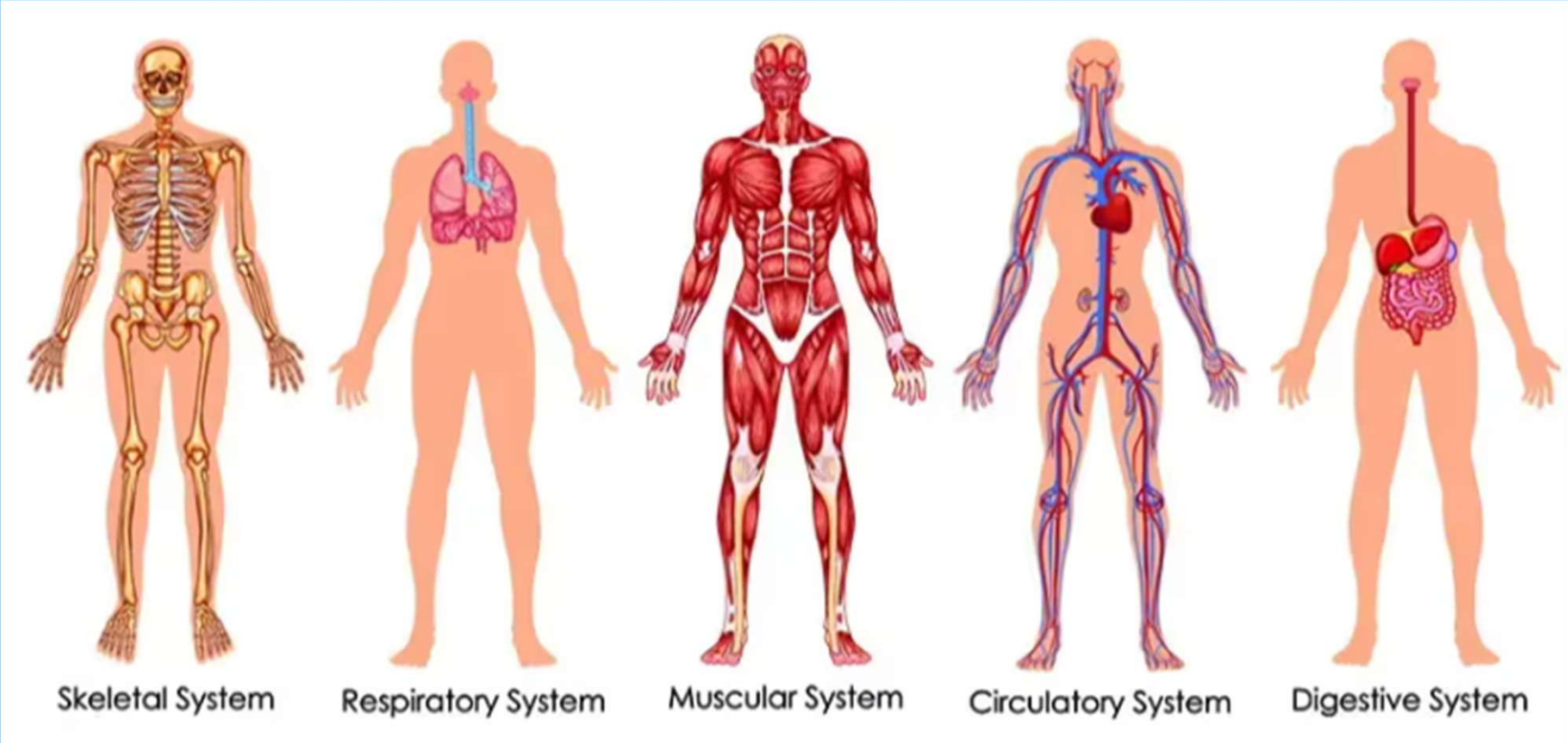
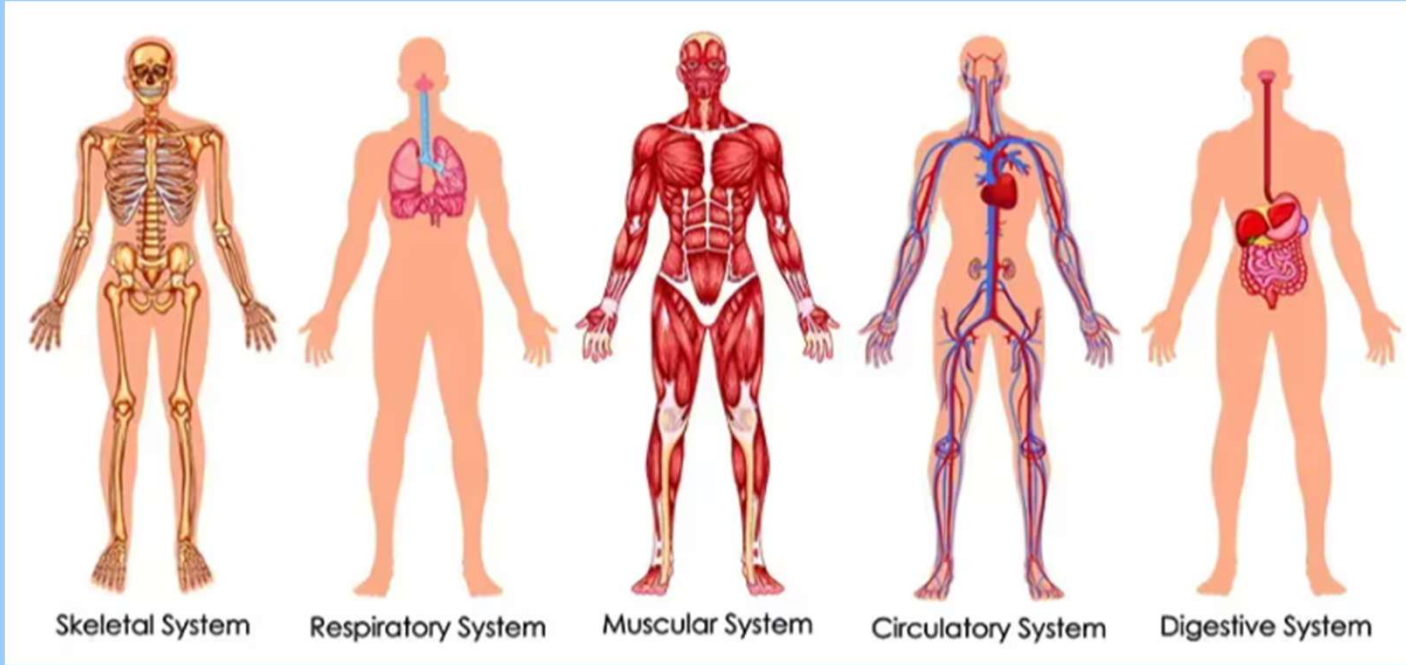
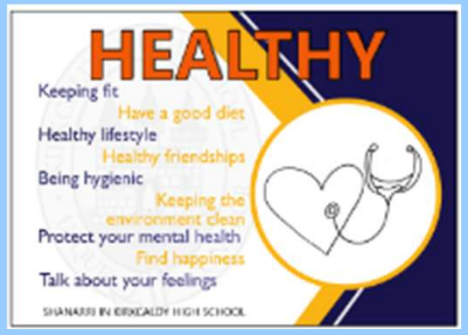
Body Systems



KHS S2 Science

Body Systems - SHANARRI



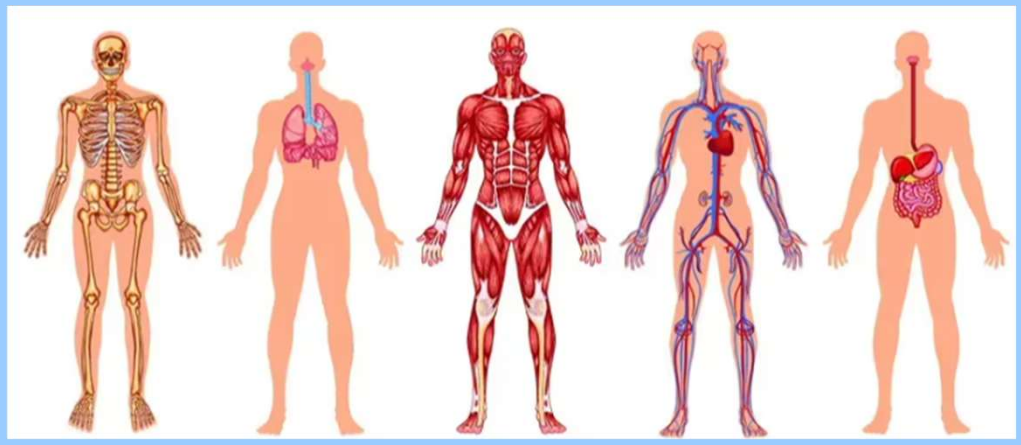


Cell Organisation

09/09/2026

Starter

How many body systems do you know of? List as many as you can.



Cell Organisation

09/09/2026

Page 4

Learning Intentions:

- To be able to describe how the body is organised.
- To be able to give examples of the main organs and systems of the body.

Cell Organisation

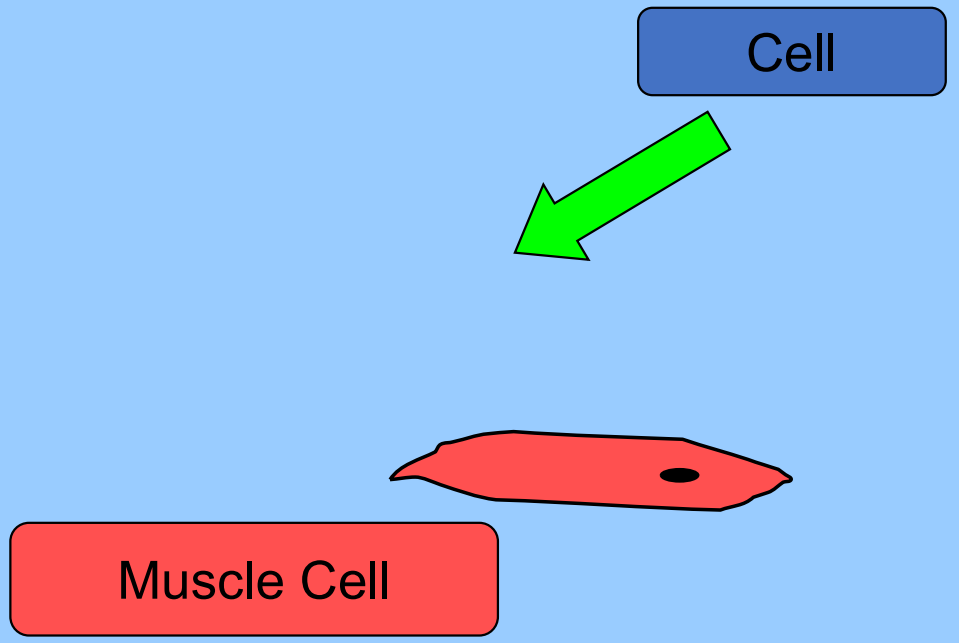
09/09/2026

Success Criteria

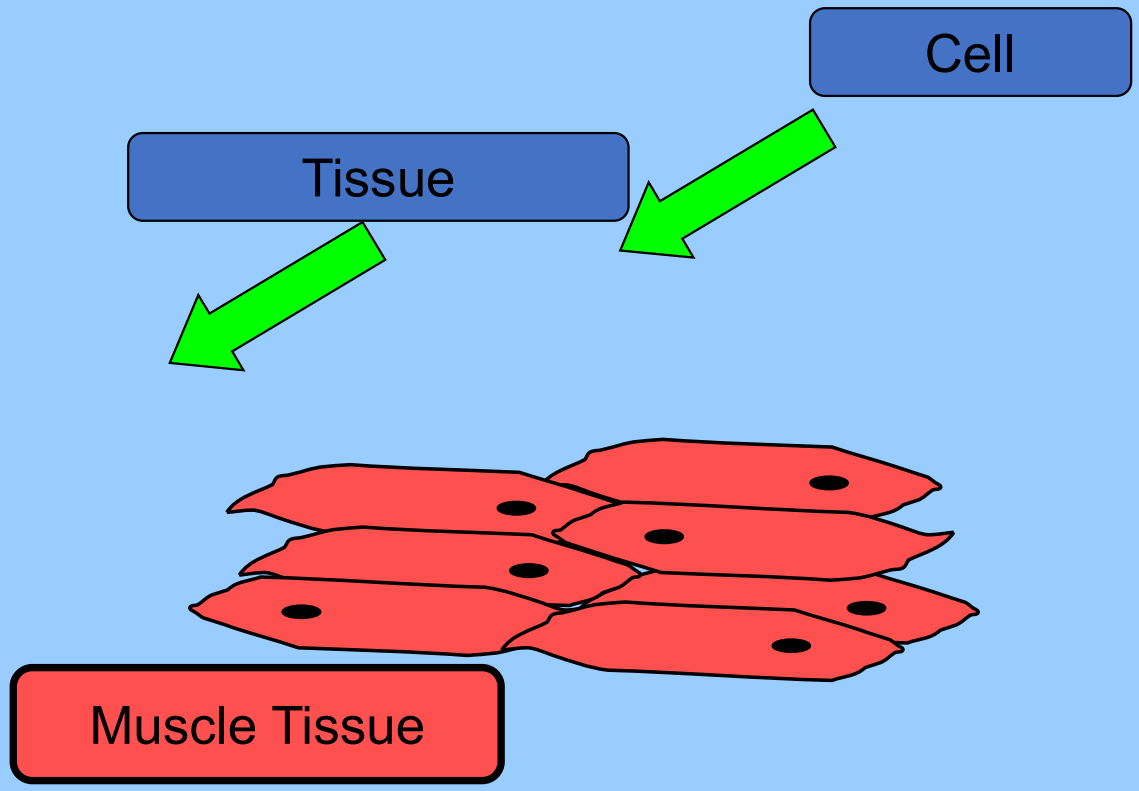
- ❑ I can describe how the body is organised.
- ❑ I can give examples of the main organs and systems of the body.

The cell is the basic unit in the bodies of living things.

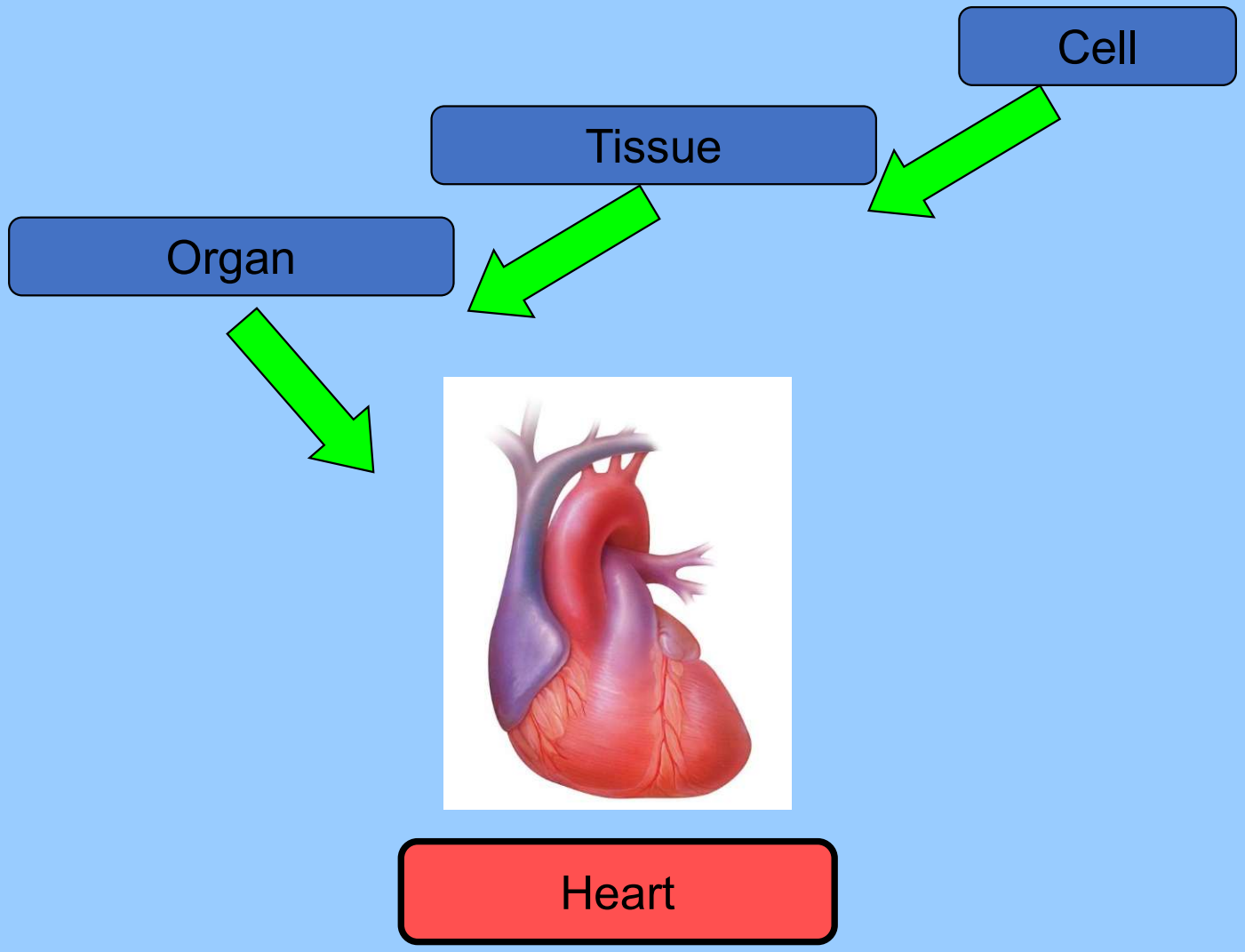
These living things are made up of a variety of different cell types - specialised cells that have a particular jobs.



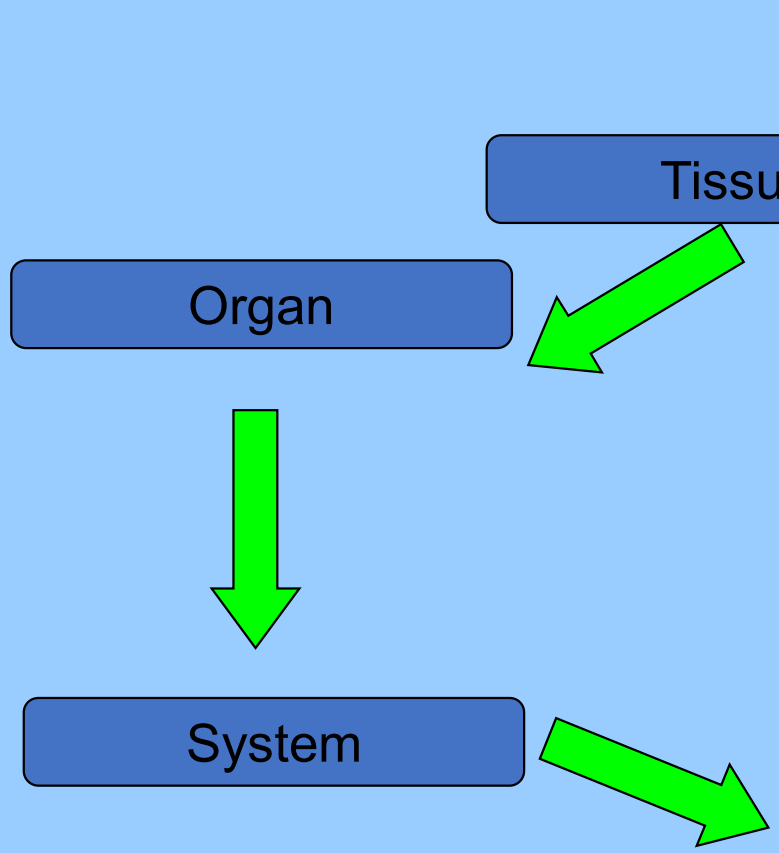
In a large organism, like a mammal, the specialised cells have to group with other cells of the same type – tissues.

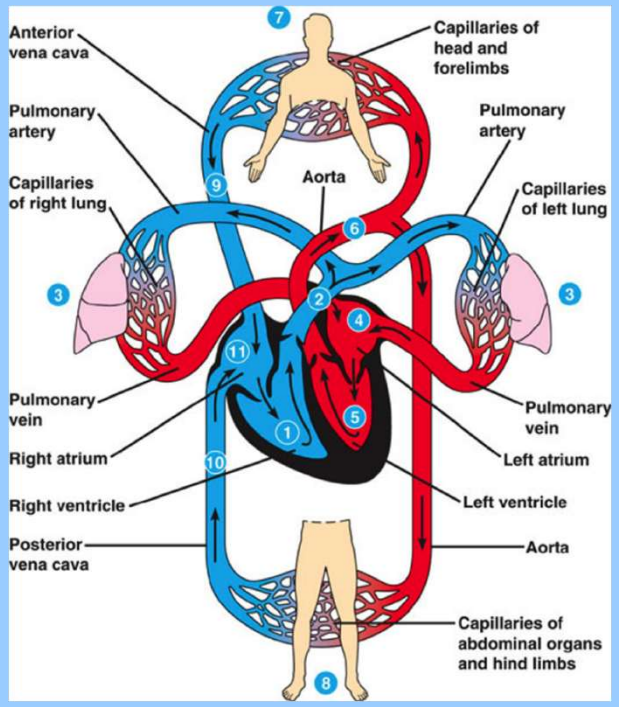


A body organ is made up of several types of tissue.
The heart is an organ made up of muscle tissue.



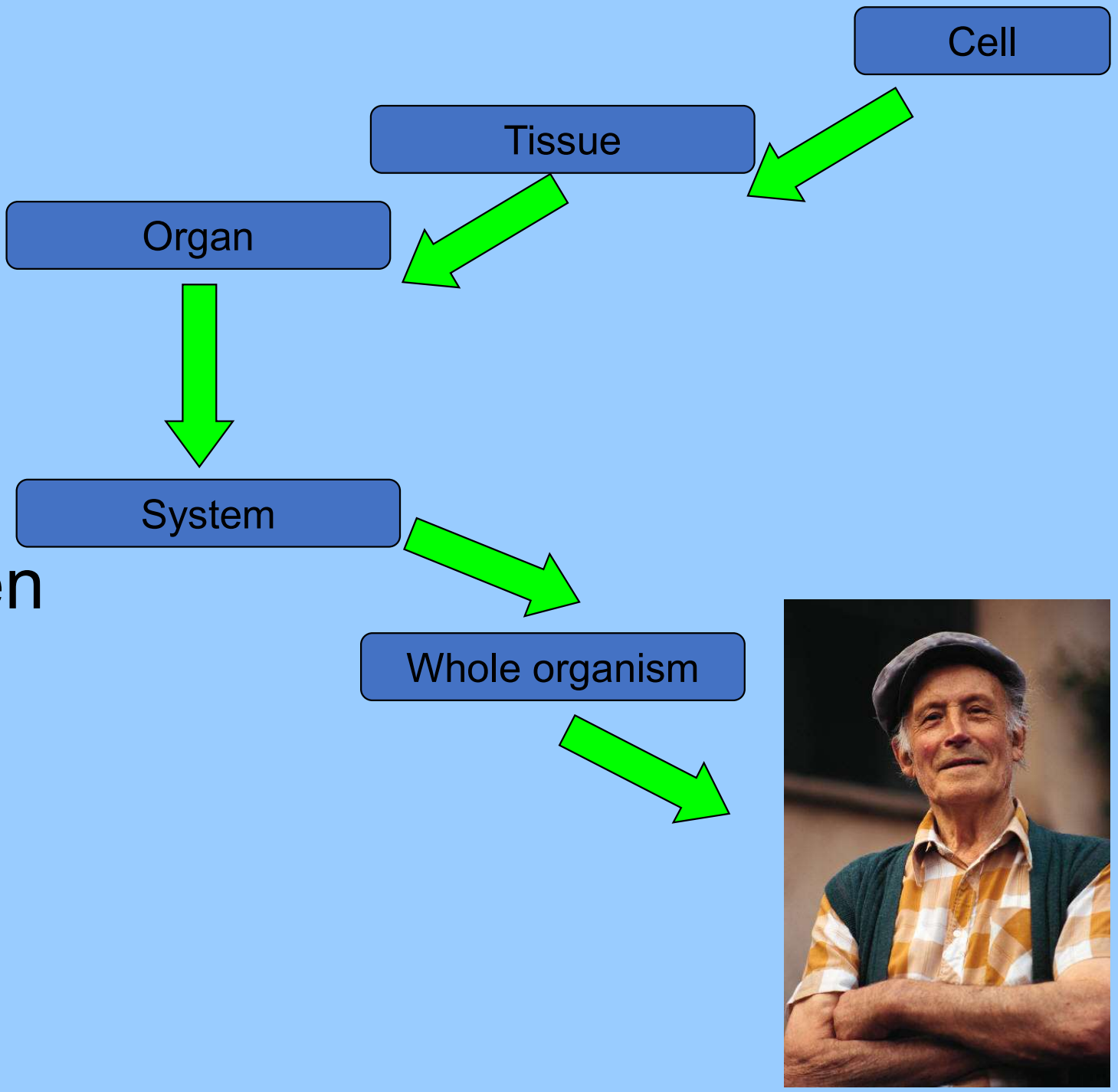
Several organs working together can be arranged into a body system. Each system has a specific job to do.





Circulatory System

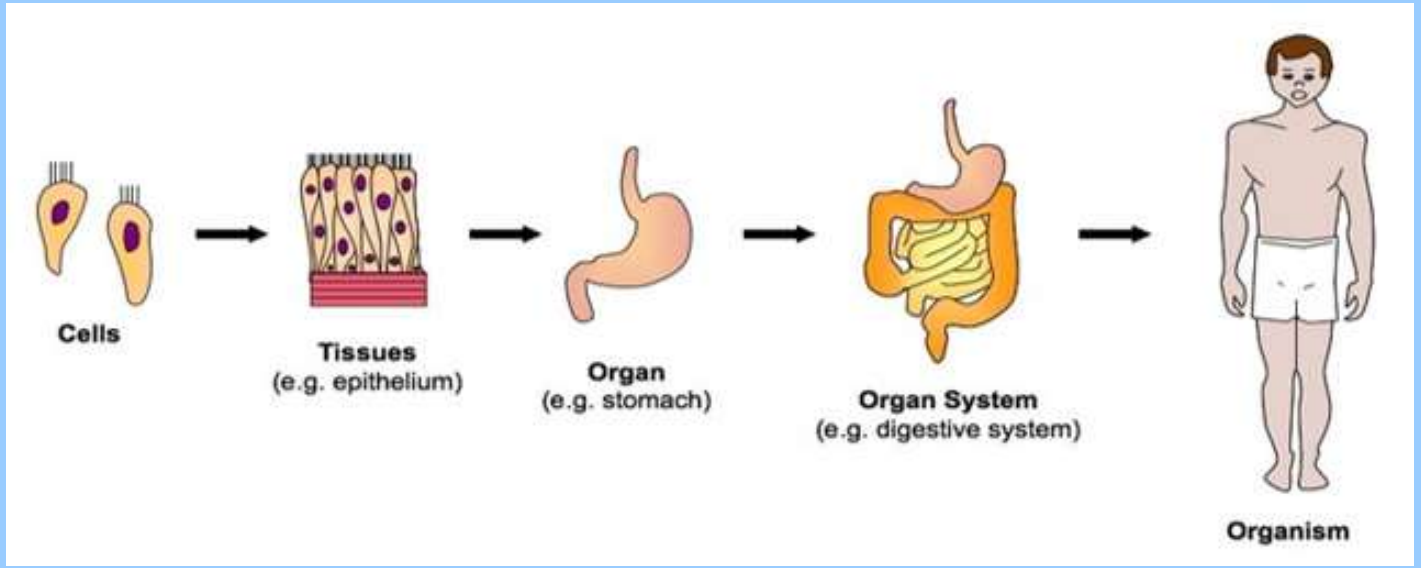
All systems form the complete organism when working together.



Cell organisation

Page 4

Cells which carry out similar roles join together to make tissues which build up into organs. Groups of organs work together to form organ systems.



Cell organisation

System

Tissue

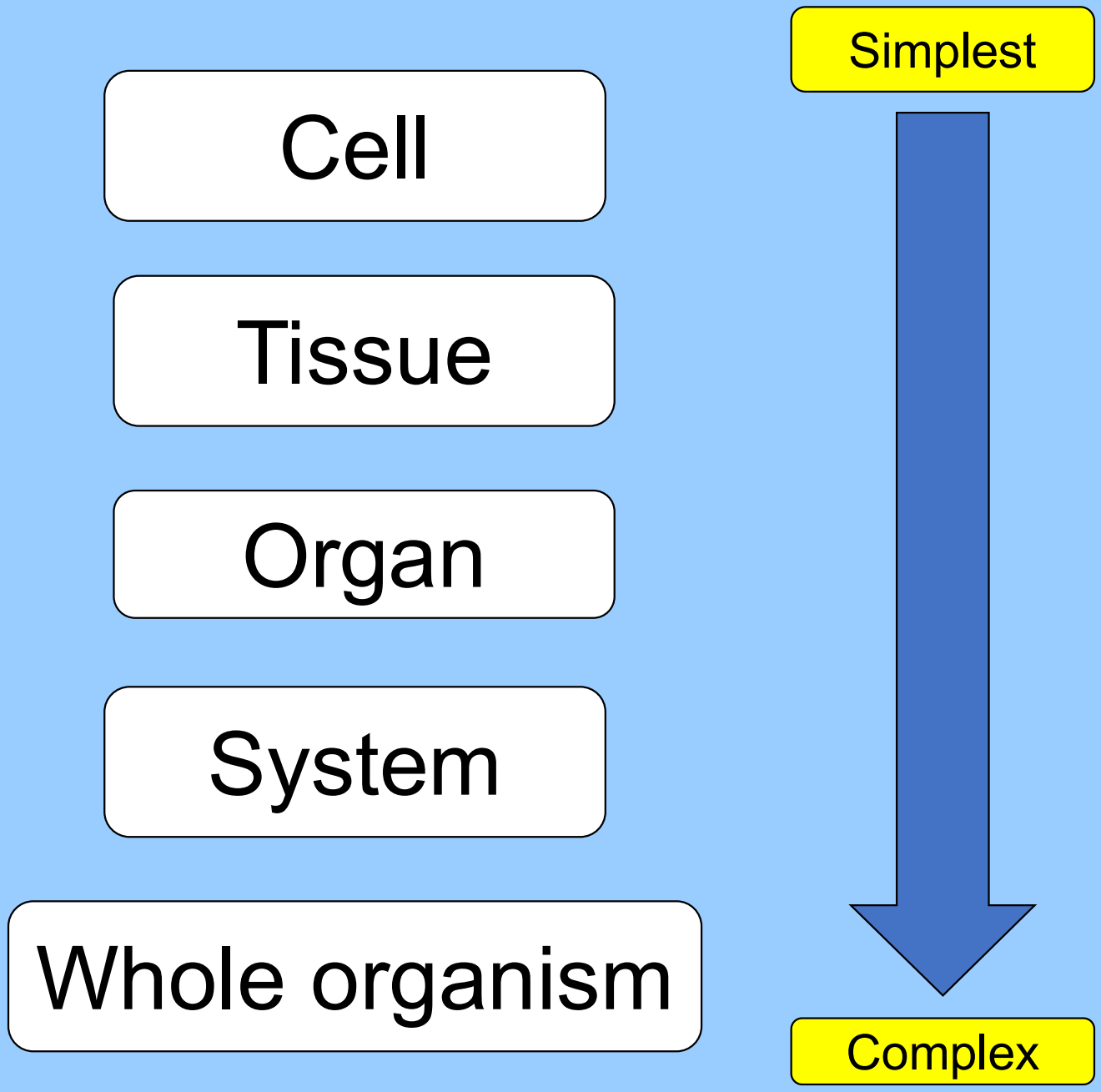
Whole organism

Organ

Sort these from simplest structure to most complicated

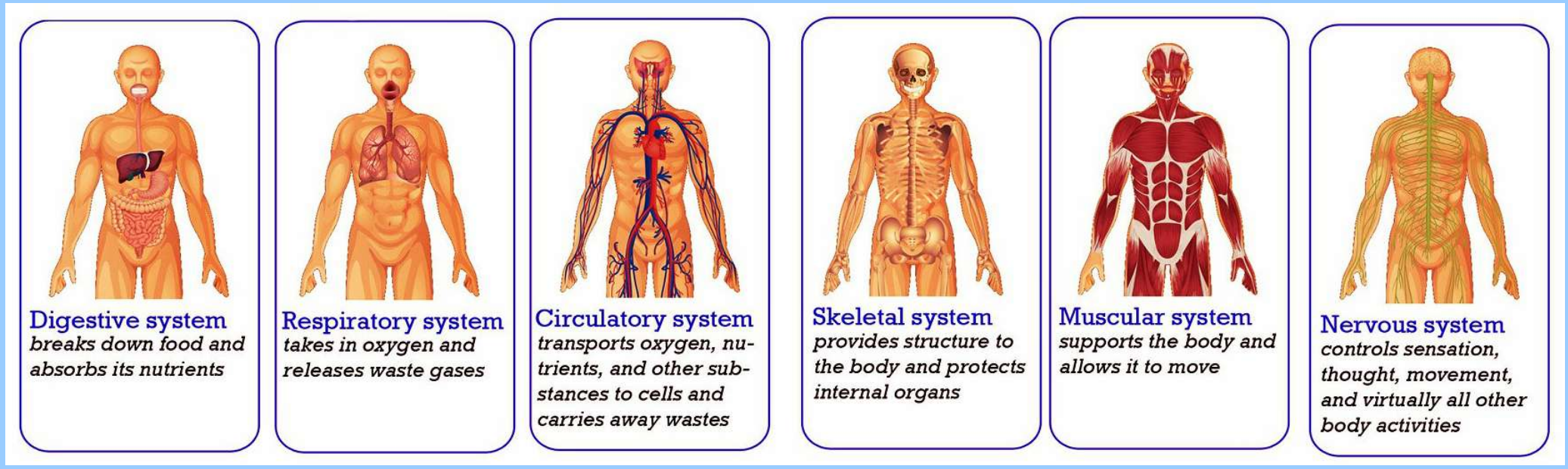
Cell

Learning Check



Body Systems

- Examples of body systems are circulatory, respiratory, digestive, skeletal, nervous and reproductive.
- Later in this unit you will learn more about some of these systems.



Build a Body Game

- Arrange yourselves into teams of 4.
- Collect a Pupil Game Sheet per player, a dice and a team set of Build a Body Game Cards.
- The youngest player rolls the dice first, each number represents a different body system:

1. Digestive system
2. Respiratory system
3. Circulatory system
4. Skeletal system
5. Muscular system
6. Nervous system

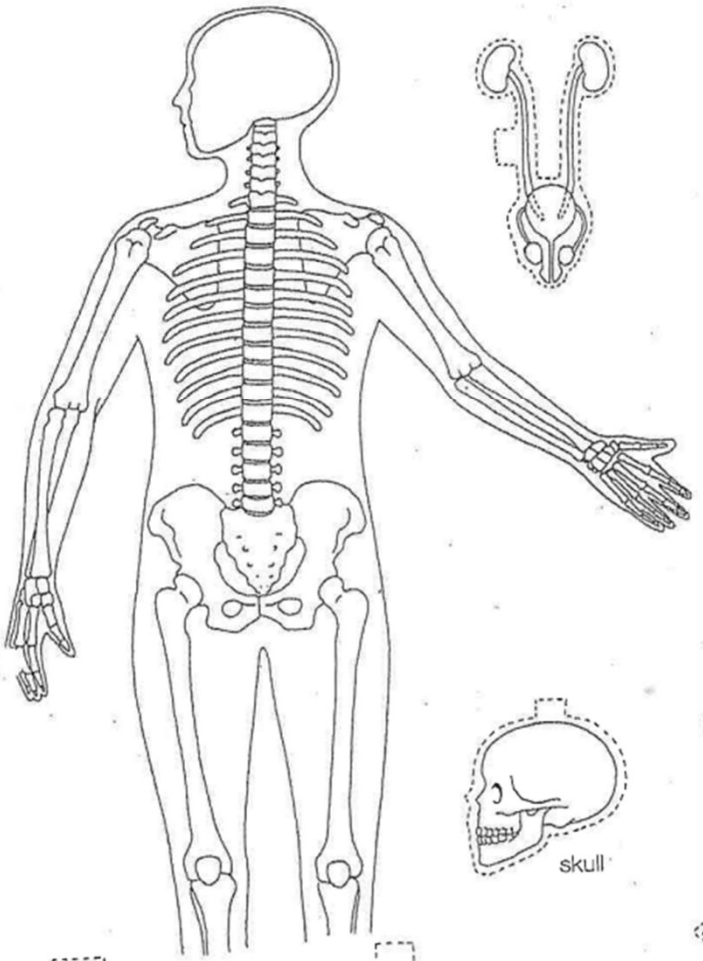
- Add the correct system to your game sheet, the first person to build a complete organism wins!

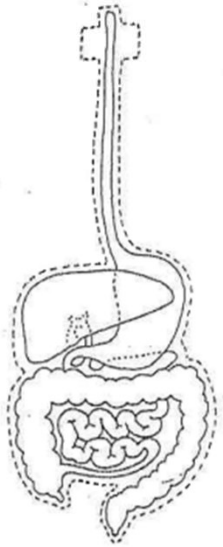
Extension Task

Body building

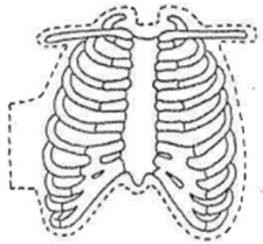
Read the instructions right through before you start

Stick the outline of the human body in your best books. Carefully cut around the dotted lines and decide on the best order in which to add the various organs and systems. Using a variety of coloured pencils, colour in all the organs you can name. You may use reference books. Now stick on the various parts by glueing the tabs only. Finally, construct a colour coded key alongside your human, naming as many organs as you can.





skull



rib-cage

Plenary

Can you name 5 keywords from today's lesson?

Blood

09/09/2026

Page 6

Starter

Write down three different cell types and describe their structure.

Blood

09/09/2026

Page 6

Learning Intentions:

- I am learning about blood.

Cell Organisation

09/09/2026

Success Criteria

- ❑ I can state the components of blood.
- ❑ I can describe the function of our blood.

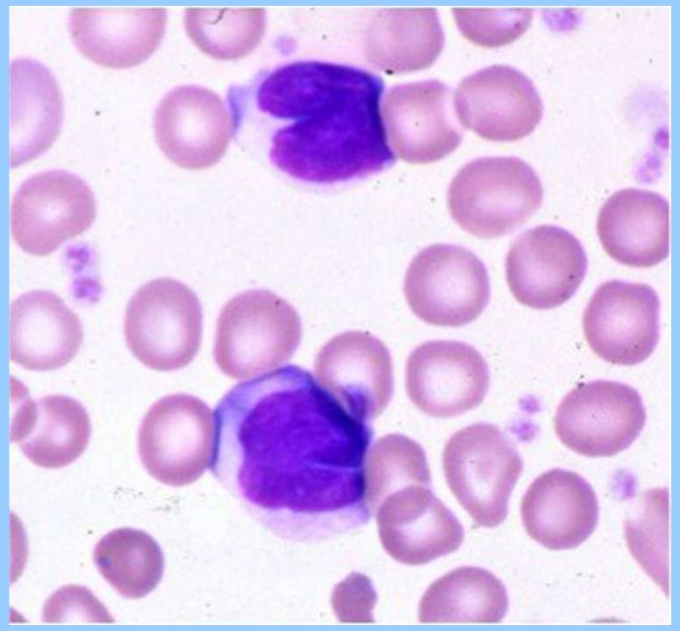
Blood

- Your blood contains red blood cells, white blood cells and plasma.

Red blood cells carry oxygen around your body.

Plasma is mainly water with dissolved food, waste materials and other chemicals in it

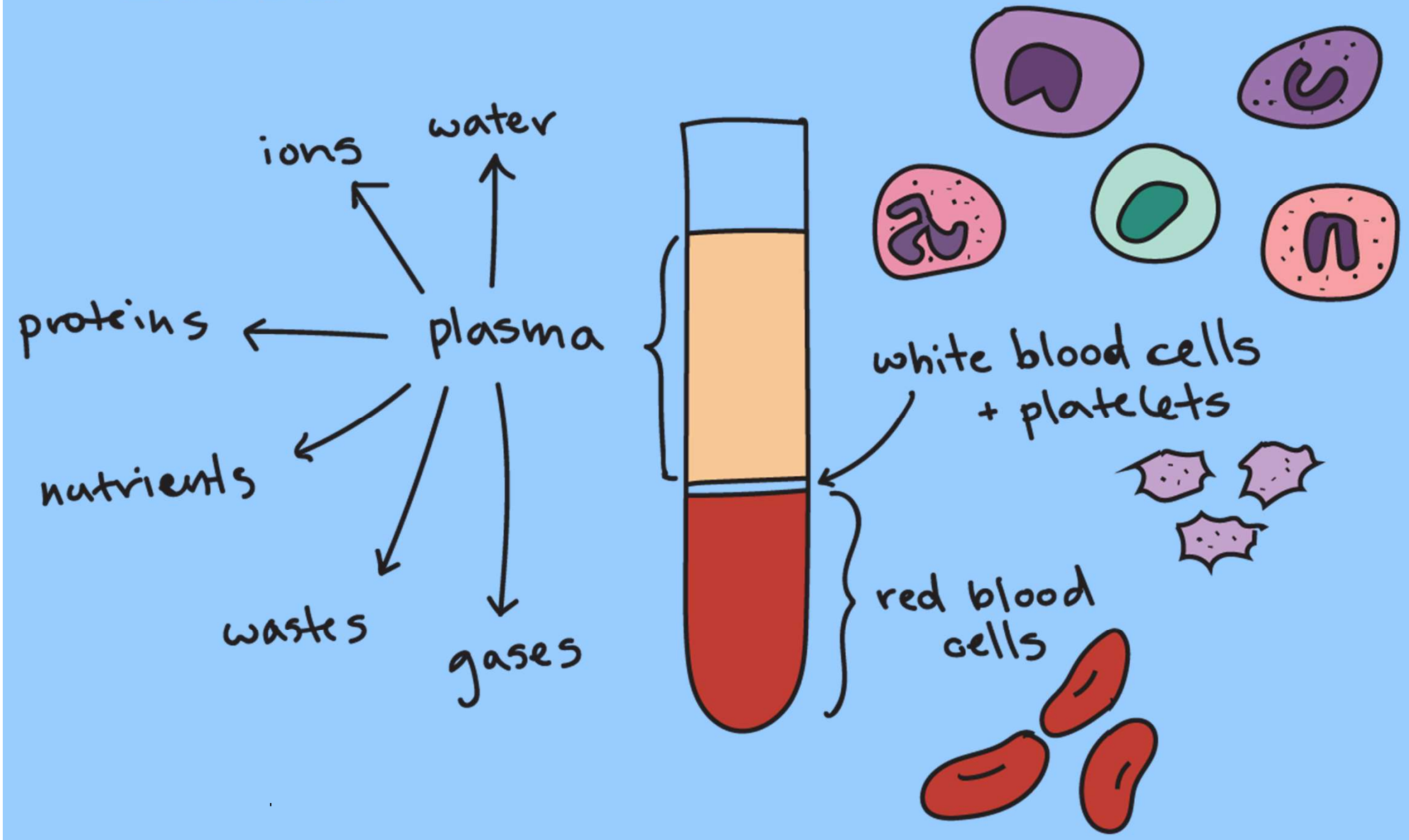
Blood



Some of your white blood cells produce ‘antibodies’ which stick to **antigens** on microbes and stop them from working and making you ill.

Other white blood cells do ‘phagocytosis’ which means that they can engulf (eat) microorganisms.

Blood


ions
water
proteins
plasma
nutrients
wastes
gases
white blood cells
+ platelets
red blood
cells

Blood

Page 6

Red blood cells carry oxygen around the body.

Plasma is mainly water with food and waste materials dissolved in it.

White blood cells play a key role in the immune system.

Blood Tests

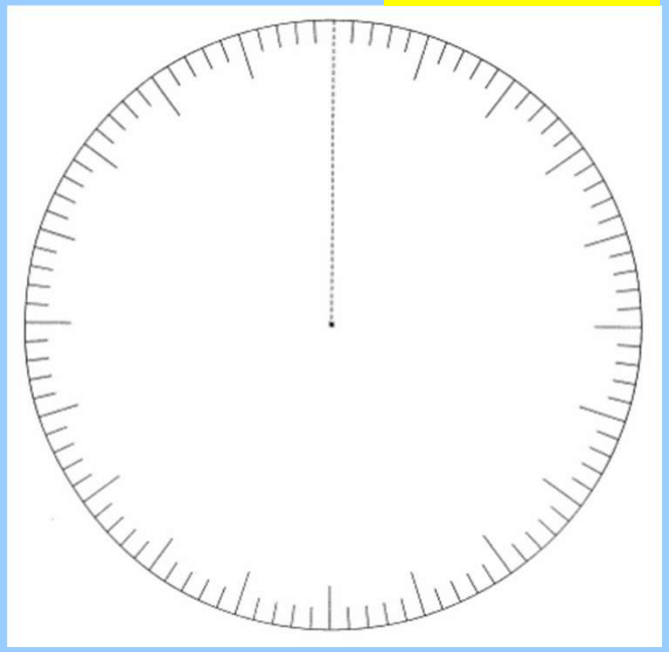
- Sometimes your doctor might want to take a blood sample.
- This blood sample would then be sent to a lab and tested by various different scientists to check for microorganisms, chemicals, and its composition.

