2. Which 5 organelles are found in both animal and plant cells?
3. Match up the organelle to its job.

(on the next page)

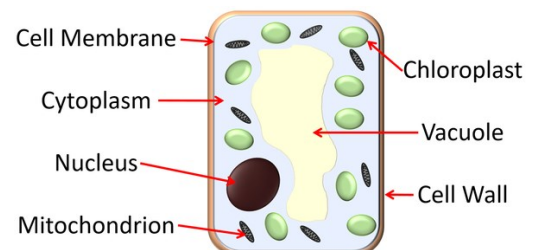
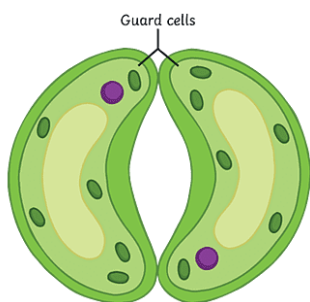


Organelle	Function
Mitochondria	Controls what goes in and out of the cell
Vacuole	Gives the cell strength and support
Cell Wall	Transfers energy to the cell
Nucleus	Filled with cell sap to keep the cell firm
Ribosomes	Makes protein
Cell Membrane	Controls the cell.
Chloroplast	Makes food for the cell.
Cytoplasm	Where chemical reactions happen.

It is important to understand that not all animal cells look the same. Plant cells do not all look like the same either. We have only looked at one type.

