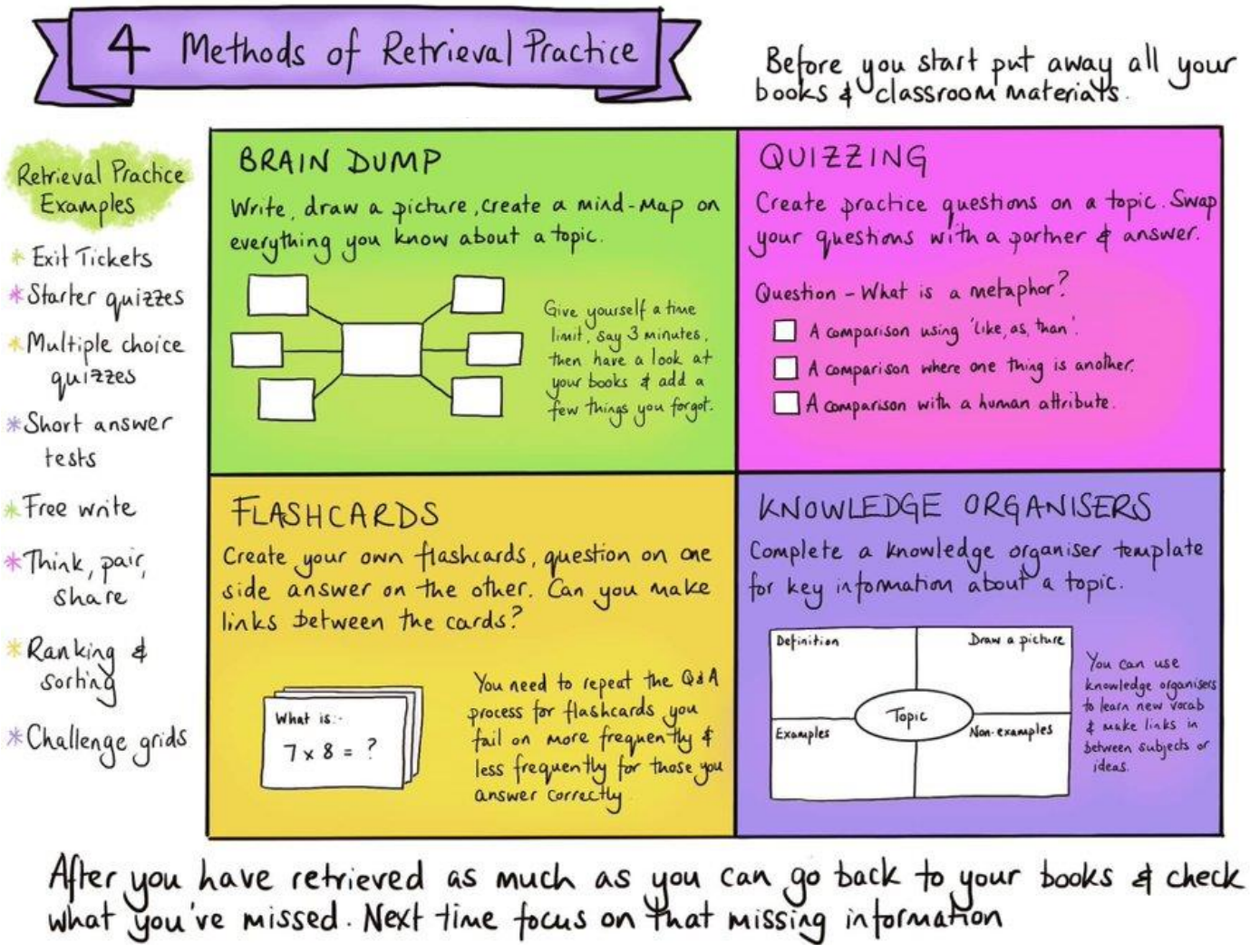
# GCSE SCIENCE

## Year 10 Mock Revision Aid

It is helpful to:

- Work quietly away from distractions.
- Organise your time to include regular meals, exercise, sleep and time to relax with friends.
- Read things through with a parent or friend and test each other on facts and answers.
- Be positive attitude about what you can achieve.
- Have the equipment that you need ready for the exam day and arrive for the exam in plenty of time.