Blood Cell Basics - Activity

Remember that blood is made up of 4 different components:

Page 7

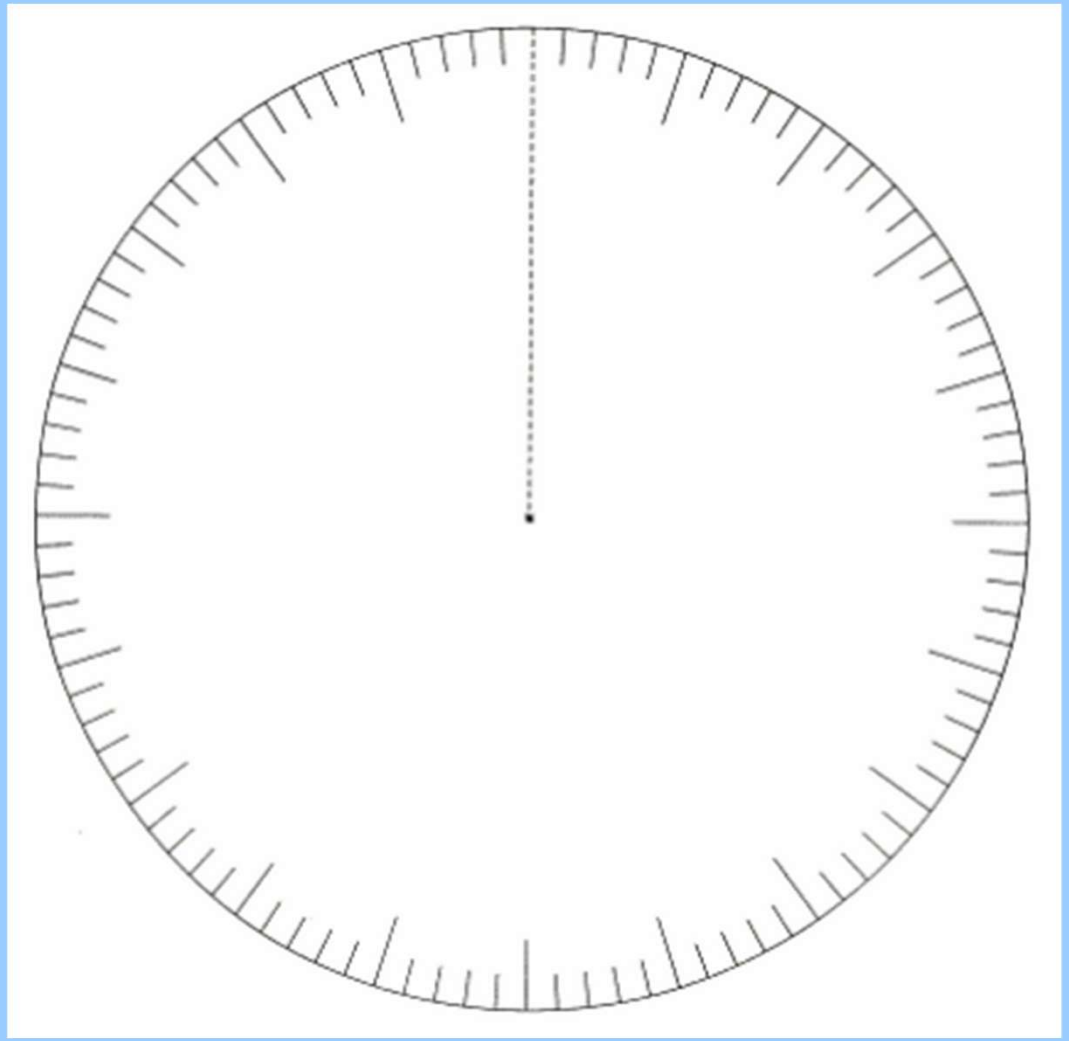
- Plasma – 55%
- Red blood cells – 43%
- White blood cells – 1%
- Platelets – 1%



Using this information, complete the pie chart in your booklet.

- Plasma – 55%
- Red blood cells – 43%
- White blood cells – 1%
- Platelets – 1%

Page 7



Plenary

Extension

Write down three things you have learned about blood today.

Write down one question you now have.

CHALLENGE QUESTION

For next lesson, try to find out what vaccinations you have had! When did you have them? What were they for? **How do they work?**

Have you heard of **anti-vaxxers?** What do they believe?

The Heart

09/09/2026

Page 8

Starter

Rearrange the following anagrams and write down the definitions.

(hint: they all relate to the blood and heart!)

1. Corbel Dolled

2. Decibel Howl Lot

3. A Lamps

The Heart

09/09/2026

Page 8

Corbel Dolled →
Red blood cell
→ carries oxygen around the body using haemoglobin

Decibel Howl Lot
→ **White blood cell**
→ helps defend the body against infection and disease

A Lamps →
Plasma
→ the liquid part of blood that transports cells, nutrients, hormones, and waste products

The Heart

09/09/2026

Page 8

Learning Intentions:

- I am learning about the heart.

The Heart

09/09/2026

Page 8

Success Criteria

- ❑ I can describe the role of the heart.
- ❑ I can label a diagram of the heart.

Think-Pair-Share

- In the first lesson, we learned about organs and body systems.

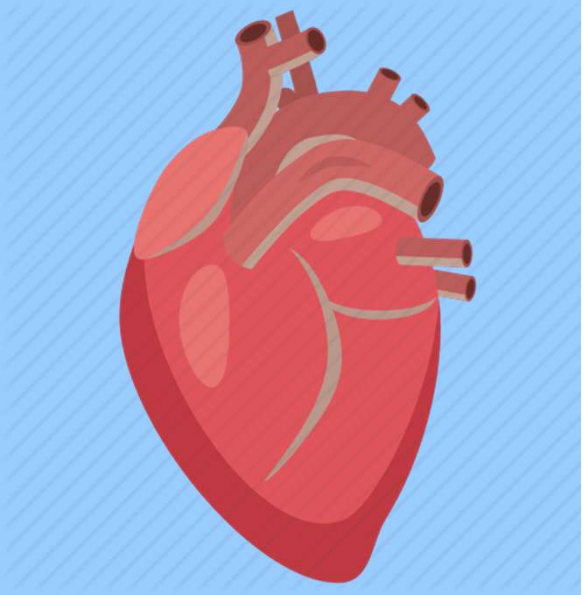
Page 8

Think-Pair-Share

Can you think which components of the body make up the circulatory system?

The heart and blood vessels containing blood

The Heart



- The heart is a muscular pump

- It sits in a cavity in your chest and is about the same size as a fist
    - Look at your fist… that's around the same size as your heart!

- Your heart's job is that it pumps blood from the lungs (where it collects oxygen) to the rest of your body tissues.

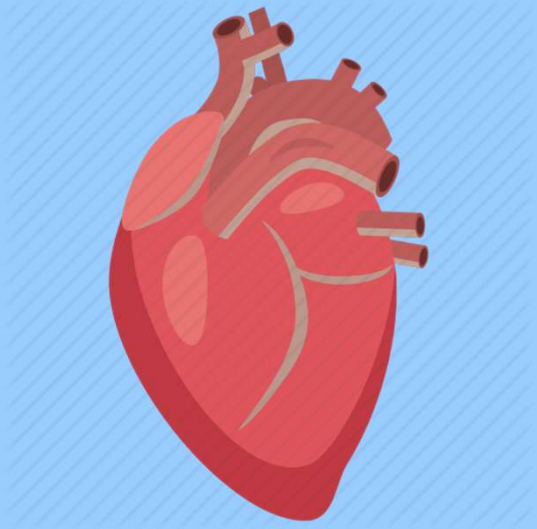
The Heart

- Video

Page 8

Video

Write down three things that you learned from the circulatory system video.



The Heart

Page 8

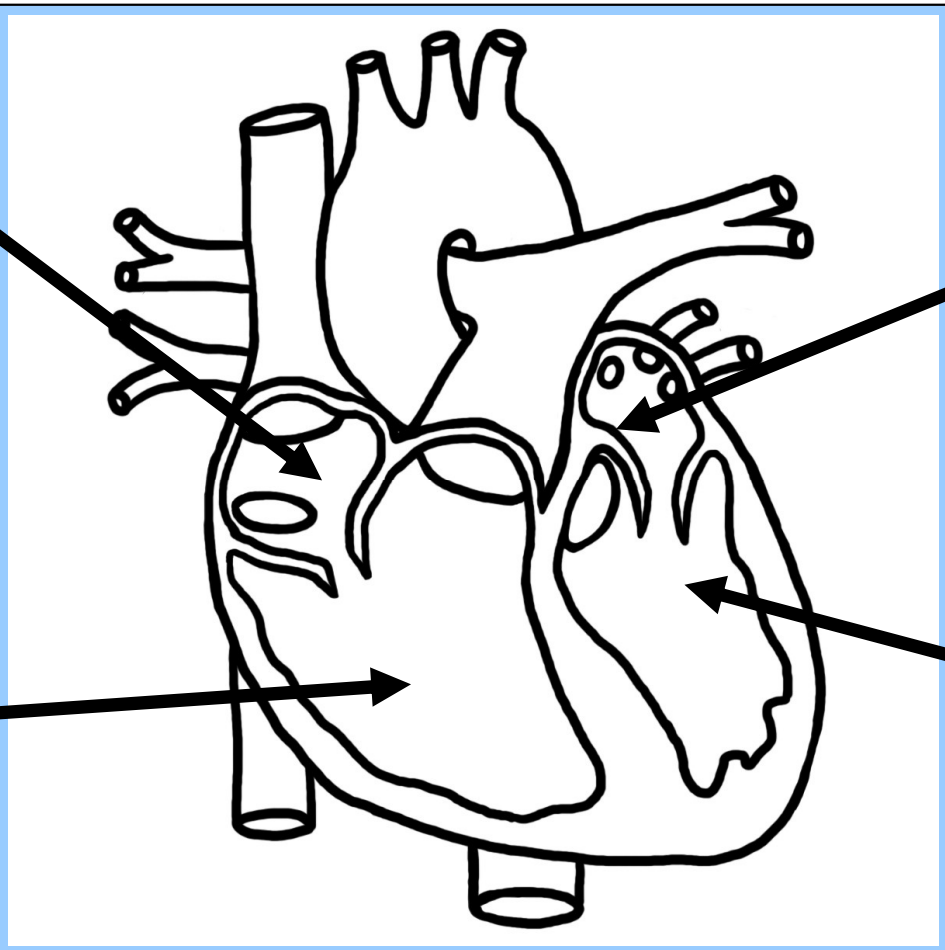
The heart is a muscular organ that pumps blood around the body to deliver oxygen.

It contains four chambers and is connected to the rest of the body via blood vessels called arteries and veins.

The Heart Diagram

On the diagram:

1. Draw arrows and label the chambers
2. Colour in the chambers red and blue to show the areas of high and low oxygen
3. Add a key



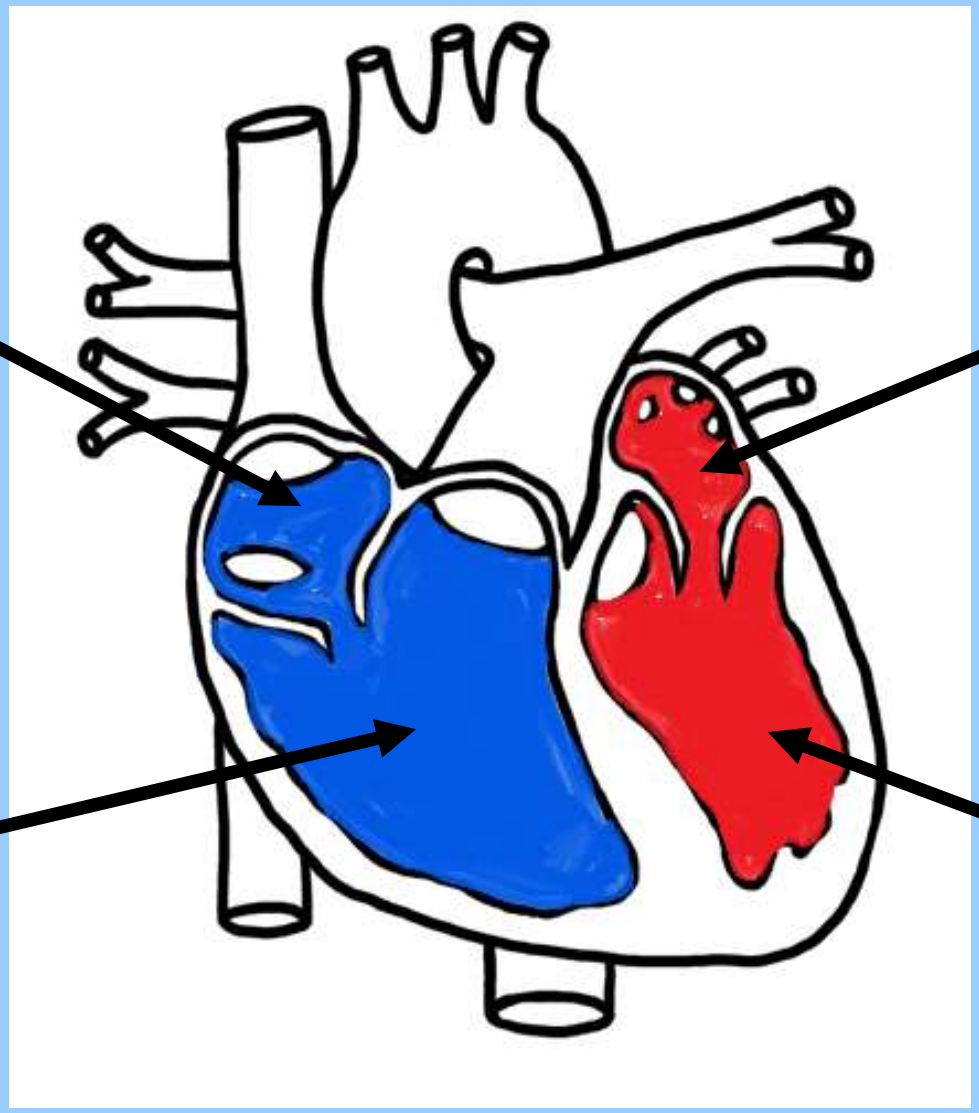
Right atrium

Left atrium

Right ventricle

Left ventricle

Heart Diagram



Right atrium

Left atrium

Right ventricle

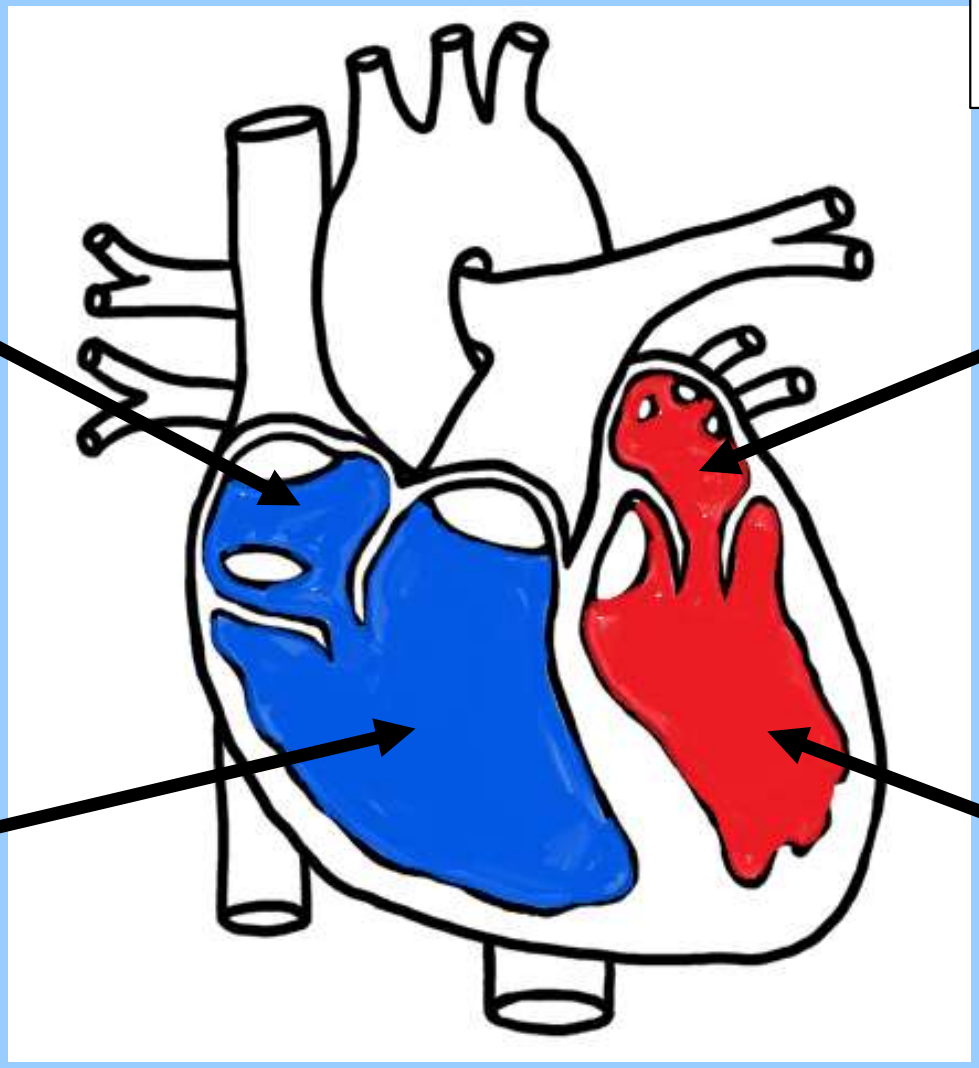
Left ventricle

Heart Diagram

Key:

= high oxygen

= low oxygen



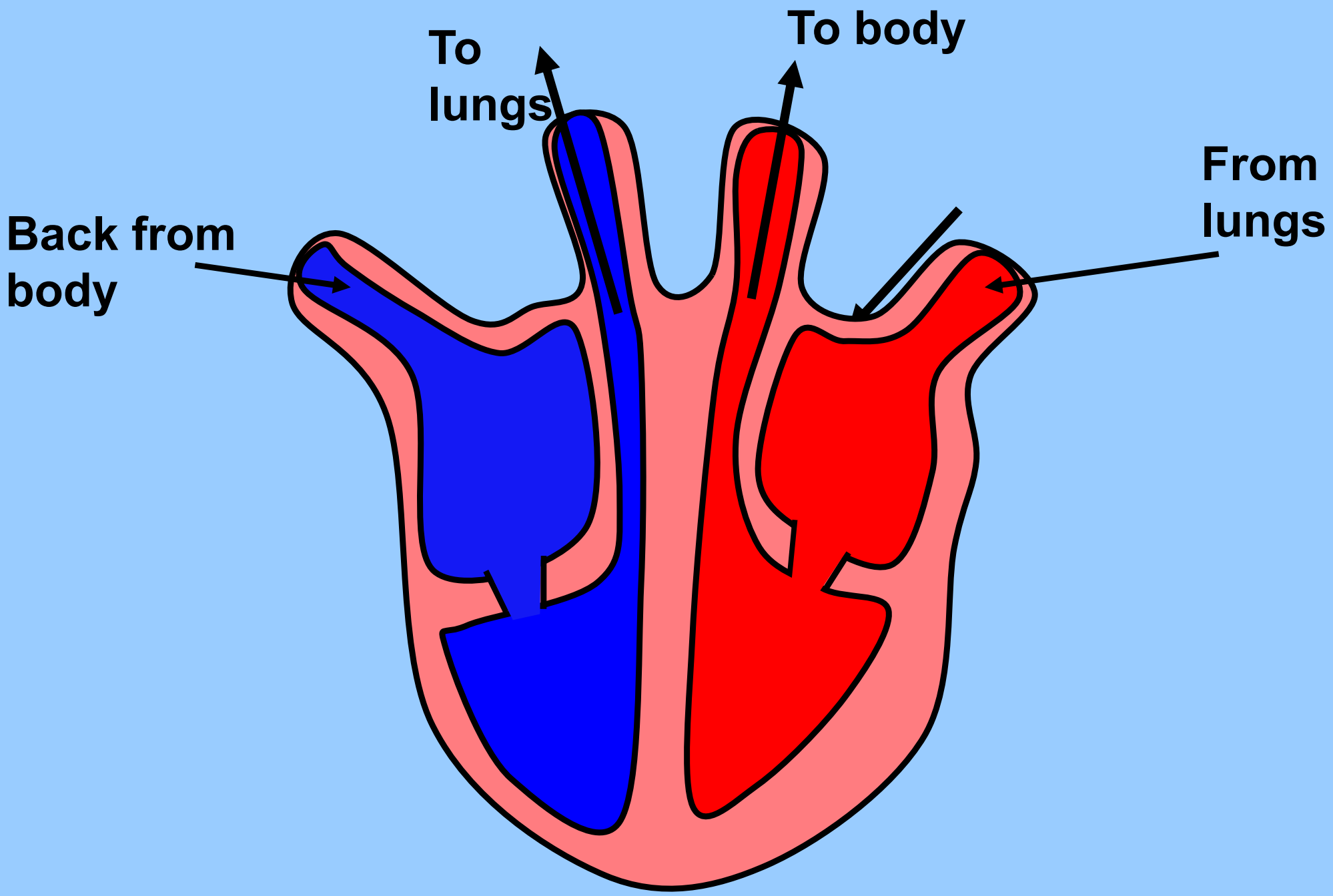
Right atrium

Left atrium

Right ventricle

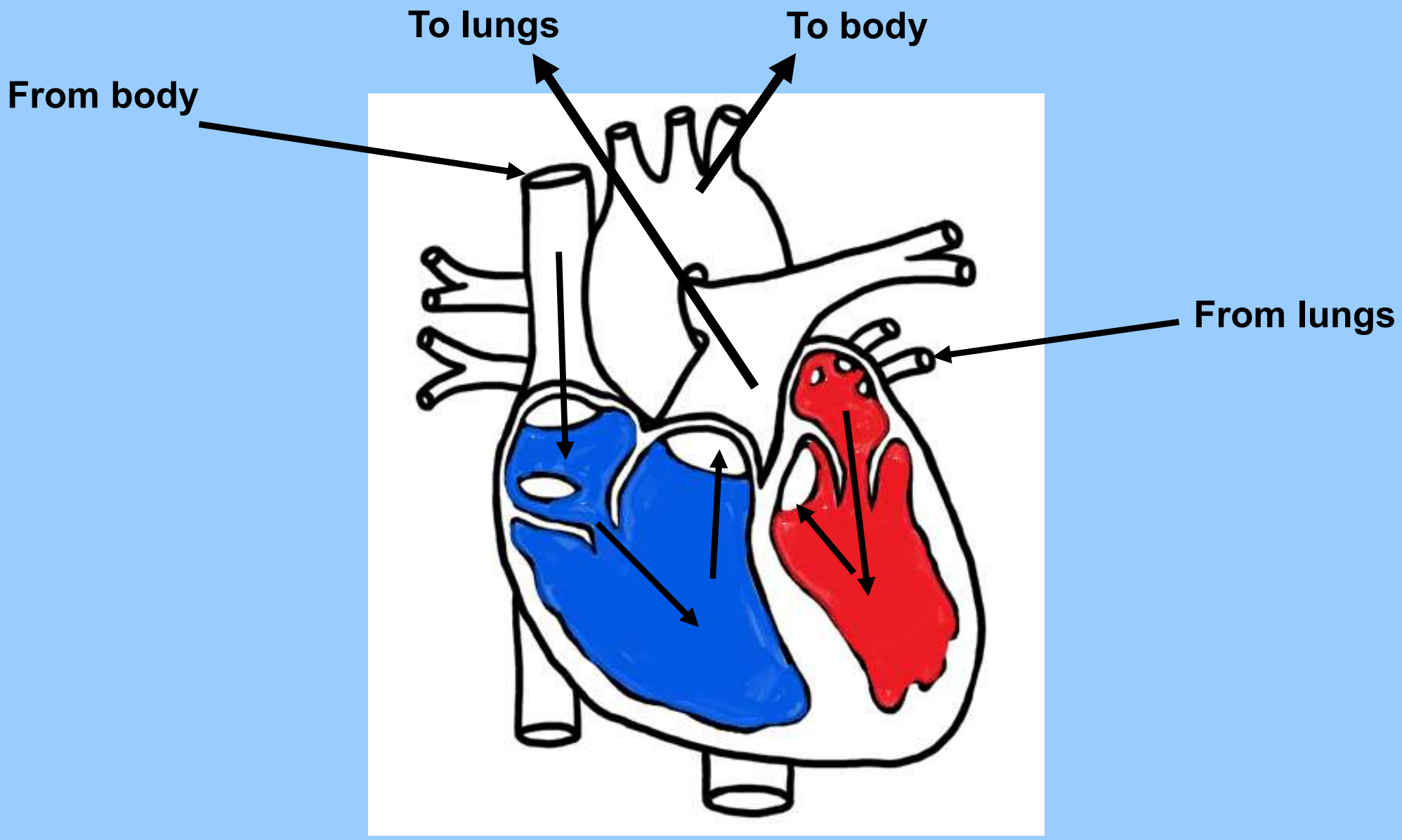
Left ventricle

Direction of blood flow



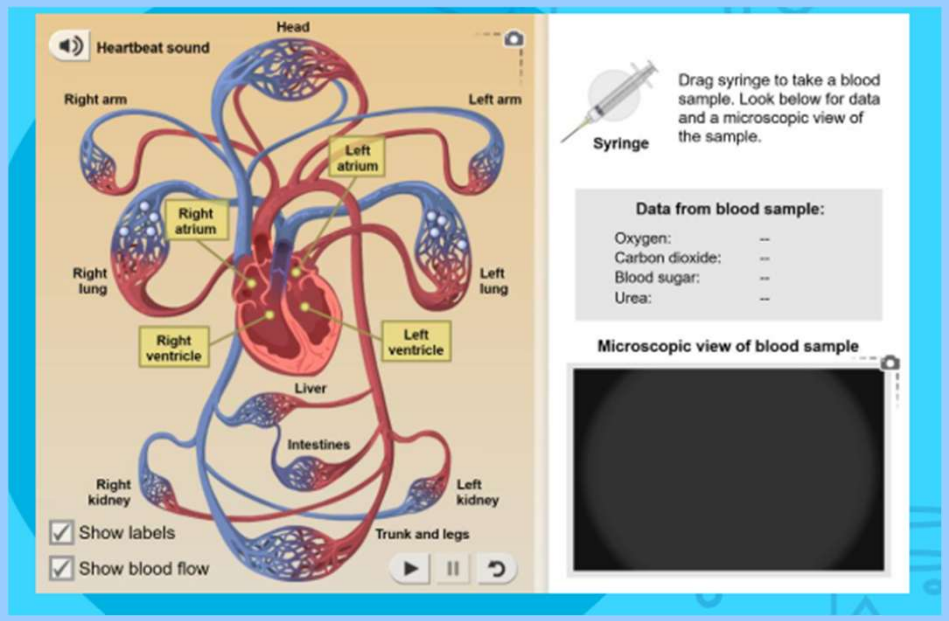
Extension

Add labels to show the direction of blood flow.



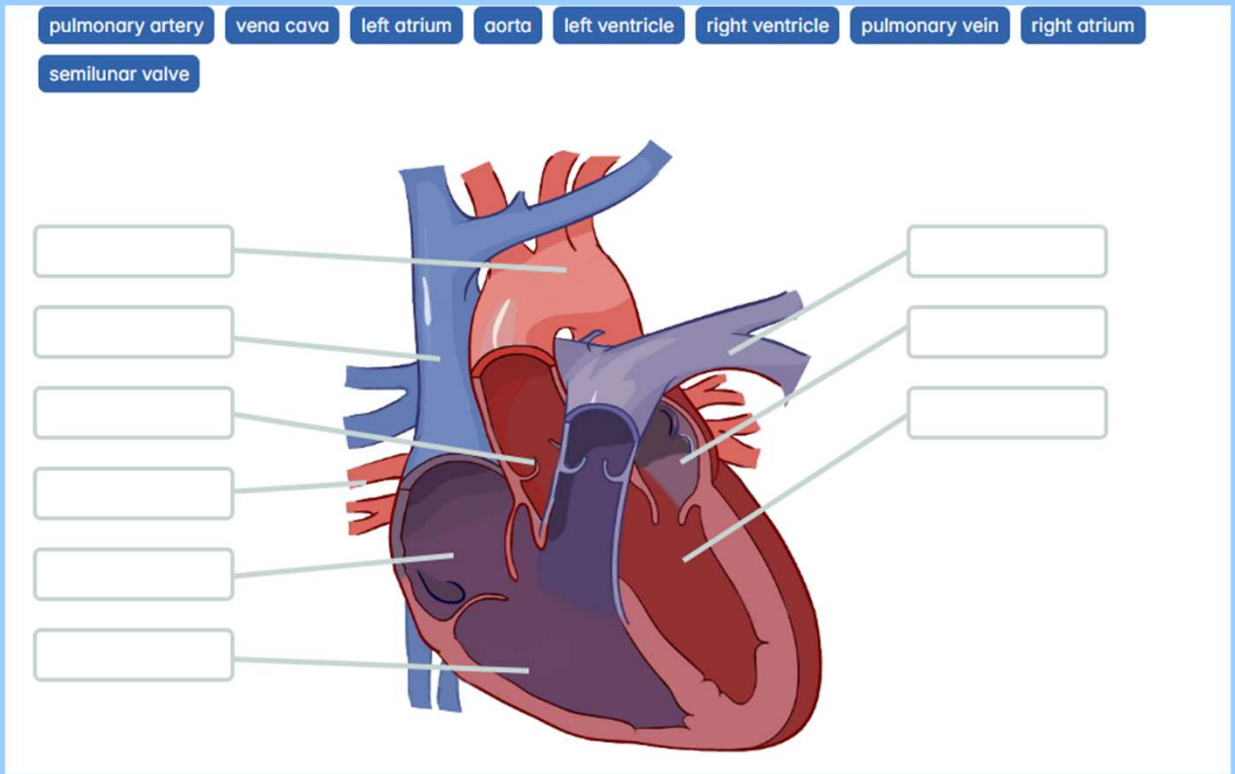
Extension: Flow of Blood – Virtual Lab

- https://gizmos.explorelearning.com/find-gizmos/lesson-info?resourceId=662



Let’s look at other structures in the heart!

- https://www.sciencelearn.org.nz/labelling_interactives/1-label-the-heart



Plenary – Spot the mistake!

Copy and complete the sentences by fixing the errors:

- The body system which transports blood carrying useful substances around the body is the digestive system.
- The function of the heart is to help you breathe.

CHALLENGE ACTIVITY

For next lesson, check out the ‘Microbe Magic’ website to explore the Circulatory System!

The Flow of Blood

09/09/2026

Page 10

Starter

1. Name the four chambers of the heart.
2. Explain why we coloured in the right side of the heart blue and the left side of the heart red.

The Flow of Blood

09/09/2026

Page 10

Learning Intentions:

- I am learning about the flow of blood.

The Flow of Blood

09/09/2026

Page 10

Success Criteria

- ❑ I can describe the flow of blood through the heart.
- ❑ I can explain how oxygen travels around the body.
- ❑ I can take part in a heart dissection.

Flow of Blood Through the Body

Rearrange the boxes

a. The blood delivers oxygen to the body tissues to allow them to have enough energy.

b. It then flows back into the left side of the heart where it is pumped out again to the rest of the body.

c. The blood flows into the lungs from the right side of the heart and collects oxygen (from the air we breathe).

Flow of Blood Through the Body

Page 10

The blood flows into the lungs from the right side of the heart and collects oxygen (from the air we breathe).

Flow of Blood Through the Body

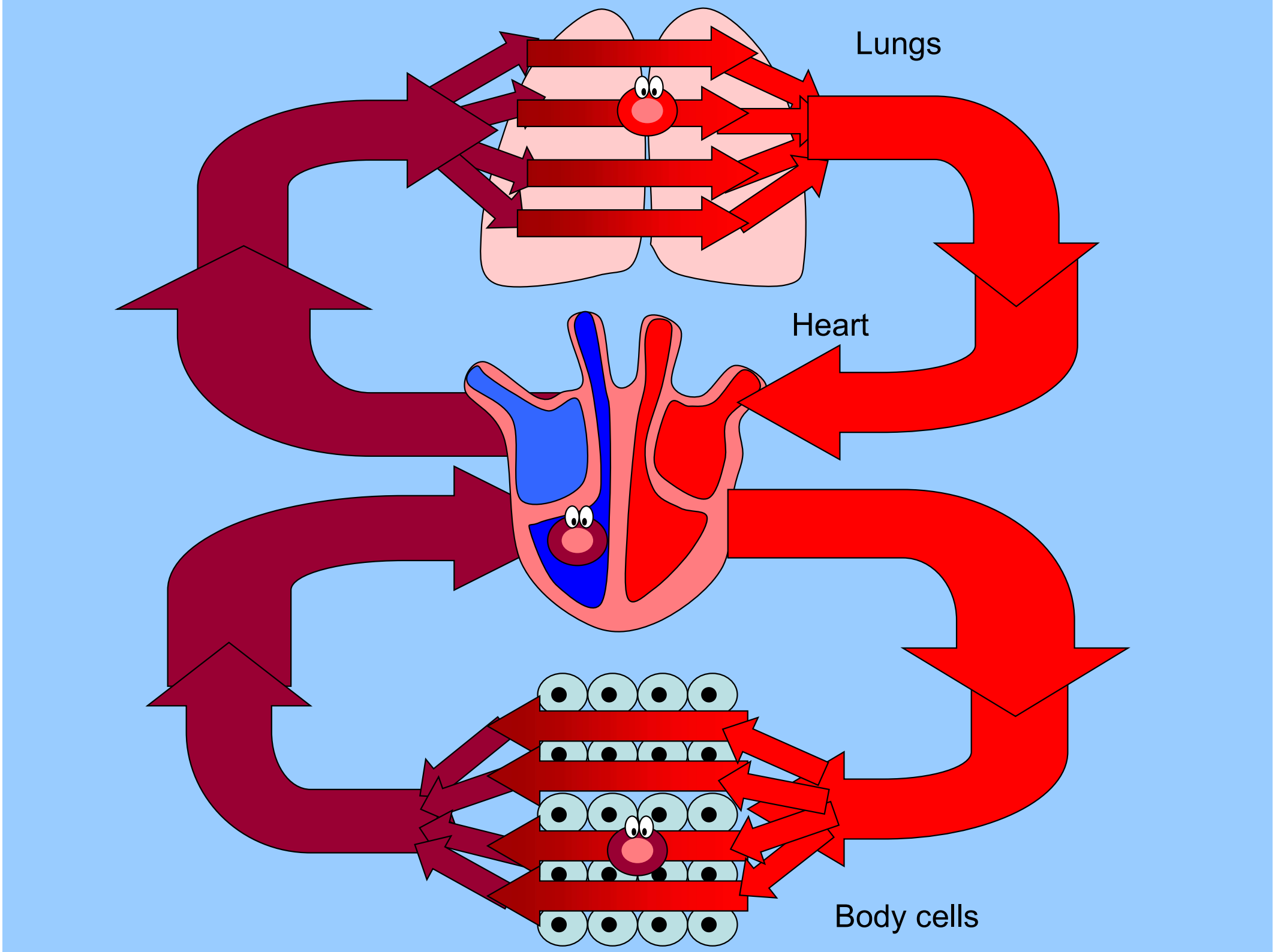
Page 10

It then flows back into the left side of the heart where it is pumped out again to the rest of the body.

Flow of Blood Through the Body

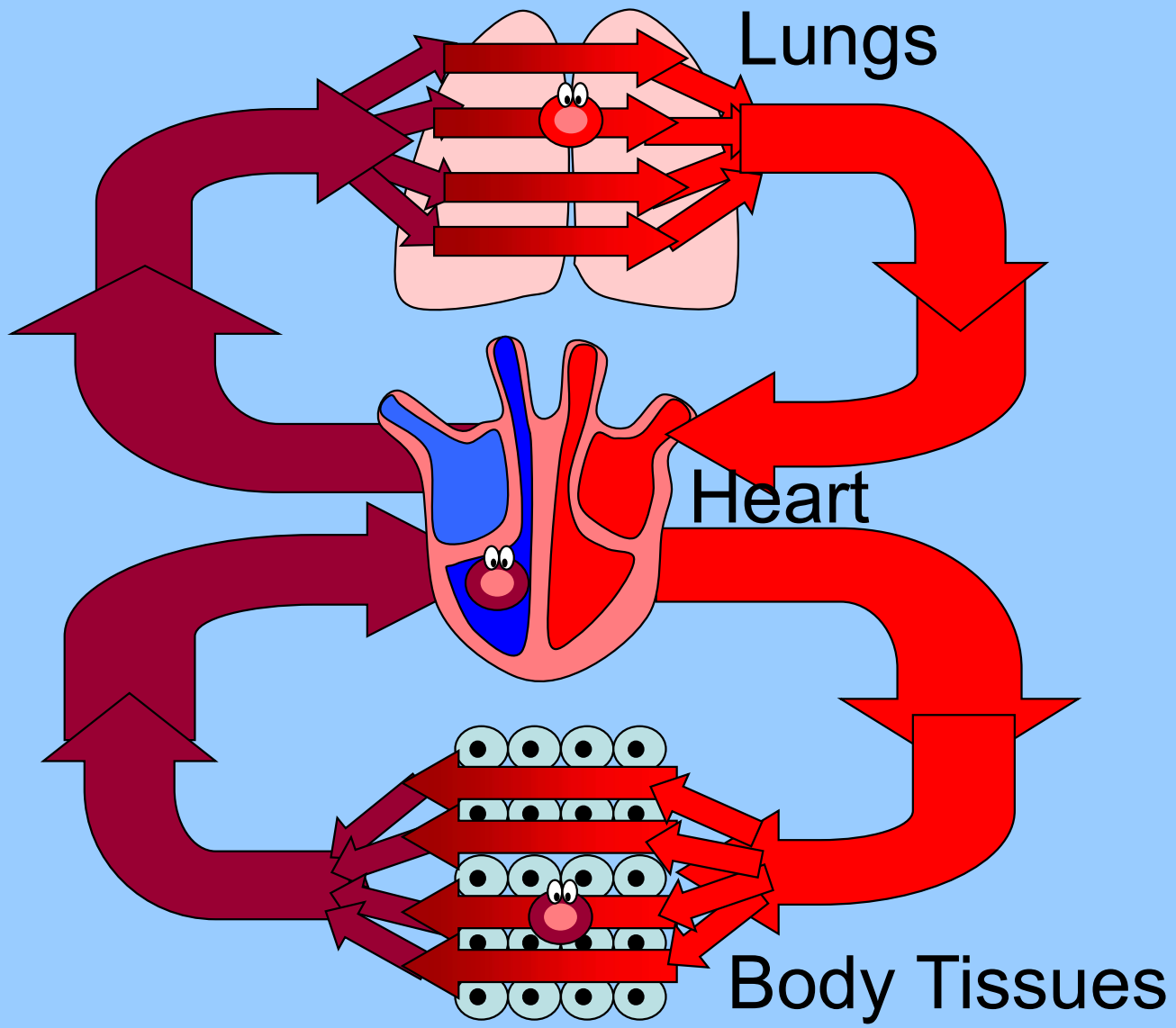
Page 10

The blood delivers oxygen to the body tissues to allow them to have energy.


Lungs
Heart
Body cells

Flow of Blood

Label the lungs, heart and body tissues on the diagram below.



Feel the beat

Before we look at the structure of the heart, lets check to see if those tickers are ticking!

You should do an activity for 30 seconds (try hopping on the spot) then check your arteries for a pulse.

Try holding your radial artery (inside your wrist) or carotid artery (on the neck) for 30 seconds.

- What does your heart sound like?
- How fast is it beating?
- What's the pattern?

Heart Dissection

You will now have the chance to watch a heart being dissected.

You should pay close attention to:

- The chambers of the heart
- The valves
- The blood vessels

Heart Dissection

Page 11

Describe what you saw in the heart dissection and draw a diagram in your booklet.

Heart Dissection

https://www.bbc.co.uk/iplayer/episode/b09d4vx2/operation-ouch-series-6-8-marvellous-valves

28 mins

Blood Vessels - Extra

Starter

Use the word bank to complete the sentences below:

blood, lower, upper, contracts

Blood enters the _____ chambers of the heart. The muscle tissue in the upper chambers _____ and pushes the blood into the _____ chambers. The lower chambers then contract and push the _____ out of the heart.

Blood Vessels

09/09/2026

Page 12

Learning Intentions:

- I am learning about the structure and function of blood vessels.

Blood Vessels

09/09/2026

Page 12

Success Criteria

- ❑ I can describe the structure of blood vessels.
- ❑ I can describe the fuction of blood vessels.

The Path of Blood Round the Body

Can you correct this?

- Blood comes back from the body into the right atrium, up into the right ventricle which pumps it to the body to pick up oxygen and drop off carbon dioxide.

- It comes back into the right atrium, down into the left ventricle which pumps it round the body to all the cells. The right ventricle wall is much thicker as it has to pump blood much further.

The Path of Blood Round the Body

The corrected version!

- Blood comes back from the body into the right atrium, **down** into the right ventricle which pumps it to the **lungs** to pick up oxygen and drop off carbon dioxide.

- It comes back into the **left** atrium, down into the left ventricle which pumps it round the body to all the cells. The **left** ventricle wall is much thicker as it has to pump blood much further.

Blood Vessels

Arteries carry blood away from the heart.

Veins carry blood to (in to) the heart.

Capillaries connect veins to arteries. They are also very thin which allows materials to pass between the blood into tissues.

Blood Vessels

Complete the table below in your booklet.

Blood Vessel	Function	Example
Artery	Carry blood **AWAY** from the heart	Aorta, pulmonary artery
Vein		
Capillary		

Blood Vessels

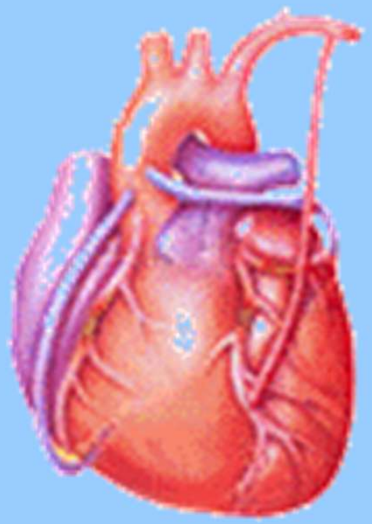
Complete the table below in your booklet.

Blood Vessel	Function	Example
Artery	Carry blood **AWAY** from the heart	Aorta, pulmonary artery
Vein	Carry blood back **IN** to the heart	Vena cava, pulmonary vein
Capillary		

Blood Vessels

Complete the table below in your booklet.

Blood Vessel	Function	Example
Artery	Carry blood **AWAY** from the heart	Aorta, pulmonary artery
Vein	Carry blood back **IN** to the heart	Vena cava, pulmonary vein
Capillary	Connects arteries to veins, and exchange of materials between the blood and tissue cells	



For children of ages 6 to 15,
the **normal** resting **heart rate** is between 70 and 100 beats per minute (bpm) and for adults it is between 60 and 100 bpm.

If someone's average heart beat was 80 bpm for their whole life and they lived to be 85, how many times would their heart beat in their lifetime?

Beats per minute = 80
beats per hour = 80 x 60 = 4800
beats per day = 4800 x 24 = 115 200
beats per year = 115 200 x 365 = 42 048 000
beats over 85 years = 42 048 000 x 85 = 3 574 080 000

Over 3.5 billion times in their lifetime!!

Heart Rate Investigation

What do you think happens to your heart rate when you exercise?

Why?

When you exercise your muscle cells need lots of **energy**.

The heart and lungs therefore work more to get the oxygen and glucose to the muscles.

You are going to investigate the effect of **exercise** on **heart rate**.

How can you measure how fast your heart is beating?

How to measure heart rate (**pulse**):

Find the position on your neck or wrist where you can feel your pulse.

Count the number of times you feel the pulse in 20 seconds and multiply this by 3.

This will give you the value for beats per minute (bpm)

e.g. 26 (in 20 seconds) x 3 = 78 bpm

Heart Rate Investigation

Heart Rate Investigation

Aim (What do you hope to find out?):

_____

_____

Materials & method:

- What will you do?

_____

_____

_____

- What equipment will you need?