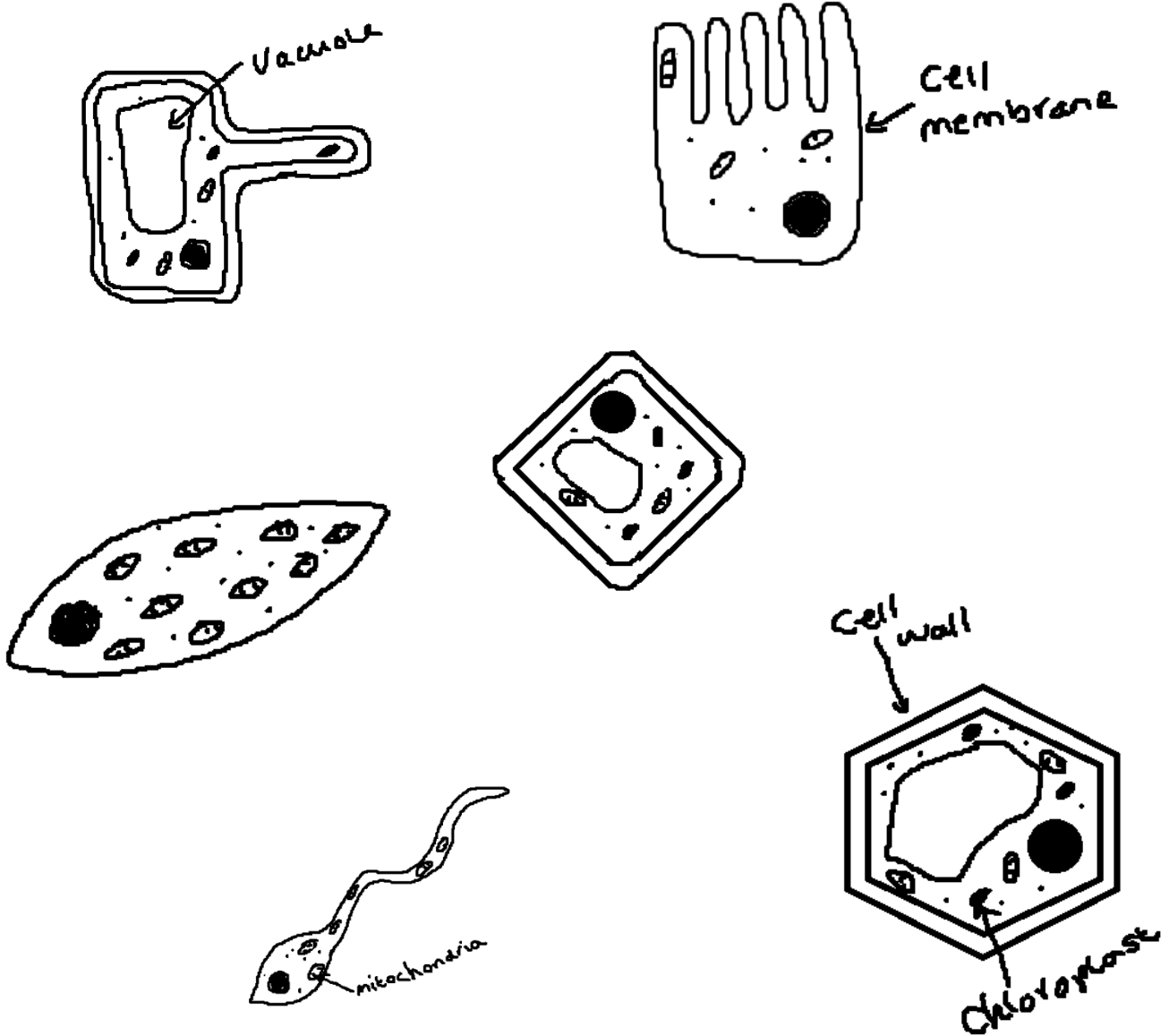


There are lots of different animal cells. There are also lots of different plant cells.



Learning activity – Decide whether the cells below are animal or plant cells. Use the labels to help you.





You learnt last topic that different organs have different jobs. You have learnt this topic that each organelle has its own job. Different cells have different jobs too.

When a cell has its own job we call it a **specialised cell**.

A **specialised cell** is a cell that has its own job.

Each cell has features that help it do its job. We call these **adaptations**.





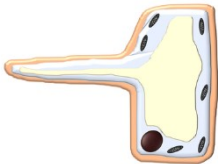
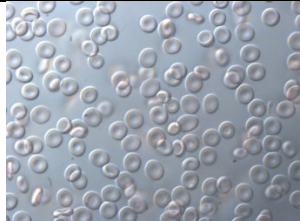
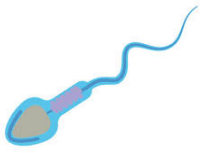

Cell	Function	Diagram	Adaptation
Red blood cell (Animal cell)	Carry oxygen around the body.		<p><u>No nucleus</u>: so there is room to carry oxygen</p> <p>A <u>big surface area</u> to carry more oxygen.</p>

Cell	Function	Diagram	Adaptation
Sperm cell (animal cell)	Carry DNA to the egg cell in reproduction		<p>Tail to help it swim to the egg.</p> <p>Lots of mitochondria to transfer lots of energy.</p>

Cell	Function	Diagram	Adaptation
Root hair cell (plant cell)	Take in water and nutrients from the soil		Large surface area to take in more water and nutrients.



Learning activity - Complete the following match up activities

Sperm cell		Sperm cell	
Root hair cell		Root hair cell	
Red blood cell		Red blood cell	

Sperm cell	Carries oxygen around the body.
Root hair cell	Carries DNA to the egg for reproduction.
Red blood cell	Takes in water and minerals from the soil

Sperm cell	Has a tail and lots of mitochondria
Root hair cell	Has no nucleus and a large surface
Red blood cell	Has a large surface area.



Ramped Questions

1	Give 3 examples of specialised cells.	1. 2. 3.
2	A cell which is specialised has its own _____.	
3	Give one example of a specialised cell found only in plants.	
4	What is the job of a red blood cell?	
5	What is the function of a root hair cell?	
6	Why do sperm have a tail?	
7	Why do root hair cells need a large surface area?	
8	How is a sperm cell adapted to help it travel to its destination?	
9	What three organelles are in plant cells but not animal cells?	
10	What is a specialised cell?	



Lesson 6 – Size and Scale

Learning purpose: To be able to describe the size of cells.

Key words:

cell		convert	
scale		micrometres	
millimetres		centimetres	

Measuring size

How could you measure the length of this line?



What is the length of this line?

Could you measure a cell in the same way?

How could you measure the length of the classroom or the muga?

Would you measure it in centimetres? Or something else?

