



Year 9 Science – Foundation Tier

Knowledge from topics being covered on this assessment – Cell Biology, Atomic Structure and the Periodic Table and Energy

- Identifying eukaryotic (animal and plant) and prokaryotic cells (bacteria)
- Linking organelles inside cells to their function (for example the cell membrane allows substances in and out of the cell)
- Calculating magnification using $\text{magnification} = \frac{\text{image size}}{\text{actual size}}$
- Understanding the different stages of cell division (mitosis)
- Defining diffusion – how is it different from osmosis and active transport?
- Knowing the difference between elements, compounds and mixtures
- Describing different separation techniques such as filtration, distillation and crystallisation and knowing the equipment used for each process
- Explaining how distillation works
- Labelling an atom (protons, neutrons, electrons, shells, nucleus)
- Understanding the difference between mass number and atomic number and using them to calculate the number of protons, neutrons and electrons in an atom
- Defining an isotope
- Linking energy stores to energy transfers
- Calculating gravitational potential energy ($\text{GPE} = m \times g \times h$)
- Calculating kinetic energy ($\text{KE} = 0.5 \times m \times \text{speed}^2$)
- Understanding the required practical on specific heat capacity
- Calculate power using $\text{power} = \frac{\text{energy transferred}}{\text{time}}$

Skills being covered on this assessment

- Using a ruler accurately to measure parts of an animal or plant cell
- Using equations effectively – showing all your working out (highlight numbers in the question, then substitute them into the equation, rearrange and then calculate)
- Selecting practical equipment for separation processes such as filtration
- Understanding resolution and linking it to measuring instruments
- Graph skills – using pie charts and estimating portions of the pie chart
- Converting units – for example minutes into seconds and KJ into J

How to revise?

1. Use the KS4 BBC Bitesize website – revision sections, videos & multiple-choice tests
Cell Biology – <https://www.bbc.co.uk/bitesize/topics/z2s8v9q>
Atomic Structure – <https://www.bbc.co.uk/bitesize/topics/zxnftv4>
Energy – <https://www.bbc.co.uk/bitesize/topics/zycbsrd>
2. Use the Year 9 Knowledge Organiser provided for you (please ask your teacher for another copy if you have misplaced this).
3. Make flashcards per topic with questions on the front, answers on the back and then ask someone to quiz you on the cards or self-quiz yourself.