_____

_____

- What is the independent variable? (The variable you are changing)

_____

- What is the dependent variable? (The variable you are measuring)

_____

- What variables will you keep the same?

_____

Heart Rate Investigation

Hypothesis (What do you predict will happen?):

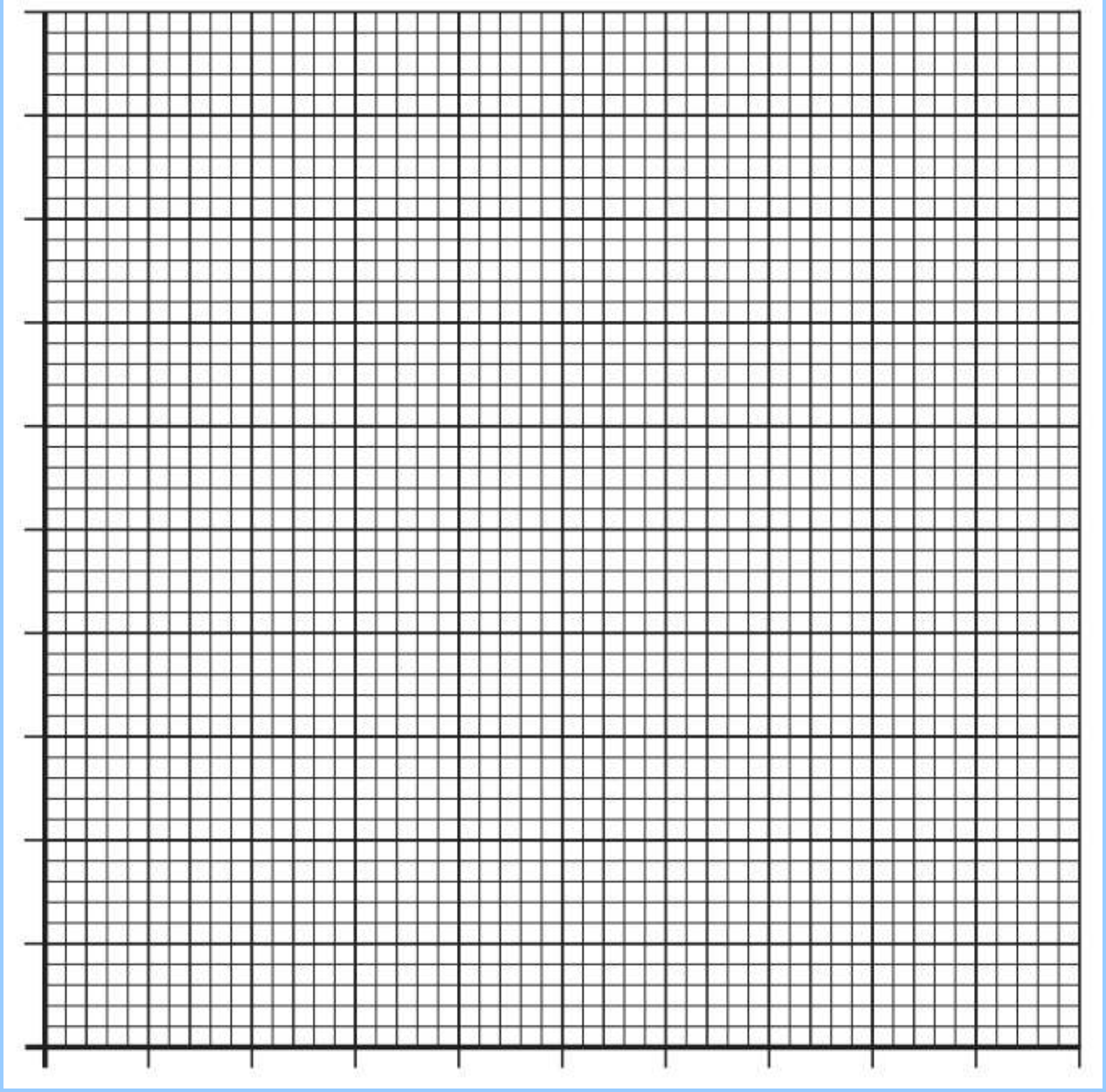
_____

_____

Results:

Type of Exercise	Heart Rate (Beats in 20 seconds)	Heart Rate (Beats per minute)

Graph:
Draw a bar chart to show how the type of exercise affects your heart rate (bpm).



Heart Rate Investigation

Conclusion:

_____

_____

Evaluation (If you were to do the investigation again, how could you improve your results?):

_____

_____

Plenary

- Write on a post-it note 3 things you have learned today about the heart.

09/09/2026

The Lungs

Page 16

Starter

Did you know… your nostrils take turns breathing air in and out?

Prove it!

Did you know…your nostrils take turns taking breathing air in and out?

- **Prove it!** - breathe down gently once onto a small mirror placed just above your upper lip.
- The moist breath will cloud up the mirror making an area of condensation for each nostril.
- Amazingly, one area will be larger than the other, indicating that more air is coming out of one nostril than the other.
- If you were to repeat this exercise in several hours you will find that the nostrils have reversed themselves.

The Lungs

09/09/2026

Page 16

Learning Intentions:

- To learn about the respiratory system
- To learn about how we breathe

The Lungs

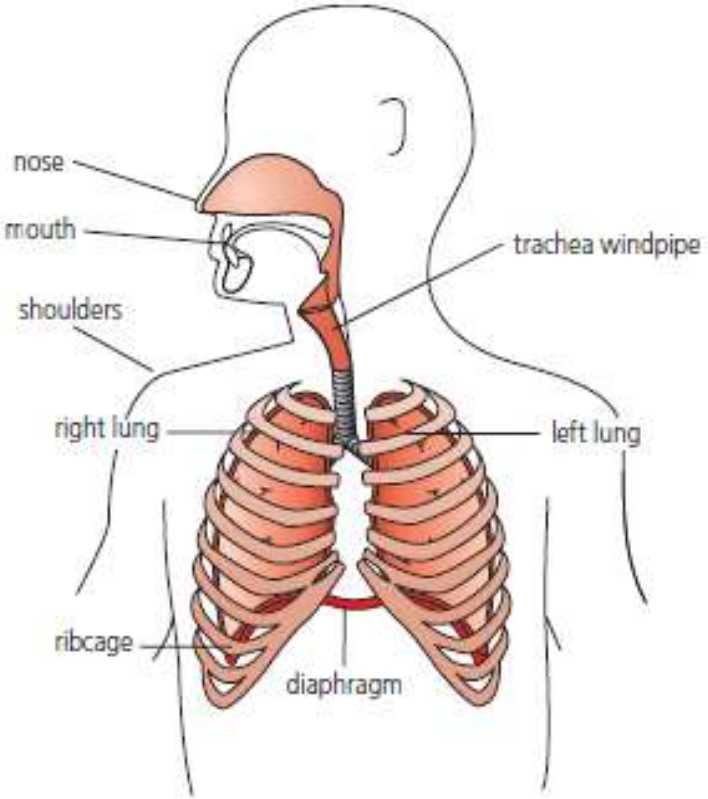
09/09/2026

Page 16

Success Criteria

- ❑ I can state the parts of the respiratory system.
- ❑ I can explain how air enters the lungs.
- ❑ I can explain how oxygen enters the blood.
- ❑ I can describe the function of each part of the respiratory system.

Something about the respiratory system



What does it do?

The respiratory system allows you to breathe.

What is in it?

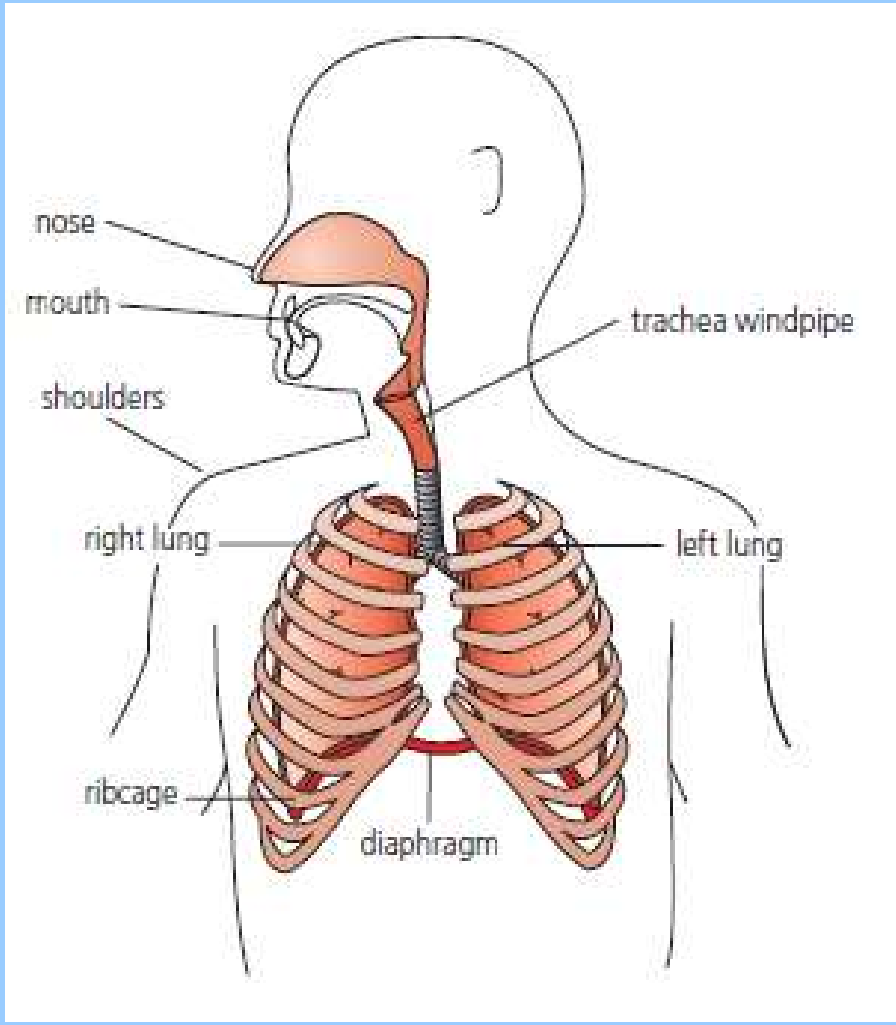
The respiratory system includes your nose, mouth and windpipe. This system carries air in and out of your lungs. The respiratory system also includes the muscles that surround your lungs – the diaphragm on the chest floor and the shoulders and ribs that surround it.

What other systems does it work with?

The respiratory system helps oxygen to enter your bloodstream as well as removing carbon dioxide from your lungs (carbon dioxide removal is essential to prevent the blood pH changing). The muscular system makes the chest move air in and out of the lungs. The skeleton protects the chest.

The Respiratory System

Page 16

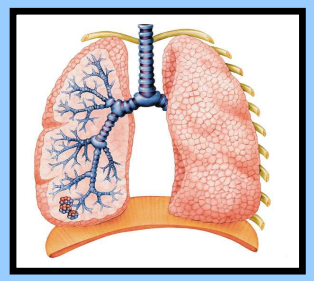


The lungs are the organs of gas exchange.

Our cells need the oxygen from the air and we must get rid of the waste product carbon dioxide.

Air enters the breathing system by the nose or mouth.

Structure of the lungs

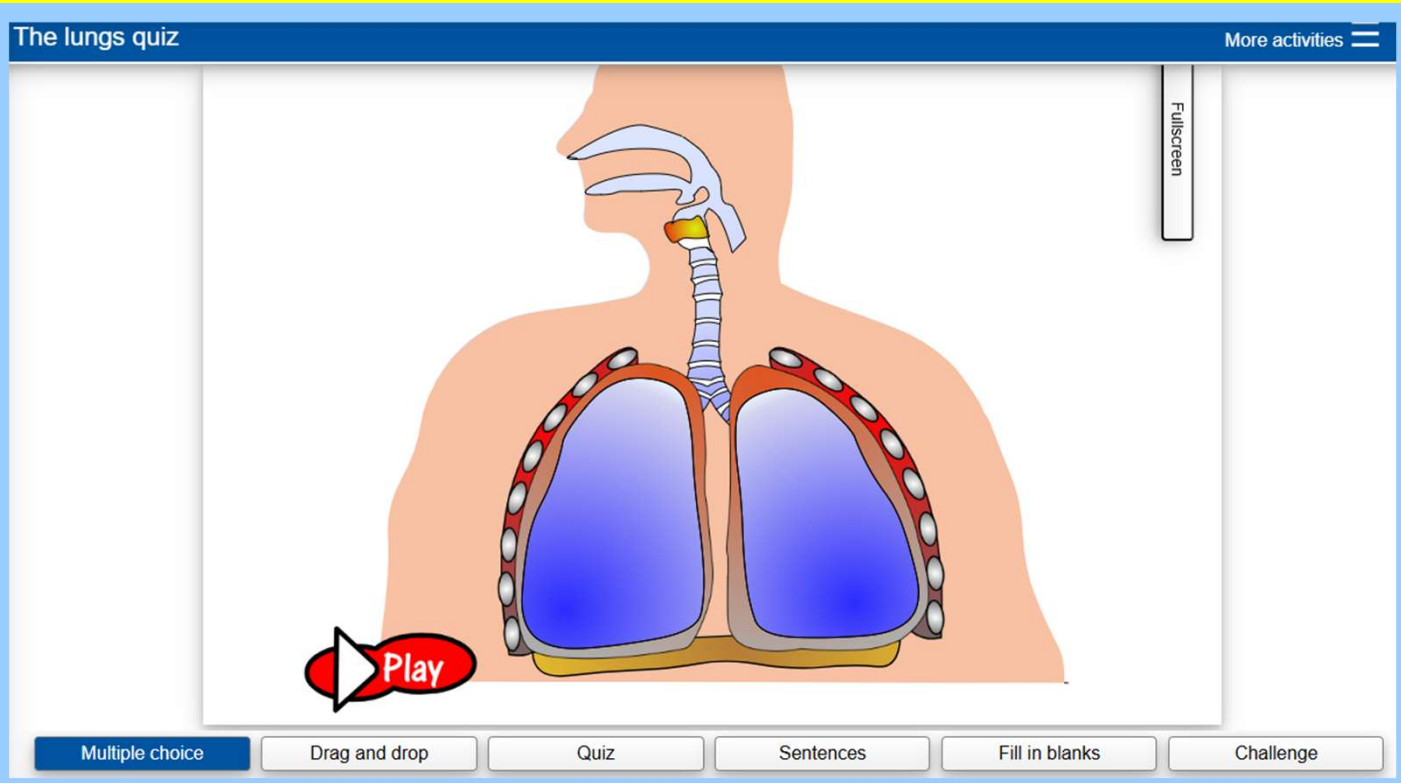


Click on the TV screen to watch the video clip about
“What do the lungs do?”

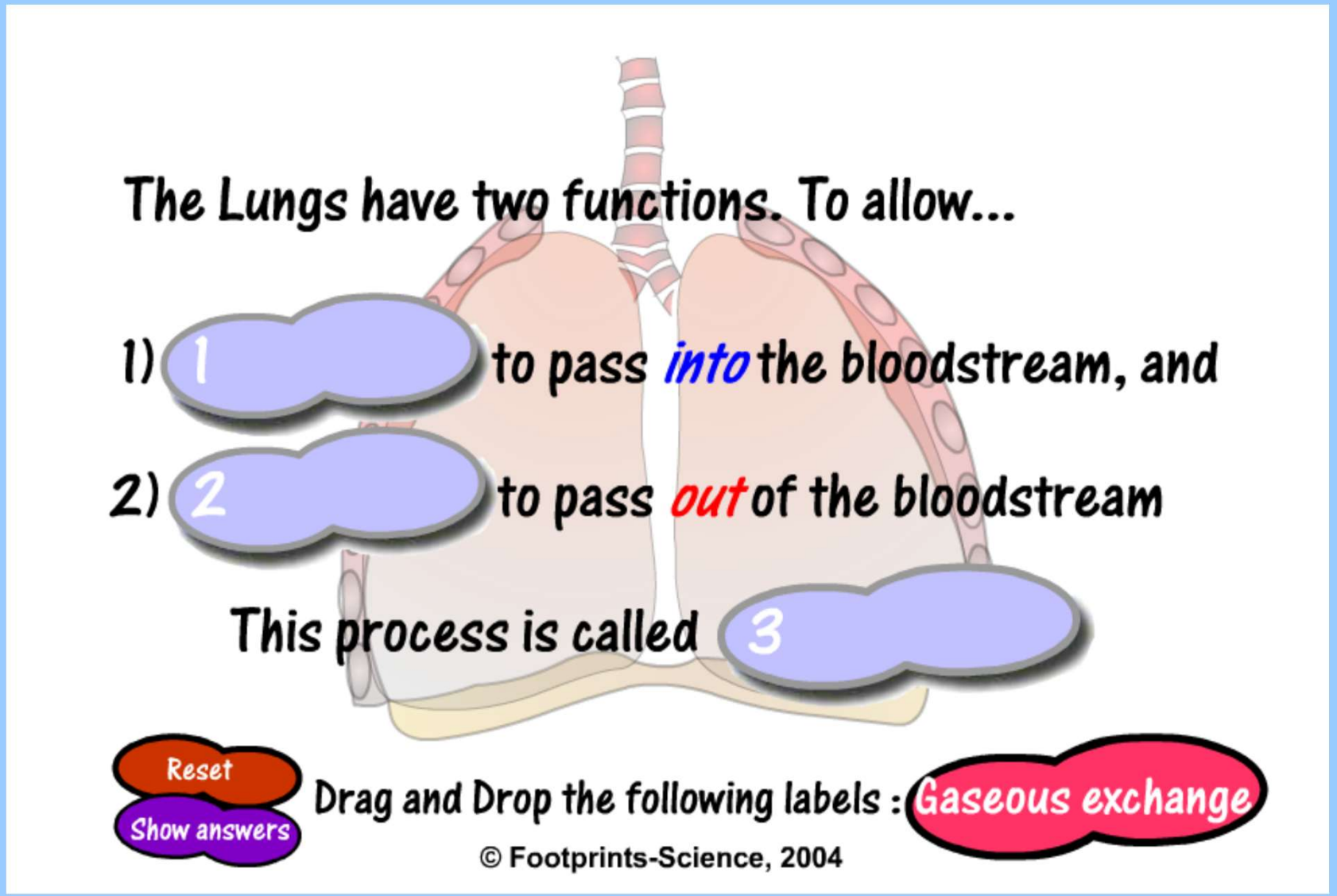
https://www.youtube.com/watch?v=8NUxvJS-_0k

The Lungs animation

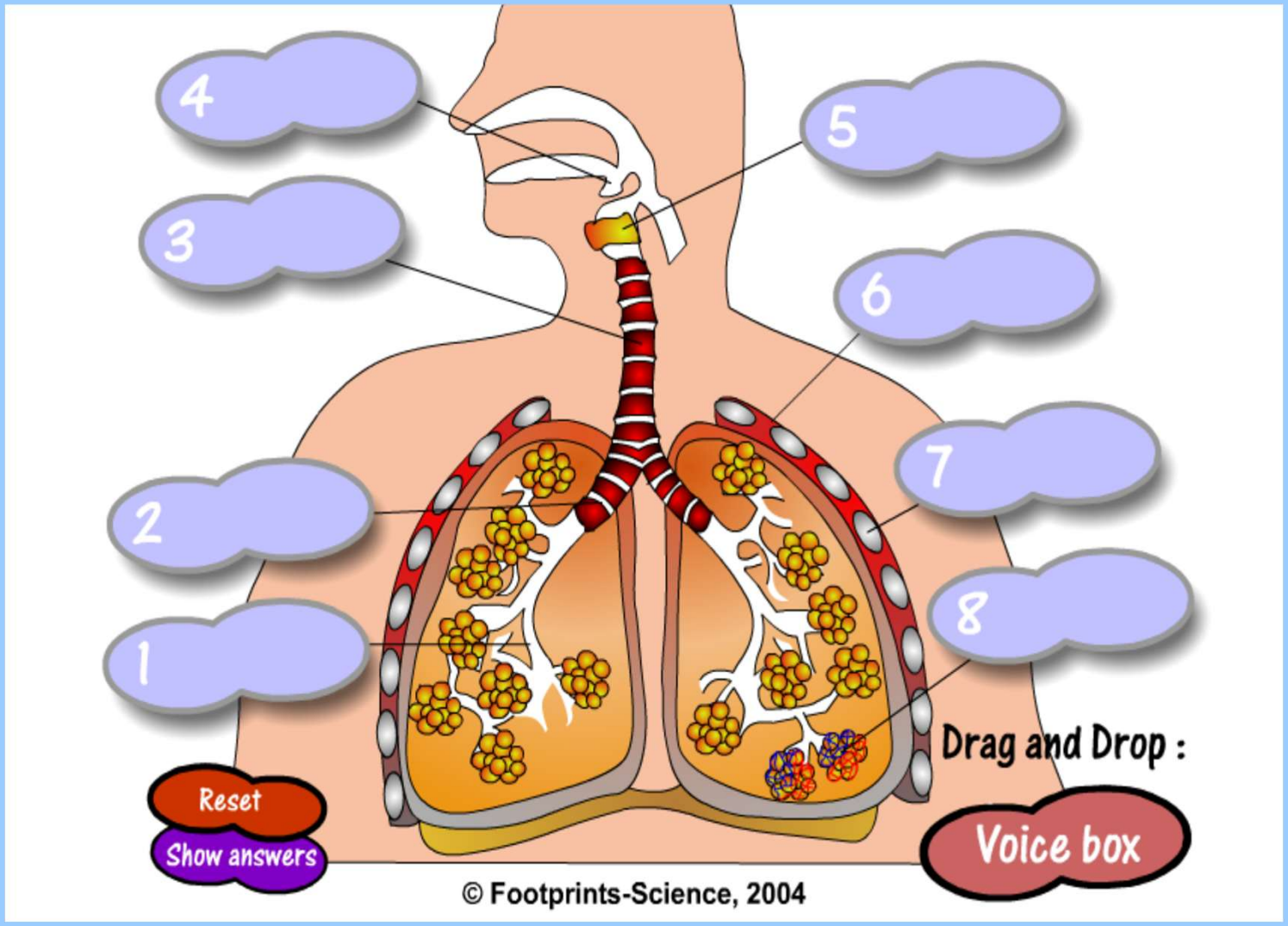
1. Scan the QR code on your iPads to access the lungs animation
2. Play to watch what happens when you breathe
3. Complete the interactive quizzes and challenges



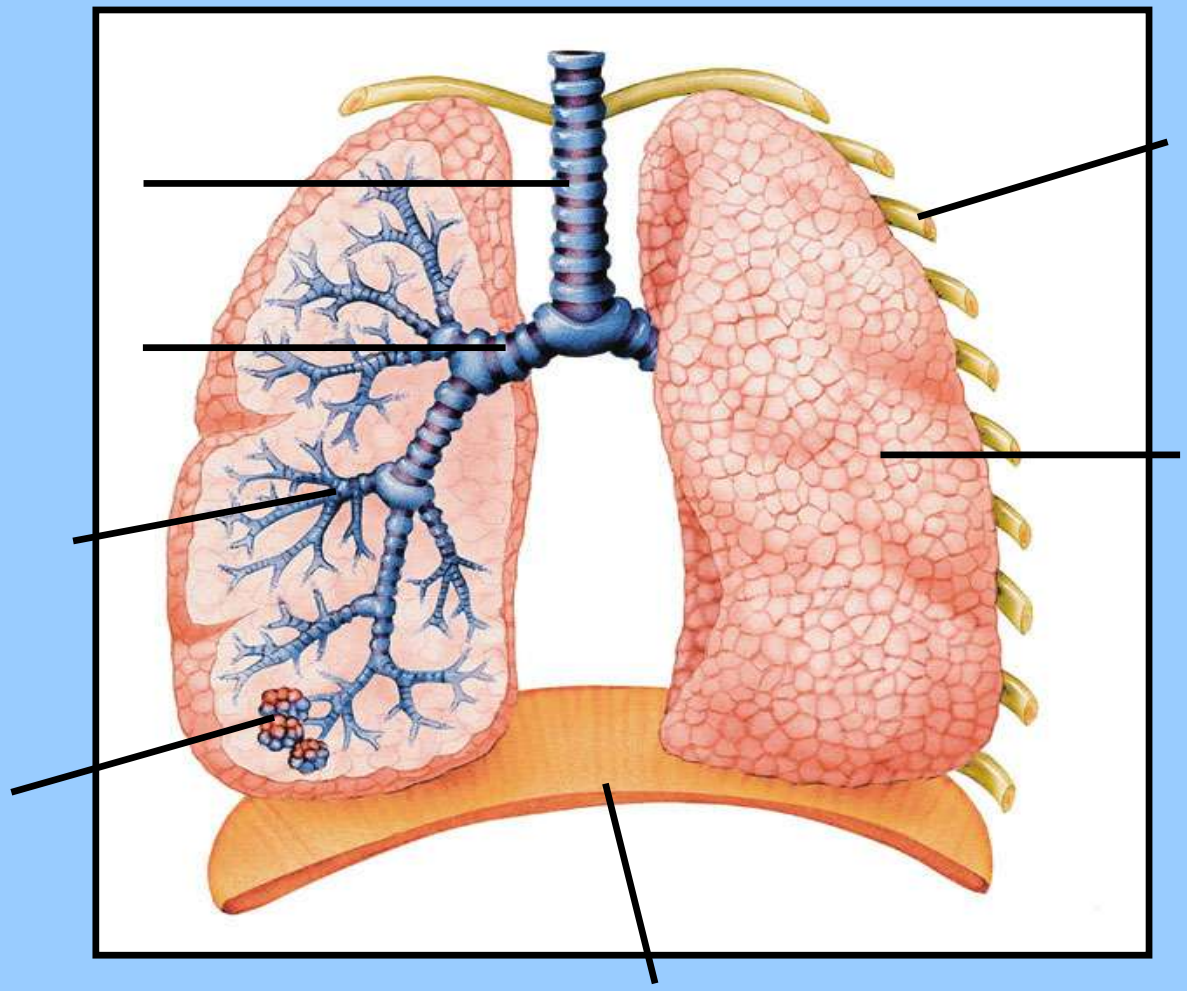
The Lungs


The Lungs have two functions. To allow...
1) 1 to pass into the bloodstream, and
2) 2 to pass out of the bloodstream
This process is called 3
Reset
Show answers
Drag and Drop the following labels :
Gaseous exchange
© Footprints-Science, 2004

The Lungs


4
5
3
6
7
2
8
1
Drag and Drop :
Voice box
Reset
Show answers
© Footprints-Science, 2004

Structure of the lungs



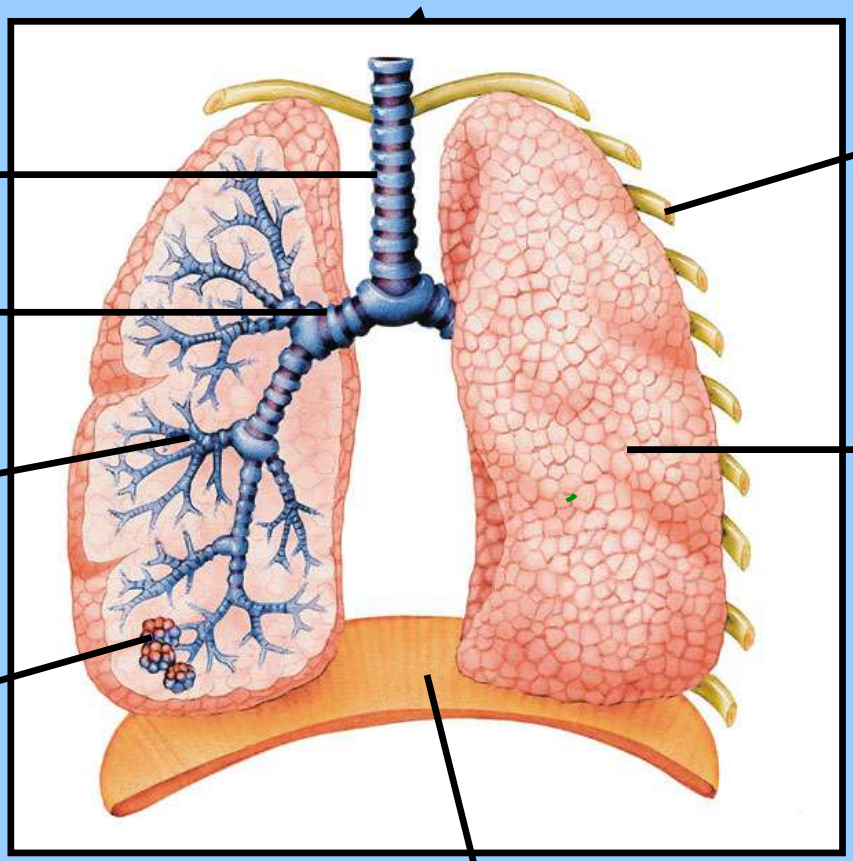
Page 17

Label the diagram of the lungs in your workbook.

Your teacher will help you.

Check your labels!

Page 17



Windpipe

Bronchus

Bronchioles

Air Sacs (Alveoli)

Ribs

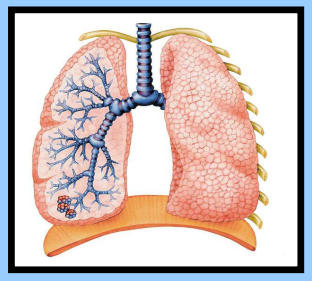
Lung

Diaphragm

Page 17

The windpipe and the bronchi have rings of cartilage in them. This makes sure that they stay open at all times.

Bronchoscopy

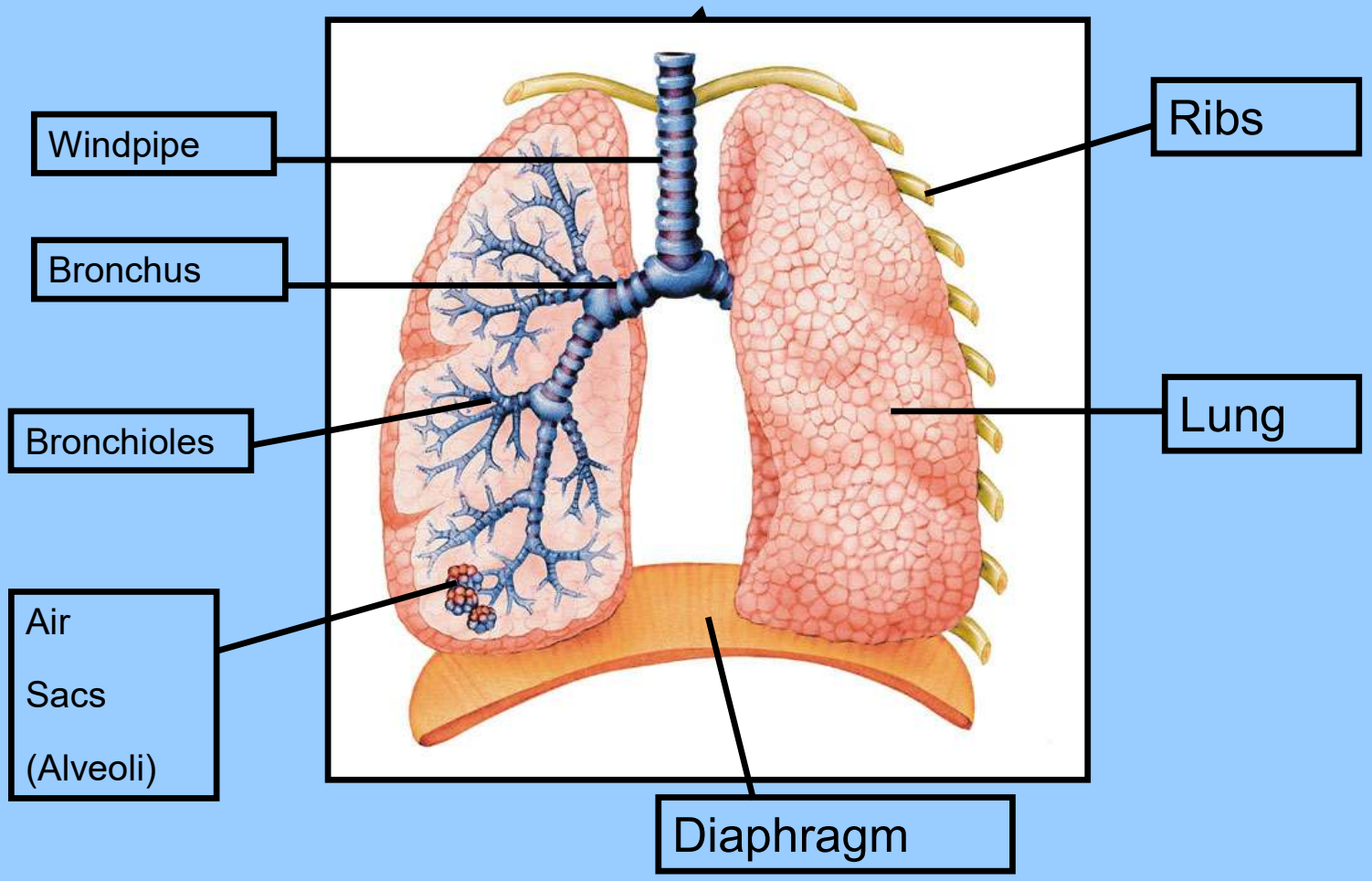


Click on the TV screen to watch the video clip where a camera is sent down into a person's lungs.

https://www.youtube.com/watch?v=KqZc1JqArco

Use the information on page 17 to help you answer the questions below

Starter:
Name the structures

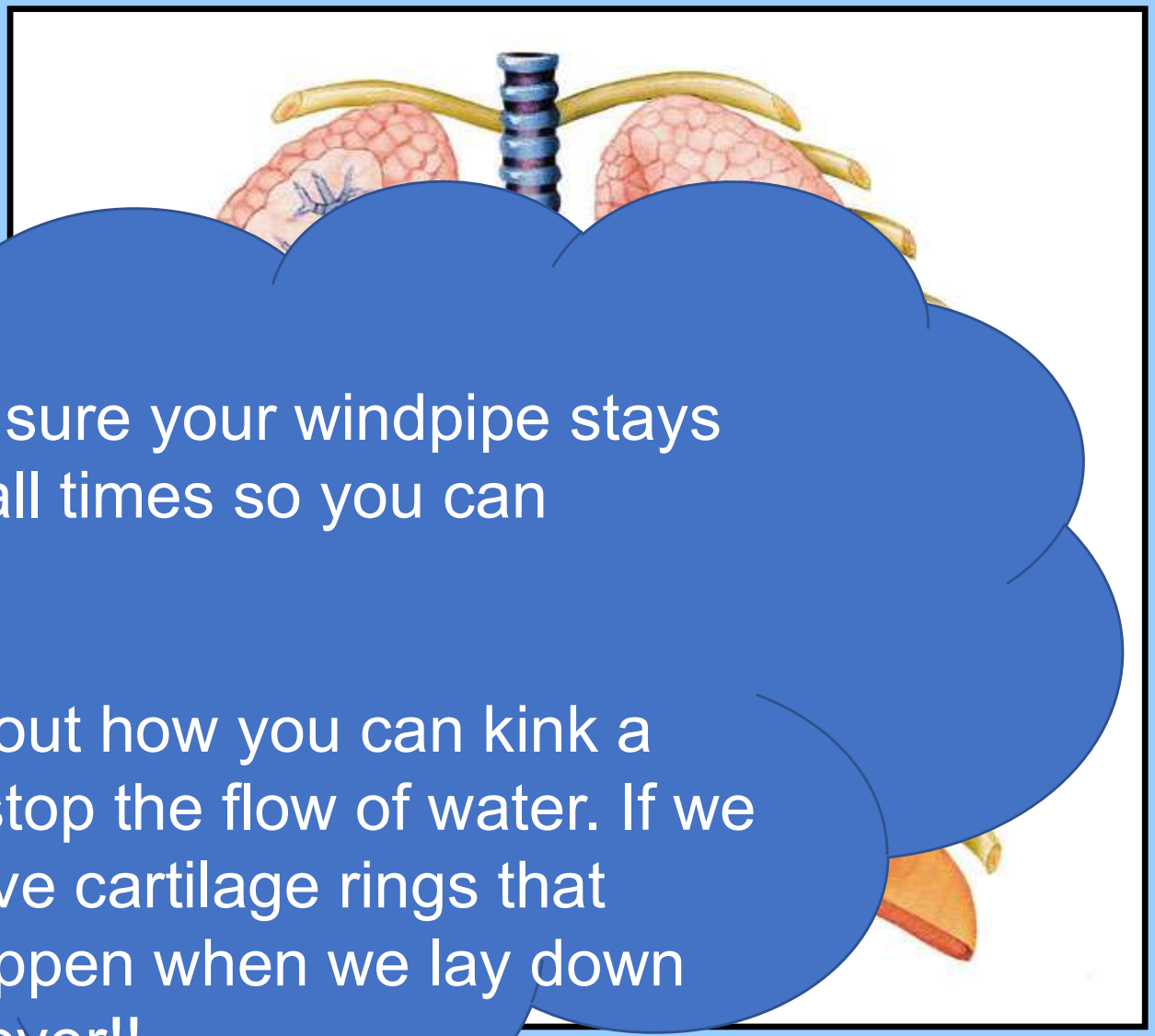


Why do the windpipe and the bronchi have **rings of cartilage** in them?

To keep them open when they bend.

Cartilage rings

The windpipe is made up of
cartilage
think w

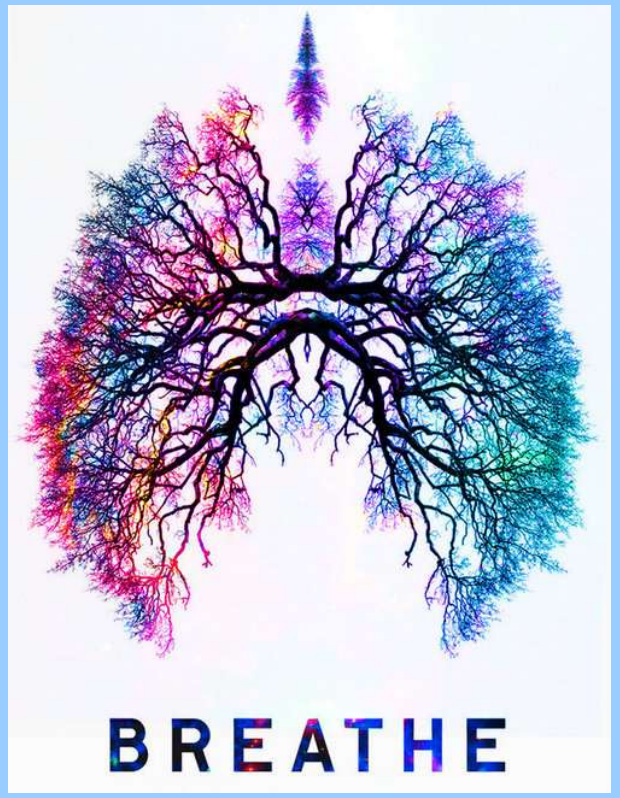


To make sure your windpipe stays open at all times so you can breathe.

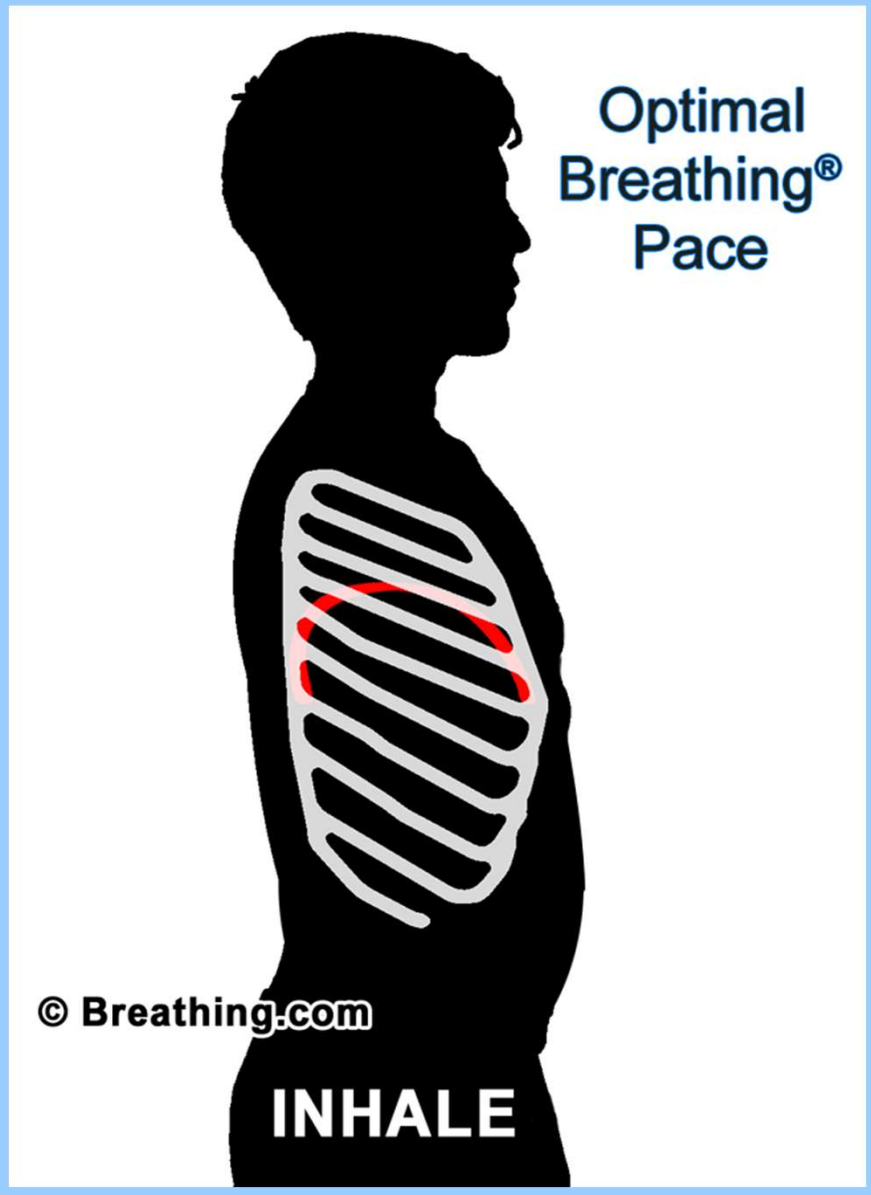
Think about how you can kink a hose to stop the flow of water. If we didn't have cartilage rings that might happen when we lay down or bend over!!

How does the air get into and out of our lungs?

- Breathing of course!
- But what makes us breathe?



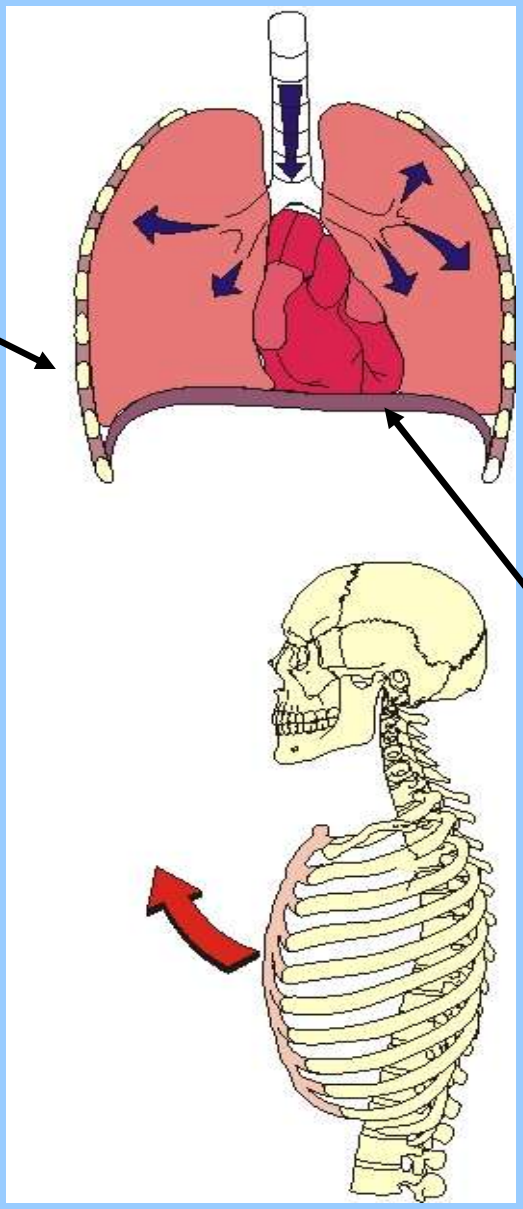
- Our intercostal muscles (muscles in between our ribs) and our diaphragm work together to cause us to breathe.
- It is a common misconception that our lungs inflate and deflate causing our chest to rise and fall.
- It is in fact the chest being made bigger or smaller that forces our lungs to inflate/deflate causes us to inhale/exhale.