Scale

Sometimes it is hard to imagine the size of something because it is so small or large. To help us we can compare the size to that of something we know.

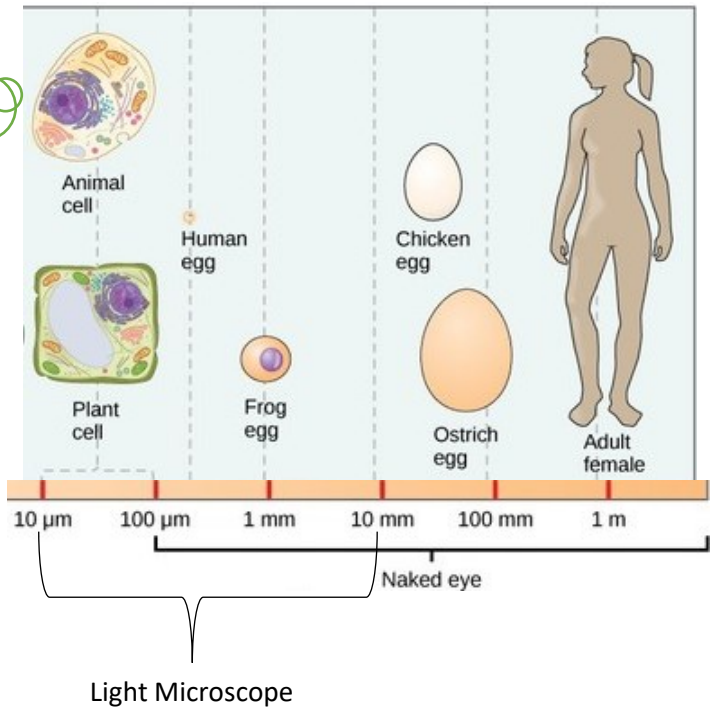
For example, if we imagine the earth was a football, the moon would be the size of a tennis ball.

Some things are so small that it would not be possible to measure them with a ruler. Since cells are so small we cannot measure their length in centimetres. Centimetres are a type of unit.



The plant cell and animal cell have been magnified. In real life they are 10,000 x smaller than the frog cell.

The scale shows their sizes.



We need to measure cells in micrometres. Micrometres are much smaller than centimetres and millimetres

μm

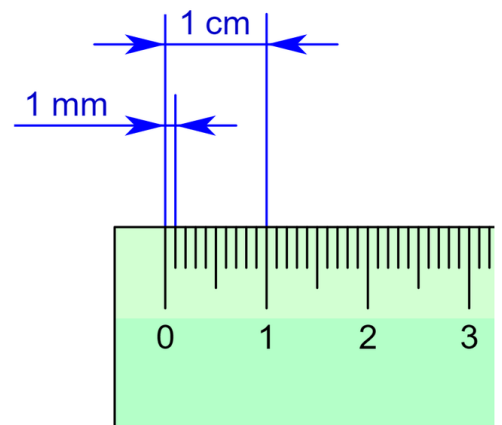
Try writing the micrometre symbol....

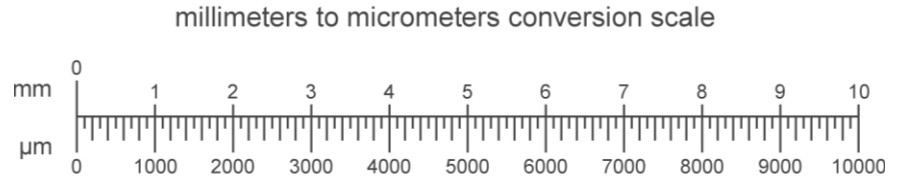
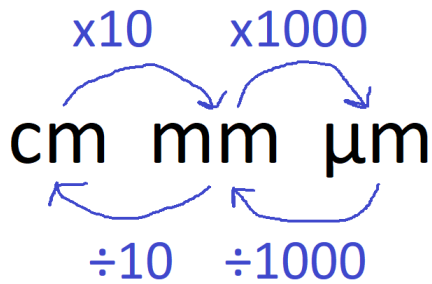
--	--	--

You can fit 10 millimetres into 1 centimetre.

