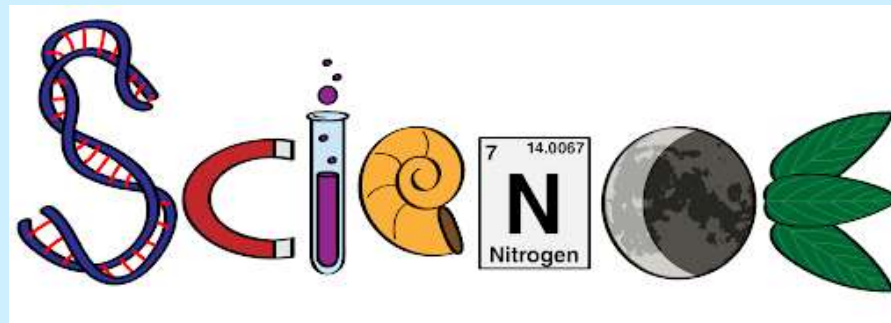




How to revise for



The 5 step plan

Pupils will be assessed on;

Substantive knowledge

Subject Content in the curriculum

Disciplinary knowledge

Working scientifically related to the
required practical

Year 7 Subject Content

Particles 1: Particle Theory

Organisms 1: Prokaryotic, Eukaryotic and Microscopy

Energy 1: Energy Conservation

Forces 1: Contact and Non contact

Electromagnets 1: Principles of electricity

Matter 1: Periodic table

Reactions 1: Acids and Alkalis

Genes 1: Reproduction

Year 8 Subject Content

Organisms 2: Respiratory system and respiration

Genes 2: Genetics and Evolution

Forces 2: Speed and Pressure

Electromagnets 2: Magnetism

Reactions 2: Combustion, endo or exothermic reaction

Waves 2: Waves light and transverse waves

Energy 2: Conduction, convection and radiation

Ecosystems 2: Photosynthesis

Organisms 3: Digestion

Earth 1: Rocks and Structure of the Earth

Year 9 Subject Content

Cells 1 and 2: Cells, Microscopy and Cell Cycle

Atoms 1: Structure of an Atom

Energy 1: Conservation of Energy

Energy and Heat: Heat Transfer

Periodic table: Development and Group Properties

Organisation 1: Digestion

Structure and Bonding: Ionic, Covalent and Metallic

Organisation 2: Circulatory System

Electricity: Principles of Electricity

Electricity and the Home: Electrical Safety and Efficiency

Energy Chemistry: Endothermic and Exothermic

Year 10 Subject Content

Infectious Disease: Pathogens, Immune System and development of drugs

Atomic Structure: Physics, Radioactivity, Half life and Risks

Quantitative Chemistry: Calculating unknown mass, conservation of mass

Chemical Change: Chemical reactions with metals and acids, metal carbonates and acid, metal oxides and acids and metal hydroxide and acid.

Bioenergetics: Photosynthesis and Respiration

Energy Change (Chemistry): Energy Chemistry: Endothermic and Exothermic

Forces: Contact and non contact and forces of motion

Homeostasis: Nervous system, hormones and the brain (TS)

Rates of Reaction: Factors affecting rate and equilibrium

Chemical Analysis: Positive tests and Chromatography

Year 11 Subject content Trilogy

Biology 1

- 1. Cell biology
- 2. Organisation
- 3. Infection and response
- 4. Bioenergetics

Biology 2

- 5. Homeostasis and response
- 6. Inheritance, variation and evolution
- 7. Ecology

Chemistry 1

- 8. Atomic structure and the periodic table
- 9. Bonding, structure, and the properties of matter
- 10. Quantitative chemistry
- 11. Chemical changes
- 12. Energy changes

Chemistry 2

- 13. The rate and extent of chemical change
- 14. Organic chemistry
- 15. Chemical analysis
- 16. Chemistry of the atmosphere
- 17. Using resources

Physics 1

- 18. Energy
- 19. Electricity
- 20. Particle model of matter
- 21. Atomic structure

Physics 2

- 22. Forces
- 23. Waves
- 24. Magnetism and electromagnetism

Year 11 Subject content Separate

Biology 1

- 1. Cell biology
- 2. Organisation
- 3. Infection and response
- 4. Bioenergetics

Biology 2

- 5. Homeostasis and response
- 6. Inheritance, variation and evolution
- 7. Ecology

•8. Key ideas

Chemistry 1

1. Atomic structure and the periodic table
2. Bonding, structure, and the properties of matter
3. Quantitative chemistry
4. Chemical changes
5. Energy changes

Chemistry 2

6. The rate and extent of chemical change
7. Organic chemistry
8. Chemical analysis
9. Chemistry of the atmosphere
10. Using resources