Breathing In

Page 17

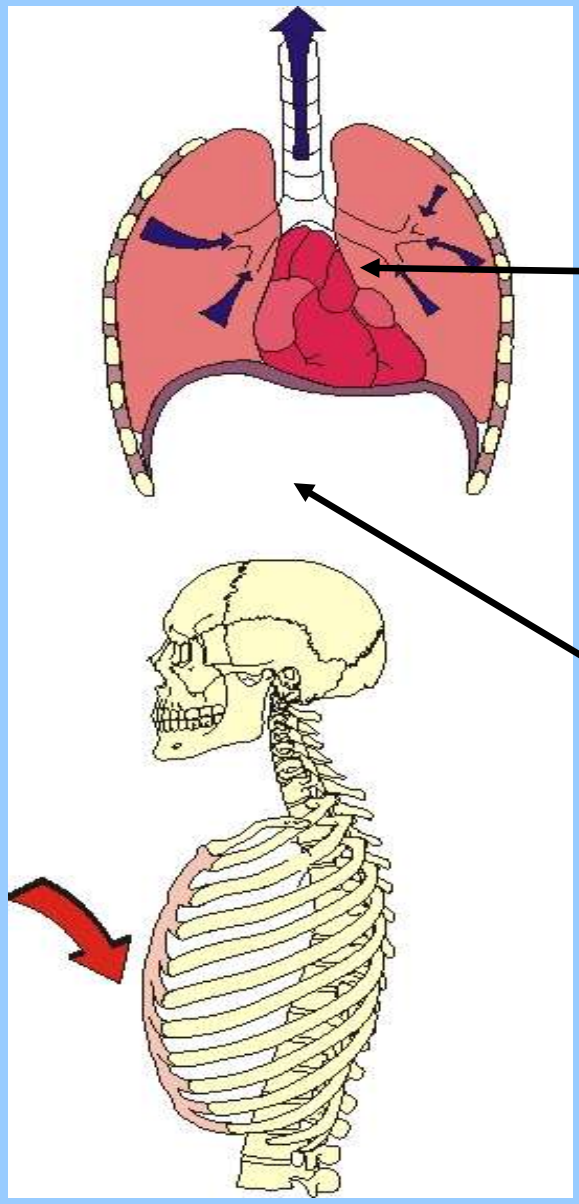
<u>Chest</u>
Volume increases
Pressure decreases
Lungs inflate



Rib cage moves
up and out

Diaphragm
contracts and the
diaphragm
flattens

Breathing Out



<u>Chest</u>
Volume decreases
Pressure increases
Lungs deflate

Diaphragm
contracts and the
diaphragm
rises

Rib cage
moves down
and in

Breathing

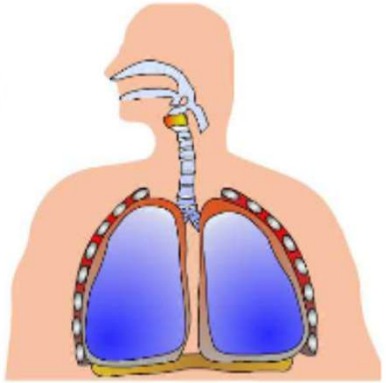
Breathing in (Inhalation)

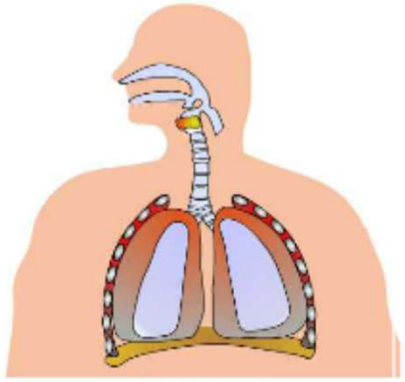
Ribcage muscles and diaphragm 1

The volume of the thorax 2

The pressure inside the lungs 3

Air 4 the lungs





Breathing out (Exhalation)

Ribcage muscles and diaphragm 5

The volume of the thorax 6

The pressure inside the lungs 7

Air 8 the lungs

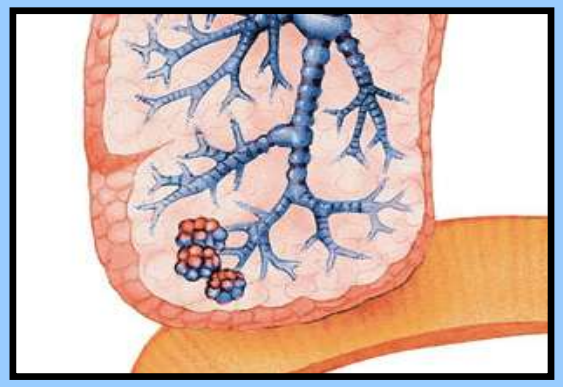
Reset

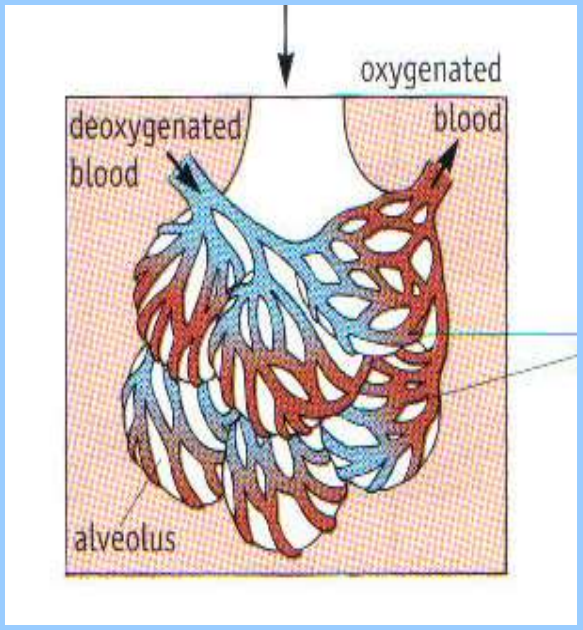
Show answers

Drag and Drop : relax

So we know how air gets in to our lungs (breathing) but how are the gases (oxygen and carbon dioxide) actually exchanged?

The Air Sacs





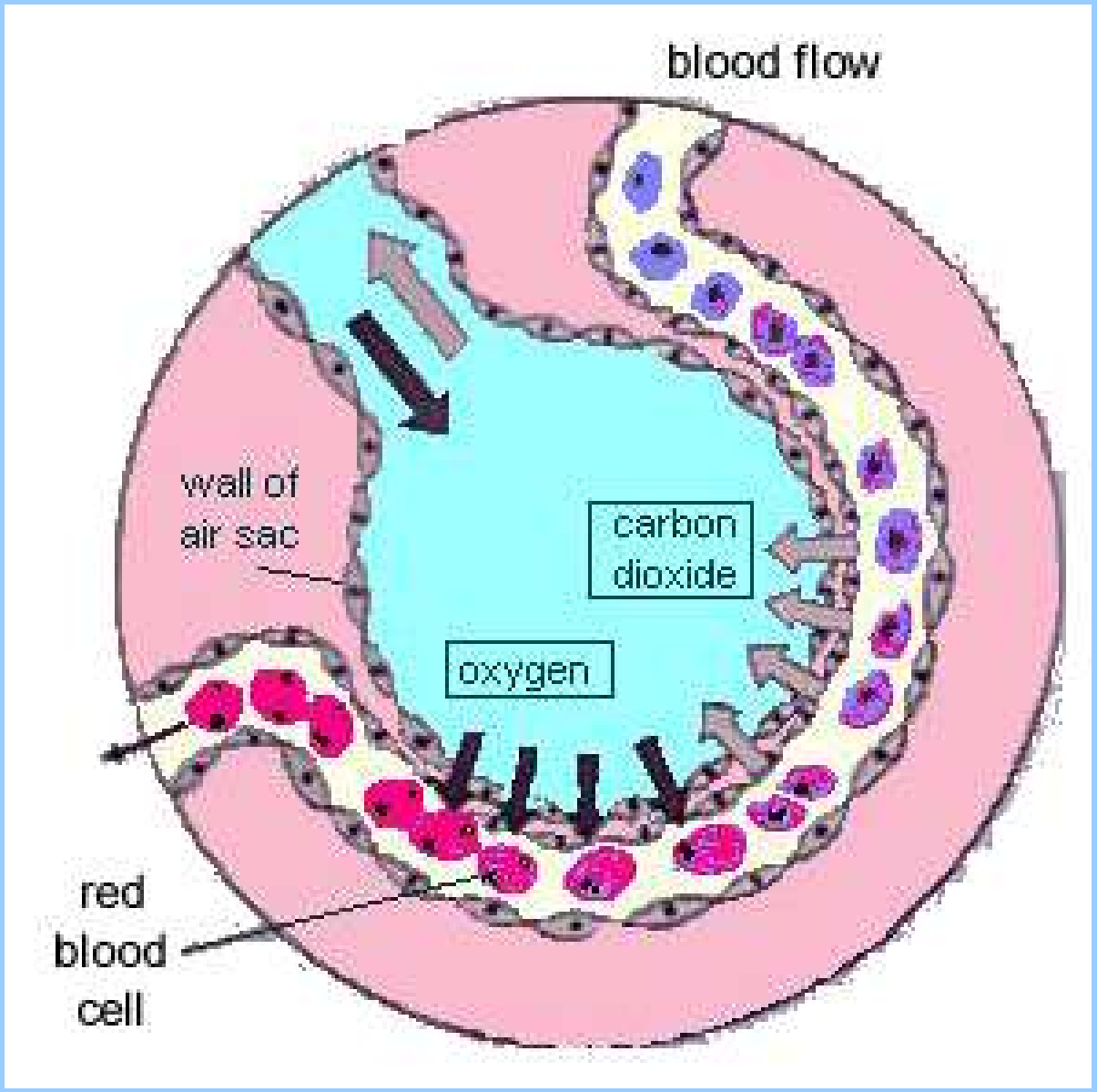
The air breathed in reaches the air sacs and is full of oxygen.

The air sacs are surrounded by blood vessels.

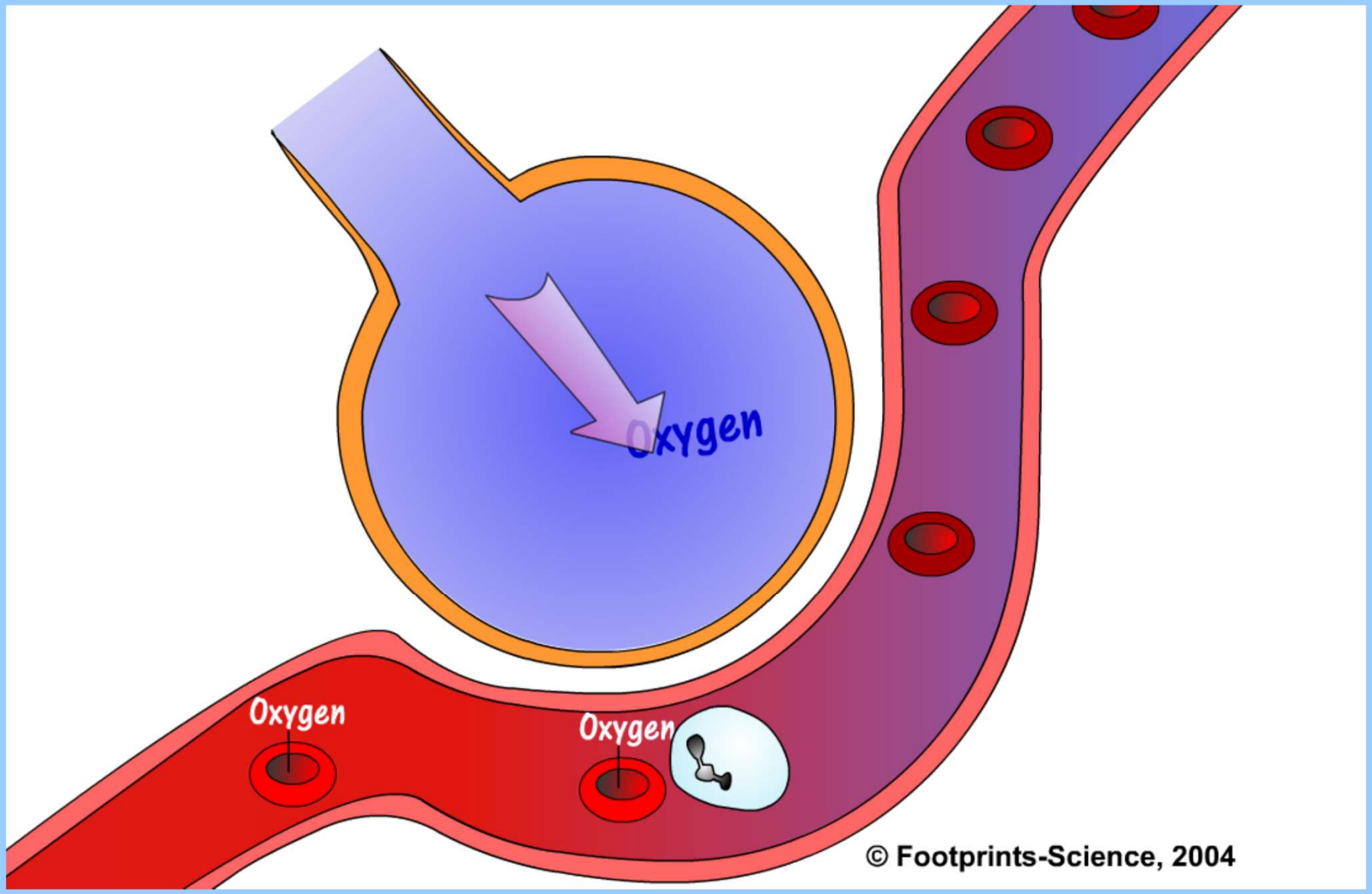
As the blood flows through the vessel:

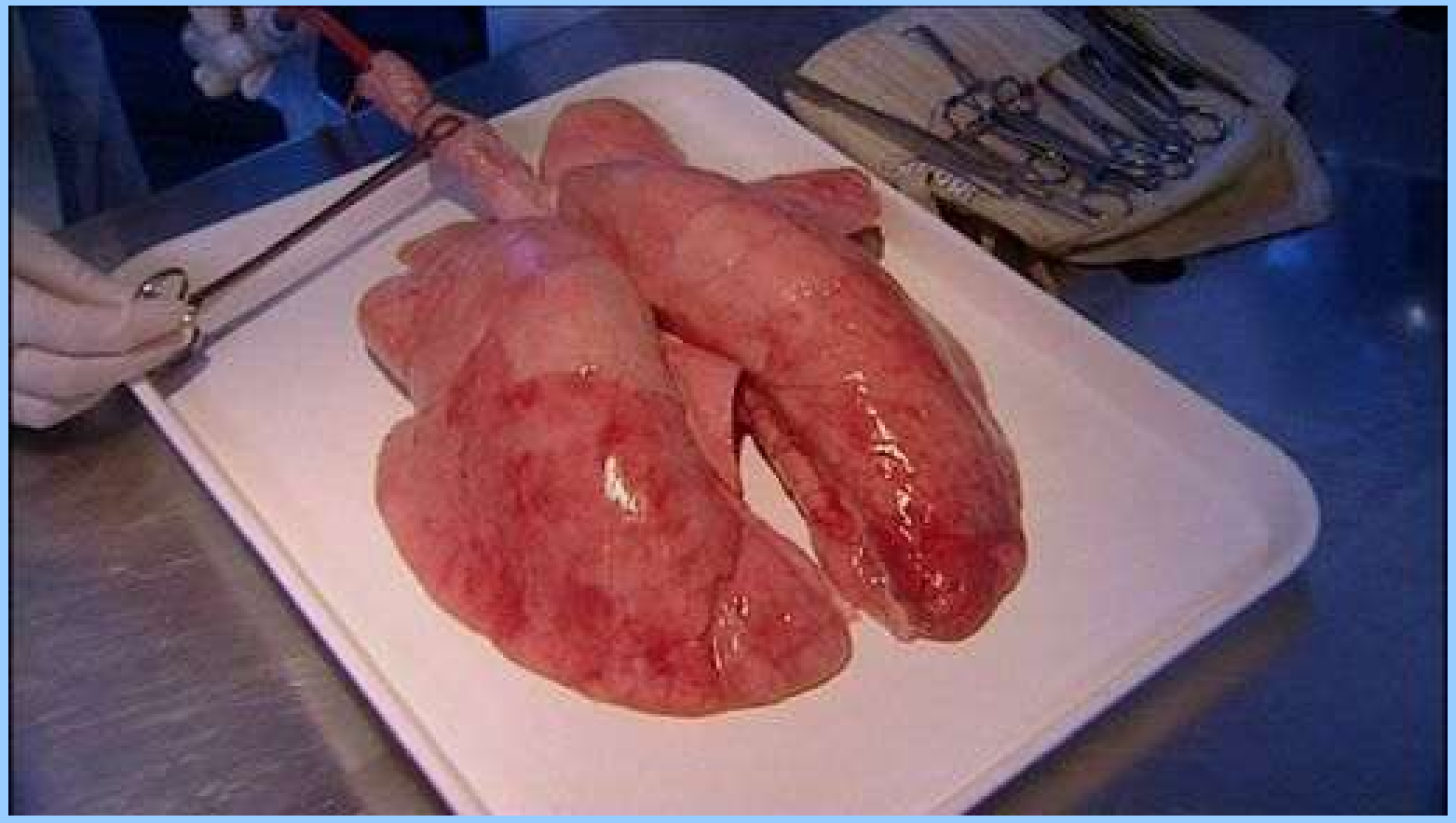
- Oxygen moves from the air sac to the blood.
- Carbon dioxide moves from the blood to the air sac(so we can breathe it out)

A closer look!



Plenary – On the board, label the diagram and draw arrows to show the direction of movement of oxygen and carbon dioxide.





Your teacher may do a lung dissection demonstration with you.

How many of the structures you have labelled on your diagram can you identify?

Body Systems - Outcome 1 Report

09/09/2026

Learning Intentions:

- To write an Outcome 1 scientific report

Success Criteria

- I can plan an investigation
- I can carry out an investigation safely
- I can write a scientific report to include an Aim

Body Systems - Outcome 1 Report

An Outcome 1 in Science is about showing that you can plan and carry out a scientific investigation.

It means you can:

- Choose a question to investigate
- Decide what things you will measure and how
- Carry out the experiment safely
- Collect and record results carefully
- Say whether your results are reliable or not

Body Systems - Outcome 1 Report

Your Outcome 1 will allow you and your teacher to assess your learning and find out what level you are working at.

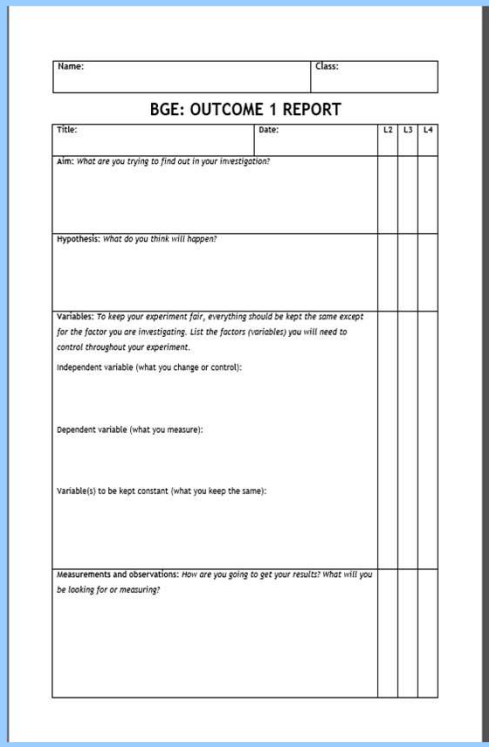
You will be working at level 2, 3 or 4 and you teacher will give you feedback about what you can do to progress to the next level.

L2/3/4 outcomes achieved: (circle the level you are working at) I am working at level 2I 2P 3I 3P 4I 4P 4A	/10	/10	/10

Teacher Feedback	
WOW	
NOW	
HOW?	

Body Systems - Outcome 1 Report

- You will be using a template to write your outcome 1 report.



Name: | Class:

BGE: OUTCOME 1 REPORT

Title:	Date:	L2	L3	L4

Aim: *What are you trying to find out in your investigation?*

Hypothesis: *What do you think will happen?*

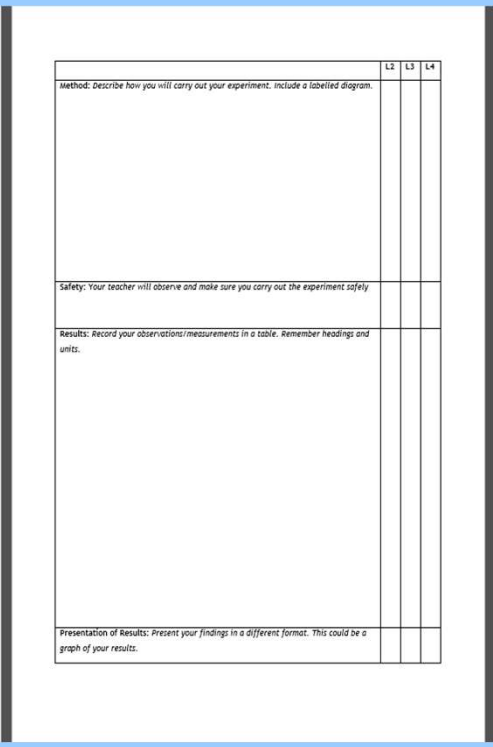
Variables: *To keep your experiment fair, everything should be kept the same except for the factor you are investigating. List the factors (variables) you will need to control throughout your experiment.*

Independent variable (what you change or control):

Dependent variable (what you measure):

Variable(s) to be kept constant (what you keep the same):

Measurements and observations: *How are you going to get your results? What will you be looking for or measuring?*



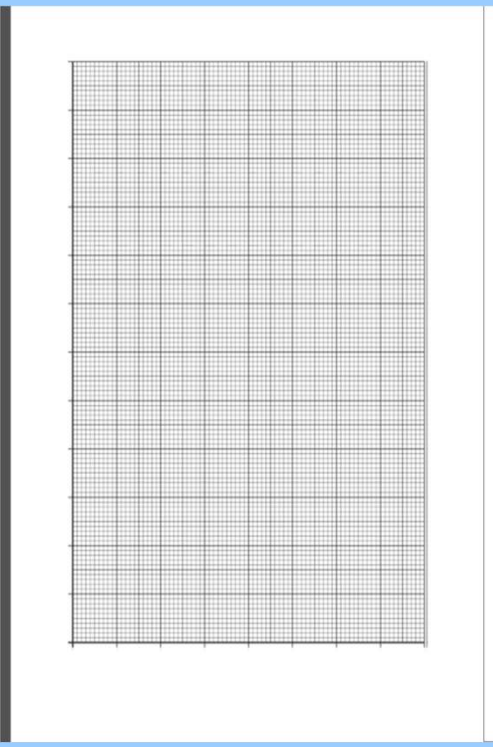
	L2	L3	L4

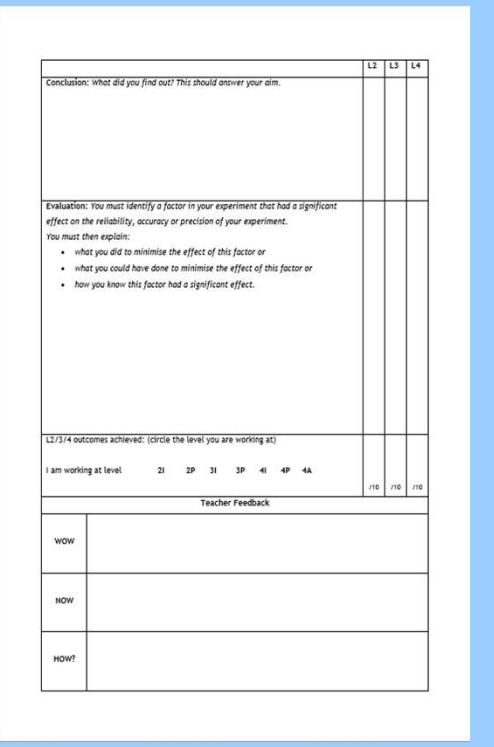
Method: *Describe how you will carry out your experiment. Include a labelled diagram.*

Safety: *Your teacher will observe and make sure you carry out the experiment safely*

Results: *Record your observations/measurements in a table. Remember headings and units.*

Presentation of Results: *Present your findings in a different format. This could be a graph of your results.*





	L2	L3	L4

Conclusion: *What did you find out? This should answer your aim.*

Evaluation: *You must identify a factor in your experiment that had a significant effect on the reliability, accuracy or precision of your experiment.*
You must then explain:
- *what you did to minimise the effect of this factor or*
- *what you could have done to minimise the effect of this factor or*
- *how you know this factor had a significant effect.*

L2/3/4 outcomes achieved: (circle the level you are working at)

I am working at level 2I 2P 3I 3P 4I 4P 4A

/10 /10 /10

Teacher Feedback

WOW	
NOW	
HOW?	

Investigating Lung Function

Name: Your name	Class: Your class

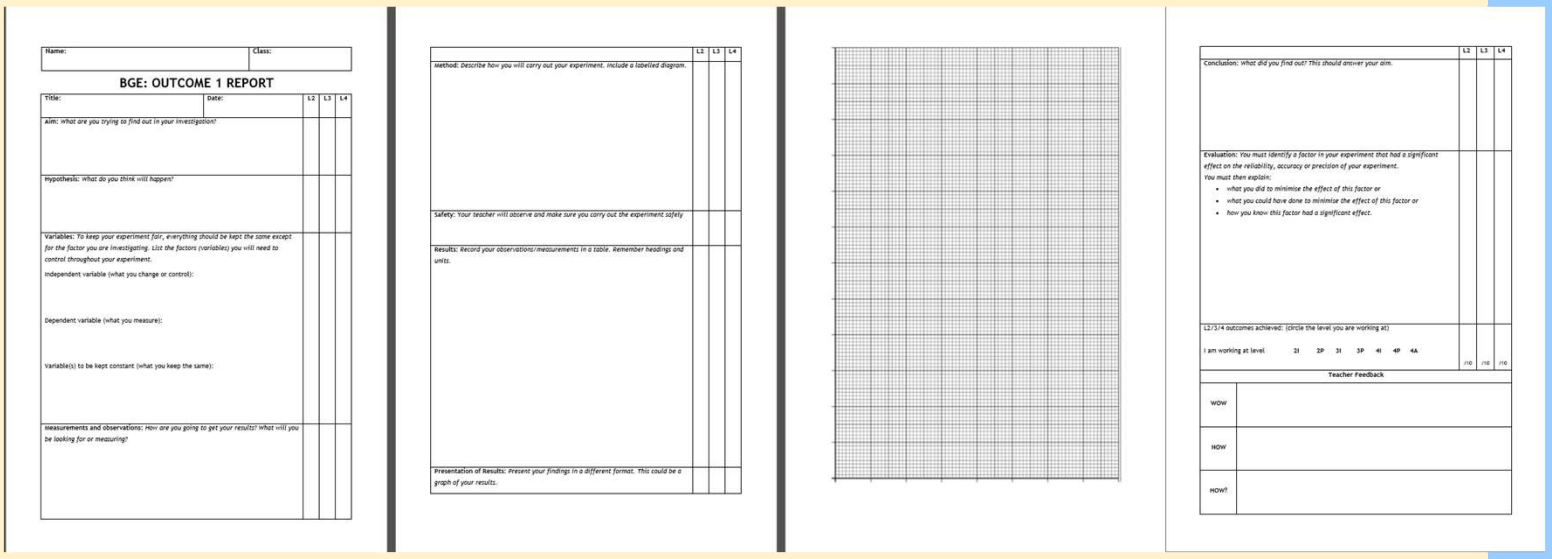
BGE: OUTCOME 1 REPORT

Title: Lung function and Exercise	Date: 12/03/2026	L2	L3	L4
Aim: *What are you trying to find out in your investigation?*				

Investigating Lung Function

Over the next 2 lessons we will be writing a full science investigation.

- Aim
- Hypothesis
- Method
- Results
- Graph
- Conclusion
- Evaluation



You will be supported throughout this investigation.

Investigating Lung Function – Rubric

- You can read over the outcome 1 rubric to see what skills are expected at each level.

Outcome 1 Rubric - Pupil Version (CfE Level 2-4)

Skill Area	Level 2	Level 3	Level 4
Planning and designing investigations	I can ask questions and make simple predictions (what I think will happen) with help. I can spot what I'm changing, what I'm measuring, and what I'm keeping the same (with help). I know some risks and how to be safe.	I can come up with my own questions and predictions using what I already know. I can plan a valid investigation (making the test fair) and decide what to change, measure, and keep the same (with a bit of help). I can spot most risks and make safe choices. I help decide what equipment and method to use.	I can make predictions and questions even in tricky situations using what I already know. I can plan my own valid investigation clearly and carefully, choosing what to change, measure, and keep the same, and use a control if needed. I think ahead about risks and how to stay safe. I pick a good range of values to test.
Carrying out practical activities	I use safety rules properly. I help carry out the steps in the experiment. I take measurements using the right equipment and units. I try to keep the test fair.	I follow safety rules and help keep everyone safe. I collect detailed information using different tools or methods. I include a control test (to make comparisons) if needed. I try hard to keep the experiment valid (a fair test).	I control big risks and work safely. I take accurate measurements (with correct units) using the right tools. I record data clearly and carefully using scientific words.
Analysing, interpreting and evaluating	I can choose a good way to record my results. I can spot patterns between what I changed and what happened.	I record my results neatly using the right words and scales. I can explain what the data shows and link it to my hypothesis (predications).	I record my results neatly in a table and use graphs to look for patterns in my data. I explain trends in data clearly and link them to my hypothesis.
	I link my findings back to my question. I can explain how it connects to the real world. I can say what I found out and explain my thinking. I can spot anything unusual and suggest why it happened. I can suggest one way to make it better next time.	I link the results to what I already know in science. I can make clear conclusions based on my results. I think about other possible explanations or ideas for new experiments. I can say how reliable the experiment was and suggest at least two improvements.	I suggest other explanations or ideas for future work. I link my findings to wider science knowledge. I make a strong conclusion using data as evidence. I can say how valid and reliable the experiment was and give at least two ways to improve it, with reasons.
Presenting scientific findings	I can show my results using tables and diagrams (with help). I can present findings as a group or by myself in different ways. I can organise my results using headings or questions with help. I use science words and say where I got my information (with help).	I use a range of ways to show my results with the right scales such as tables, bar and line graphs (with some help). I can explain my findings clearly in writing or when talking. I use the best format for different people (like a report or poster). I include evidence and sources (with some help).	I present my results clearly using suitable graphs, tables, and diagrams without help. I choose the best way to present depending on the audience. I use data from at least two sources to back up my work. I give full credit to all my sources, like using full web links.

Lung Function and Exercise

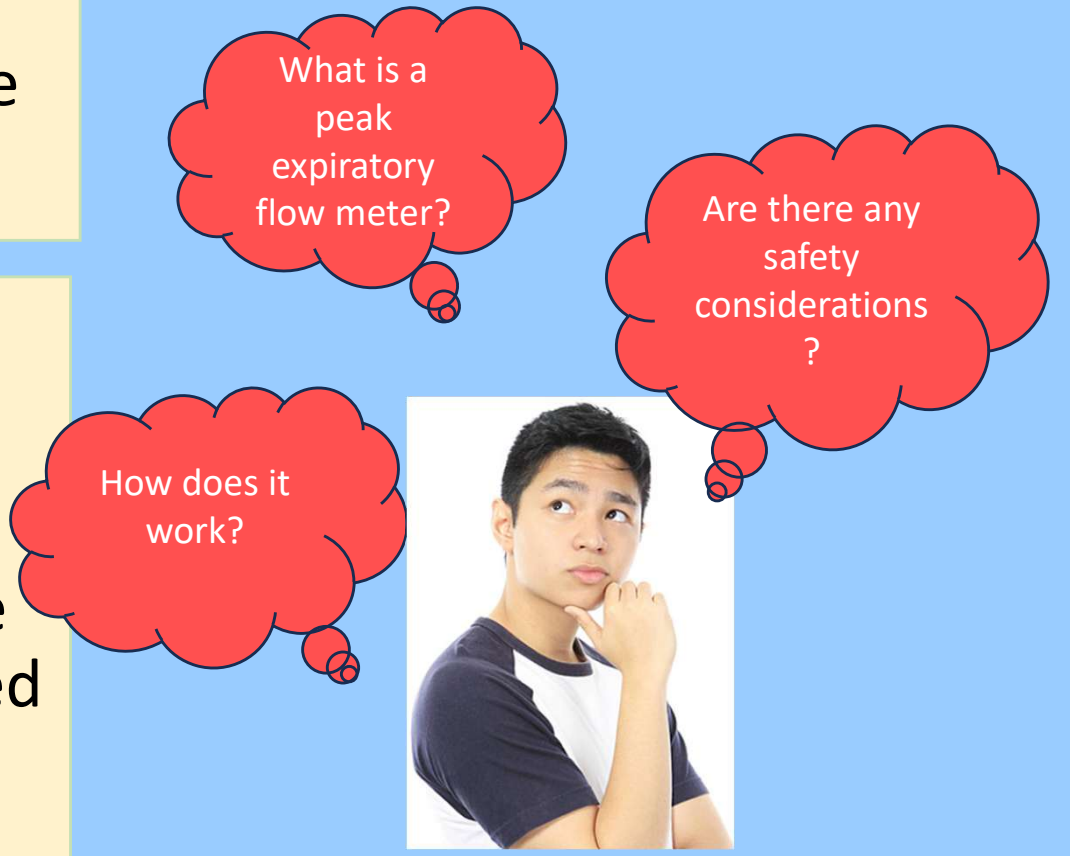
Experiment Instructions

- Investigate the relationship between lung capacity and exercise.
- Record your lung capacity before and after a period of exercise.

How?

- Using a peak expiratory flow meter.
- Watch the video and answer the questions opposite – be prepared to share!

https://youtu.be/jdA8KU_D9JU?si=TZyW8JAswddoLWLj/



Investigating Lung Function

Peak Flow Meter

- A peak expiratory flow meter measures the maximum speed of air forced out of the lungs in a single breath, known as the peak expiratory flow rate (PEFR).
- **Key Measurements and Functions:** Speed of Exhalation - It measures how quickly a person can blow air out of their lungs, usually recorded in litres per minute (L/min).

Investigating Lung Function

Experiment Instructions - Basics

Method:

- Sit up straight
- Return the marker to zero
- Place a clean mouthpiece over the end of the end of the meter
- Pinch your nose
- Take a deep breath in
- Release all the air in your lungs into the meter as quickly and forcefully as you can
- Record your peak expiratory flow rate (PEFR) in L/min

Take one reading before and one reading after exercise

Each team should choose a different exercise – you decide what to do and how long for!

How could you ensure your results are reliable?

Investigating Lung Function – The Variables

Planning your investigation. What factors could you investigate?

Independent variable **What you change or control**	**Dependent variable** **What you measure**	**Variable(s) to be kept constant** **What you keep the same**
• **The exercise**	• **The peak expiratory flow rate (L/min)** (the maximum speed of air forced out of the lungs in a single breath)	• **The person** • **Same starting lung volume (full deep breath)** • **Zero marker each start** • **Nose pinched**

Investigating Lung Function

Aim: *What are you trying to find out in your investigation?*

Hypothesis: *What do you think will happen?*

Investigating Lung Function

Write your aim – What are you trying to investigate?

Aim:

To investigate the effect of _____ on _____.

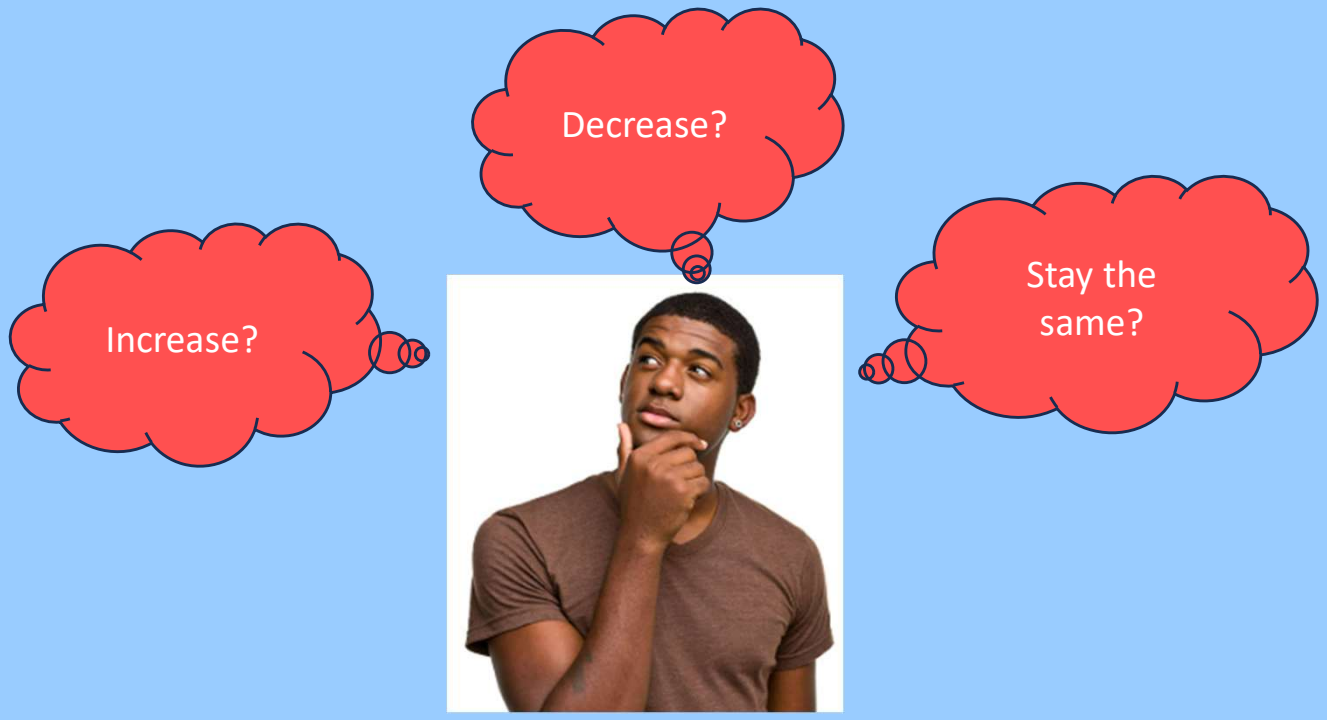
Independent variable **What you change or control**	Dependent variable **What you measure**	Variable(s) to be kept constant **What you keep the same**
• The exercise	• The peak expiratory flow rate (L/min)	• The person • Same starting lung volume (full deep breath) • Zero marker each start • Nose pinched

Investigating Lung Function

Hypothesis:

After exercise, the peak expiratory flow rate will

_____ .



Investigating Lung Function

Variables: *To keep your experiment fair, everything should be kept the same except for the factor you are investigating. List the factors (variables) you will need to control throughout your experiment.*

Independent variable (what you change or control):

Dependent variable (what you measure):

Variable(s) to be kept constant (what you keep the same):

Investigating Lung Function

Measurements and observations: *How are you going to get your results? What will you be looking for or measuring?*

Independent variable

What you change or control

- The exercise

Dependent variable

What you measure

- The peak expiratory flow rate (PEFR) (L/min)

Investigating Lung Function

Method: *Describe how you will carry out your experiment. Include a labelled diagram.*

Investigating Lung Function

Safety: *Your teacher will observe and make sure you carry out the experiment safely*

Investigating Lung Function

Results: *Record your observations/measurements in a table. Remember headings and units.*

Investigating Lung Function

Results: *Record your observations/measurements in a table. Remember headings and units.*

Peak flow

Timing of measurement	PEFR 1 (L/min)	PEFR 2 (L/min)	?
Before Exercise			
After Exercise			

Starter

Calculate the average peak flow for both rows of data

Timing of measurement	PEFR 1 (L/min)	PEFR 2 (L/min)	Calculate Average PEFR (L/min)?
Before Exercise	332	345	
After Exercise	411	425	

Investigating Lung Capacity

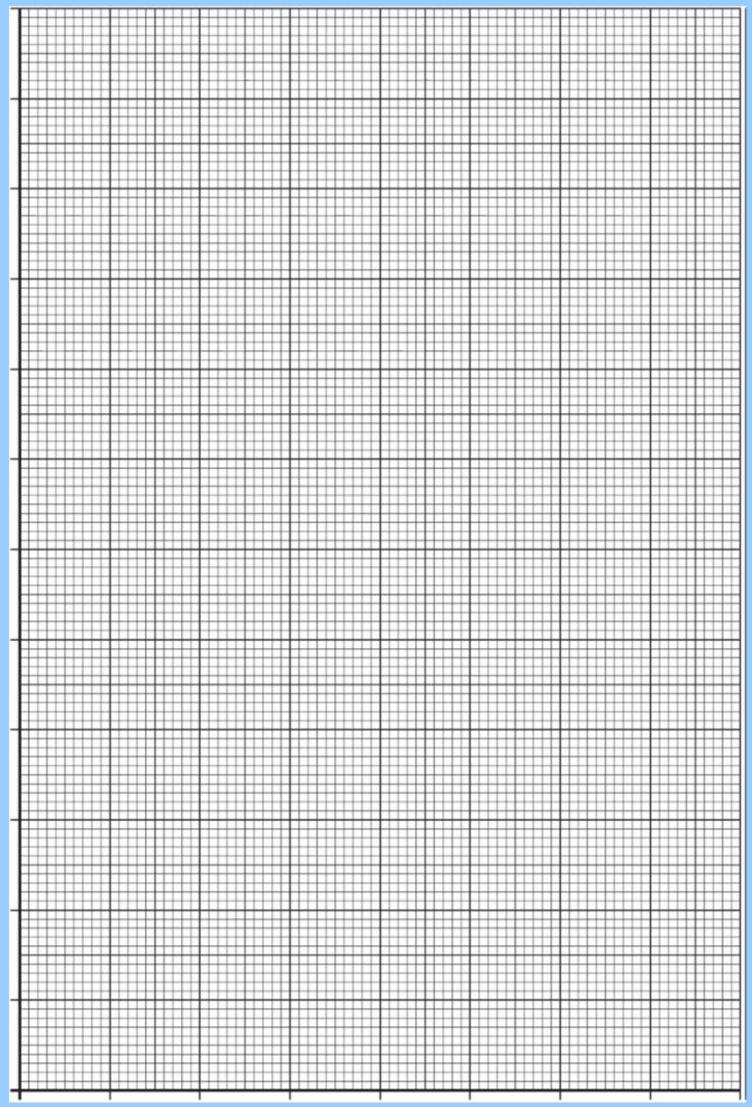
Presentation of Results:

Present your findings in a different format. This could be a gra[illegible]ur results.

Bar graph

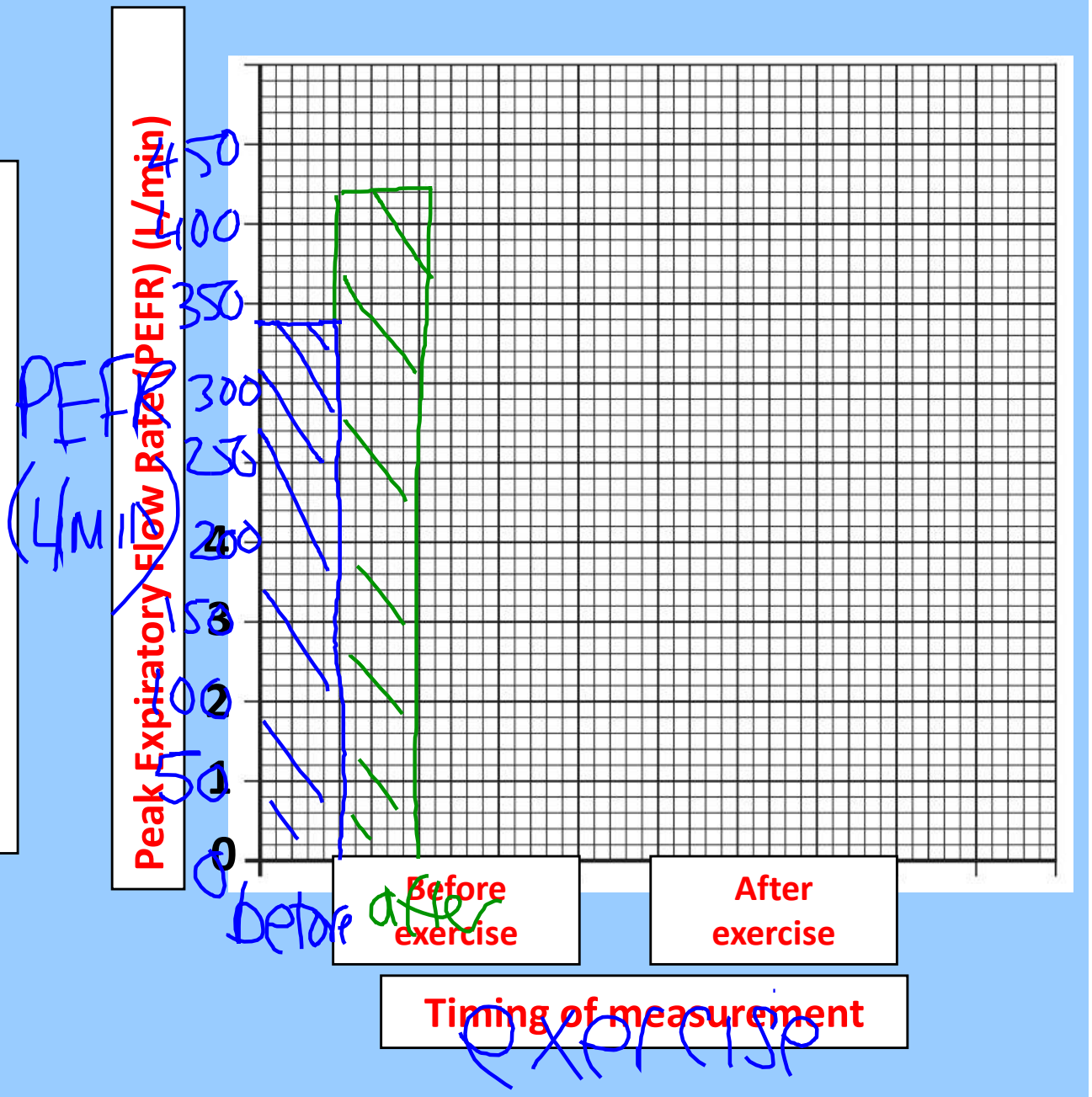
Scatter graph

Line graph



Graph:

Plot a bar graph comparing PEFR (L/min) before and after exercise.