You can fit 1000 micrometres into 1 millimetre.

This means you could fit 10,000 micrometres into 1 centimetre!





Sometimes we need to convert from one unit of measurement into another.

Learning activity – convert the measurements.

cm	mm
1	
6	
	20
	30
3.5	
7.2	
	46
	83

mm	μm
1	
4	
	3000
	4000
5.6	
2.3	
	970
	450

cm	μm
2	
3	
	50000
	70000
0.4	
0.03	
	6500
	370

Learning activity – Read the story below and answer the questions. You should highlight anywhere in the story which talks about size.

Once upon a time, there was a scientist named Dr Mini who was fascinated by the human body. One day, he stumbled upon a machine that could shrink him down to the size of cells. Excited to explore the inner workings of the human body, he stepped into the machine and was shrunk down in an instant. He stood only $10\ \mu\text{m}$ tall.



As he floated through the bloodstream, he marvelled at the different cells and organisms that surrounded him. He saw red blood cells rushing to deliver oxygen, they were half his size. He stumbled upon a beating heart and watched in awe as it pumped blood throughout the body. Each heart cell seemed so tall compared to him, they were 100 μm long.

Next, Dr Mini travelled to the digestive system, where he saw things much smaller than him, moving in and of the cells. He saw a sugar molecule that was 2000x smaller than he was. The experience was truly breath-taking, and Dr Mini couldn't believe what he was seeing.

Finally, it was time for Dr Mini to return to his normal size, to do this he needed to make himself 180,000 times bigger!

Questions

1	How tall was Dr Mini once he had been shrunk?	
2	What would this height be in mm?	
3	How much smaller was the red blood cell compared to Dr Mini?	
4	Work out the size of the red blood cell.	
5	How tall was the heart cell?	
6	How many times taller was the heart cell compared to Dr Mini?	
7	What was smaller a red blood cell or a sugar molecule? What evidence is there for this in the story?	



Ramped Questions

1	What piece of equipment can we use to measure the length of a finger?	
2	What piece of equipment can we use to measure the length of the football field?	
3	What piece of equipment is needed to look at cells?	
4	What units should we use to measure cells?	
5	A ruler measures length in _____.	
6	How many millimetres can fit into a centimetre?	
7	How many micrometres can you fit into a millimetre?	
8	Convert 3000 μm into mm.	
9	Convert 250 μm into mm.	
10	Convert 5 mm into μm .	
11	Convert 0.3 mm into μm .	
12	Convert 45000 μm into mm.	



Lesson 7 – Movement in and out of cells

Learning purpose: To describe how things move in and out of cells.

Key words:

Cell membrane		substance	
diffusion		sugar	
concentration		oxygen	

Leaning activity – Demonstration. Answer the questions below.

1. Who smelt the perfume first?
2. Who smelt it last?
3. Where were the most perfume particles to start?
4. What happened to the potassium permanganate after it was added to the water?

