Particle model

Matter 3.5.1 | Part 1, usually Year 7 | 20 quick questions

KS3 science quick questions

Answer online, marked instantly

Activate 1: Particles and their behaviour; Activate 3: Particle model and state change | Exploring Science 7G

Name: _____ **Date:** _____ **Score:** _____ **/ 20**

1 In an ice cube, the particles are packed tightly in a regular pattern and can only vibrate on the spot. Which state of matter is this? Answer in one word.

2 In which state of matter are the particles far apart, moving fast in every direction?

3 Orange juice takes the shape of the glass. In this state the particles touch but can slide past each other. Which state is it?

4 Chocolate left in a hot car turns from a solid into a liquid. What is this change of state called?

5 A puddle slowly disappears on a sunny day without ever boiling. What is this change from liquid to gas called?

6 After a hot shower, tiny drops of water appear on a cold mirror. What is this change from gas to liquid called?

7 A solid air freshener block shrinks over a few weeks. It turns straight from a solid into a gas with no liquid stage. What is this change called?

8 Someone makes toast in the kitchen and soon you can smell it upstairs. Particles spread from where there are lots of them to where there are few. What is this process called?

9 A block of ice melts into water in a sealed bag. Does the mass increase, decrease or stay the same?

10 Soup is heated in a pan. Do the particles in the soup move faster or slower?

11 A pupil measures mass in grams and volume in cm^3. What unit should the density be given in?

12 A pebble has a mass of 30 g and a volume of 12 cm^3. Use density = mass / volume to find its density. Give your answer in g/cm^3.

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13 Which state of matter usually has the lowest density: solid, liquid or gas?

14 The air inside a balloon pushes outwards on the rubber. What are the gas particles doing to the inside of the balloon to cause this pressure?

15 What name is given to the temperature at which a liquid turns into a gas all the way through?

Year 9 stretch

16 A football is pumped up indoors and then left in hot sunshine. Does the pressure inside it increase or decrease?

17 A candle has a mass of 0.18 kg and a volume of 200 cm^3. What is its density in g/cm^3? Change the mass into grams first.

18 A wooden block has a density of 0.6 g/cm^3 and a volume of 50 cm^3. Use mass = density × volume. What is its mass in grams?

19 Explain why the air in a bicycle pump can be squashed but a block of wood cannot.

20 A drop of food colouring is added to a glass of hot water and another to a glass of cold water. In which glass does it spread out faster?

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