Investigating Lung Capacity

Conclusion: *What did you find out? This should answer your aim.*

Investigating Lung Capacity

Evaluation: *You must identify a factor in your experiment that had a significant effect on the reliability, accuracy or precision of your experiment.*

- *You must then explain:*
- *what you did to minimise the effect of this factor or*
- *what you could have done to minimise the effect of this factor or*
- *how you know this factor had a significant effect.*

Investigating Lung Capacity

09/09/2026

Learning Intentions:

- To write an Outcome 1 scientific report

Success Criteria

- I can plan an investigation
- I can carry out an investigation safely
- I can write a scientific report to include an Aim

Investigating Lung Capacity

Success Criteria – see pupil rubric

Instructions:

- Carefully read their science report.
- Fill in the NOW WOW HOW feedback sheet
- Return the feedback to your classmate
- Collect and read your peer feedback

Praise – What is good about this piece of work?

Next steps – What needs to be improved?

How can this be improved?

Praise – What is good about this piece of work?

Next steps – What needs to be improved?

<u>How</u> can this be improved?

Investigating Lung Capacity

09/09/2026

Plenary:

Read over your feedback carefully.

1. WOW, what is good about this piece of work?
2. NOW what needs to be improved?
3. HOW can this be improved?

The Skeleton

Starter:
We all have a skeleton, what do you think the job of the skeleton is?

The Skeleton

Page 19

Learning Intentions:

- To find out what the main functions of the skeleton are
- To be able to name some of the main bones of the skeleton

The Skeleton

Page 19

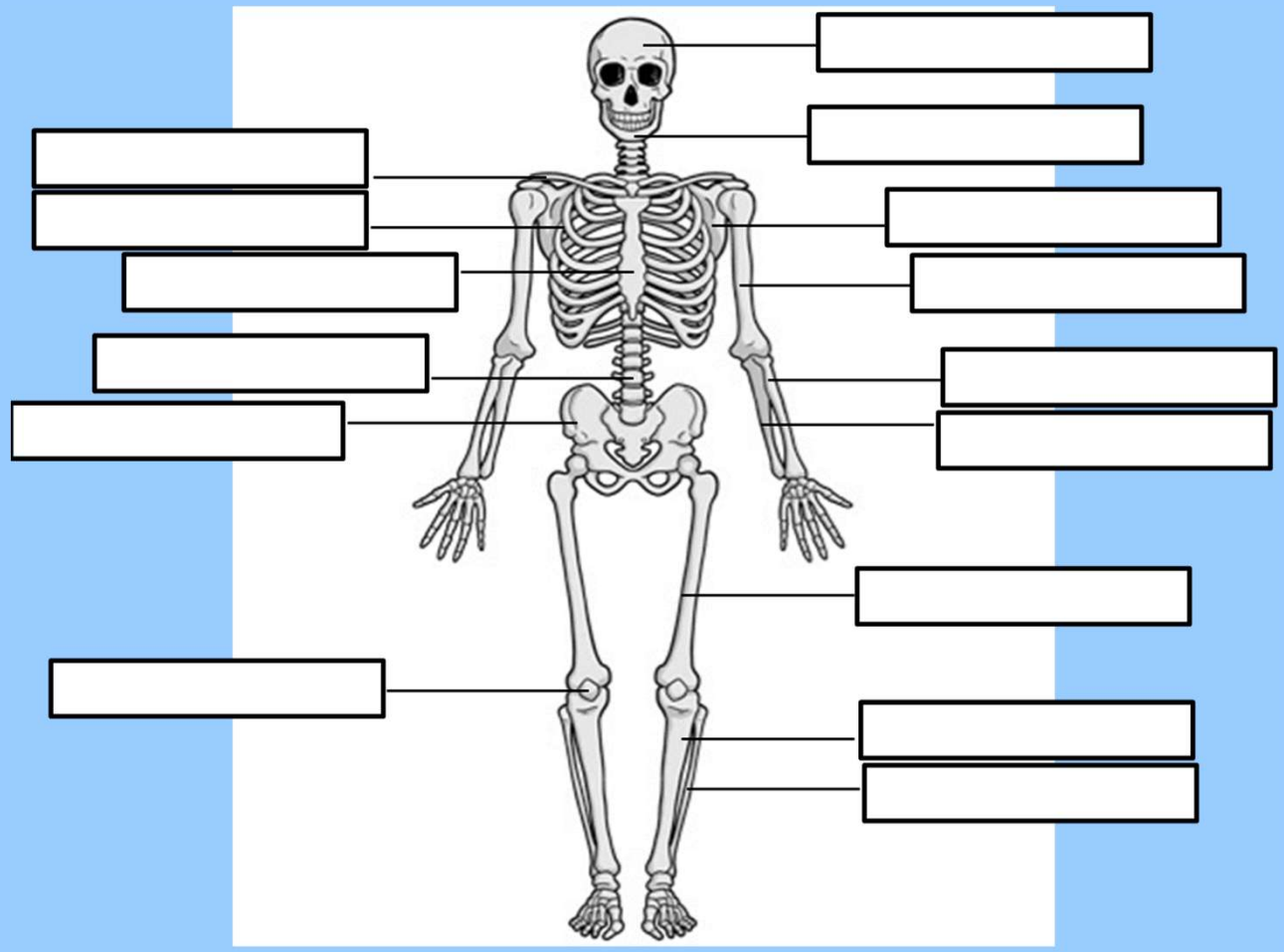
Success Criteria

- ❑ I can state the main functions of the skeleton.
- ❑ I can name some of the main bones of the skeleton.

The Skeleton

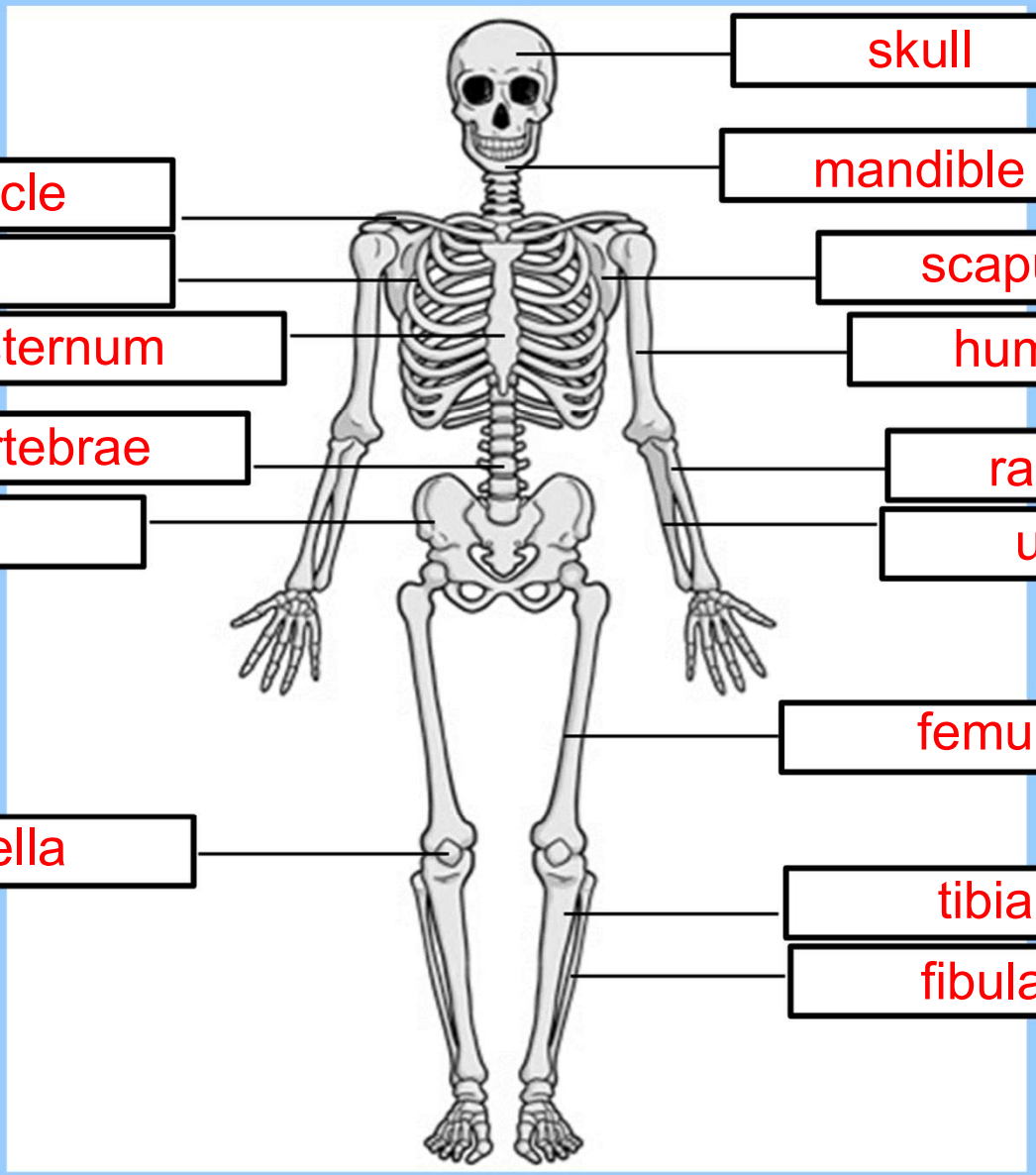
The Skeleton

- Add the names of as many of the bones that you know…
- Check your answers against the names of the bones in the **next** slide.



A picture to check yours against…

How many did you get?



The skeletal system - Skeleton - Living organi - KS3 Biology - BBC Bitesize - BBC Bitesize

09/09/2026

FACTS

There are over 200 bones in the human skeleton

Humans are vertebrates – our skeleton is covered by skin and tissues

Bones are strong, but teeth are stronger

The stirrup is the smallest bone in the body

The hyoid bone (which holds your tongue in place) doesn't connect to any other bones

More than half your bones are in your hands and feet

The femur is the longest, largest and strongest of all the bones

Skeleton

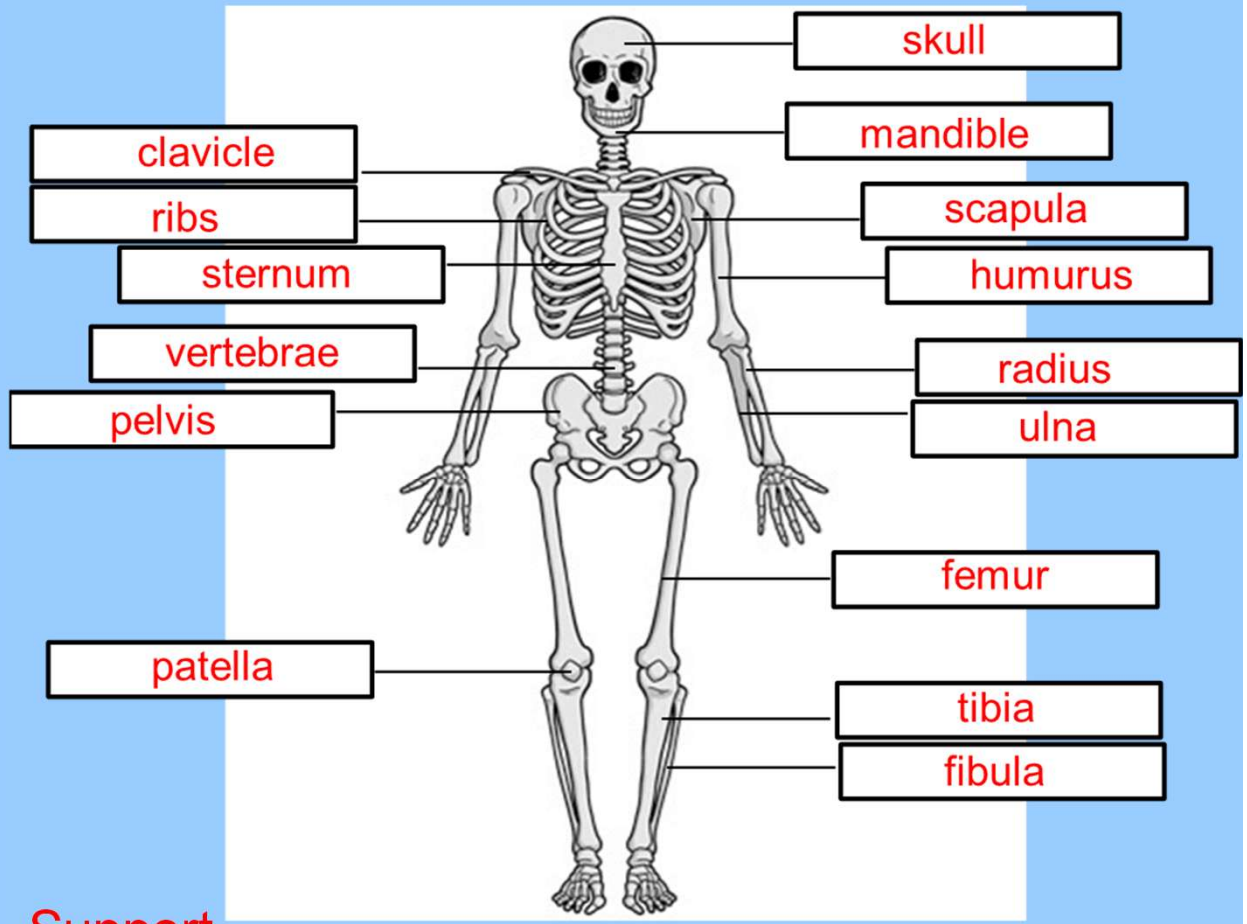
Page 20

The three main functions of the Skeleton are **Support**, **Movement** and **Protection.**

Skeleton

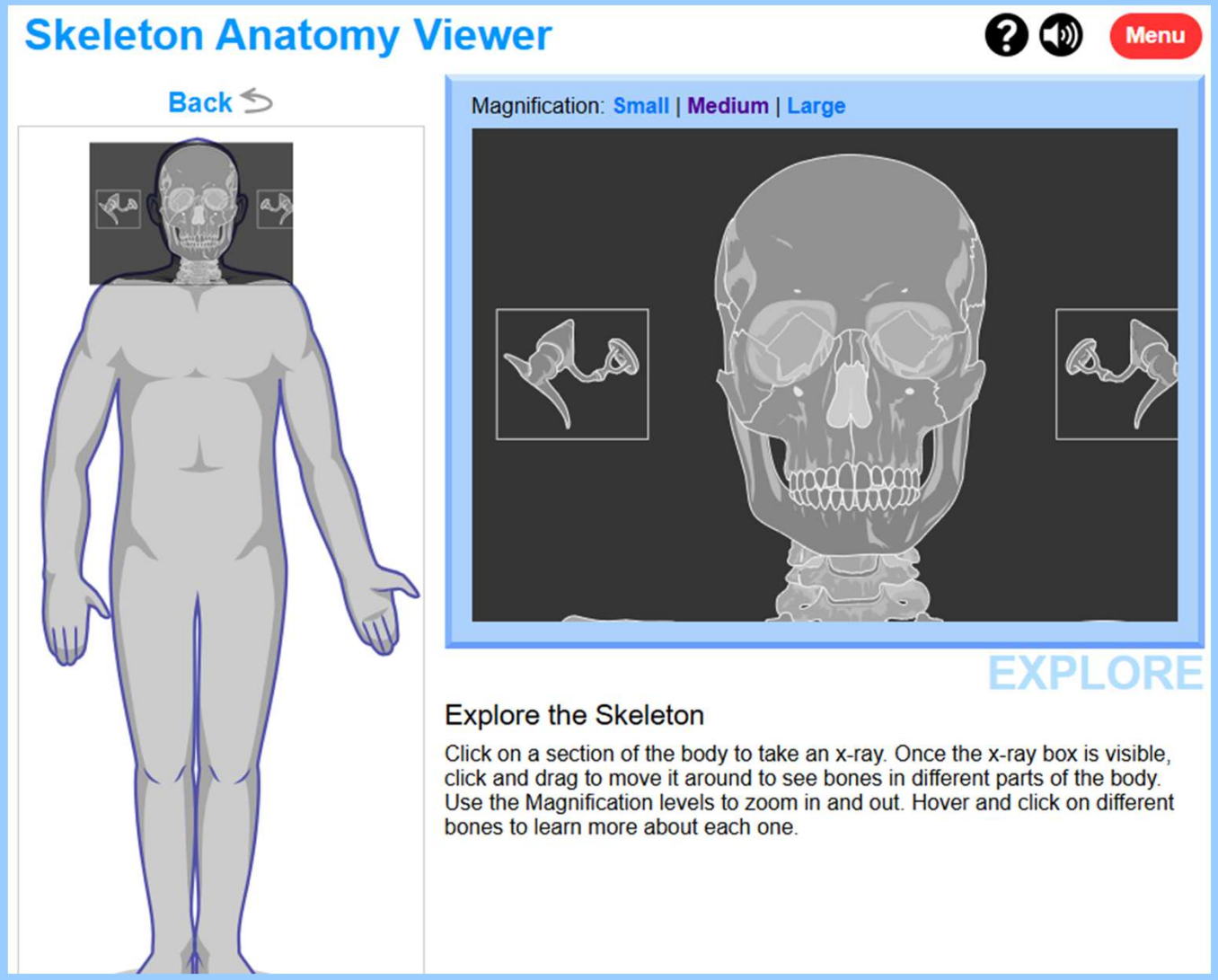
Page 20

- Now choose 3 colours and shade the bones in our body which provide…
  - Support
  - Protection
  - Movement



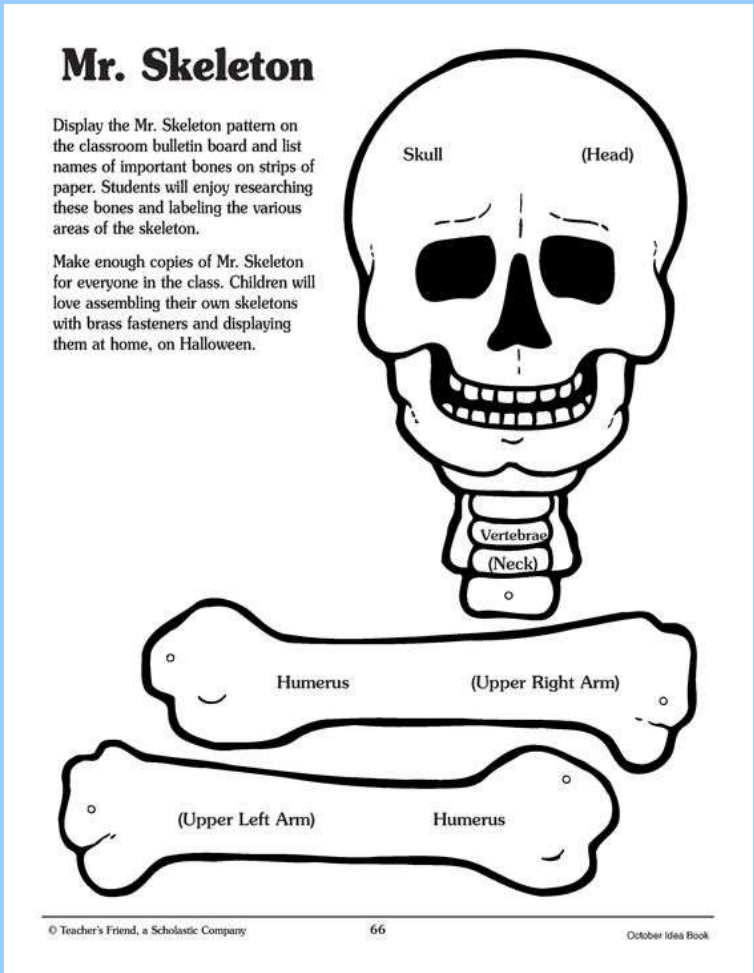
Support
Protection
Attachment = SPAMM
Muscles
Movement

Skeleton Anatomy Viewer



https://askabiologist.asu.edu/games-sims/skeleton-viewer-game/play.html

EXTRA - Time to move….



Mr. Skeleton

Display the Mr. Skeleton pattern on the classroom bulletin board and list names of important bones on strips of paper. Students will enjoy researching these bones and labeling the various areas of the skeleton.

Make enough copies of Mr. Skeleton for everyone in the class. Children will love assembling their own skeletons with brass fasteners and displaying them at home, on Halloween.

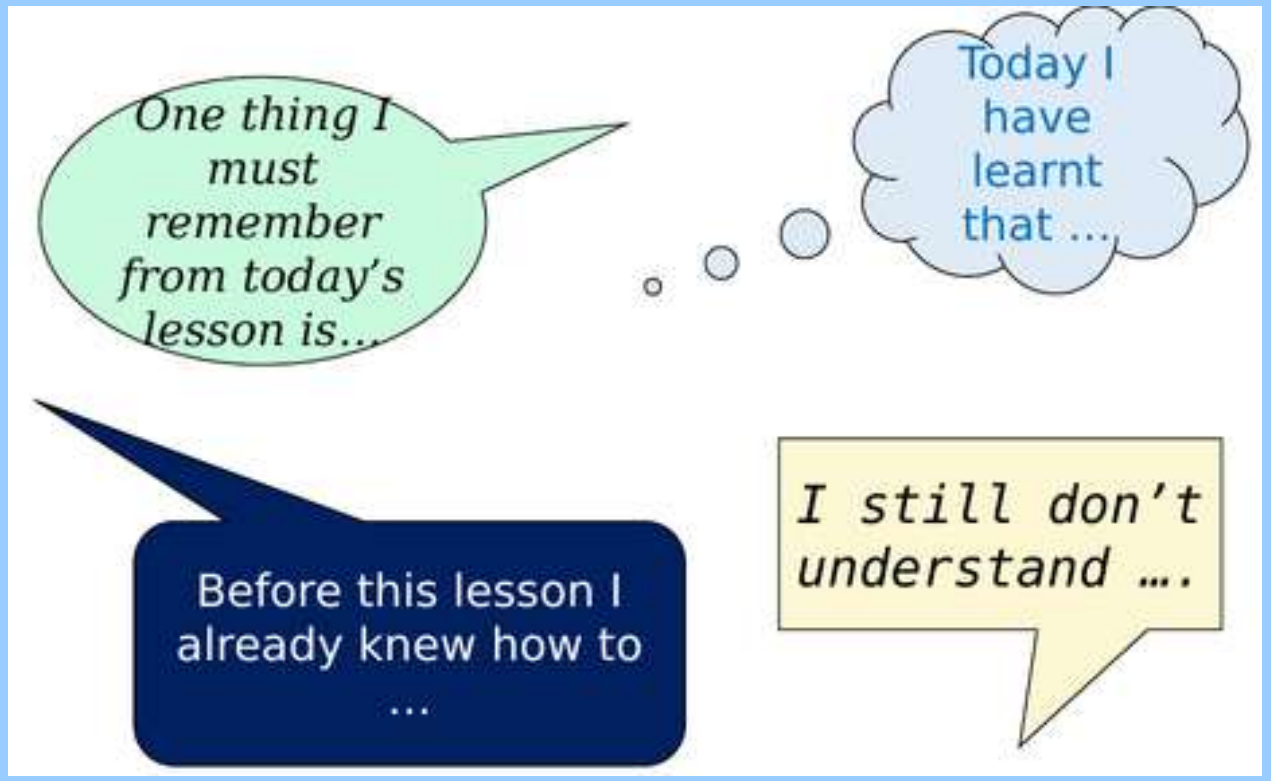
- Mr Skeleton Activity

Now choose 3 colours and shade the bones in our body which provide…

Support
Protection
Movement

Plenary

Copy and complete <u>one</u> of the following sentences…



Joints

Starter:

Can you think of any joints in the body?

Joints

Page 21

Learning Intentions:

- To find out what a joint is
- To find out the different types of joint in the body

Joints

Page 21

Success Criteria

- ❑ I can state the names of joints in the body.
- ❑ I can state the types of joints in the body.
- ❑ I can explain how the types of joints move.

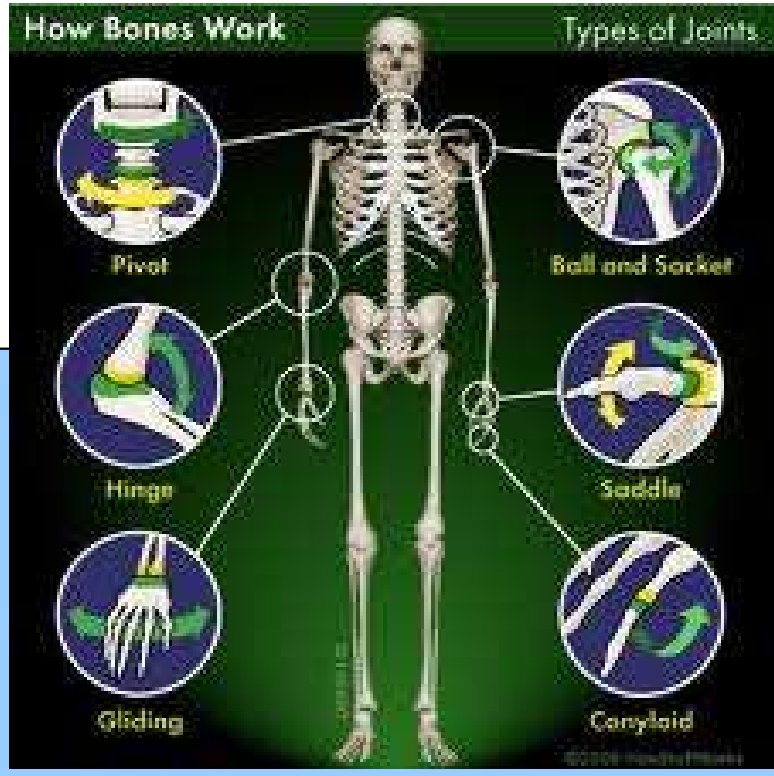
Joints

Page 21

The meeting point between two bones is called a **joint**.

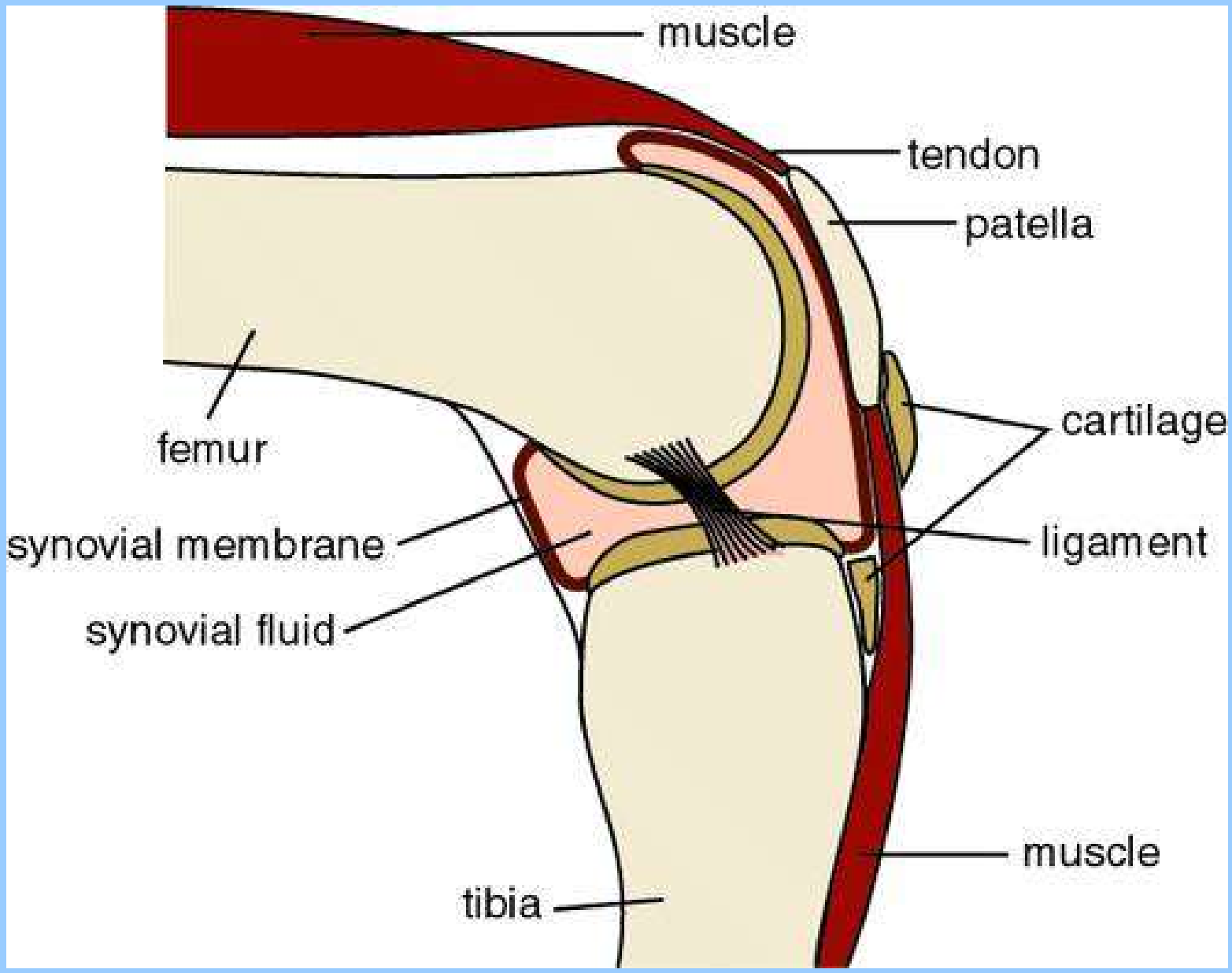
There are two different types of joint

- Hinge Joint
- Ball and Socket



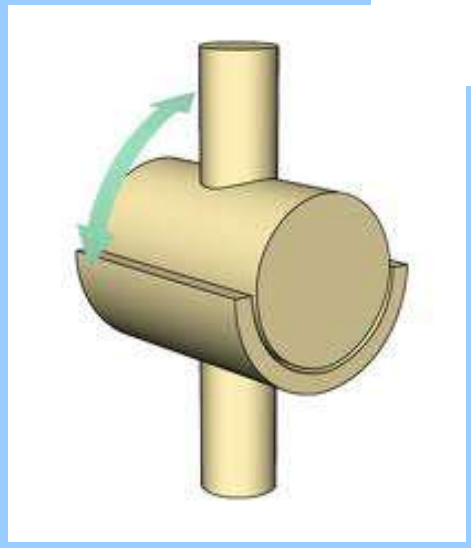
https://www.youtube.com/watch?v=ihTmABgLqV4

Hinge Joint

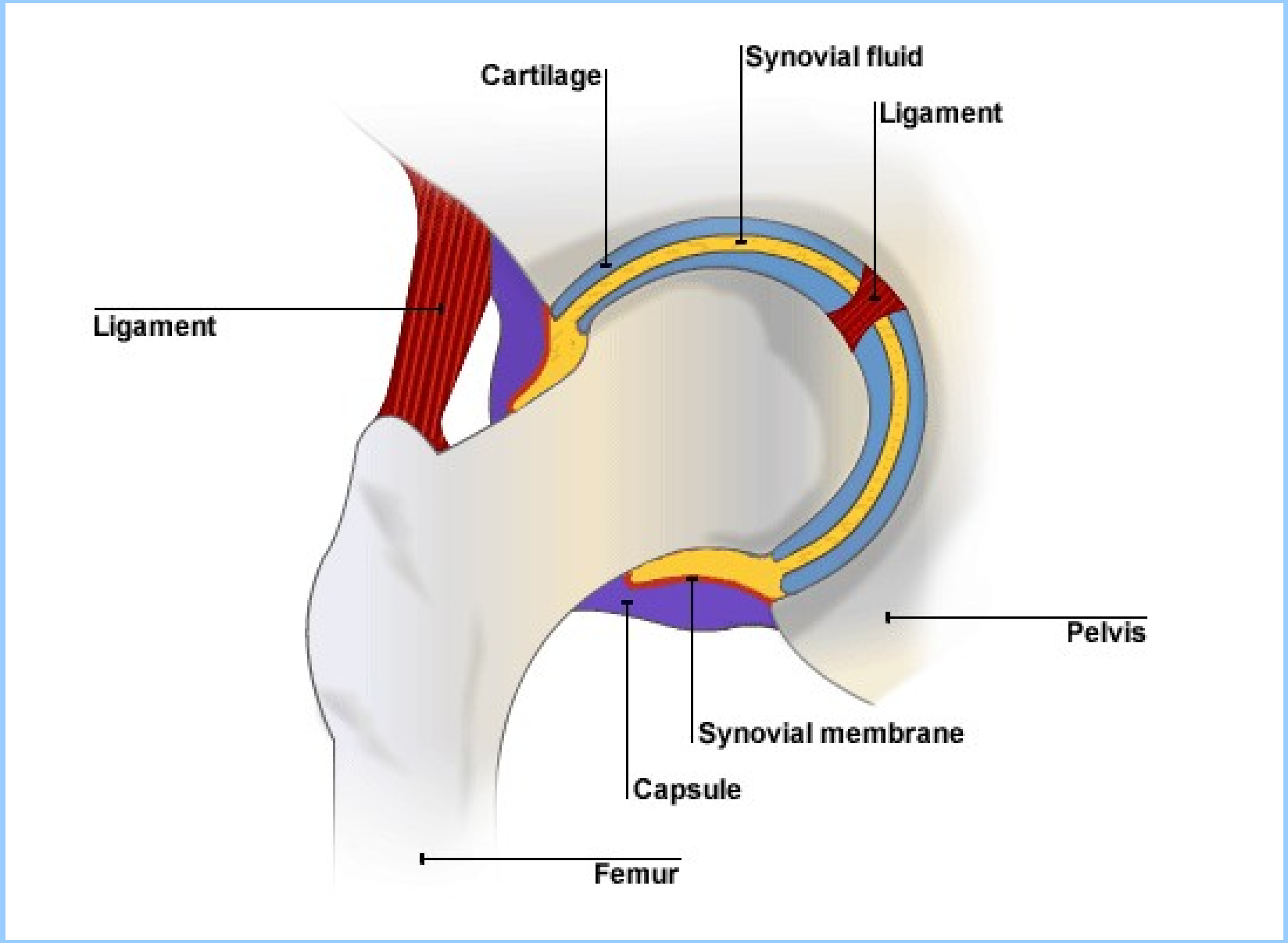

muscle
tendon
patella
femur
cartilage
synovial membrane
ligament
synovial fluid
muscle
tibia

Hinge Joint

- Bones meet together like a hinge and movement is restricted to one plane.
- Examples – elbow, knee and ankle

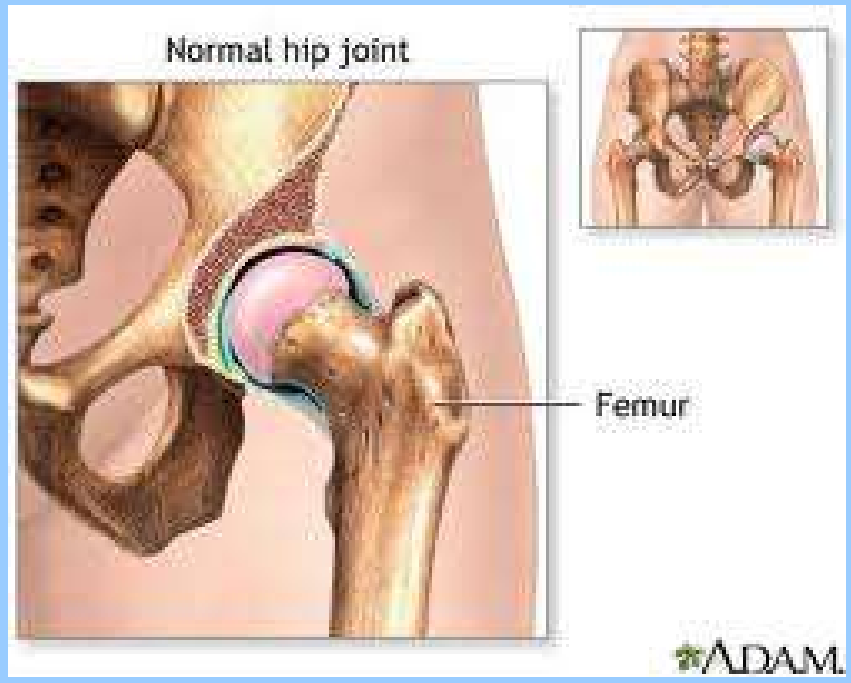


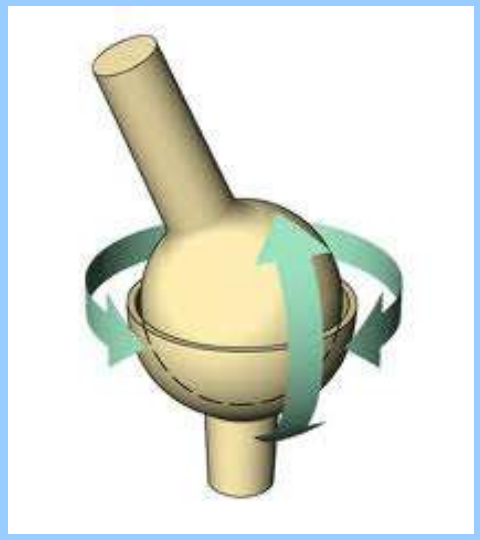
Ball and Socket Joint



Ball and Socket Joint

- At the hip and shoulder, the rounded head (ball) of one bone fits into the socket of another allowing movement in three different planes.
- Examples – shoulder and hip





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Joints

Page 22

Type of Joint	Movement of Joint	Examples of Joint
Ball and Socket		

Joints

Page 22

Cartilage – covers the ends of bones. It has two functions:

- Acts as a shock absorber in joints
- It is smooth so reduces friction when the joints move.

Joints

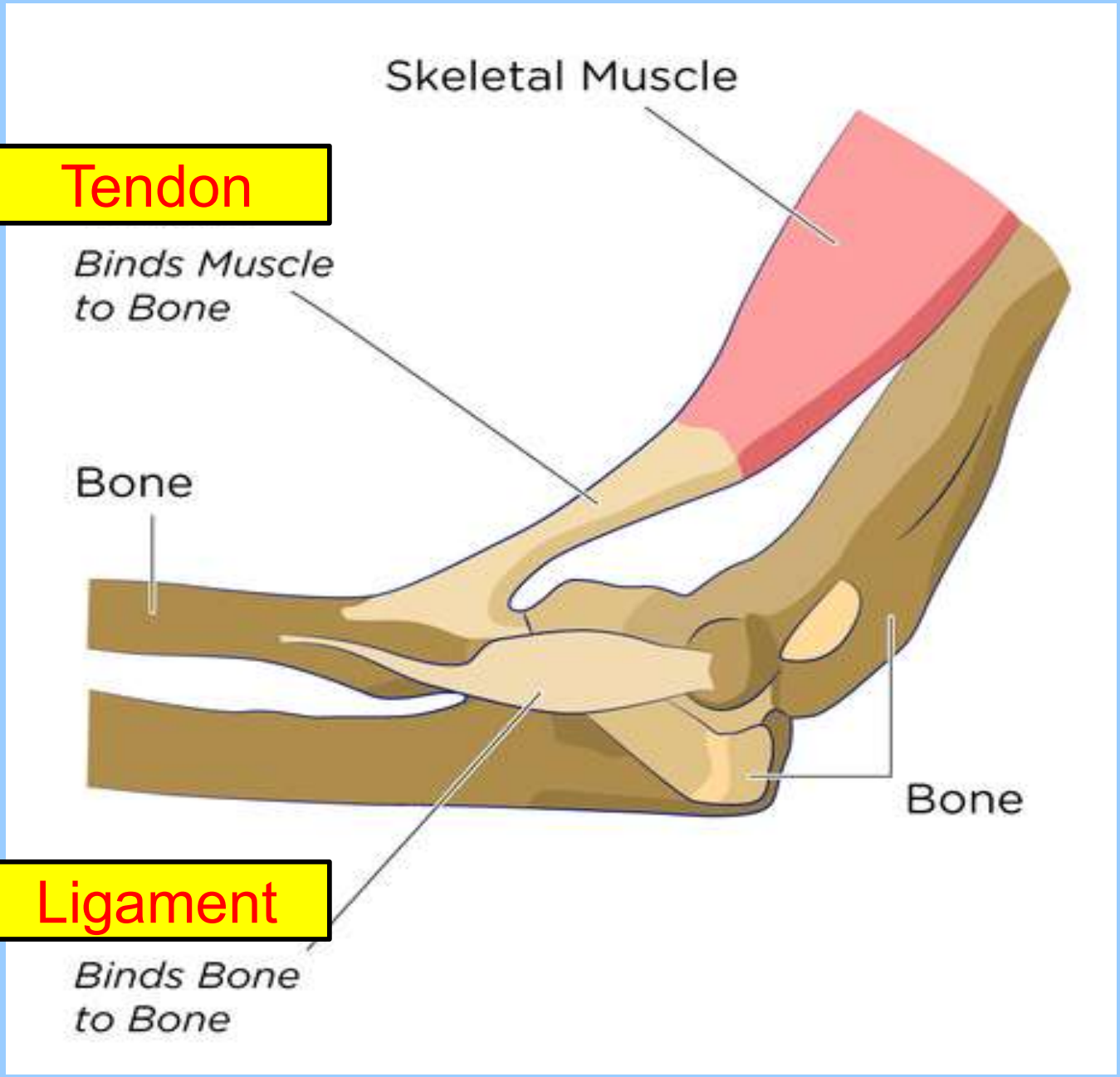
Page 22

Ligaments – hold bones together at a joint (connects bone to bone).

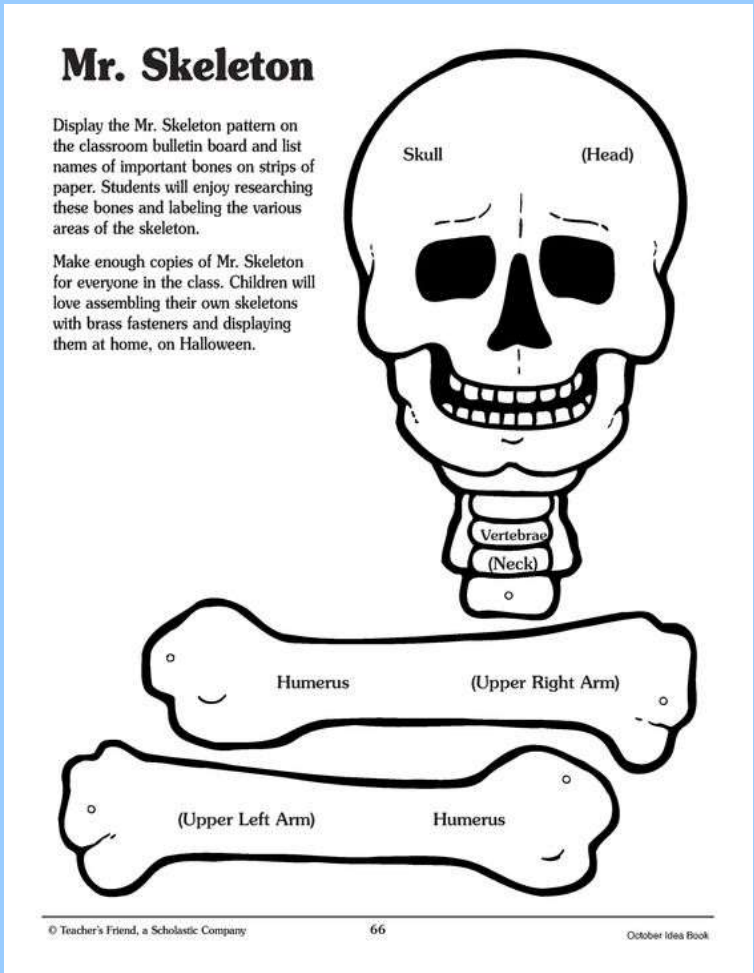
They hold the joint in place yet allow movement because they are slightly elastic.

