



Stockport Academy

The best in everyone™

Part of United Learning

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24th February 2025

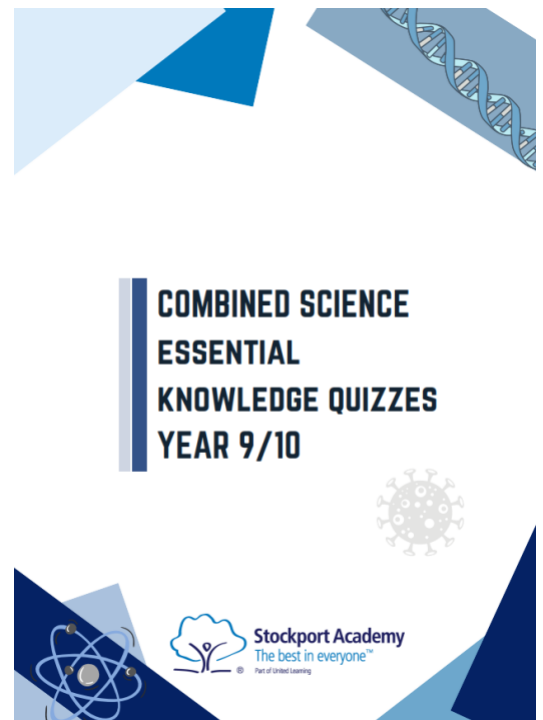
Dear Parent/Carer,

After February half-term, your child will be starting **GCSE content in their science lessons.**

Your child has been given an **'Essential Knowledge Quiz'** booklet to take home. This booklet contains all the essential knowledge they need to learn in science in year 9 and year 10. The science department have written the essential knowledge needed for each topic using mark schemes and the AQA specification, to ensure that your child is learning exactly what they need to know to be successful at GCSE. Students must keep this booklet and use it regularly from now until year 11. Each booklet costs £4.00 to print and we would therefore like to limit the number of replacement booklets.

The greatest challenge with GCSE science is the vast amount of content students need to learn. To support your child with this, they will be set 10-15 questions to learn each week from the **'Essential Knowledge Quiz'** booklet. On the last lesson of the week, they will be tested on these questions in their lesson. You will be informed by the class teacher if your child is unprepared and therefore underperforming in the weekly quizzes.

The **'Essential Knowledge Quiz'** booklet looks like this and you can expect your child to be bringing this home in the next few days.



Principal: Mrs Janine McCann BA MEd NPQEL



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The Particle model – Essential Knowledge Quiz

Each topic has a number of essential knowledge facts to learn (please see example). Your child will be told which topic and questions they need to focus on each week.

We recommend covering the answers, asking the questions, and then checking. If the student is correct, tick this off and move on. The students only need to focus and revisit the questions they have got wrong.

Thank you in advance for your support with the GCSE start in science. It is very much appreciated.

If you have any questions, please contact tara.quigley-curror@stockport-academy.org. Alternatively, parents evening on Thursday 27th February will be an excellent opportunity for further discussion.

Question	Answer
1. Describe the arrangement and movement of particles in a solid	Arrangement: Particles touching, in a fixed position, held together by strong forces of attraction. Movement: vibrate around a fixed position
2. State 3 Properties of solids	High density, fixed volume, fixed shape
3. Describe the arrangement and movement of particles in a liquid	Arrangement: Particles are touching, forces of attraction are weaker than in a solid Movement: free to move randomly around each other
4. State 3 properties of liquids	Lower density, fixed volume, they can flow
5. Describe the arrangement and movement of particles in a gas	Arrangement: Particles are spread out, very weak forces of attraction between the particles Movement: move randomly at high speeds
6. State 3 properties of gases	low density, no fixed volume or shape, can be compressed, can flow
7. Why are changes of state physical changes	No new substances are produced, and the substance will have the same properties as before if the change is reversed.
8. What is the equation for calculating density?	Density $\text{kg/m}^3 = \frac{\text{mass kg}}{\text{volume m}^3}$
 9. What is a Eureka can?	A piece of equipment used to measure the volume of an irregularly shaped object. Fill with water just below the spout. Place the object in and measure the volume displaced.
10. What happens to the particles in a substance if its temperature is increased?	They move faster and the energy in their kinetic store increases
11. What is the internal energy of a substance?	The total kinetic and potential energy of all the particles in the substance
12. What is the name given to the energy transferred when a substance changes state?	Latent heat
13. What is the specific latent heat of a substance?	The energy needed to change the state of one kilogram of that substance with no temperature change
14. What is the specific latent heat of fusion of a substance	The energy required to change one kilogram of a substance from solid to a liquid at its melting point, without changing its temperature

Yours faithfully,

Miss T Quigley

Head of Science (starting from Easter)