

Task 1: Cells

Task 1: Complete the 9 sentences by choosing a word or phrase from each column in sequence. Write your sentences on the lines below.

Animal cells	contain	a nucleus	where
Plant cells		cytoplasm	which
		a cell membrane	
		a cell wall	
		a vacuole	
		chloroplast	

- 1 _____
chemical reactions take place to keep the cell alive.
- 2 _____
supports the cell and stops it collapsing or bursting.
- 3 _____
controls what happens in the cell.
- 4 _____
transfer energy from light and use it to make food.
- 5 _____
contains the cell sap and keeps the cell firm.
- 6 _____
controls what enters and leaves the cell.
- 7 _____
controls what happens in the cell.
- 8 _____
controls what enters and leaves the cell.
- 9 _____
chemical reactions take place to keep the cell alive.

Task 2: Cells

Task : Choose the **best** explanation to explain each statement. Some of the explanations match more than one statement. Write your sentences on the lines below.

Explanation

- it is needed to control what goes in and out of the cell
- they need to perform different functions
- they are unable to photosynthesise
- they need to perform similar functions
- it is better for absorption of gases and liquids
- it contains the genes that control the characteristics of the organism
- it gives the cell a large surface area

1 Plant and animal cells have many features in common because

2 Many cells have a large surface area because

3 There are some differences between plant and animal cells because

4 Plant cells have a cell wall because

5 Both plant and animal cells have a cell membrane because

6 Animal cells do not have chloroplasts because

7 Nearly every type of cell has a nucleus because

Task 3 Forces: Colour the statements at the top of the page in different colours, then match them to the explanations at the bottom of the page. The first has been done for you.

Scientists use arrows to show forces

Aeroplanes are a streamlined shape

An object will stay still

Moving objects usually slow down and stop

Things with the same mass may weigh different amounts on different planets

People on the earth don't notice the force of the moon's gravity

Snow shoes stop explorers sinking into soft snow. The pointed end of a drawing pin hurts more than the flat end

Statements

The moon stays in orbit round the earth

An object will move at a steady speed

Skiers move faster on snow than on grass

Astronauts can jump much higher on the moon than on the earth

Bulldozers use caterpillar tracks on soft ground

Two magnets will stick together

the force of gravity is different

the forces on it are balanced

the force is concentrated onto a small area, making the pressure more

it is a long way away

it makes the force of air resistance on them less

Explanations

they can show both the size and the direction of the force

the force of gravity is much less

The forces on it are balanced

their weight is spread out over a larger area, causing less pressure

the force of gravity stops it from flying off into space

the force of friction is less

the opposite poles attract each other

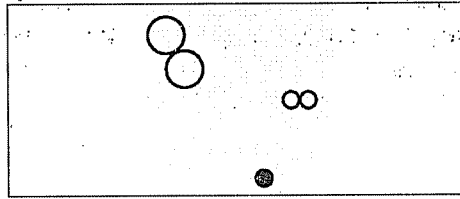
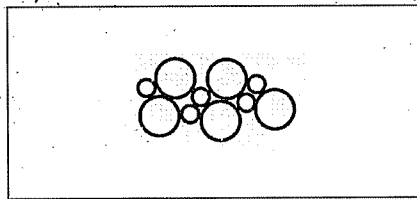
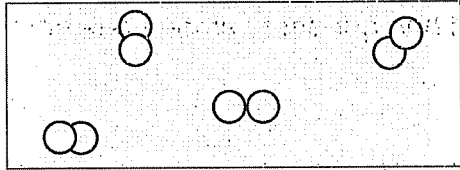
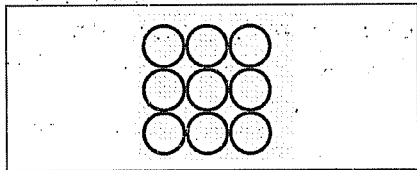
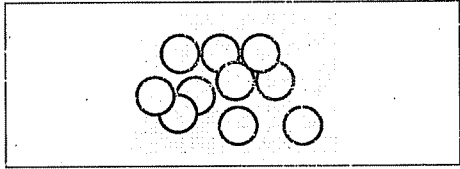
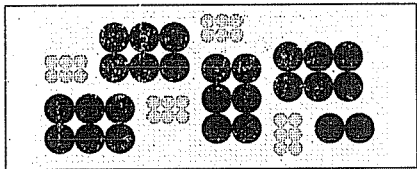
the force of the friction slows them down

Task 4 Particle diagrams: Draw lines to link the statements at the top and bottom of the page to the correct particle diagram.

Which diagram best represents the particles in a liquid?

Which diagram best represents the particles in solid gold?

Which diagram best represents the particles in a gas such as oxygen?



Which diagram best represents a solid compound such as table salt (sodium chloride)?

Which diagram best represents air?

Which diagram best represents a mixture of iron filings with copper pieces?

Task 5: Make 6 correct sentences by choosing a phrase from the box (there are more phrases than you need).

- gain energy and move further apart
- cannot move around, only vibrate
- move around but stay close together
- gain energy and move around more
- are close together
- lose energy and move around less
- lose energy and move closer together
- are far apart
- move around freely, at high speed

1. Solids cannot be squashed because the particles

2. Liquids take the shape of the container because the particles

3. Solids have a fixed shape because the particles

4. Gases spread to fill the space available because the particles

5. Solids melt when heated because the particles

6. Liquids evaporate when heated because the particles

Task 6: Match the sentences to the correct words(s) from the list below.

yes, the steel one	filtration	distillation	chromatography	physical
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If you have a mixture of a dissolved salt and an insoluble substance (such as sand) you would separate the sand from the salt solution by ...

To separate pure water from a salt solution you would need to use the process of ...

I want to get two different coloured dissolved substances out of a solution. What technique should I use?

I have a mixture of copper, aluminium and steel screws; could I separate one type of screw from the others by magnetism? If you think the answer is yes then which type of screw can be separated?

Mixtures can be separated by means but compounds can only be separated chemically.