Tendon vs Ligament

Page 22



COMPLETE - Time to move….



- Mr Skeleton Activity

Now choose 3 colours and shade the bones in our body which provide…

Support

Protection

Movement

Can you identify the different types of joint on your skeleton?

Plenary

- Write on a post-it 2 things you have learnt from today

https://www.bbc.co.uk/bitesize/topics/znyycdm/articles/zgbddp3#zt3bydm10 QUIZ (10)

Muscle Fatigue

Page 25

Starter:

1. What do you think happens to your muscles when you exercise for a long period of time?

- Optional lesson

Muscle Fatigue

Page 25

Learning Intentions:

- To find out what happens to our muscles when we exercise for a long period of time.

Muscle Fatigue

Page

Success Criteria

- ❑ I can undertake an experiment to test muscle fatigue
- ❑ I can explain why muscles become tired

Muscle Fatigue

- This is when a muscle loses its ability to contract as a result of over activity.
- It will happen when there is a lack of OXYGEN to the muscle
- There is a build up of Lactate

https://www.youtube.com/watch?v=PthdswsrM3Y

To avoid muscle fatigue

1. Rest Days
2. Warm Up Exercises
3. Stretch at the end of training
4. Alternate exercise in workouts
5. Use the right equipment

Stretches you can do while sitting

Muscle Fatigue Experiment

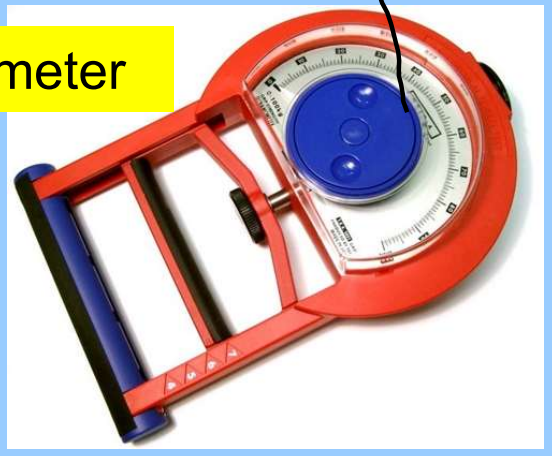
Aim:

To investigate how grip strength/strength can be affected by time.

Muscle Fatigue Experiment

- **Method - In pairs go around the room trying each of the muscle fatigue exercises.**

Dynamometer



Muscle Fatigue Experiment

Do this:

Hold a book in each hand. Raise one arm straight out parallel to the ground and the other arm down at your side.

Muscle Fatigue ... Weight Lifting

How long did you hold the book before fatigue got the better of you?

_____ minutes _____ seconds

Which arm felt the fatigue the most? ◯ straight arm ◯ arm by your side

Which muscles experienced the most fatigue?

◯ biceps ◯ triceps ◯ deltoids ◯ pectoralis major

Muscle Fatigue Experiment

Do this:

Sit against the wall with your knees bent at a 90^0 angle. Hold this position for as long as it takes to feel muscle fatigue.

(If it's been more than 3 minutes you ain't doin' it right).

Muscle Fatigue ... Too Tired to Sit

How long did you sit before your legs started to burn like crazy?

_____ minutes _____ seconds

How did it feel to try to walk right after sitting against the wall?

The funny feeling in your legs is called *muscle fatigue*. Fatigue is caused by a buildup of _____ _____ in the muscle.

Muscle Fatigue Experiment

Do this:

Extend your arm out in front of you and using your hand, squeeze the tennis ball hard one time each second. This is how hard your heart works...and it doesn't complain!

Muscle Fatigue ... To Beat or Not to Beat

How is your heart (cardiac) muscle different from your arm (skeletal) muscle? (just compare how tired your arm got doing the work of the heart)

Does cardiac muscle experience fatigue? _____

Does skeletal muscle experience fatigue? _____

So, about how long did you "live", anyway??

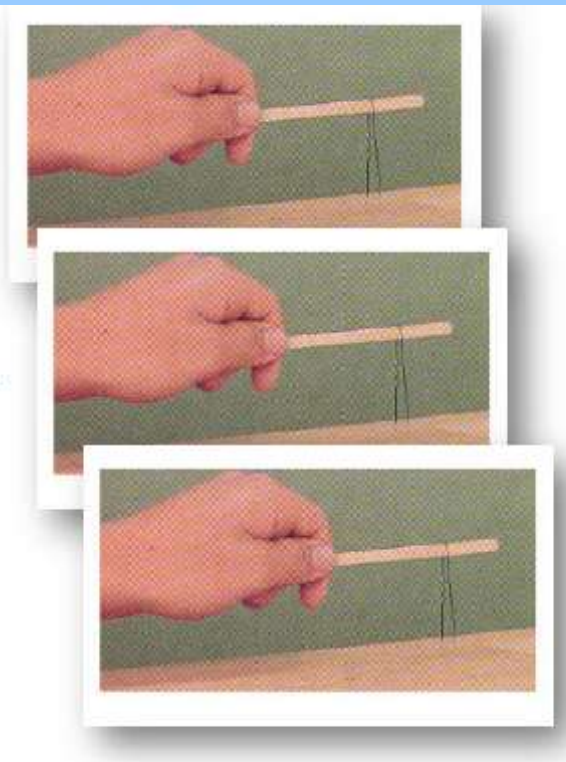
_____ minutes

You would not live long if your heart were made of skeletal muscle.

Muscle Fatigue Experiment

Do this:

1. Hold a popsicle stick in front of you , parallel to the table top.
2. Place a bent paper clip on the stick.
3. Raise the stick until the legs of the paper clip just touch he table.
4. The top of the paper clip should rest on the stick.
5. Hold the stick as steady as you can for about 30 seconds and observe.
6. Grip the stick tighter and repeat step 5.
7. Answer the questions on your answer sheet.



Muscle Fatigue ... Get a Grip

What happened to the paper clip even when you kept your hand steady?

What caused this? Hint: read the introduction

Muscle Fatigue Experiment

Do this:

1. Hold a clothespin between your thumb and index finger and see how many times you can squeeze it in one minute. Record
2. Now, without resting, squeeze it as fast as you can for a second minute. Record

Muscle Fatigue ... Clothespin Calisthenics

How many times did you squeeze the clothespin the first minute? _____

How many times did you squeeze the clothespin the second minute? _____

The soreness in your and arm is called *muscle fatigue*. Fatigue is caused by a buildup of _____ _____ in your muscles. Hint: read the introduction

Why did you feel fatigue in your forearm rather than your fingers?

- **Conclusion**
- **Grip strength reduces over time as muscles become fatigued**
- **Repeatedly gripping and un gripping an object leads to muscle fatigue.**

Reproduction

Page 24

- Starter
  1. List the three parts of an animal cell.
  2. What is the name of the **male** reproductive cell?
  3. What is the name of the **female** reproductive cell?

Reproduction

Page 24

Learning Intentions:

- I am learning about the parts of the body used in reproduction.

Joints

Page

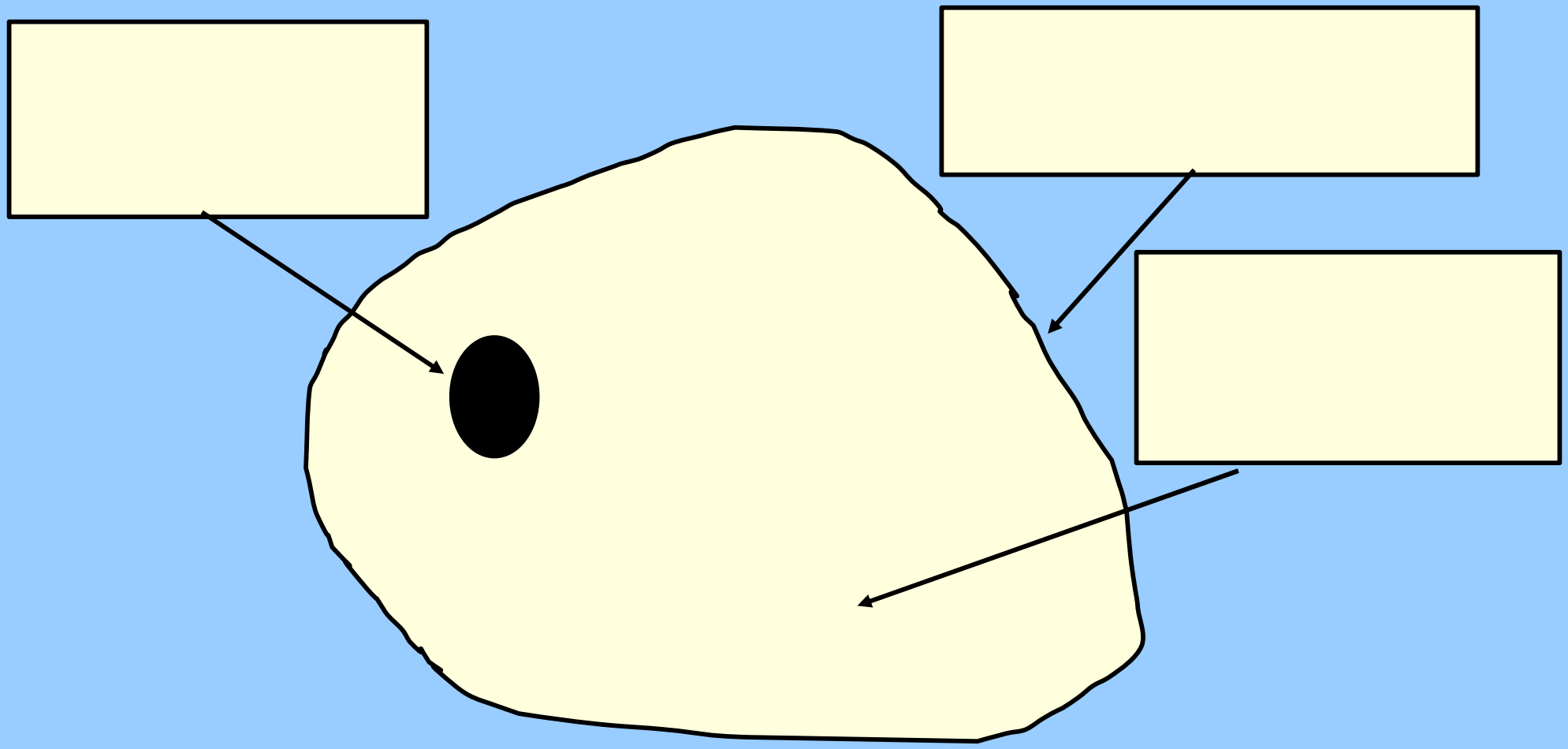
Success Criteria

- ❑ I can state the name of the main parts of the male and female reproductive systems.
- ❑I can describe the functions of the main parts of the male and female reproductive systems

Revision: Animal Cells

Use your knowledge of animal cells from the ‘Body Systems’ topic to complete the boxes in your booklet, labelling each part of a basic animal cell.

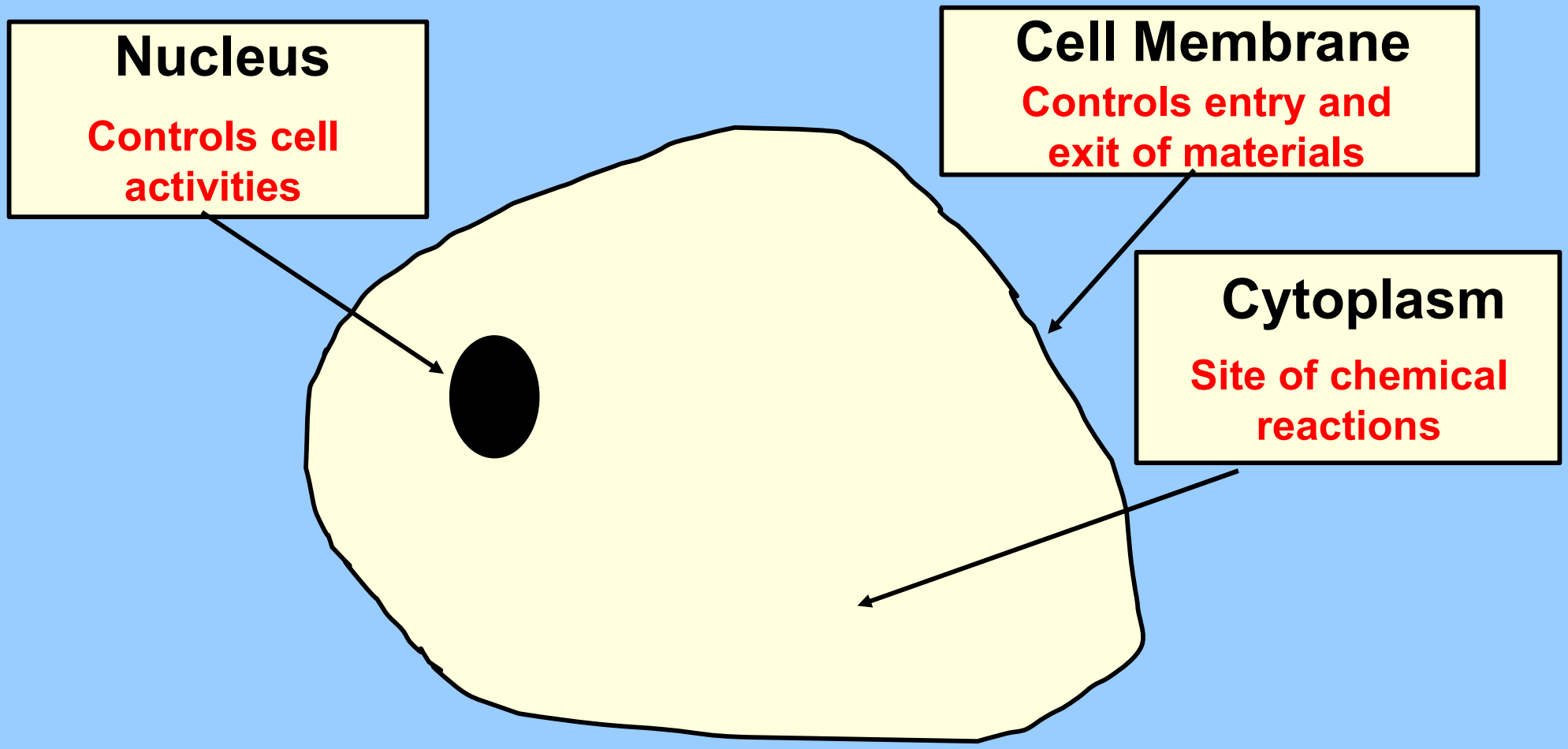
Extension task: write down the job of each part of the animal cell.



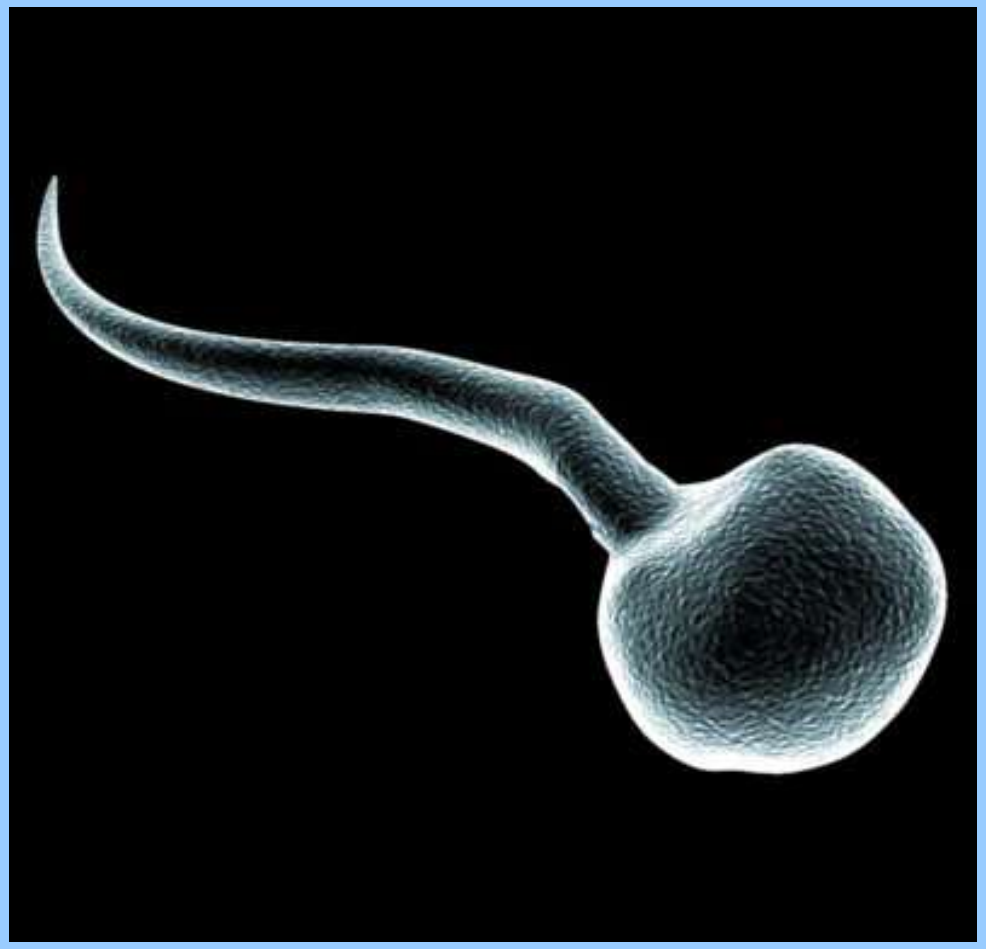
Learning Check

Use your knowledge of animal cells from the 'Body Systems' topic to complete the boxes in your booklet, labelling each part of a basic animal cell.

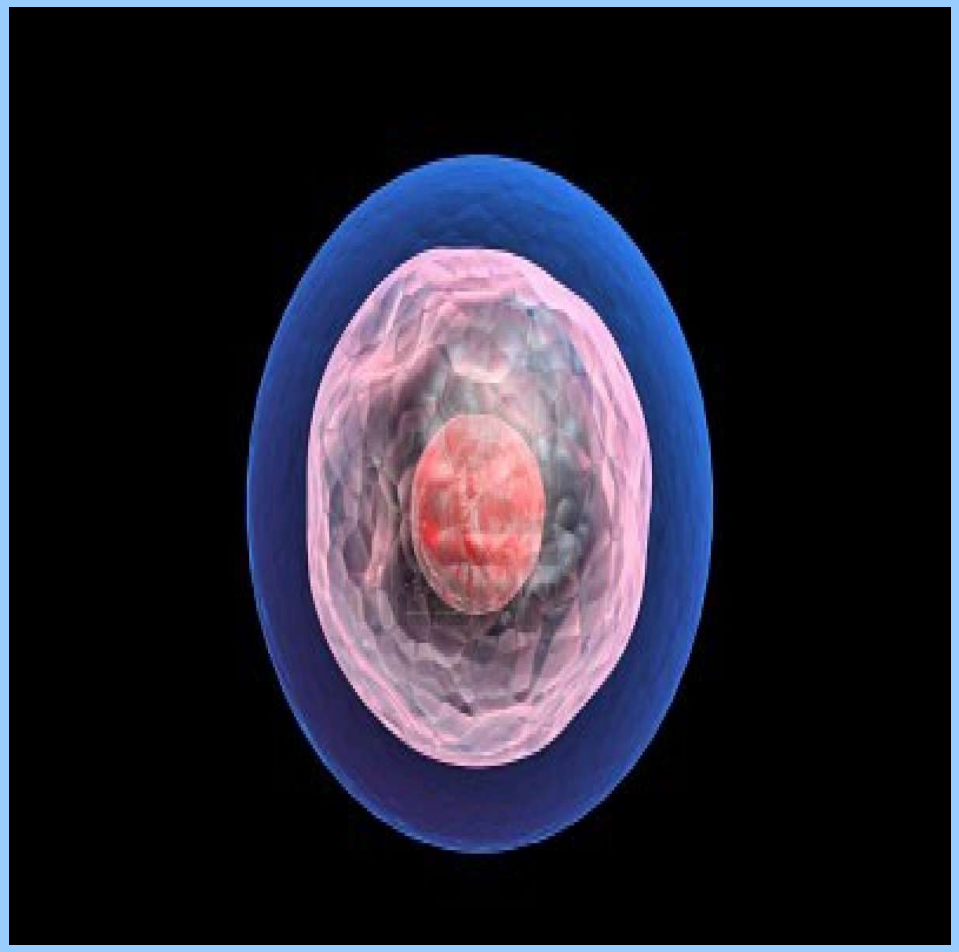
Extension task: write down the job of each part of the animal cell.



Male and Female Sex Cells



Male Sex Cell
Sperm



Female Sex Cell
Egg

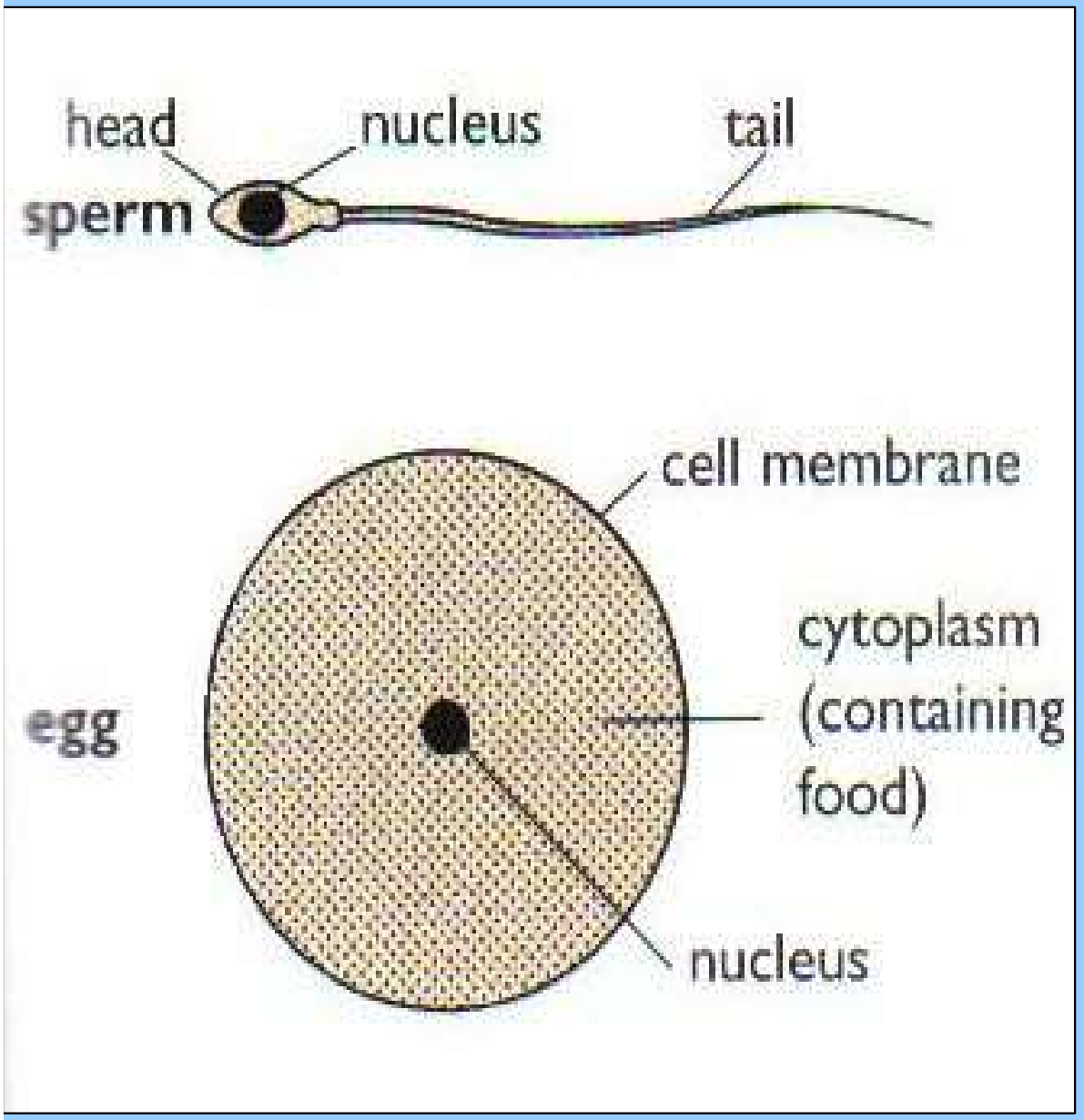
Male and Female Sex Cells

During **sexual reproduction** the sperm joins with the egg.

The sperm contains **half** the information for the new organism while the egg contains the other half.

The information is carried on special structures called **chromosomes** found in the nucleus of each cell.

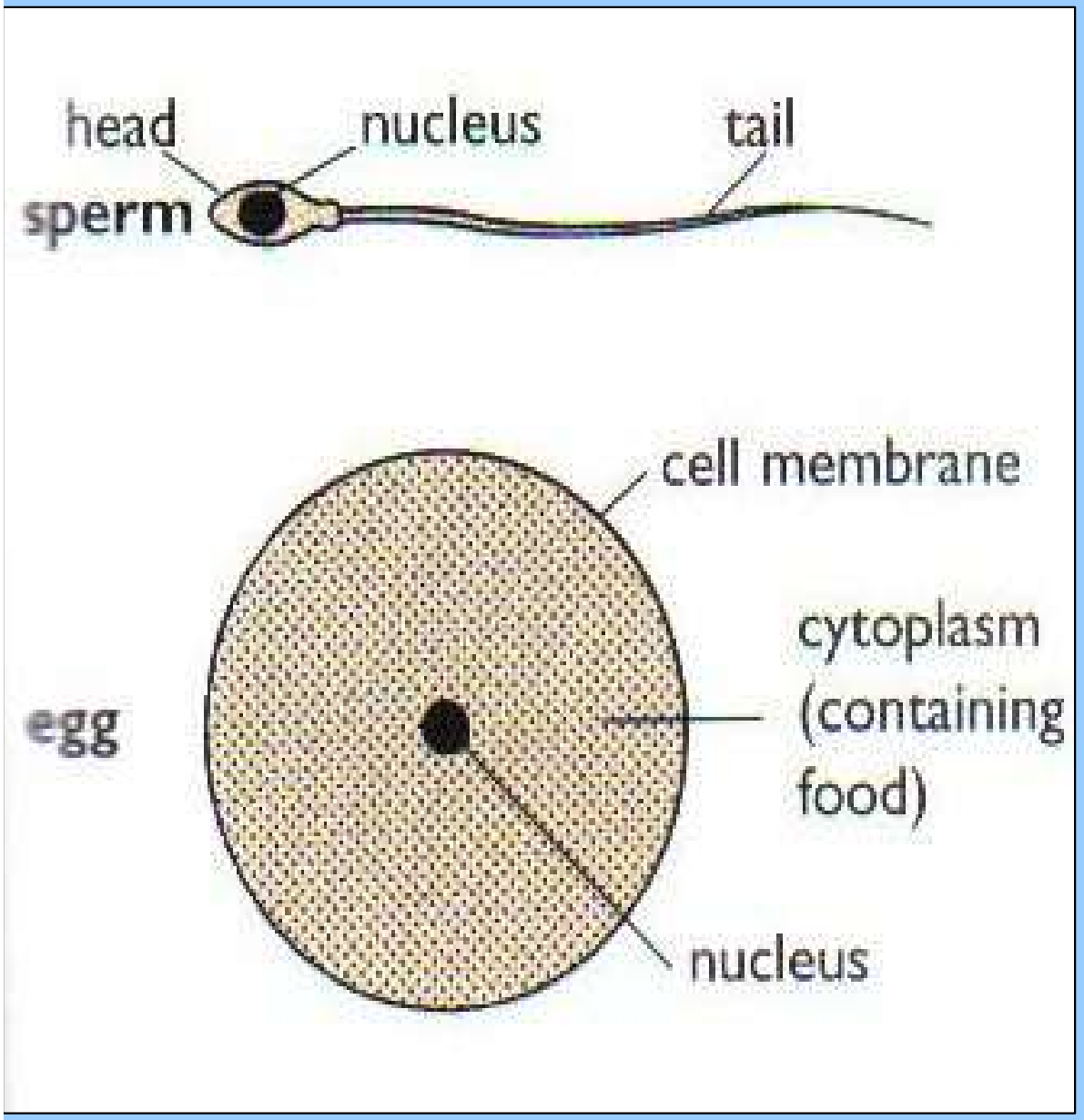
Sperm and Egg



In your booklet, draw labelled diagrams of a sperm and egg cell then answer the following questions:

1. Why does a sperm cell have a tail?
2. Why is an egg cell larger than a sperm cell?

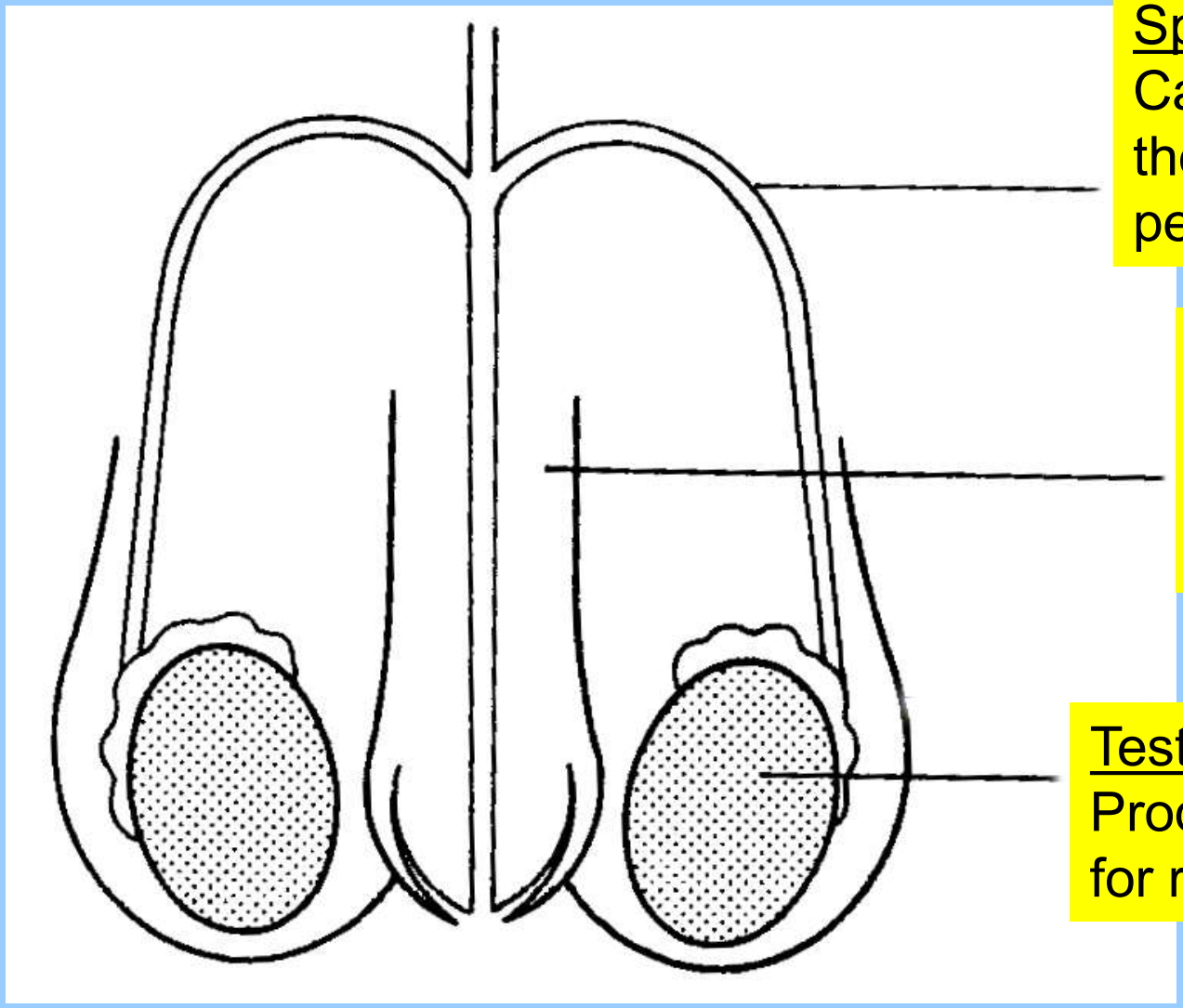
Sperm and Egg



In your booklet, draw labelled diagrams of a sperm and egg cell then answer the following questions:

1. A sperm consists of a head containing a nucleus and a tail which helps it swim to the egg.
2. An egg is larger than a sperm because it also has a food store so it can survive until the sperm reaches it.

The Male Reproductive System



Sperm duct
Carries sperm from the testes to the penis.

Penis
The organ from which semen and urine leaves the body.

Testes
Produces sperms for reproduction.

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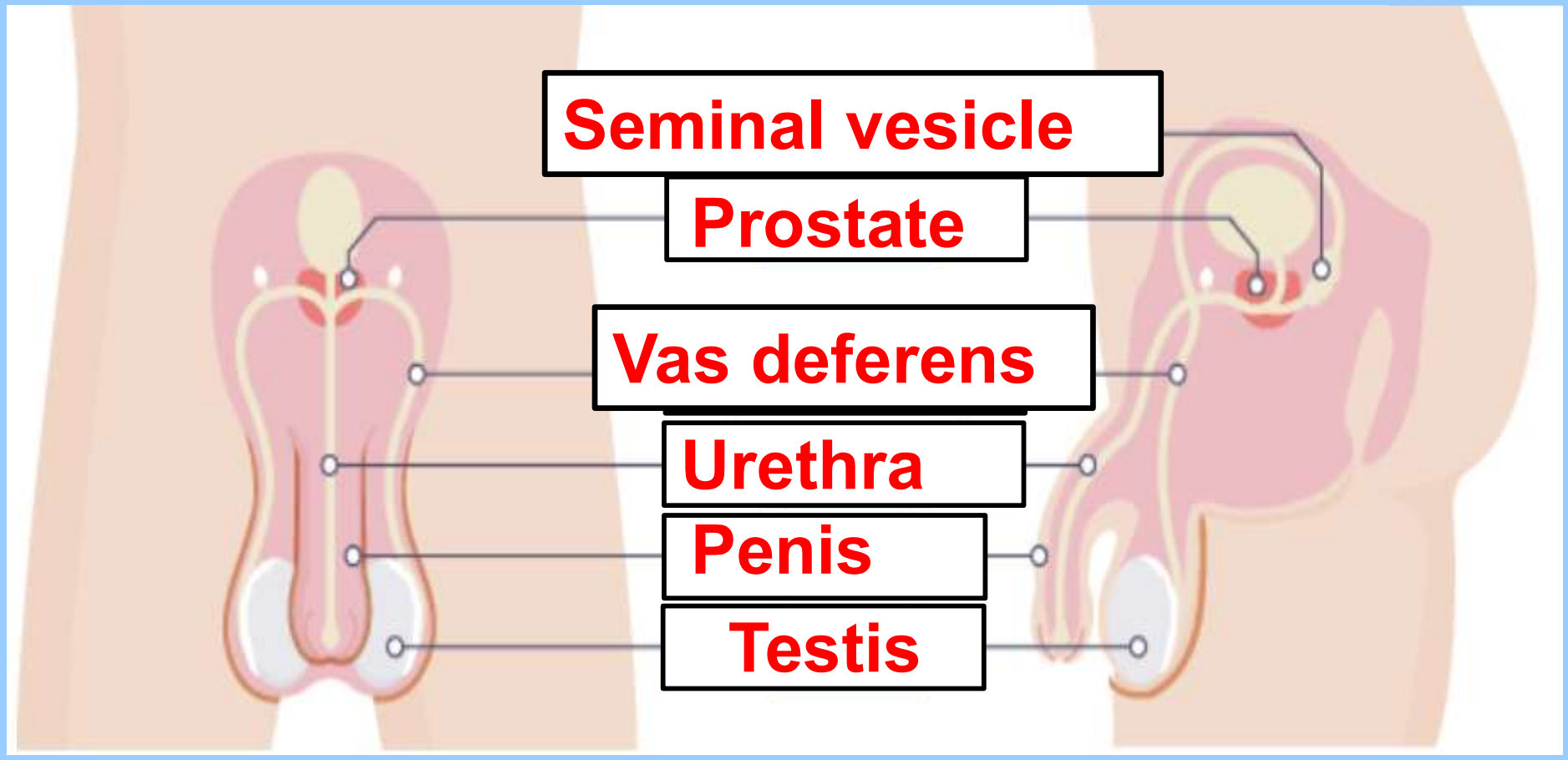
The Male Reproductive System



Use this slide to label the diagram in your booklet of the male reproductive system.

The Male Reproductive System

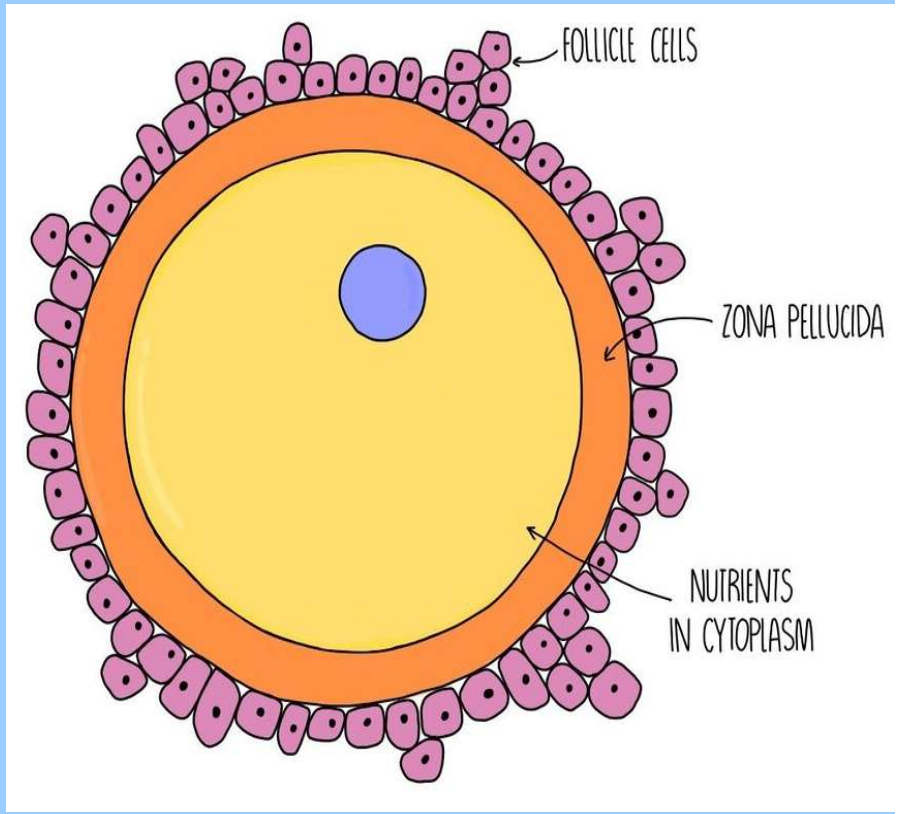
Complete the table in your booklet, using the word bank to help.

Structure	Function
	Carries sperm from the testes to the penis
	Produce sperm for reproduction
	The organ from which semen and urine leaves the body.

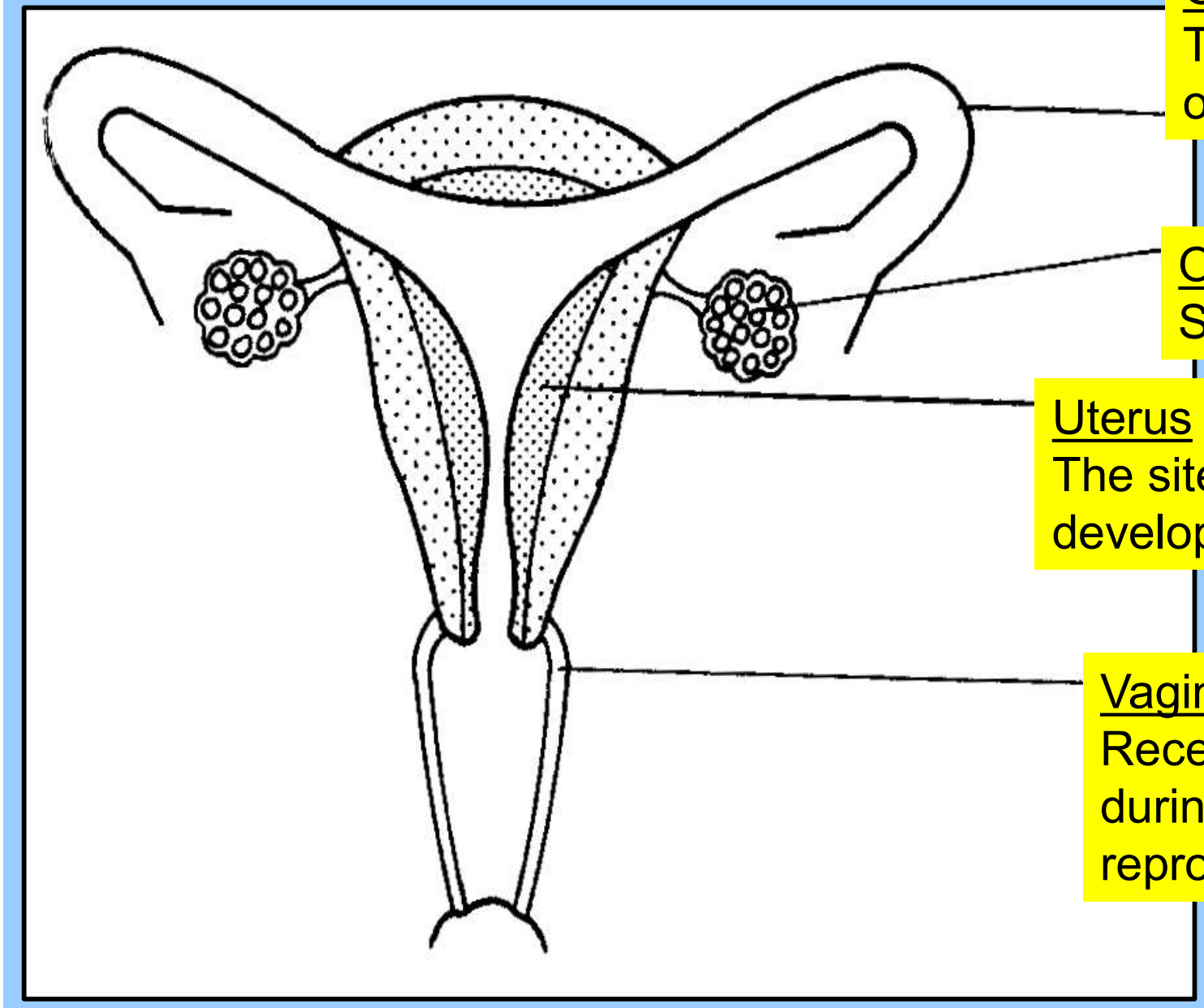
Word bank: Penis, sperm duct, testes

The Female Reproductive System

- The female reproductive system produces egg cells that may be fertilised by male sperm.
- A sperm is the smallest cell in the body, about 5000 sperm cells would fit into one millimetre!
- The egg cell is the largest – about the size of a full stop.