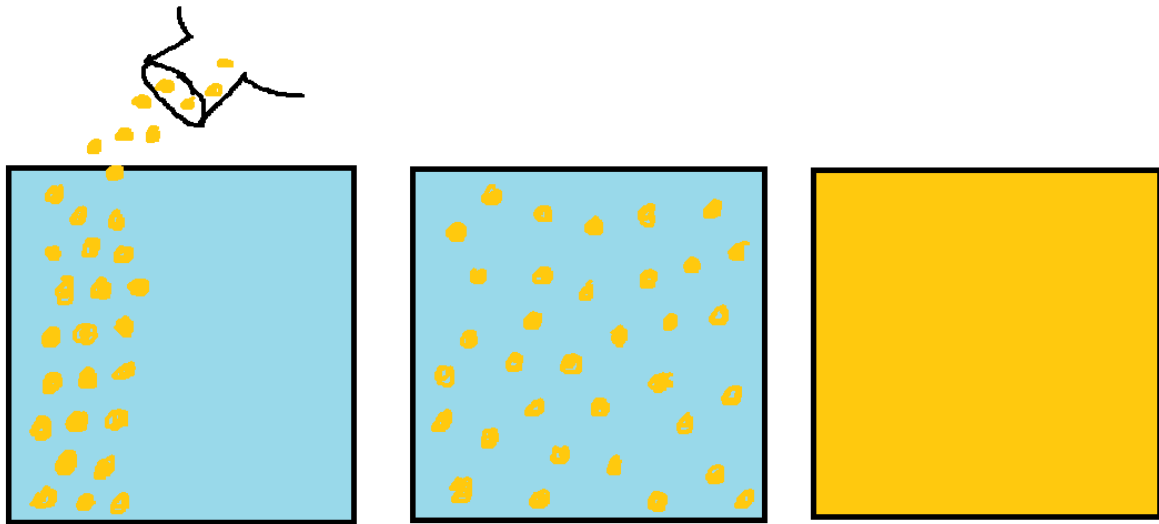
Diffusion

What you have just witnessed is called diffusion. It happens all around us.

When you can smell things from far away, this is because of diffusion.

When you make orange squash or a cup of tea, the tea or squash spread out into the water, because of diffusion.



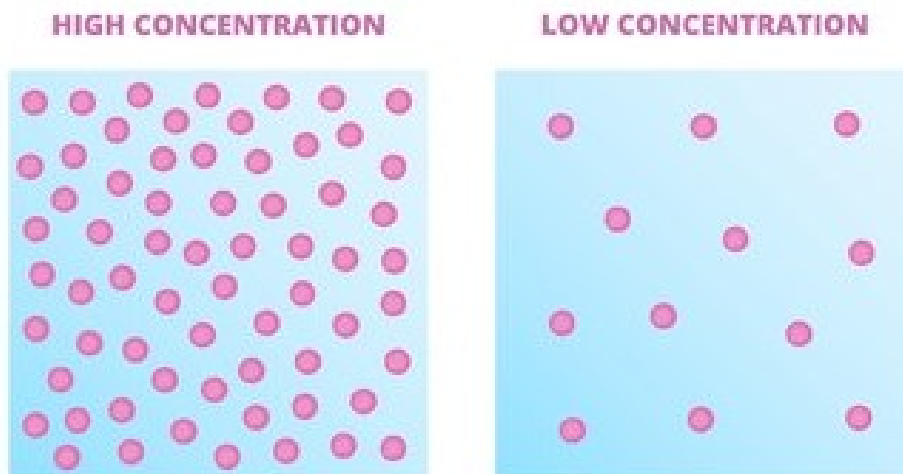


How do substances move in liquids and gases?

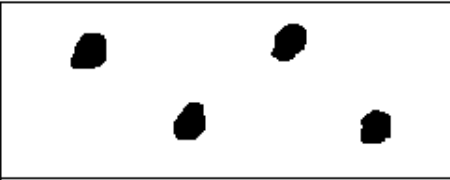
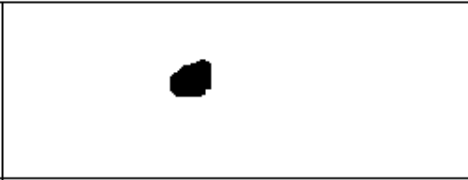
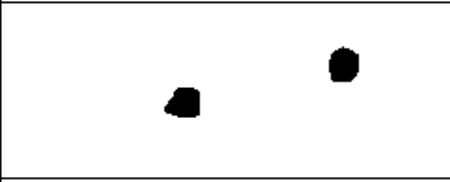
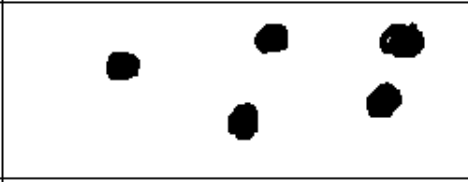

