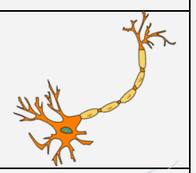
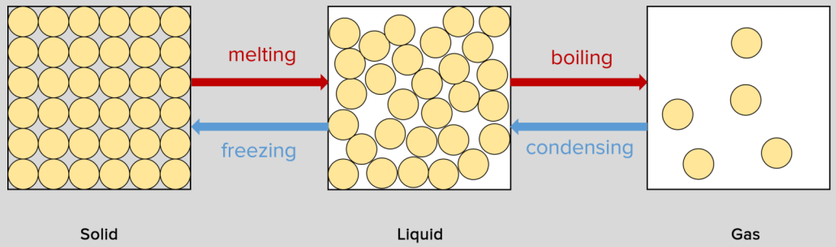
Science—Topic 6

Year 8 Term 5

(1) Biology—Specialised Cells

Specialised Cell	How specialised	Image
Red blood cell carries oxygen	• Contains **haemoglobin** which carries oxygen • Doesn't have a nucleus so there is more space for oxygen • Has a **biconcave** shape for a large surface areas	
Ciliated epithelial cell moves particles	• Contain **cilia** which move mucus	
Nerve cell transmits electrical signals	• **Thin and long** so they can carry messages over long distances • Have **branches** to join to other nerve cells • Have a **myelin sheath** which increases the speed of messages	
Sperm cell fertilises the egg	• Have a **tail** so they can move	
Egg cell fertilised by sperm	• **Very large** and has a **nutrient rich** cytoplasm to support embryo growth	

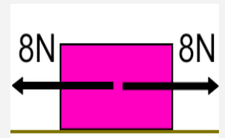
(2) Chemistry— Changes of State



Atom	A single sphere that makes up all matter
Molecule	A group of two or more atoms chemically bonded.
Particle	An atom or a molecule

(3) Physics—Forces and Energy

Stores

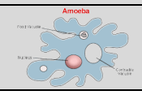


A **force** can be a **push** or a **pull.**
Force diagrams show the **size and direction** of a force. When objects are moved by a force work is done. Work can be calculated by
Work done (J) = Force (N) x Distance (m)

Contact Forces	friction, air resistance, water, resistance, normal contact.
Non-Contact	Gravity, magnetism, weight
Fluid	A liquid or gas that can change shape and flow from one place to another

8 Energy Stores

(4) Biology— Specialised Cells and Drugs

Specialised Cell	How Specialised	Image
Bacteria unicellular organism	• Don't have a nucleus • Have a **flagellum** that spins allowing for movement.	
Protozoa unicellular organism	• Has **pseudopodia** (false feet) that allow movement	
Yeast unicellular organism	• Have a **cell wall** like a plant cell but no chloroplast	

Drug– a substance that has an effects chemical reactions in the body.

Stimulant	Depressant
Speed up messages in the brain. Can cause more alertness**.** Can cause **liver and heart damage, loss of memory and concentration**. E.g. **nicotine**	**Slow down** messages in the brain. Can cause; **feelings of well-bring, lowered inhibition** and **slowed thinking.** E.g. **alcohol.**

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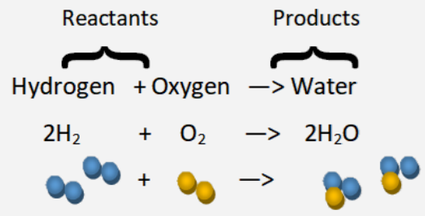
(4) Chemistry—Chemical Reactions



Term	Definition	Diagram
Atom	The simplest particles of matter.	
Molecules	Two or more atoms, chemically joined together.	
Element	A substance that is made up of only one kind of atom and cannot be broken down into any other, simpler substance.	
Compound	A substance made up of two or more elements, chemically joined together.	

(6) Physics—Energy and Charge

Energy Transfers

Energy cannot be created or destroyed only **transferred** from one store to another**.** Energy can be transferred **by heating, mechanically, electrically or by radiation.**

Static Charge

All matter has a **charge.** Charges can be **positive** or **negative**. When charges are **separated** from an object, this causes **static electricity.** When objects are charged they can **attract or repel** when not in contact.