The Female Reproductive System



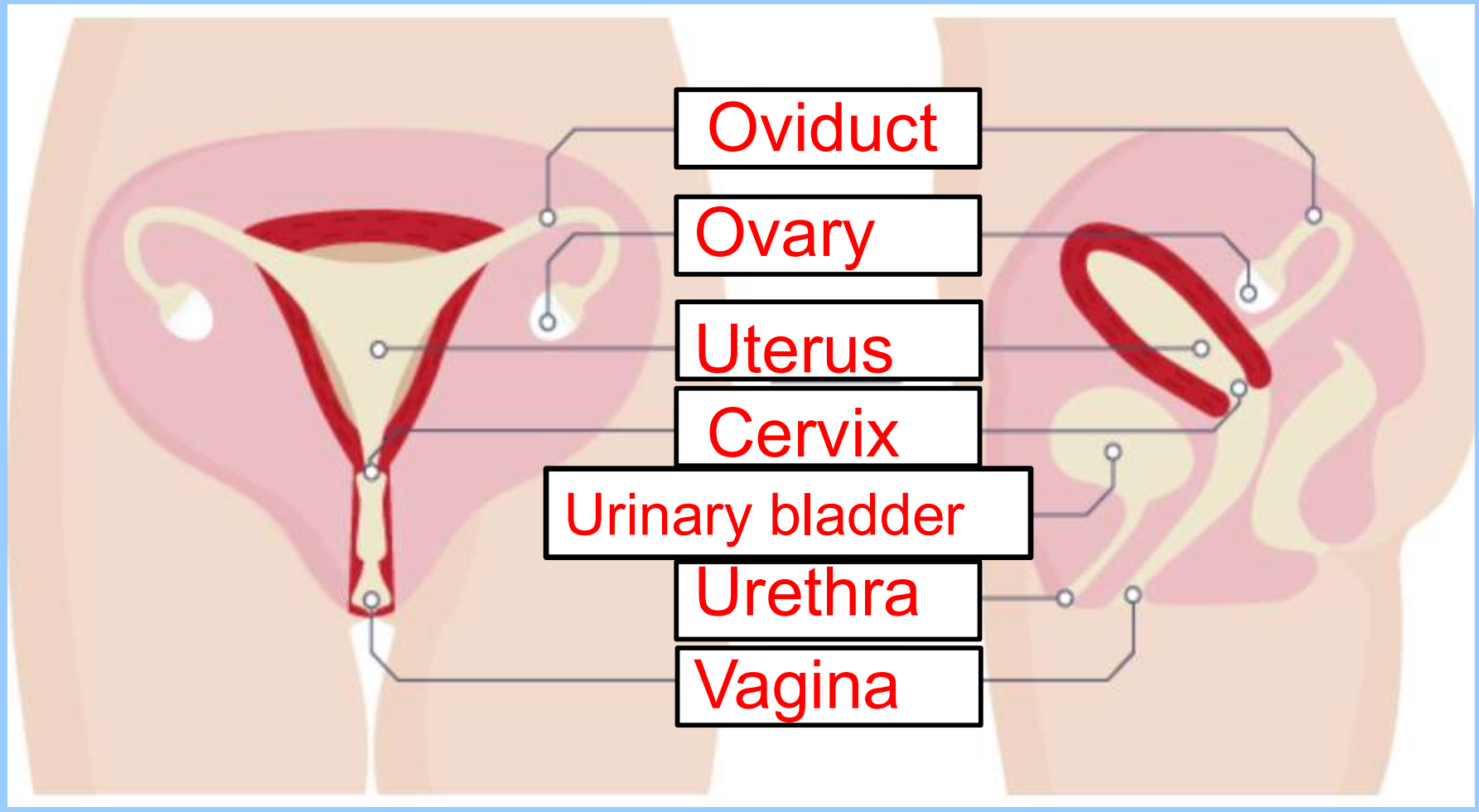
Oviduct
Transports egg from ovary to uterus.

Ovary
Stores eggs.

Uterus
The site of foetus development.

Vagina
Receives sperm during sexual reproduction.

The Female Reproductive System



Use this slide to label the diagram in your booklet of the female reproductive system.

The Female Reproductive System

Complete the table in your booklet, using the word bank to help.

Structure	Function
	Produces eggs.
	Transports the egg from the ovary to the uterus.
	The site of foetus development.
	Allows entry of sperm during sexual reproduction and exit of baby at birth.

Word bank: vagina, oviduct, ovary, uterus

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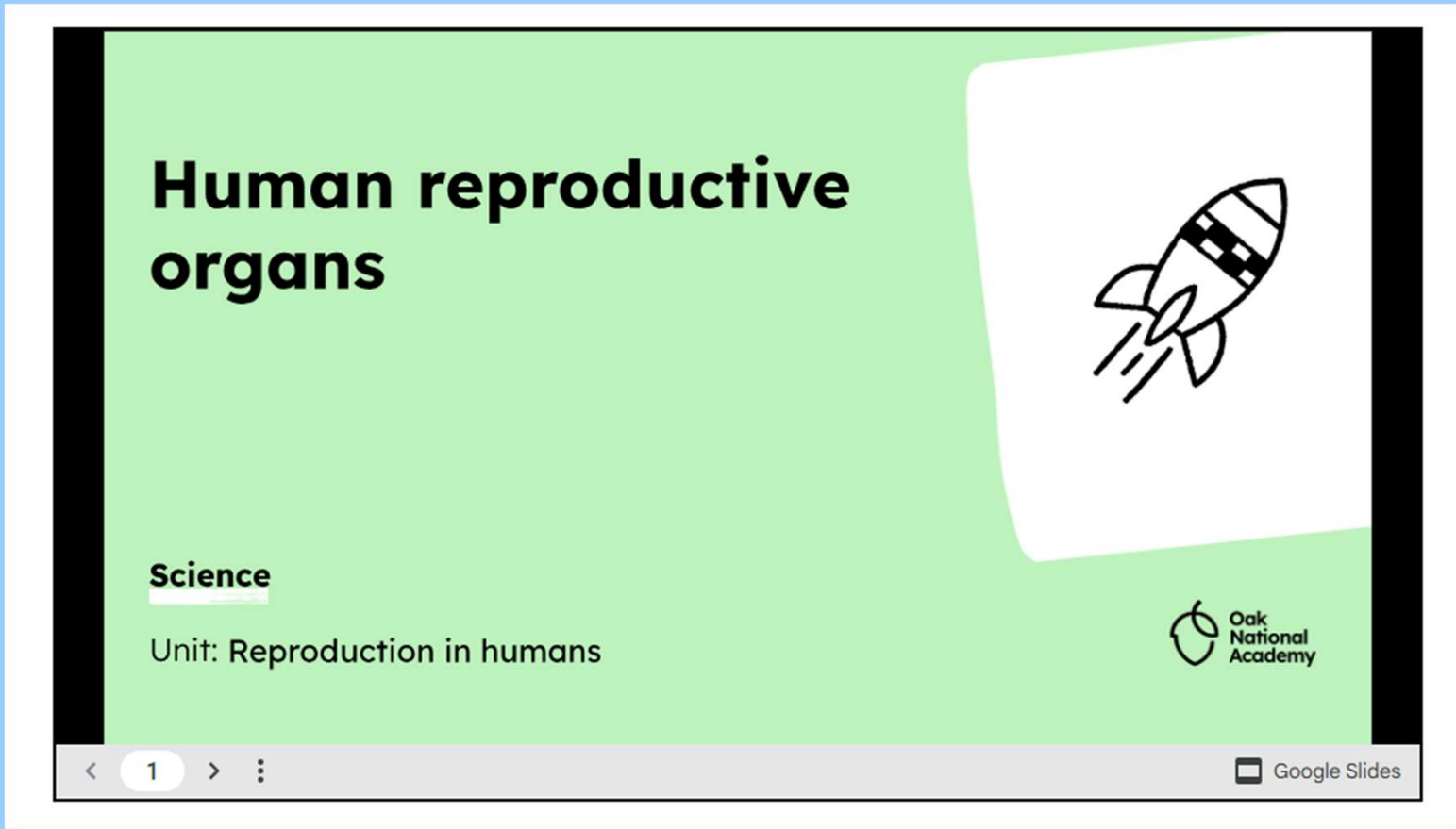
The Reproductive System Activity



Work through the Human Reproductive Organ slides and worksheets, answering the questions throughout

https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/reproduction-in-humans/lessons/human-reproductive-organs#slide-deck

09/09/2026

Plenary – Exit Ticket

1. What did you learn in the lesson today?
2. Is there anything you need me to go over again?

Puberty

- Starter

  List three changes which happen during puberty.

Puberty

Page 27

Learning Intentions:

- I am learning about what happens to the human body during puberty.

Puberty

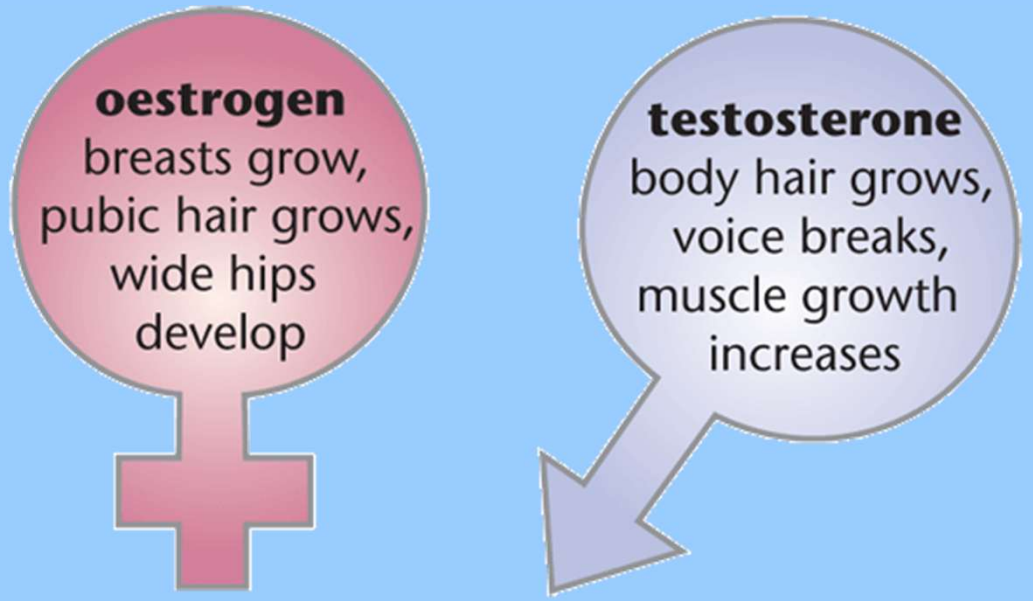
Page

Success Criteria

- ❑ I can list changes that happen to boys during puberty.
- ❑I can list changes that happens to girls during puberty.
- ❑I can list changes that happen to both boys and girls during puberty.

Puberty

- Puberty is the stages in life when a child's body develops into an adults body, usually between the ages of 10 and 16.
- Changes occur at puberty because of hormones.
- Testosterone controls development in males.
- Oestrogen controls development in females.



Puberty

You will be working in groups to sort the cards into 3 categories:

1. Changes that happen to boys during puberty
2. Changes that happen to girls during puberty
3. Changes that happen to both during puberty

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Puberty

Changes in boys	Changes in girls	Changes in both boys and girls

The **testes** begin to produce sperm cells.	**Voice** becomes deeper	Growth of **pubic hair**.
Growth hormones released causing growth of body and reproductive organs.	**Hips** widen (often but not always) and **breasts** develop.	**Oestrogen** and **progesterone** hormones are released by the ovaries.
Production of **testosterone** by the testes	Increase in **erections**	Ovaries begin to release **egg cells**
Foreskin detaches from the glans.	Changes in moods and **emotions**.	Increased interested in **sex**

Body Story – Teen Dreams - EXTENSION

Fertilisation

Starter

1. Name the parts 1-4 of the female reproductive system.
2. What is the function of parts 1 and 3?

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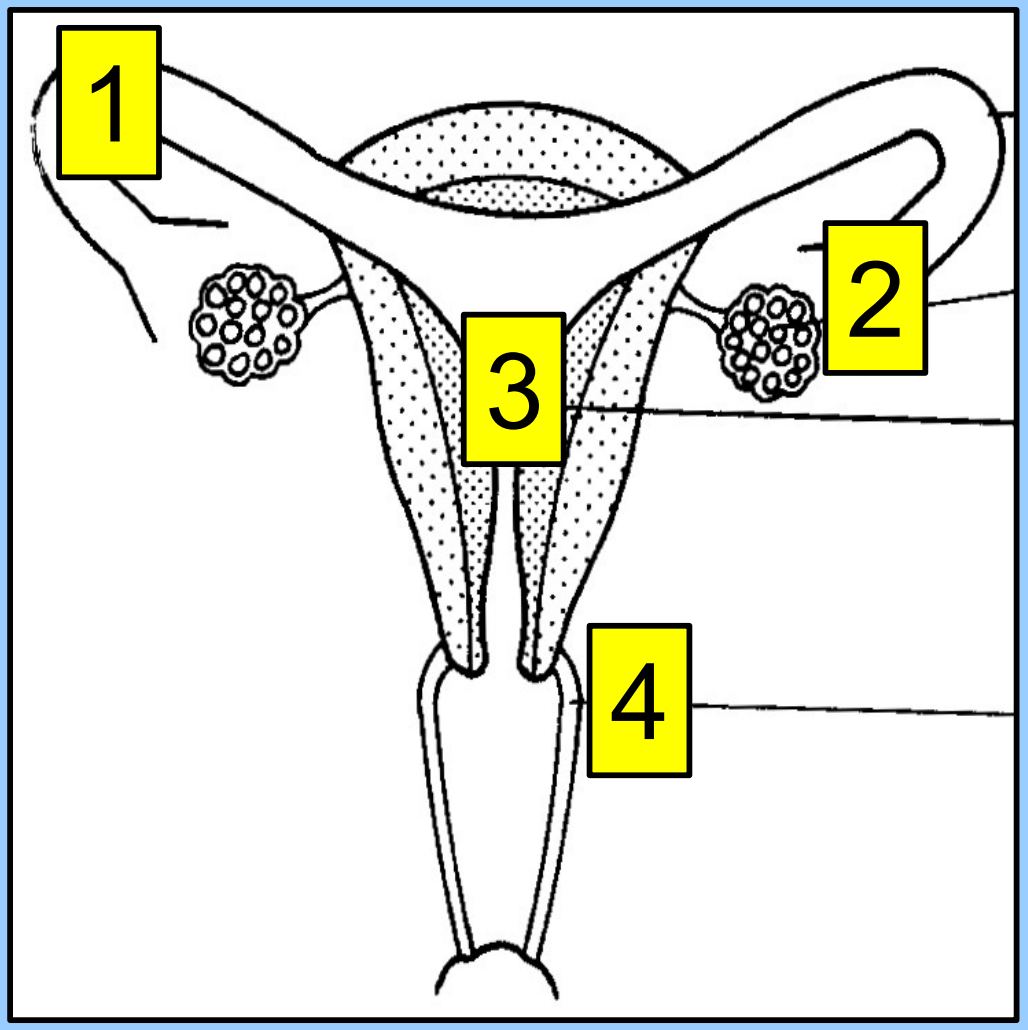


Fertilisation

Page 30

Learning Intentions:

- I am learning about fertilisation.

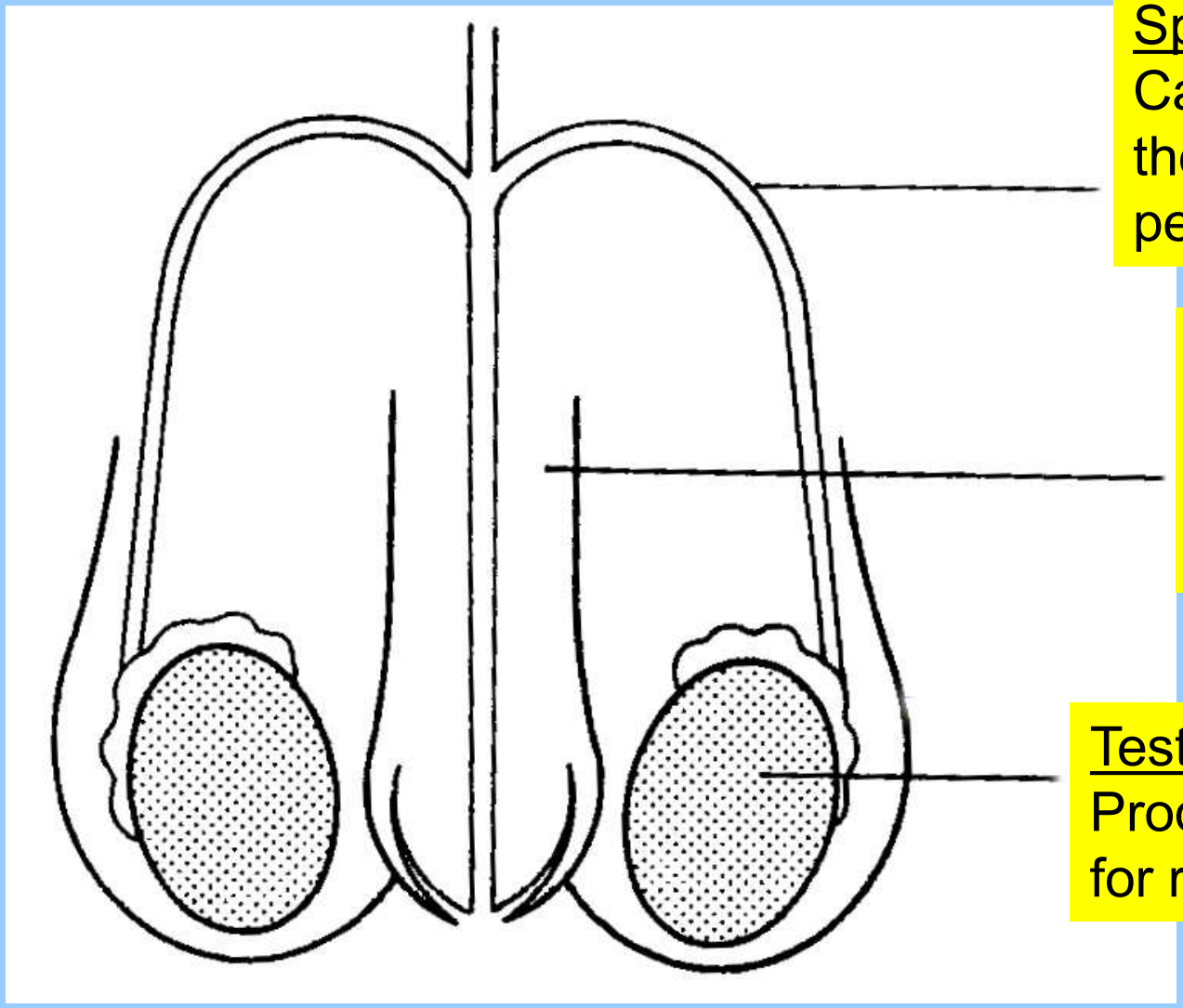
Fertilisation

Page 30

Success Criteria

- ❑ I can state the definition of fertilisation
- ❑ I can name the male and female parts involved in fertilisation

Recap: The Male Reproductive System

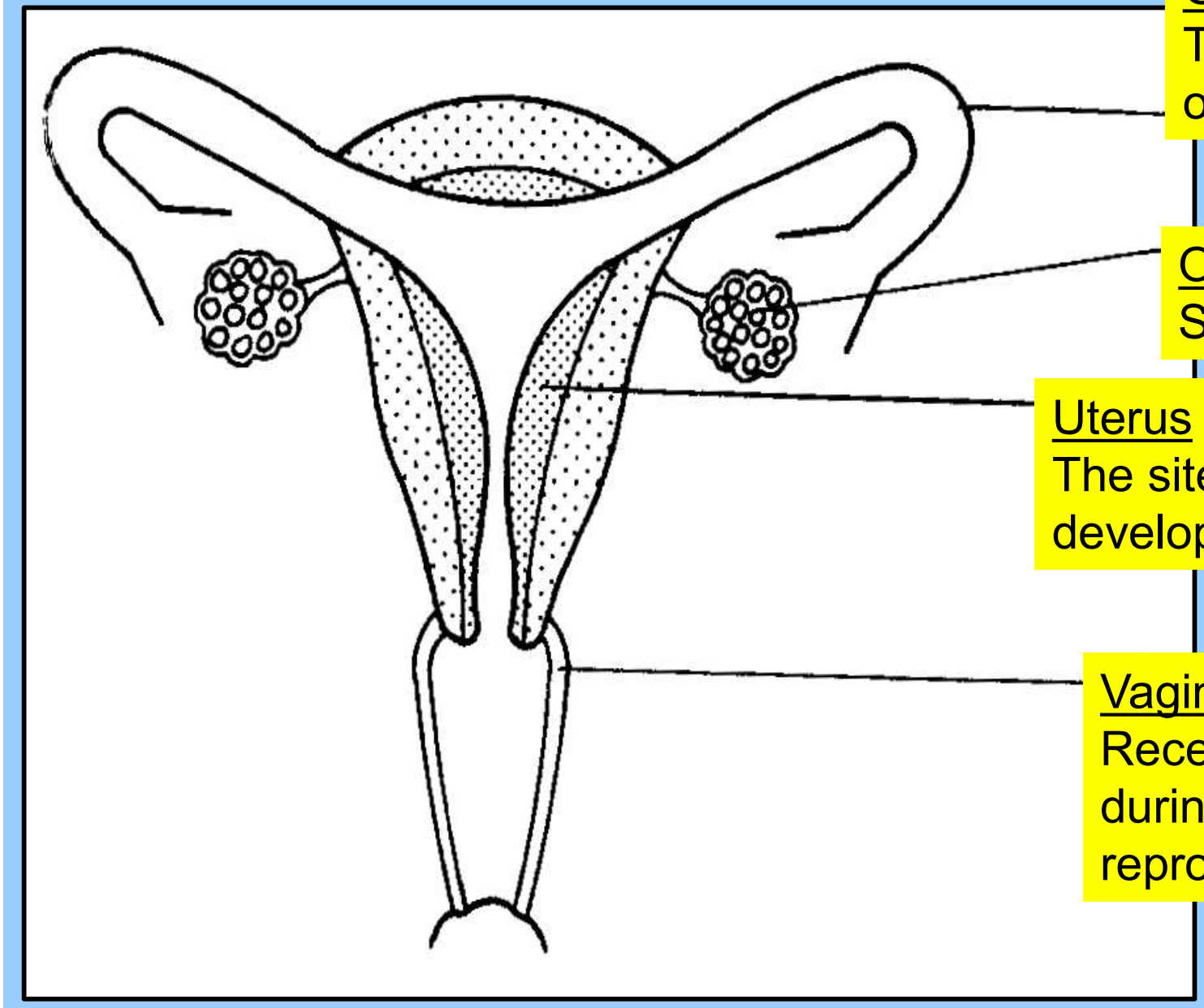


Sperm duct
Carries sperm from the testes to the penis.

Penis
The organ from which semen and urine leaves the body.

Testes
Produces sperms for reproduction.

Recap: The Female Reproductive System



Oviduct
Transports egg from ovary to uterus.

Ovary
Stores eggs.

Uterus
The site of foetus development.

Vagina
Receives sperm during sexual reproduction.

Fertilisation

The process of fertilisation takes place within the oviduct of the female reproductive system. To do this, the male sperm cells must be placed within the female through sexual intercourse.

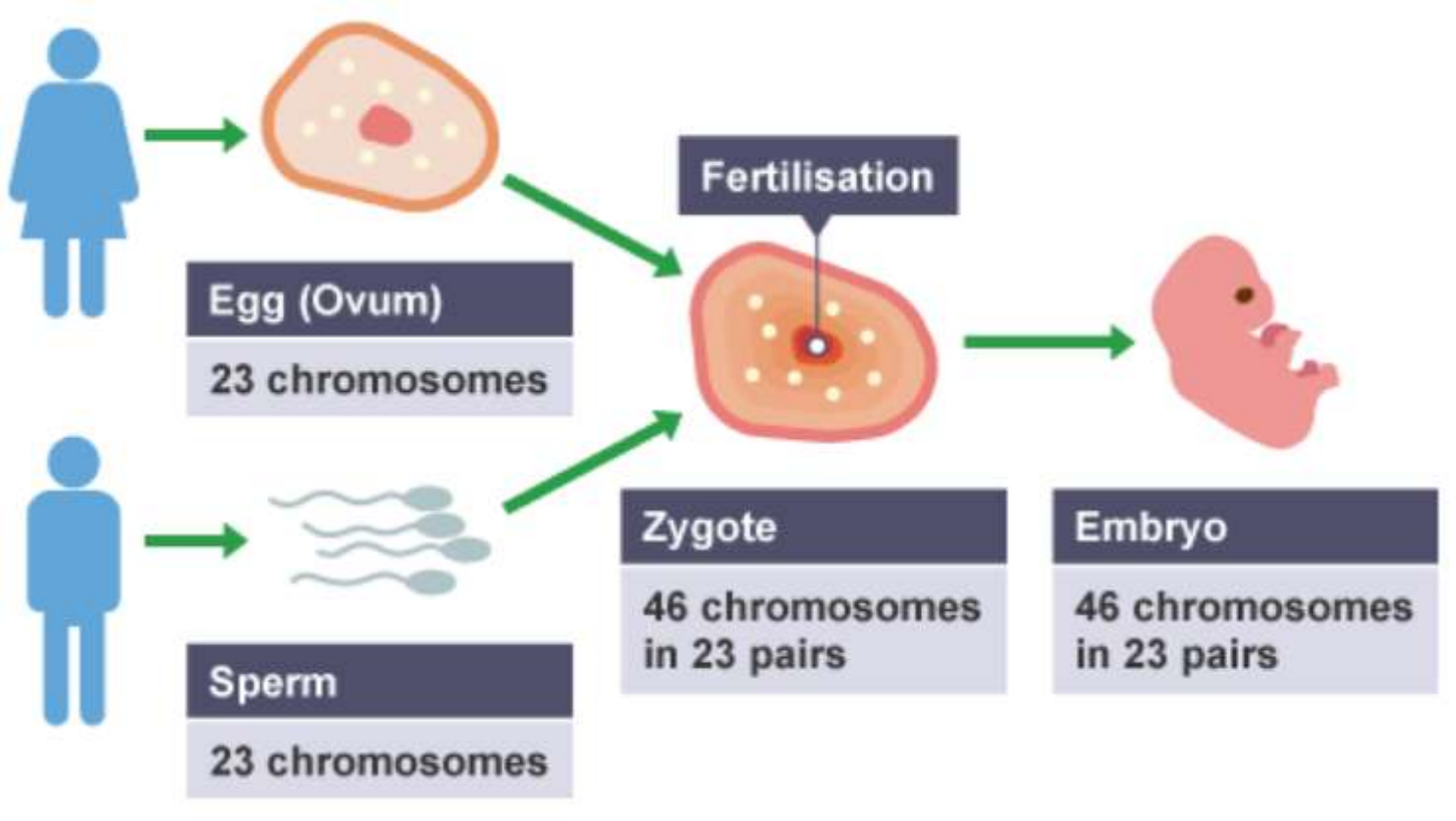
Fertilisation

- The Sperm Cells 'Swim' from the Vagina, through the Cervix and Uterus to the Oviduct to reach the Ovum.
- The Video below shows the journey and difficulties a Sperm Cell must endure to fuse with the Ovum.

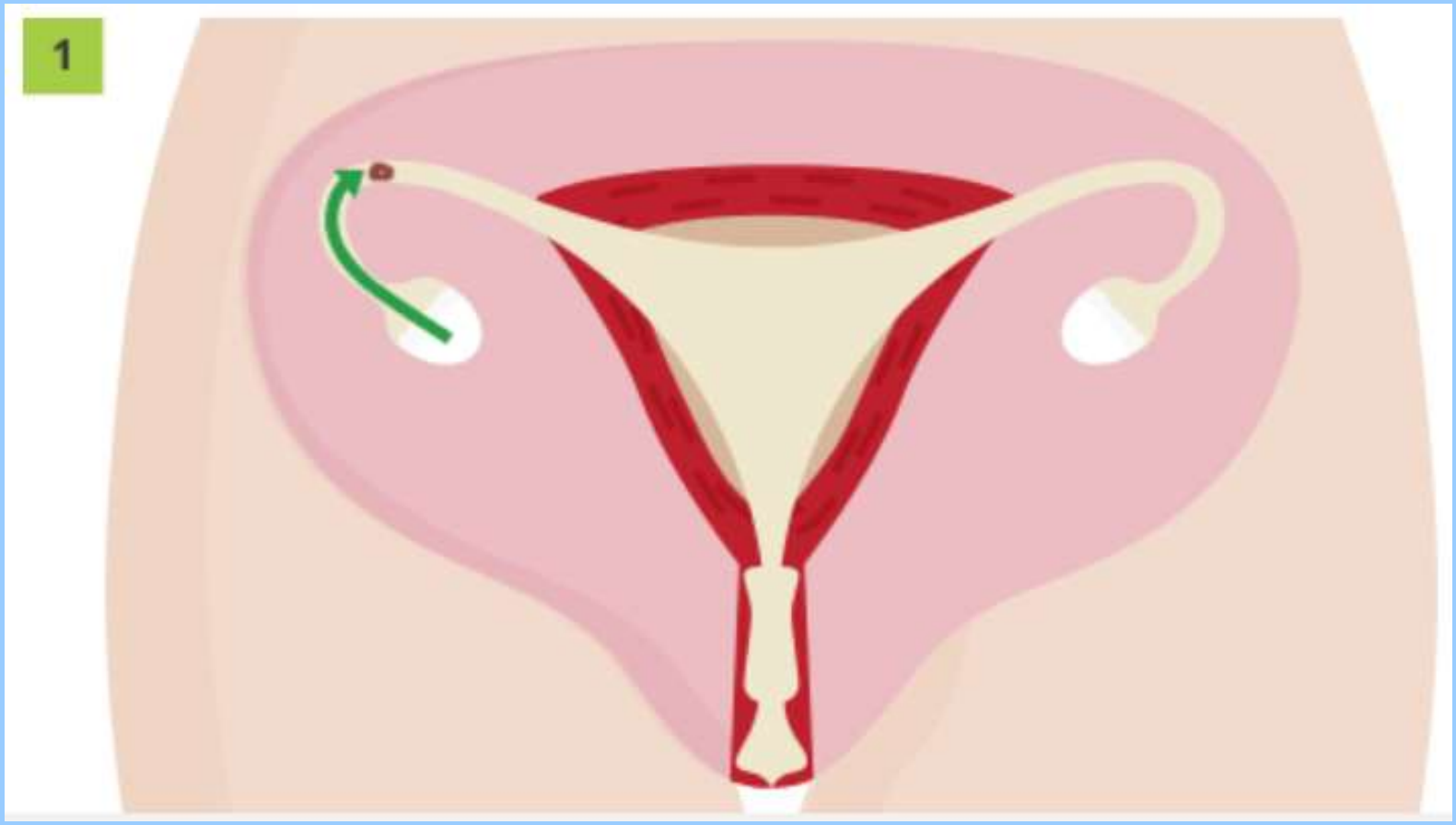
https://youtu.be/_5OvgQW6FG4

Fertilisation

- Fertilisation occurs when the sperm nucleus and the egg nucleus joins, this produces a new cell called a zygote.
- The zygote then matures into an embryo.

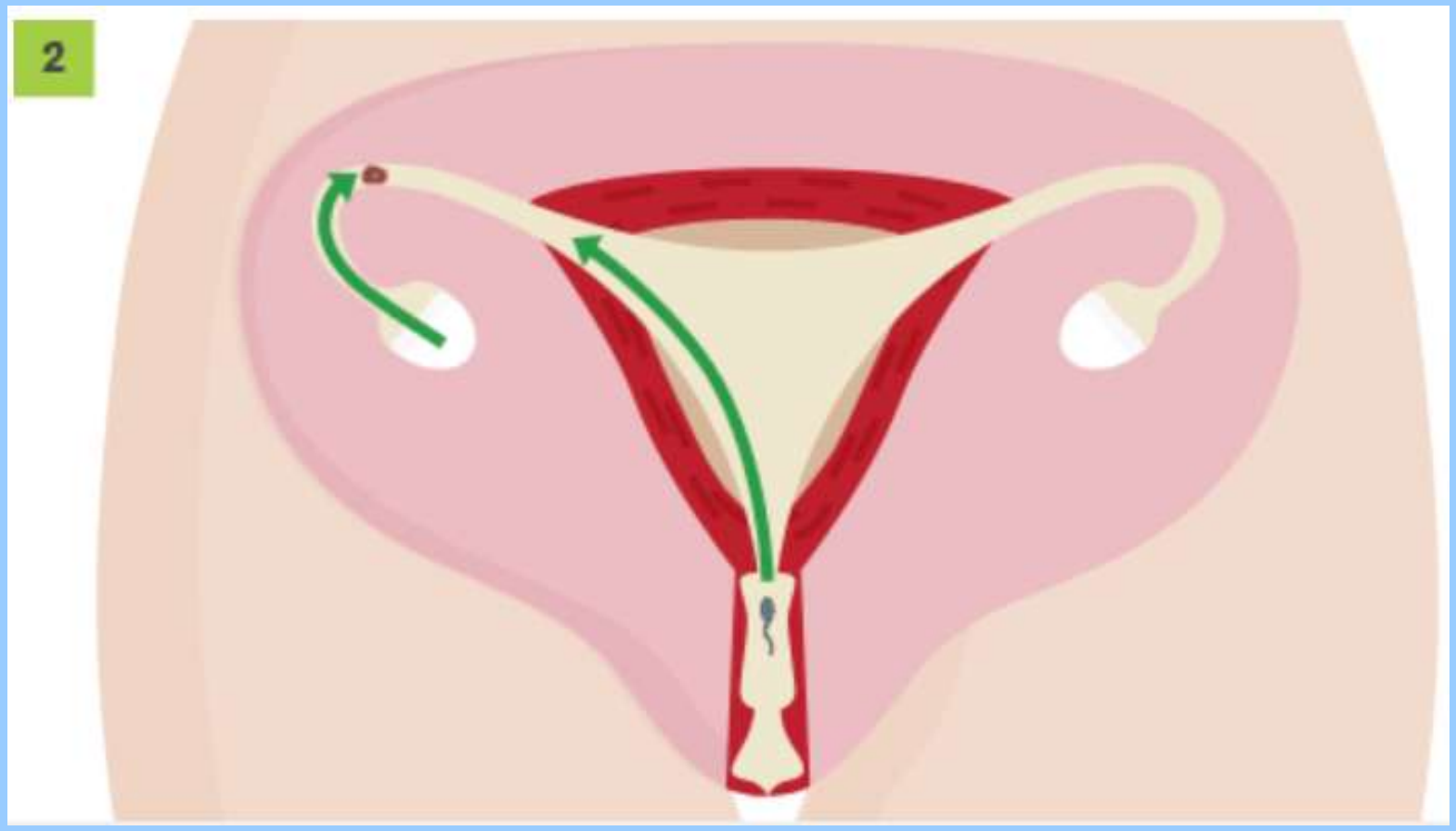


Human fertilisation



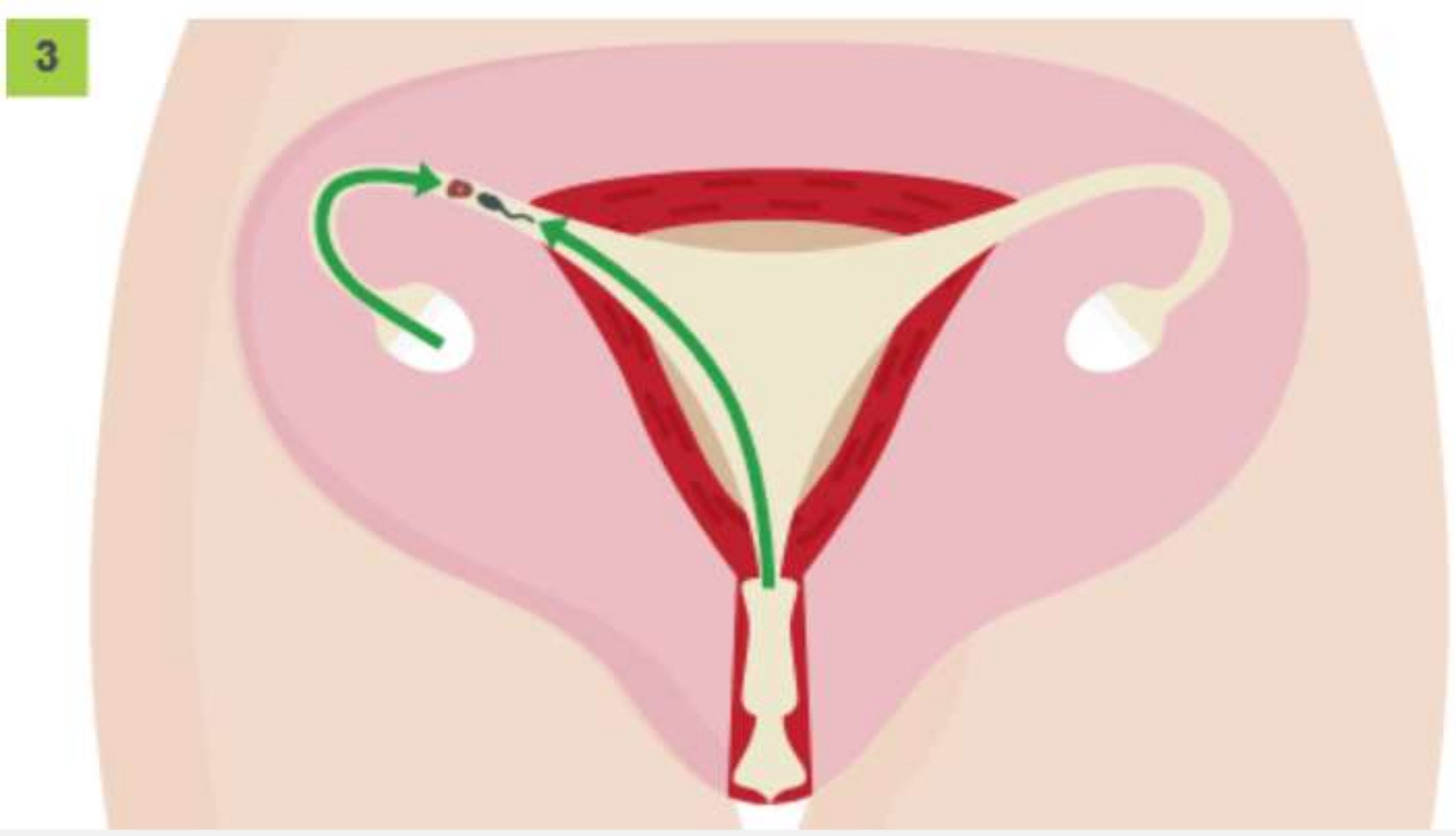
The egg is released from the ovary and moves toward the oviduct

Human fertilisation



Sperm has been ejaculated into the vagina and is travelling up the cervix

Human fertilisation



The egg and sperm meet at the oviduct and the process of fertilisation begins.

The Menstrual Cycle

During human reproduction, the aim is for a sperm to meet an egg. This is only possible for a few days every month.

In order to ensure that the fertilised egg has the best possible environment to develop in, the entire lining of the uterus (called the endometrium) is replaced every 28 days in a process known as the menstrual cycle.

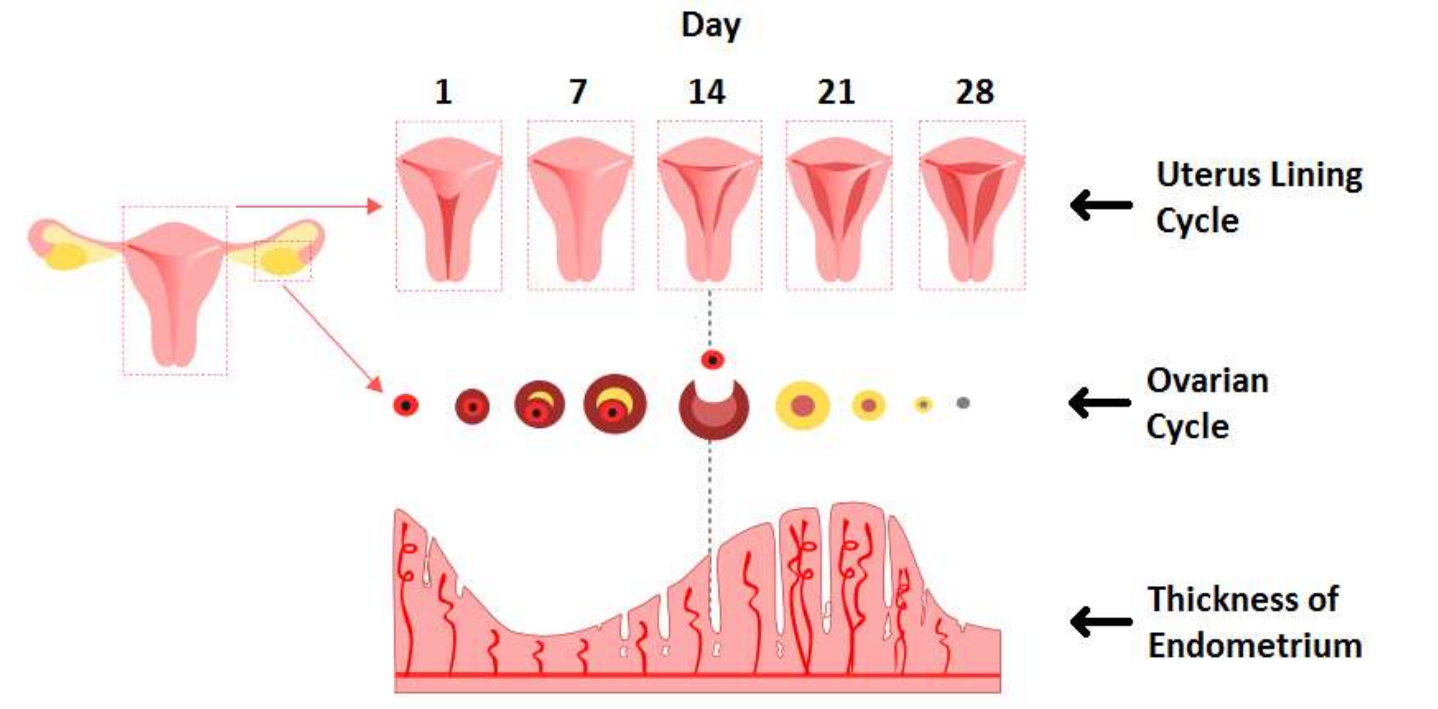
Day 1 - The endometrium breaks down and is lost from the body through the vagina. In the ovary, a new ovum starts to develop.

Day 7 – The endometrium starts to thicken again and the ovum is almost fully mature.

Day 14 - The ovum is released from the ovary in a process called ovulation. Cilia cells in the oviduct move the ovum towards the uterus.

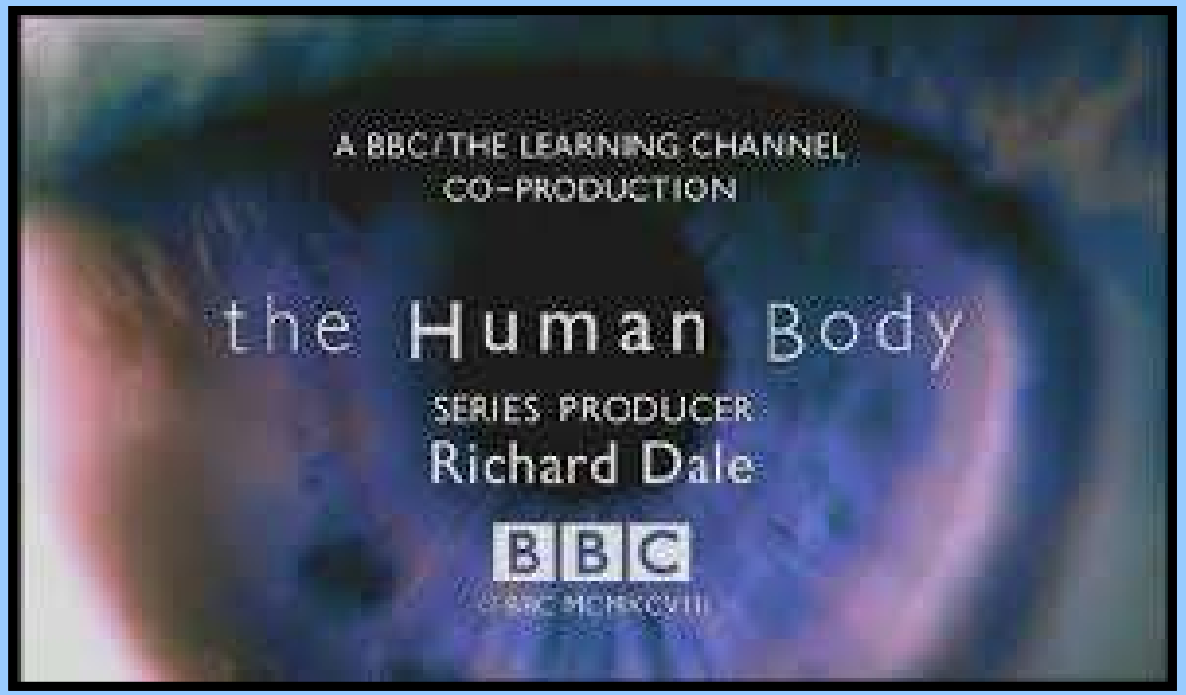
Day 21 - The endometrium has reached full thickness and is ready for implantation if the female becomes pregnant.

Day 28 / 1 - If the female is not pregnant, the endometrium breaks down and is lost from the body through the vagina.



An Everyday Miracle

Answer the questions to part 1 in your booklet as you watch the video.