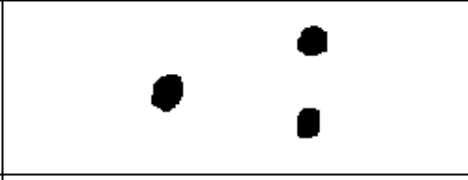
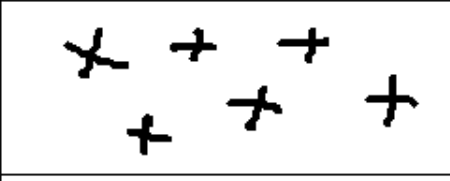
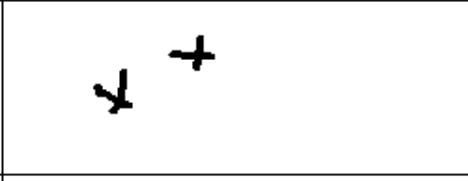
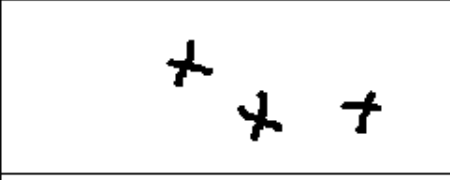
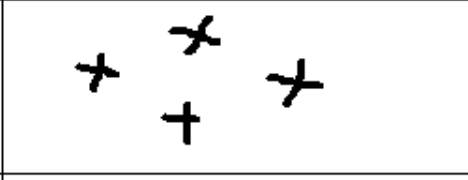
The substances move from areas where there were lots, to areas where there are few.

When there is a lot of a substance in an area we call this **high concentration**.

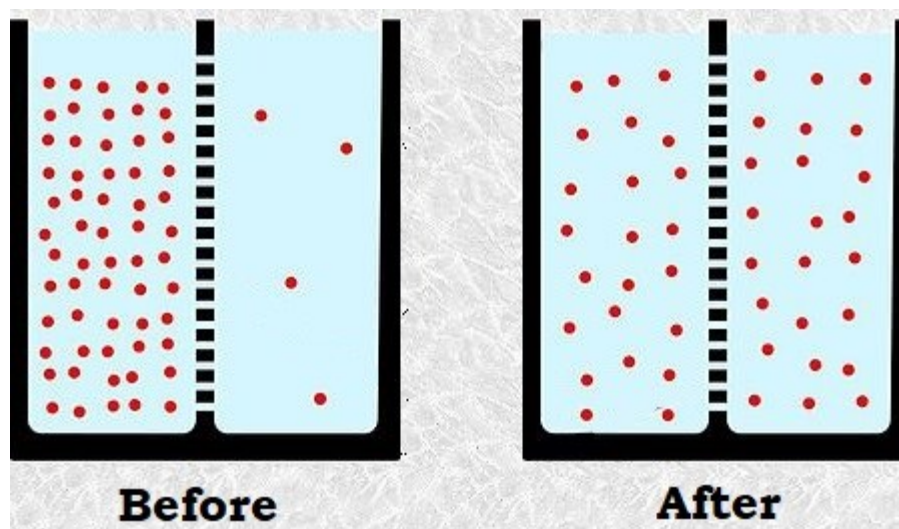
When there is a few of a substance in an area we call this **low concentration**.



Learning activity – High or low? In each pair, which is showing the high concentration and which the low concentration?

1		
2		
3		
4		
5		

Diffusion is the movement of substances from an area of high concentration to an area of low concentration.

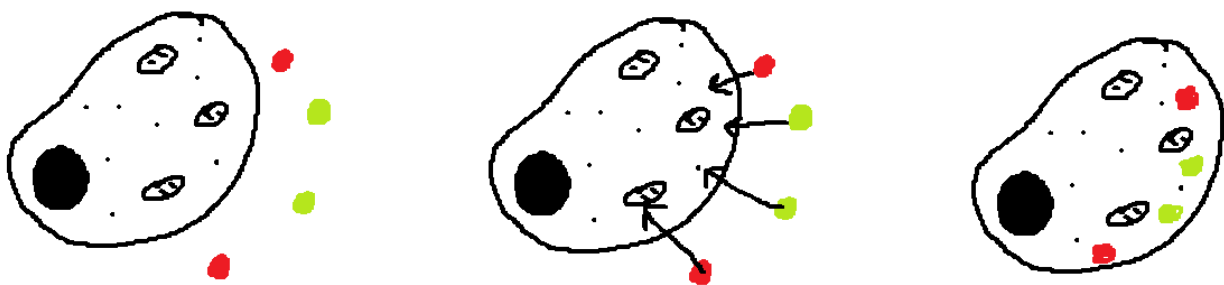


Learning activity – add an arrow to each pair to show which box the substance would move into. One has been done for you.

