

Cells

Choose the **best** explanation to explain each statement. Some of the explanations match more than one statement.

statement	because	explanation
<p>Plant and animal cells have many features in common</p> <p>Many cells have a large surface area</p> <p>There are some differences between plant and animal cells</p> <p>Plant cells have a cell wall</p> <p>Both plant and animal cells have a cell membrane</p> <p>Animal cells do not have chloroplasts</p> <p>Nearly every type of cell has a nucleus</p>	<p>because</p>	<p>it is needed to control what goes in and out of the cell</p> <p>they need to perform different functions</p> <p>they are unable to photosynthesise</p> <p>they need to perform similar functions</p> <p>it is better for absorption of gases and liquids</p> <p>it contains the genes that control the characteristics of the organism</p> <p>it gives the cell a large surface area</p>

Interdependence

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statement	because	explanation
Related animals can be grouped together Arrows flow from producer to consumer in a food chain Photosynthesis is important to humans Pesticides can build up in a food chain Habitats may change for animals Food webs give more information than food chains Without plants we could not survive	because	the energy is transferred from producer to consumer only plants can make their own food larger animals will eat several smaller ones the amount of available food changes they cannot make their own food (from sunlight) they have similar features they contain the links between organisms organisms may be involved in more than one chain

Particles

Choose the **best** explanation to explain each statement. Some of the explanations match more than one statement.

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<p>Diffusion happens more quickly in gases than in liquids</p> <p>Solids have a fixed shape</p> <p>Solids are usually more dense than liquids or gases</p> <p>Liquids have a fixed volume</p> <p>Gases are easy to compress</p> <p>A liquid evaporates when heated</p> <p>A solid melts when heated</p> <p>A gas condenses when cooled</p> <p>A liquid freezes when cooled</p>	<p>because</p>	<p>the particles are closely packed together</p> <p>the particles are spread far apart</p> <p>the particles lose energy and move closer together</p> <p>solid particles are more closely packed together than liquid or gas particles</p> <p>the particles move around but stay close together</p> <p>gas particles move around more freely than liquid particles</p> <p>the particles gain energy and move around more</p> <p>the particles cannot move around, but only vibrate</p>

Forces

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<p>Scientists use arrows to show forces</p> <p>Things with the same mass may weigh different amounts on different planets</p> <p>An object will stay still</p> <p>An object will move at a steady speed</p> <p>The moon stays in orbit around the earth</p> <p>Astronauts can jump much higher on the moon than on the earth</p> <p>Two magnets will stick together</p> <p>Aeroplanes are a streamlined shape</p> <p>People on the earth don't notice the force of the moon's gravity</p> <p>Moving objects usually slow down and stop</p> <p>Skiers move faster on snow than on grass</p> <p>Bulldozers use caterpillar tracks on soft ground</p> <p>Snow shoes stop explorers sinking into soft snow</p> <p>The pointed end of a drawing pin hurts more than the flat end</p>	<p>because</p>	<p>the force of gravity is different</p> <p>the forces on it are balanced</p> <p>the force is concentrated onto a small area, making the pressure more</p> <p>the force of friction is less</p> <p>it makes the force of air resistance on them less</p> <p>it is a long way away</p> <p>they can show both the size and the direction of the force</p> <p>the force of gravity stops it from flying off into space</p> <p>the force of friction slows them down</p> <p>their weight is spread out over a larger area, causing less pressure</p> <p>the opposite poles attract each other</p> <p>the force of gravity is much less</p>

Energy transfers

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statement	because	explanation
<p>Hot things cool down and cold things warm up</p> <p>When energy is transferred it becomes less useful</p> <p>Fuels are useful</p> <p>The total amount of energy is always the same before and after something happens</p> <p>The batteries in an electric circuit go flat</p> <p>Animals eat foods</p> <p>Plants do not need to eat food</p> <p>Respiration and combustion are similar processes</p> <p>People who eat too much get fatter</p> <p>Ordinary light bulbs are not very efficient</p> <p>Energy cannot be transferred to the earth from the sun by conduction or convection</p>	<p>because</p>	<p>it is spread out into smaller amounts in lots of places</p> <p>energy cannot be created or destroyed</p> <p>they get the energy they need from the sun</p> <p>they are chemical reactions that transfer energy to the surroundings</p> <p>they store the extra energy in their bodies as fat</p> <p>there are no particles in space</p> <p>they transfer much more energy to the surroundings by heating than by light</p> <p>energy is transferred by heating</p> <p>all of the stored energy has been transferred to the circuit and the surroundings</p> <p>they are concentrated stores of energy</p>

Scientific enquiry

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<p>Scientists repeat measurements</p> <p>In an enquiry scientists change one thing while keeping everything else the same</p> <p>Scientists make sure they have enough readings</p> <p>Scientists draw graphs of their results</p> <p>When collecting results scientists measure things carefully</p> <p>Scientists often make a prediction</p> <p>Scientists use scientific ideas</p> <p>Scientists often do a control experiment where they keep everything the same</p>	<p>because</p>	<p>it makes it easier to spot patterns in their results</p> <p>to help them decide what to investigate</p> <p>they want to be sure of their conclusions</p> <p>they need to make sure the effect is not just something that would have happened anyway</p> <p>they need to make their results as accurate as possible</p> <p>they often have an idea of what will happen before they do the experiment</p> <p>they want to make it a fair test</p> <p>they want to make sure their results are reliable</p>