Bitesize: https://www.bbc.co.uk/bitesize/examspecs/z8r997h

Seneca: https://app.senecalearning.com/courses?Price=Free&text=aqa+combined+science

Save my Exams: https://www.savemyexams.com/gcse/

# BIOLOGY

| Topic | Tick when completed |
|---|---|
| **Topic 1: Cell Biology** | |
| Animal and plant cells | |
| Prokaryotic cells | |
| Specialised cells | |
| Microscopes and magnification | |
| Cell division | |
| Stem cells | |
| Diffusion and active transport | |
| | |
| **Topic 2: Organisation** | |
| Digestive system | |
| Enzyme activity | |
| The heart, blood and blood vessels | |
| Problems with the heart | |
| Respiratory system- the lungs | |
| Non-communicable diseases | |
| | |
| **Topic 3: Infection and response** | |
| Health and disease | |
| Pathogens (bacteria/viruses/protists/fungi) | |
| Human defence systems | |
| Antibiotics | |
| Vaccinations | |
| Drug development | |
| | |
| **Topic 4: Bioenergetics** | |
| Aerobic respiration | |
| Anaerobic respiration | |
| Response to exercise | |

# Chemistry

| Topic | Tick when completed |
|---|---|
| **Topic 1: Atomic structure and the periodic table** | |
| Atoms, elements and compounds | |
| Atomic structure | |
| History of the atom | |
| Periodic table | |
| Development of the periodic table | |
| Alkali metals, halogens and noble gases | |
| | |
| **Topic 2: Bonding structure and properties of matter** | |
| Ionic bonding and ionic compounds | |
| Covalent bonding and covalent compounds | |
| Metals and metallic bonding | |
| States of matter | |
| | |
| **Topic 3: Quantitative chemistry** | |
| Conservation of mass | |
| Relative formula mass | |
| Moles (H only) | |
| Concentrations of solutions | |
| | |
| **Topic 4: Chemical changes** | |
| Reactivity series | |
| Acids and alkalis | |
| Metal salts | |
| Neutralisation | |

# Physics

| Topic | Tick when completed |
|---|---|
| **Topic 1: Energy** | |
| Energy stores | |
| Kinetic, gravitational potential and elastic energy | |
| Power | |
| Efficiency | |
| National and global energy resources | |
| | |
| **Topic 2: Electricity** | |
| Circuit symbols | |
| Current and voltage | |
| Resistance and potential difference | |
| Series and parallel circuits | |
| Main's electricity | |
| National grid | |
| | |
| **Topic 3: Particle model of matter** | |
| Solids, Liquids, Gases | |
| Density | |
| Specific heat capacity | |
| Latent heat | |
| Pressure | |
| | |
| **Topic 4: Atomic Structure** | |
| Atomic structure | |
| Isotopes | |
| Radiation | |
| Radioactive contamination | |

Physics Equation sheet

## Unit 1: Energy

| Equations | |
|---|---|
| kinetic energy $= \frac{1}{2} \times$ mass $\times$ speed$^2$ | $E_K = \frac{1}{2}mv^2$ |
| GPE = mass × gravitational field strength × height | $E_P = mgh$ |
| power $= \frac{\text{work done}}{\text{time taken}} = \frac{\text{energy transferred}}{\text{time taken}}$ | $P = \frac{W}{t} = \frac{E}{t}$ |
| efficiency $= \frac{\text{useful energy output}}{\text{total energy input}}$<br>efficiency $= \frac{\text{useful power output}}{\text{total power input}}$ | |
| | |
| elastic potential energy = 0.5 × spring constant x (extension)$^2$ | $E_e = \frac{1}{2}ke^2$ |
| change in thermal energy = mass × specific heat capacity × temperature change | $\Delta E = mc\Delta\theta$ |

## Unit 2: Electricity

| Equations | |
|---|---|
| charge flow = current × time | $Q = I\,t$ |
| potential difference = current × resistance | $V = I\,R$ |
| total resistance = resistance of component 1 + resistance of component 2 | $R_T = R_1 + R_2$ |
| power = current × potential difference | $P = I\,V$ |
| power = (current)$^2$ × resistance | $P = I^2R$ |
| energy transferred = power × time | $E = Pt$ |
| energy transferred = charge flow × potential difference | $E = QV$ |

## Unit 3: Particle Model of Matter

| Equations | |
|---|---|
| density $= \frac{\text{mass}}{\text{volume}}$ | $\rho = \frac{m}{V}$ |
| | |
| change in thermal energy = mass × specific heat capacity × temperature change | $\Delta E = mc\Delta\theta$ |
| thermal energy for a change in state = mass × specific latent heat | $E = mL$ |
| ^ for a gas: pressure × volume = constant | $pV = constant$ |

These equations may come up in your paper 1 physics exam.

# 23 Equations

This is a great free app for practicing your physics equations.