AN EVERYDAY MIRACLE – QUESTIONS

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PART 2

1. What blood-sucking animal is the developing embryo compared to?
2. What time did Phillipa take the pregnancy test?
3. What is the round ball?
4. Where does work start?
5. What are millions of cells becoming?
6. What is the work fuelled by?
7. What does the 12 week foetus weigh?
8. What is the most common complaint?
9. When do most women feel better by?
10. What was ultrasound developed for?
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13. What allows mother and foetus to live together?
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1. What has happened to Phillipa's spine?
2. What is the most dramatic change?
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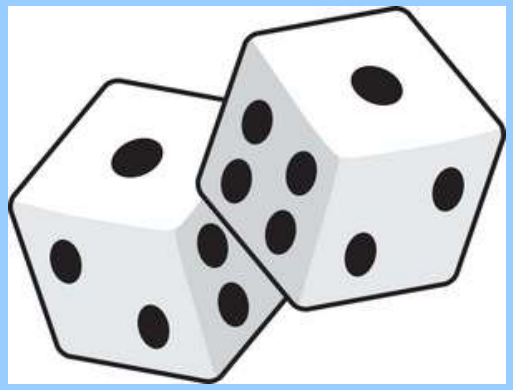
5. Why is the baby not ready for the world?
6. How early was Phillipa's baby?
7. How far apart are Phillipa's contractions?
8. What does the head act as?
9. Where does the baby's head face during birth?
10. How should birth be viewed?
11. Where is the last baby shown from?

Plenary

1. Write down everything that you can remember from this lesson.

2. Write down two things you want to know more about



3. You will be given a key word, you must write everything you know about this word.

4. Write a question regarding today's lesson, then you may get to choose someone to answer your question.

5. Describe this lesson in 5 words

6. Summarise this lesson in under 15 words

Pregnancy

Page 32

Starter

1. Describe what happens during fertilisation.
2. What does a zygote develop into?

Pregnancy

Page 32

Learning Intentions:

- I am learning about pregnancy.

Pregnancy

Page 32

Success Criteria

- ❑ I can explain how a foetus develops.
- ❑ I can describe the stages of pregnancy.

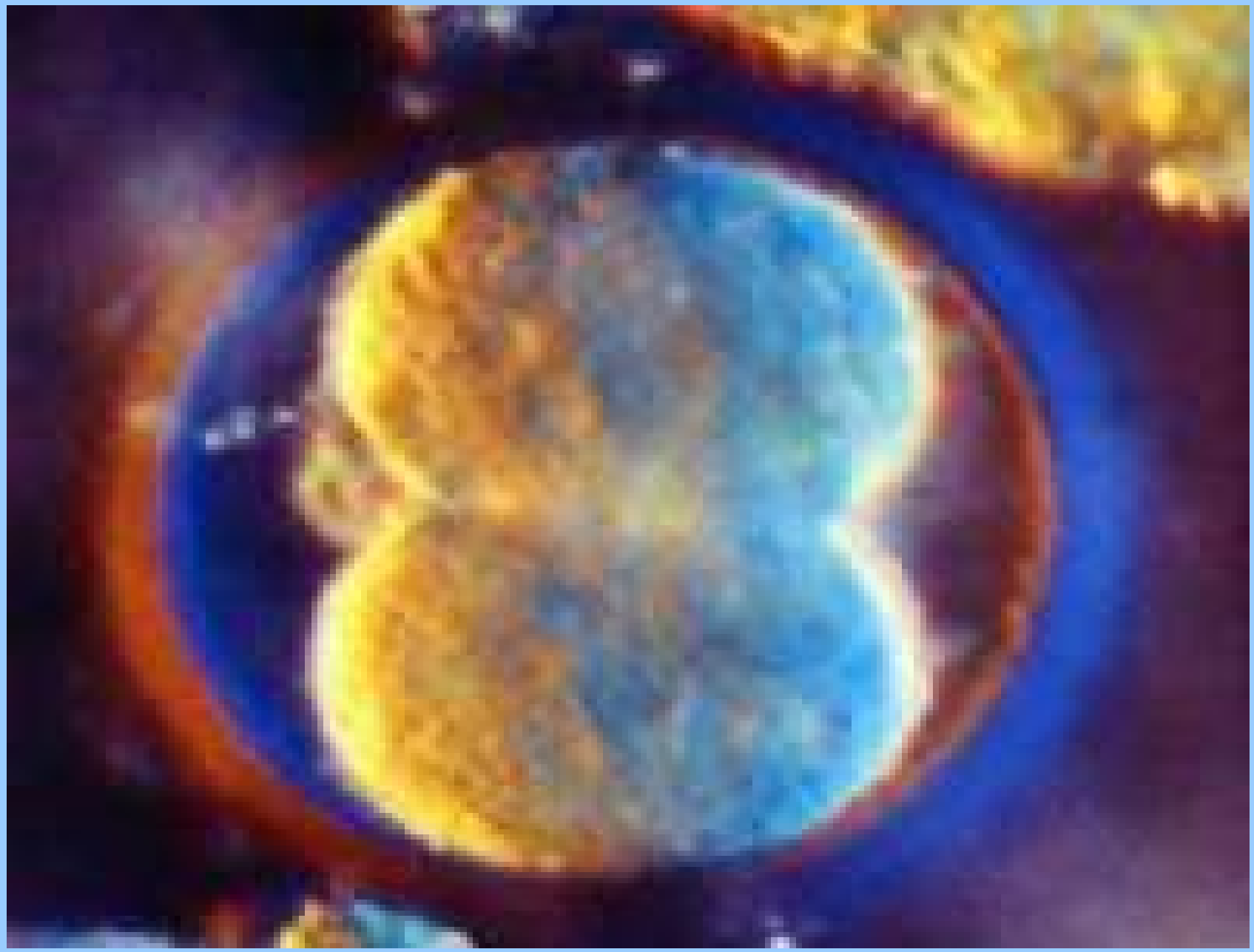
Stages of Pregnancy

Once fertilisation has occurred, the process of pregnancy can begin. The single fertilised cell goes through a huge amount of change before the baby is ready to be born.

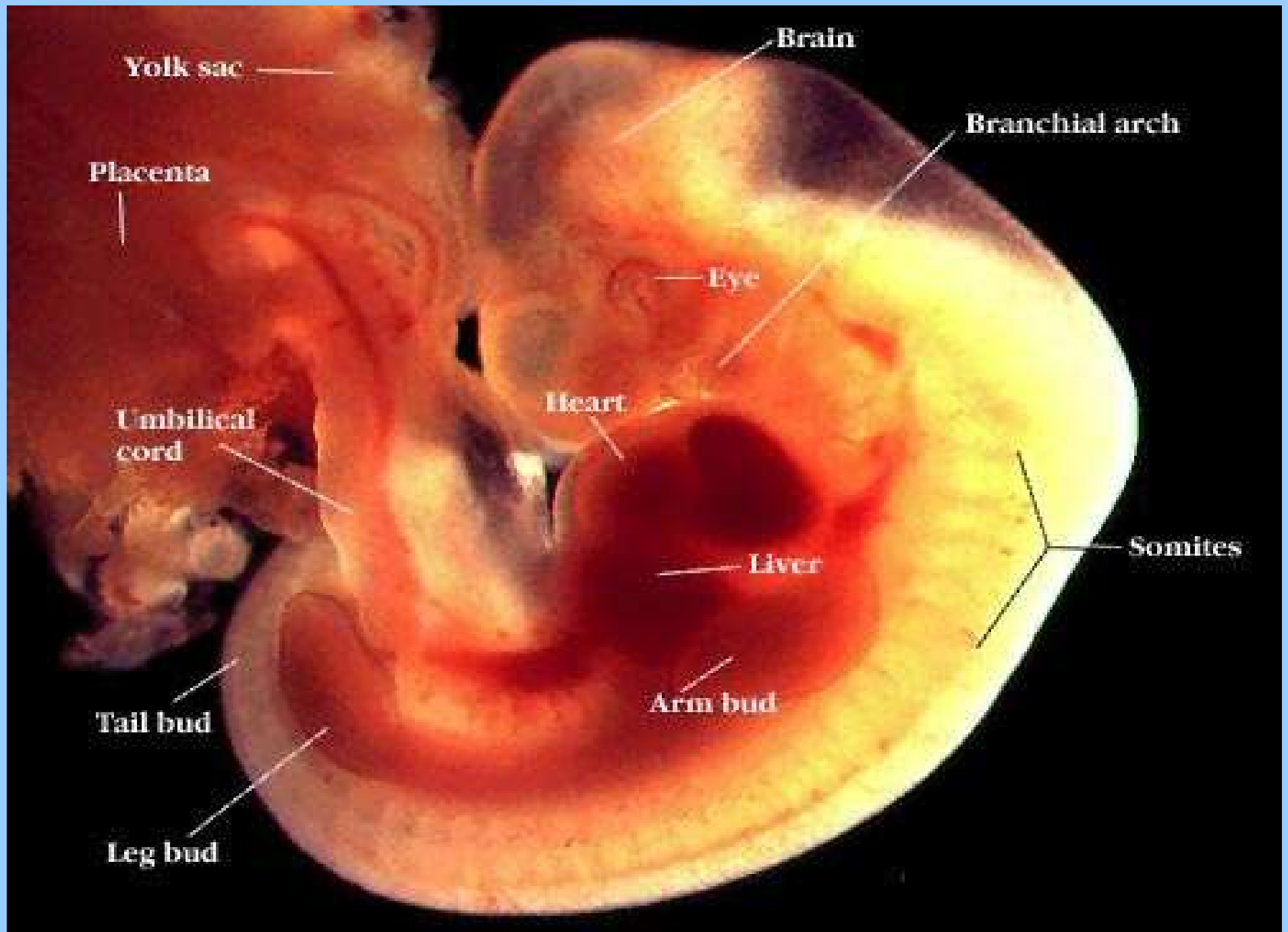
Fertilisation (zygote)

09/09/2026

30 hours later (zygote)

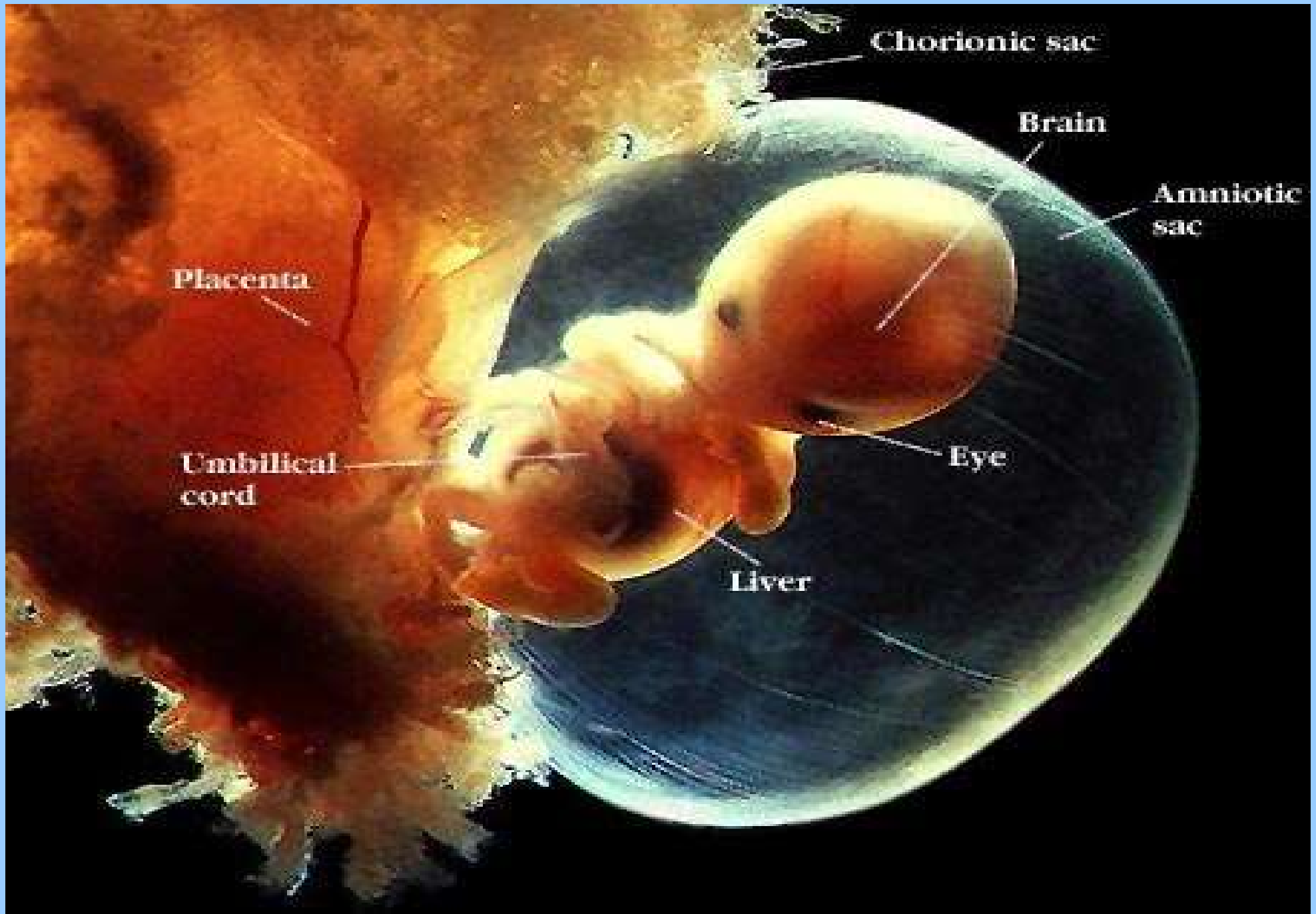


Weeks 3-5 (embryo)

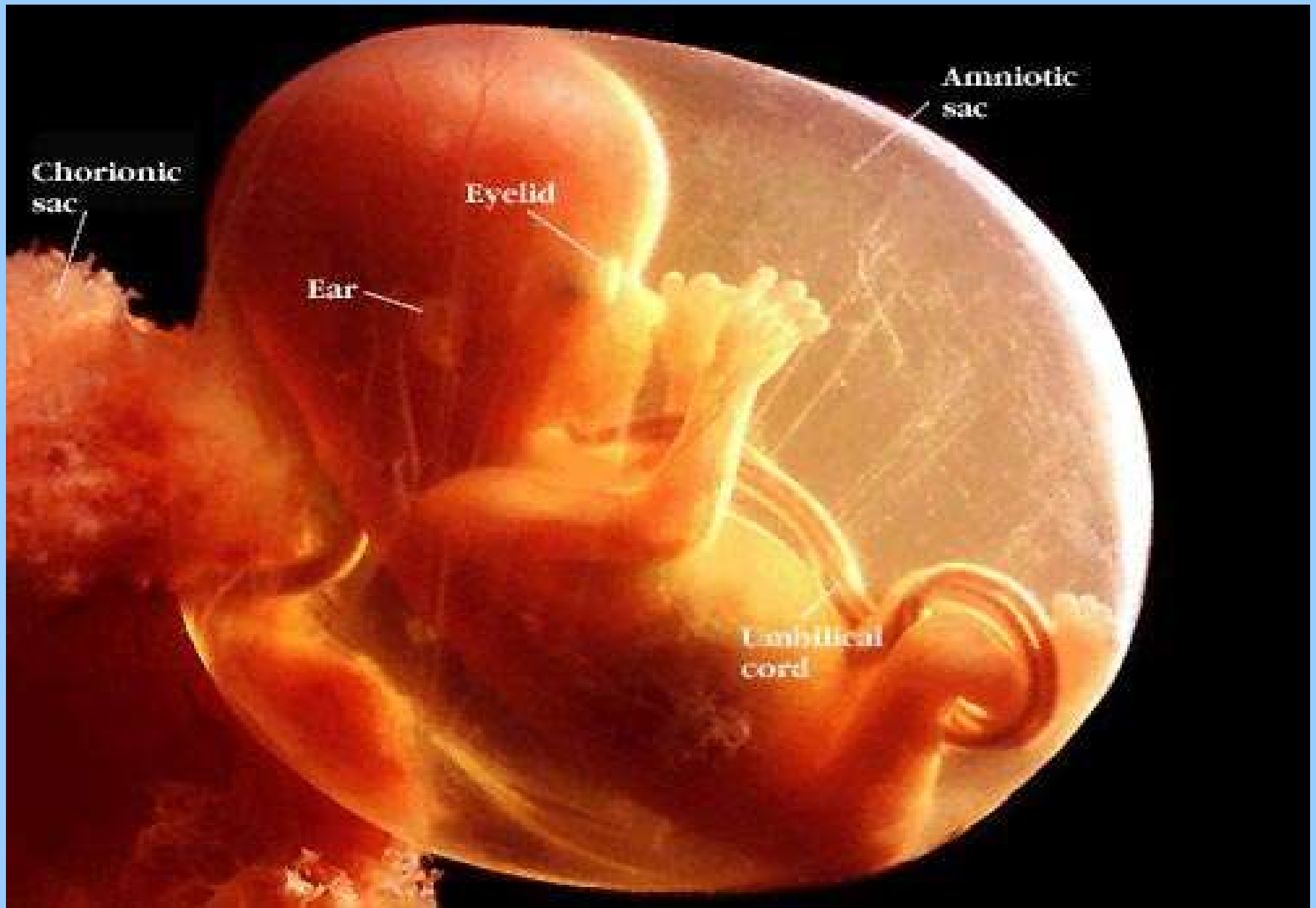


Week 7 (foetus)

Weeks 8-12 (foetus)

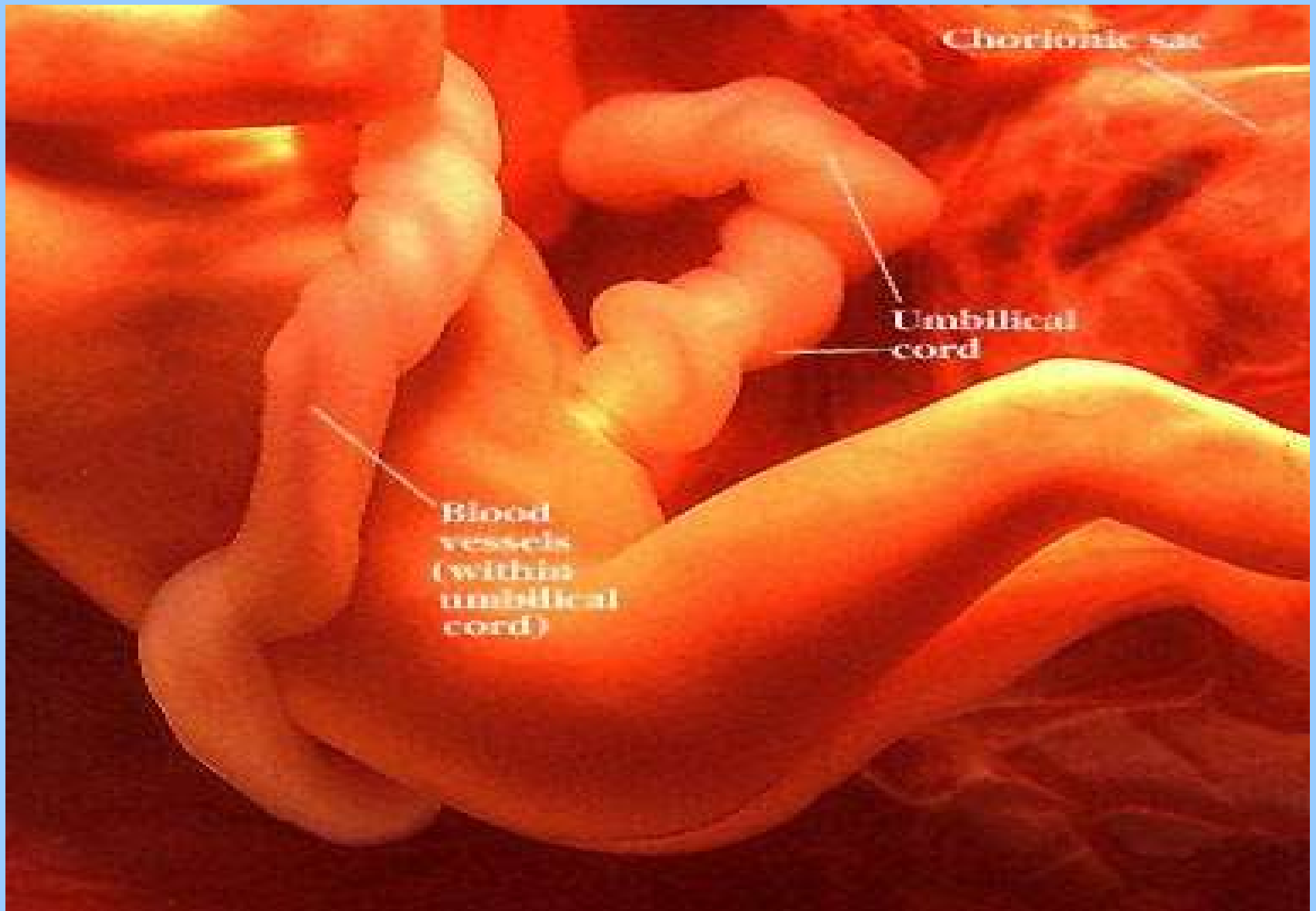


Weeks 13-16 (foetus)



Weeks 20-24 (foetus)

Weeks 25-32 (foetus)

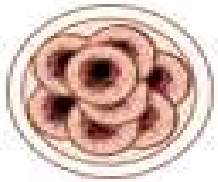


Stages of Pregnancy

- When the sperm and the egg join, the cell formed is called a **zygote**.
- Between 1 and 8 weeks, the baby is called an **embryo**.
- After 8 weeks, it is called a **foetus**.

https://www.youtube.com/watch?v=jvanNDQhlYI

Age: Day 1

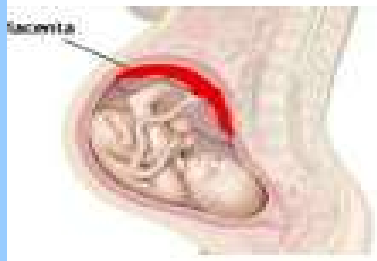


Age: Day 2

Age: Day 8 (blastocyst)

Age: 4 weeks

Age: 10 weeks



Age: 30 weeks

Age: 40 weeks

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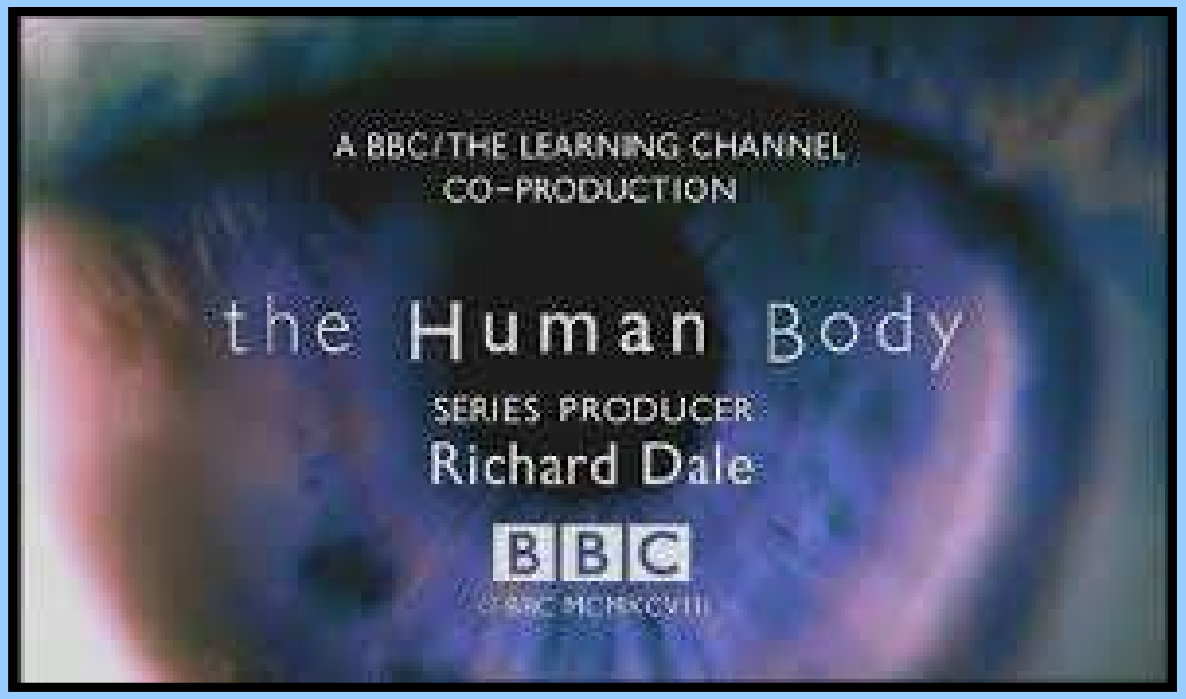
An Everyday Miracle

Answer the questions to part 2 in your booklet as you watch the video.



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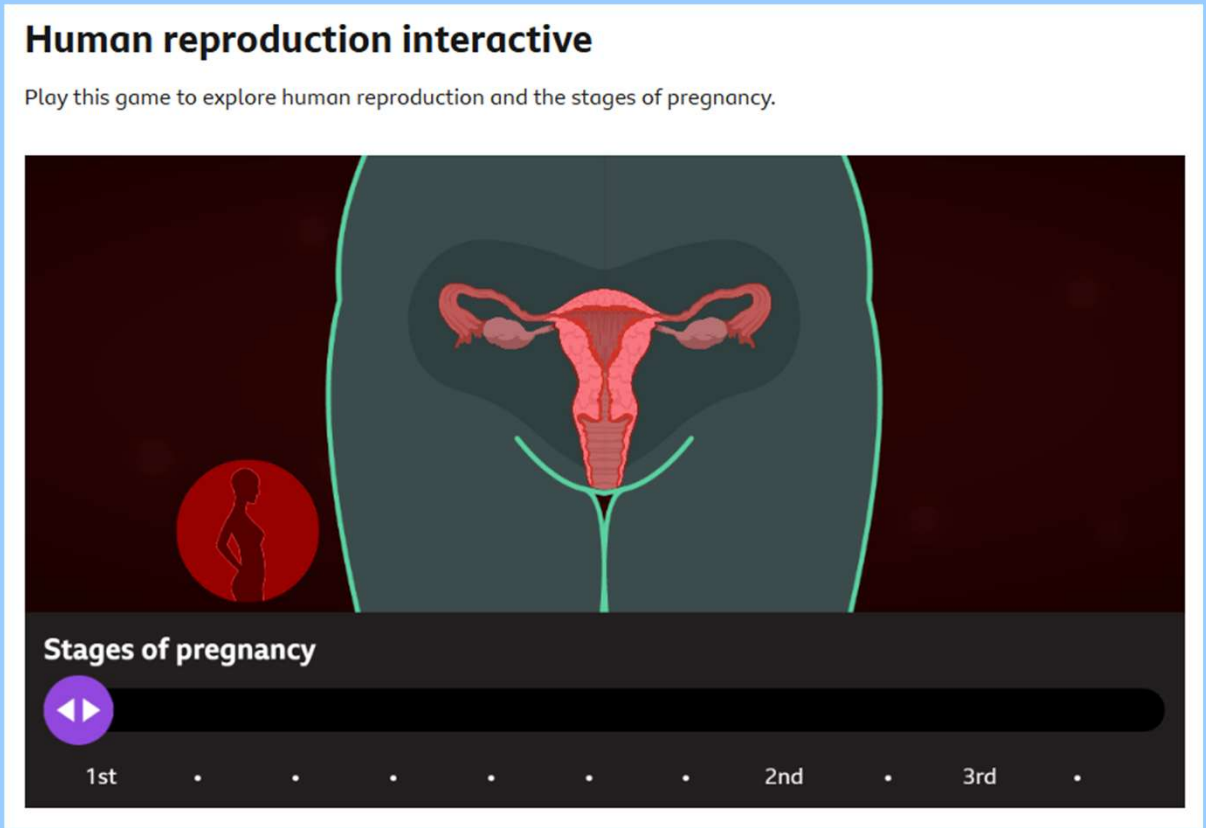
The Reproductive System Activity



Read through the key points and take the quiz at the end

Human reproduction - Reproduction - KS3 Biology - BBC Bitesize

Plenary

1. Give the term used to describe the ball of cells that is formed when a fertilised eggs starts to divide (hint, day 8!)
2. Give the term used to describe the later stages of development before the baby is born.
3. Name the part of the female reproductive system where the embryo develops.

Extension : Can you think of the name of the technique used to monitor the health of the baby during pregnancy?

Stages of Pregnancy

Page 34

Starter

Describe **three** of these key words:

Fertilisation	Sperm
Egg	Oviduct
Uterus	Ovary
Embryo	Zygote
Foetus	Pregnancy
Puberty	Testes

Stages of Pregnancy

Page 34

Learning Intentions:

- I am learning about the stages of pregnancy.

Pregnancy

Page 34

Success Criteria

- ❑ I can describe how a foetus develops.
- ❑ I can describe the growth rate of the embryo in the womb.

Pregnancy

Uterus (womb)

Stores the baby for 9 months

Placenta

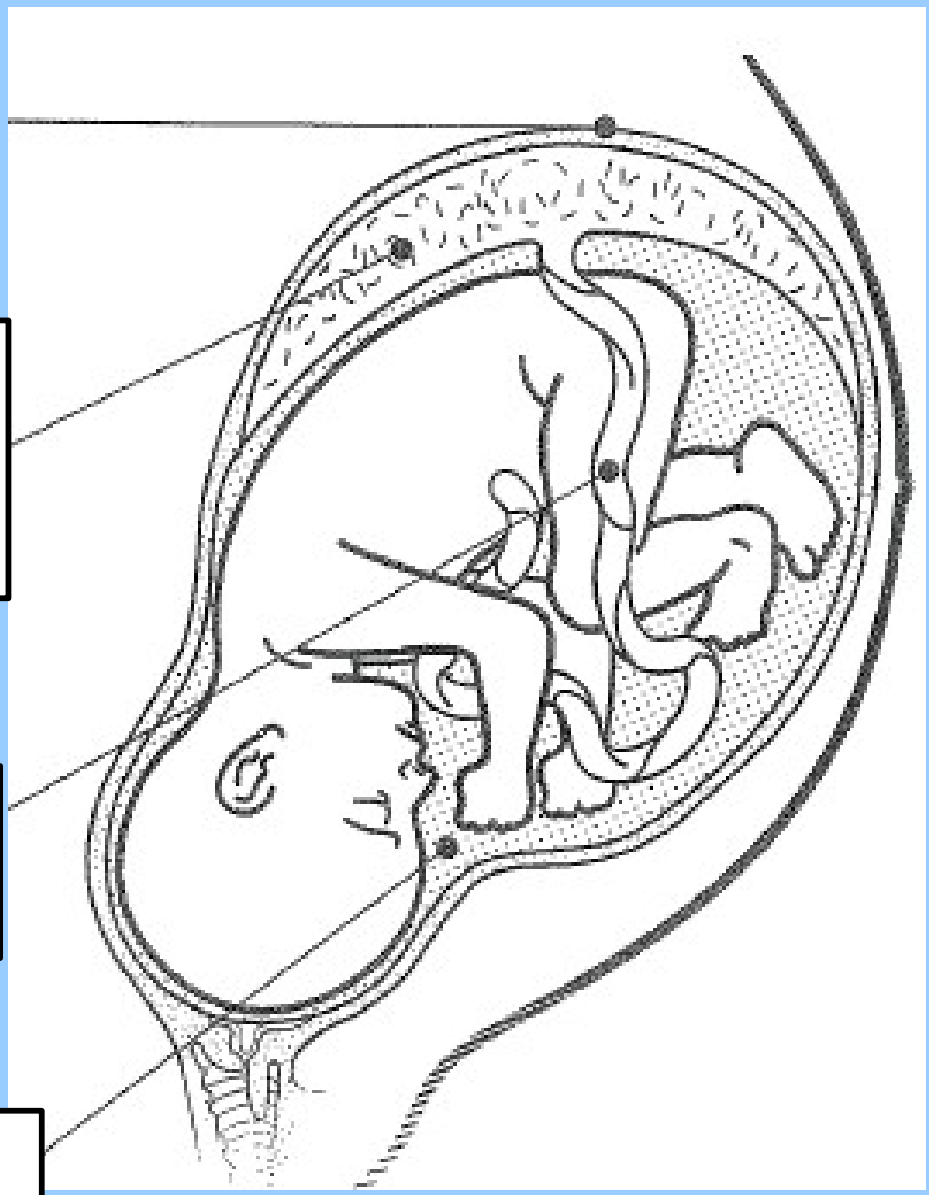
Transfer food/waste between the mother and the baby

Umbilical Cord

Supplies blood to the baby.

Amniotic Fluid

Protects the baby from bumps.



09/09/20

Stages of Pregnancy

Pregnancy in humans lasts 9 months (40 weeks). It is split into three parts of 3 month each. Each part is called a **trimester**.

First Trimester	Second Trimester	Third Trimester
At this Stage the Baby is known as an Embryo.	At this Stage the Baby is known as a Foetus.	At this Stage (24 Weeks) if born prematurely, the Baby could survive.
Week 3 - Implantation Occurs	Week 12 - All Vital Organs are now Formed. The Foetus can now hear Sounds and control its limbs, it can kick and even suck its thumb.	Week 24 to 36 - The Third Trimester is about growth, the Foetus will double in size.
Week 4 - Brain, Heart, Spine, Nervous and Circulatory Systems form.		Week 33 - The Foetus can hear the Outside World, learning to recognise its mother's voice. The Foetus can now see, its pupils reacting to light.
Week 7 - Facial Features, Limbs, Digestive and Respiratory Systems Form.	Week 17 - The Gender of the Foetus can now be seen.	
Week 12 - Embryo is now about 8 cm in size.	Week 24 - Foetus is now about 32 cm in size.	Week 37 to 40 - Foetus is now about 50 cm in size.

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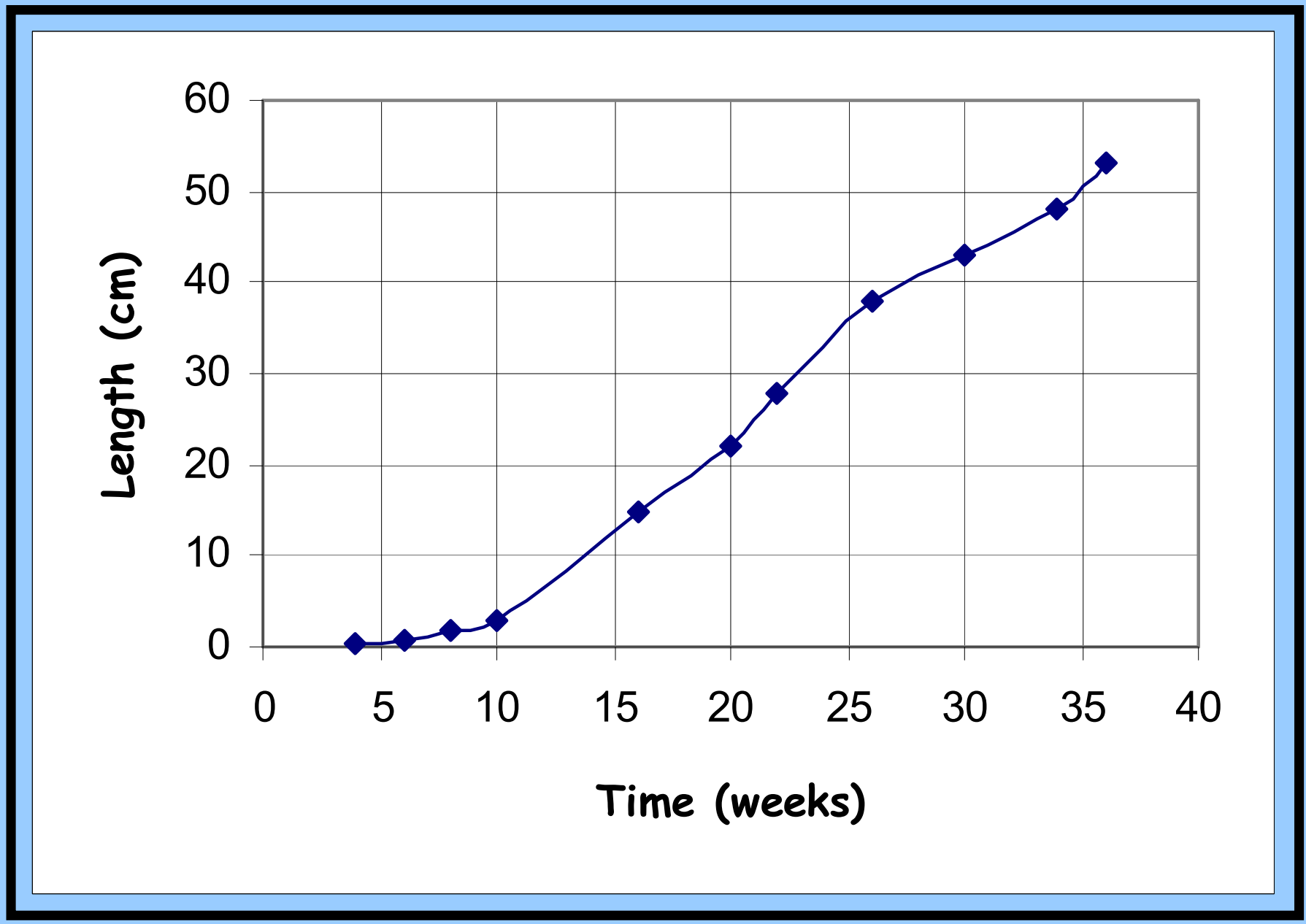
Growth rate of the embryo in the womb

Time (weeks)	Length (cm)
4	0.5
6	1
8	2
10	3
16	15
20	22
22	28
26	38
30	43
34	48
36	50

Plot line graph of these results in your booklet


Length (cm)
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
Time (weeks)

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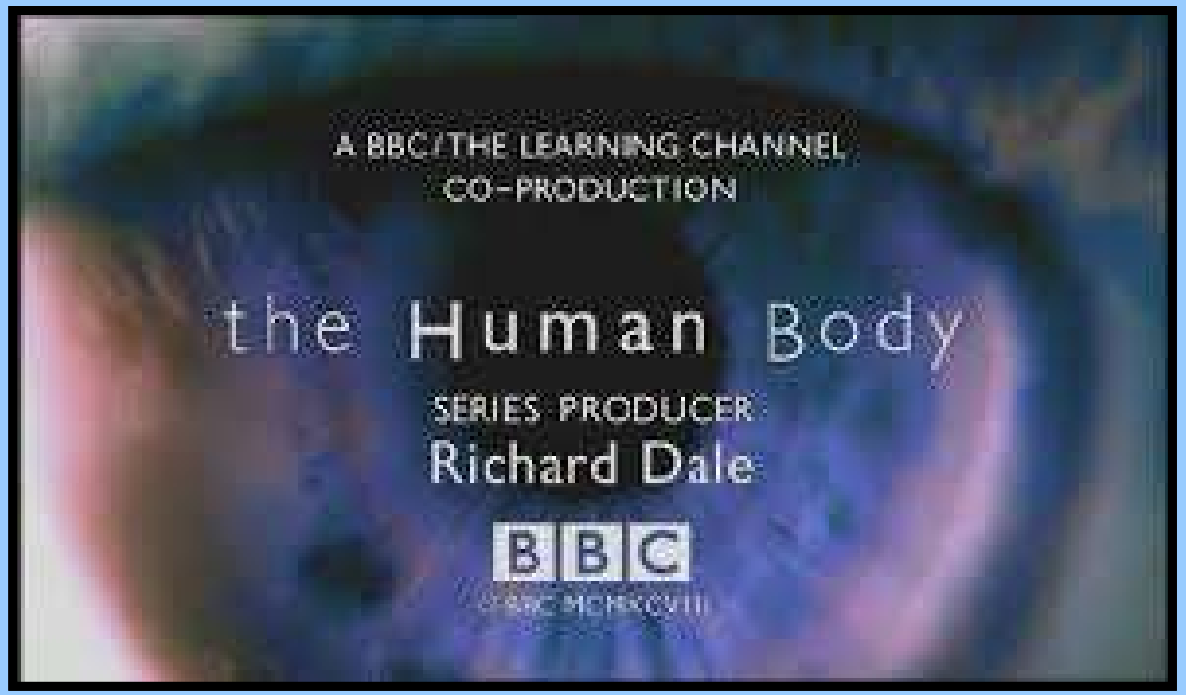

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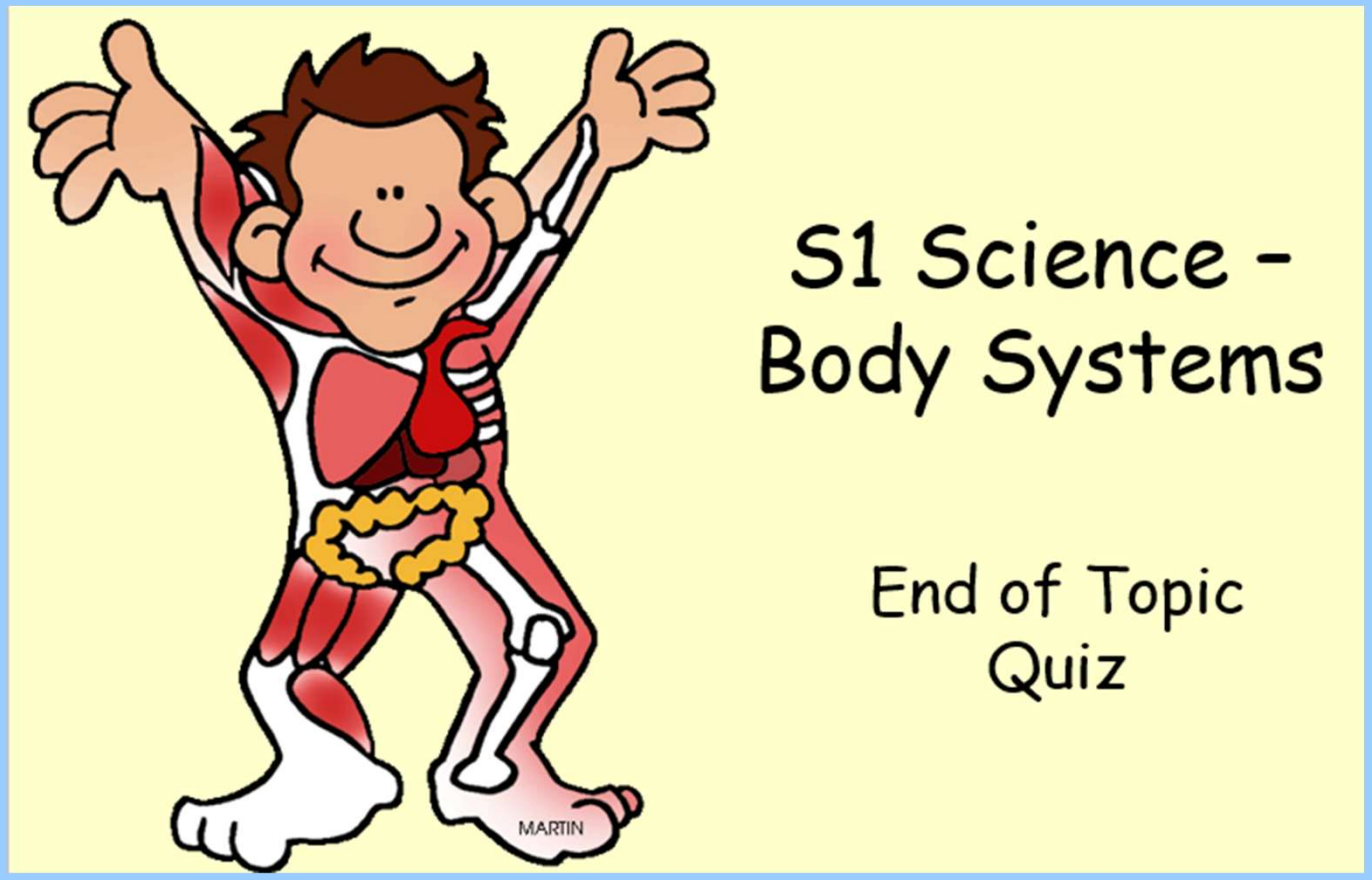
Revision



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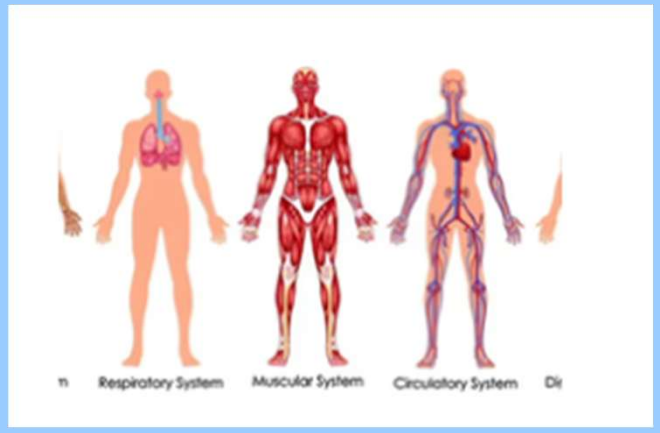
Revision



https://create.kahoot.it/details/body-systems/988a6b77-c8d5-4aa8-a5f3-5e1ba61f9c1b?drawer=