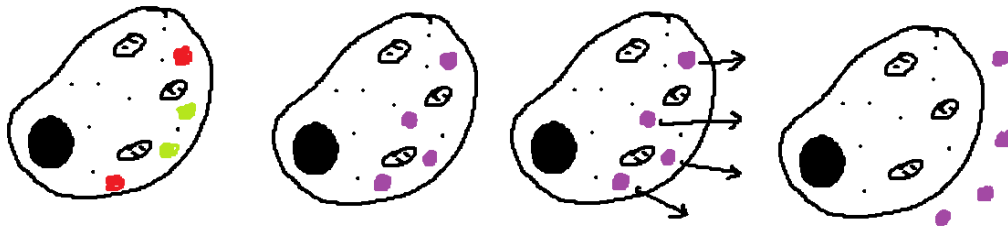
1	
2	
3	
4	
5	

Diffusion in cells

For cells to carry out their functions, they need substances from outside of the cell. For example they need oxygen and sugar.



The organelles use these substances to make new things. The new substances then need to leave the cell.



To move in and out of the cell, substances move from an area of high concentration to an area of low concentration



This is called **diffusion**.



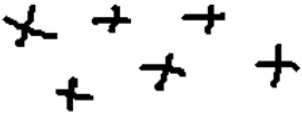
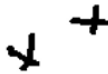
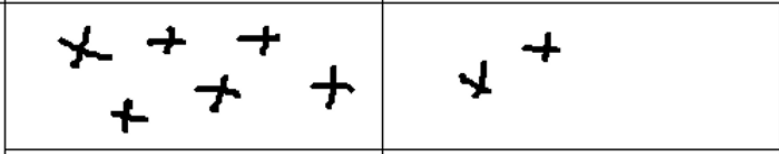
Learning activity – Will the substances move into or out of these cells?

	Situation	Into or out of?	Why?
1		It will move _____ the cell	

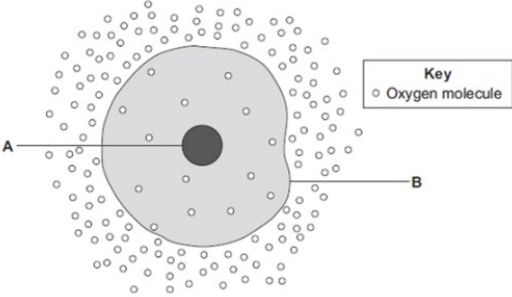


2		It will move _____ the cell	
3		It will move _____ the cell	

Ramped Questions

1	Which box shows low concentration?		
2	Draw an arrow to show which was the substance would move.		
3	High concentration is when there is _____ of a substance in an area.		
4	List some substances you have seen this lesson which move in and out of cells.		
5	Diffusion is the movement of substances from _____ to _____ concentration.		



6	What is diffusion?	
7	Which organelle controls what goes in and out of the cell?	
8	<p>The diagram shows a cell.</p>  <p>Is the cell an animal cell or plant cell?</p> <p>How do you know?</p> <p>Will oxygen diffuse into or out of the cell?</p> <p>How do you know?</p>	



Lesson 8 – Investigating Diffusion

Learning purpose: To be able to describe what can change the rate of diffusion.

Key words:

cell membrane		substance	
diffusion		temperature	
concentration		surface area	

Learning activity: Watch the demonstration and answer the questions below.

What colour is the potassium permanganate?	
Which had the larger surface area? Chose one.	Chunk or Powder
When the chunk was added did diffusion happen quicker or slower?	
When the powder was added did diffusion happen quicker or slower?	
Why was there a difference in how fast diffusion happened, even though the same amount of grams was used?	



How fast does diffusion happen?

Sometimes diffusion can happen fast. Sometimes diffusion can happen slowly.

How fast diffusion happens can depend on:

- surface area
- temperature

If a cell has a larger surface area then the substances will be able to move in and out of it more quickly.






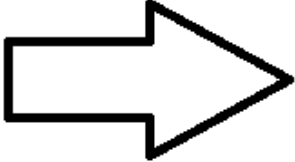




If a cell has a larger surface area then diffusion will happen more quickly.



If the substance which is moving has a bigger surface area diffusion will also happen quicker.

Learning activity – More or less? In each pair, which shape has a bigger surface?



1		
2		
3		
4		
5		

How does temperature affect diffusion?



Learning activity – Investigating how temperature affects diffusion.

Equipment:

Dish/plate

Water

Skittles

Method:

1) Sort your skittles into colours. You need at least 2 of each colour.

2) Places the skittles around the outside of the plate in their colours.

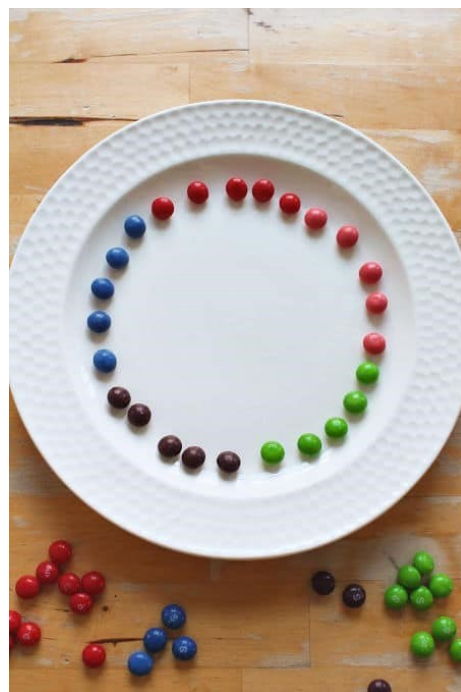
3) Gently pour tap water into the centre of the plate, until the plate is filled with a shallow layer. You do not want the skittles to move.

4) Once all the water has been added start a stopwatch.

5) Stop the stop watch when all the colours have reached the centre.

6) Repeat the whole process again, but this time using warm water from a kettle which has been boiled.

7) Record your results in the table;



Temperature of the water (degrees C)	Time taken for diffusion (second)
Cool	
Warm	



Learning activity – Answer the questions below.

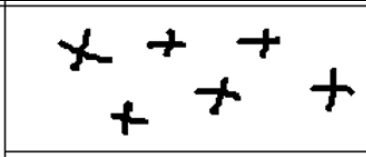
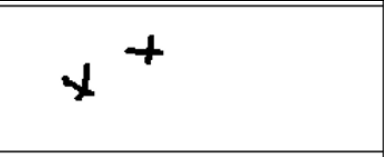
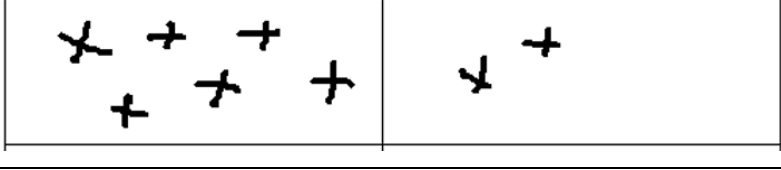
1. On the diagram of red and green skittles, with a labelled arrow, show where high and low concentration of colour would be.



2. Where did the colours diffuse the quickest? Chose one.	Cold water Hot water
3. Where on the plate did the colours diffuse into?	
4. Where the colours moving from..... Chose one.	High to low concentration Low to high concentration



Ramped Questions

1	Which box shows low concentration?		
2	Draw an arrow to show which was the substance would move.		
3	High concentration is when there is _____ of a substance in an area.		
4	List 2 factors that can change how fast diffusion happens.		
5	Diffusion is the movement of substances from _____ to _____ concentration.		
6	What is diffusion?		
7	If the temperature is decreased what happens to diffusion?		
8	<p>If you were on the top floor of C block, would you smell the food from the canteen faster or slower on a hot day?</p> <p>Can you explain your answer?</p>		