Physics 1

1. Energy
2. Electricity
3. Particle model of matter
4. Atomic structure

Physics 2

5. Forces
6. Waves
7. Magnetism and electromagnetism

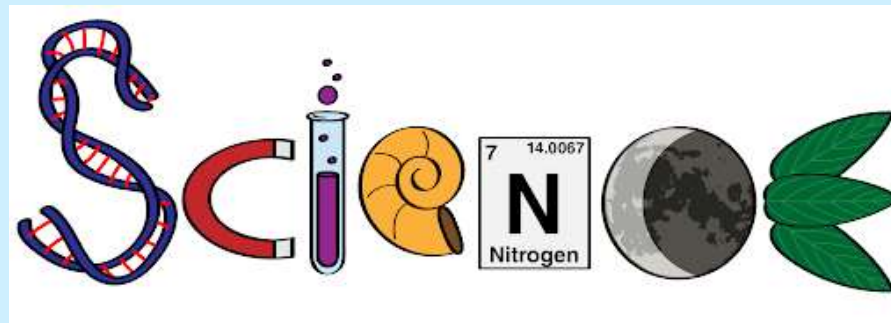
8. Space physics

Required Practicals-KS4

Required practical activity	Trilogy	Biology	Chemistry	Physics
Microscopy	✓	✓		
Osmosis	✓	✓		
Enzymes	✓	✓		
Food tests	✓	✓		
Photosynthesis	✓	✓		
Reaction time	✓	✓		
Field investigations	✓	✓		
Plant responses		✓		
Decay		✓		
Microbiology		✓		
Making salts	✓		✓	
Temperature changes	✓		✓	
Rates of reaction	✓		✓	
Chromatography	✓		✓	
Water purification	✓		✓	
Electrolysis	✓		✓	
Neutralisation			✓	
Identifying ions			✓	
Specific heat capacity	✓			✓
Resistance	✓			✓
I-V characteristics	✓			✓
Density	✓			✓



How to revise for



The 5 step plan

Go to share point on the school website





[Remote Access](#) [EduLink](#) [E-mail](#) [SharePoint](#) [Online Payments](#) [Parents' Evening](#) [E-Praise](#) [GCSEPOD](#)



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→ Science → Year → Revision

Science ToolBox

 Digital Classroom

 My Emails

 My OneDrive

 Stream

 Teams

 Documents

Year 7

Year 8

Year 9

Year 10

Year 11

Year 11



Focus eLearning
Simulations



Chemistry Required
Practical Videos



Equations

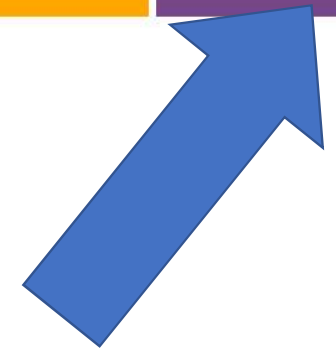
Practice Papers

Revision

Autumn 1

New Tile

Manage Tiles



Documents > Year 11 > **Revision Resources**



Name ▾



Additional resources



Step 2. Knowledge organisers



Step 3. Checklists



Step 4. Complete end of Topic Tests



Step 5. Required Practicals



Step 6. Web links - Revision

Step 1 What exam do I need to revise for and what Tier should I be looking at? (KS4 only)

Are you doing AQA Separate Sciences or the Combined Science Trilogy GCSE?

Are you doing the Foundation or Higher Tier specification?

Speak to your class teacher if you are not sure

Step 2 Find out what the topic is about?

Have a look in the **knowledge organiser** section.

Keywords	
Cell	The unit of a living organism.
Eukaryotic cell	Animal, plant and fungus cells. Their DNA is confined to a nucleus.
Prokaryotic cell	Bacterium cell. Their DNA is not confined to a nucleus.
Mitochondria	Is the site of respiration Oxygen + glucose → water + carbon dioxide
Chloroplasts	Is the site of photosynthesis Water + carbon dioxide → oxygen + glucose
Ribosomes	Is the site of protein synthesis (new proteins are made)
Nucleus	Controls the activities of the cell
Partially permeable membrane	A membrane that only allows certain substances to go through.

Factors Affecting the Rate of Diffusion
- Higher concentration gradient = faster rate of diffusion. - Higher temperature = faster rate of diffusion. - Larger surface area of the membrane = faster rate of diffusion.

Magnification Equation
Magnification = $\frac{\text{Size of image}}{\text{size of real object}}$

Microscope magnification
Magnification = Eyepiece x objective lens

Unit Conversions
1km = 1000m 1m = 100cm 1cm = 10mm 1mm = 1000µm 1µm = 1000nm

Animal and Plant Cells

B1 Cell Structure and Transport

Transport Key Terms
Diffusion is the spreading of particles from area of high to low concentration. Diffusion High concentration → Low concentration Osmosis is the diffusion of water through a partially permeable membrane from an area of high to low concentration of water. Active transport is the movement of substances from a dilute solution to a more concentrated solution. Requires energy.

Step 3 Find out what you know already?

Complete the appropriate checklist

B1 Checklist Cell structure and transport

Lesson	Objectives
1 - Microscopes and magnification	● State how microscopy techniques have developed over time. ● Explain how electron microscopy has increased understanding of subcellular structures. ● Compare differences in magnification and resolution of light and electron microscopes. ● Calculate magnification, real size and image size, giving answers in standard form, using the formula: $\text{magnification} = \frac{\text{size of image}}{\text{size of real object}}$
2 - Animal and plant cells	● Explain how organelles are related to their functions. ● Estimate the size of organelles based on the size of a cell.
3 - Required practical activity 1	● Required practical activity 1: use a light microscope to observe, draw and label a selection of plant and animal cells. A magnification scale must be included.

Step 3 Find out what you know already?

- Complete the appropriate checklist

Use a
highlighter

Lesson	Objectives
1 - Microscopes and magnification	• State how microscopy techniques have developed over time. • Explain how electron microscopy has increased understanding of subcellular structures. • Compare differences in magnification and resolution of light and electron microscopes. • Calculate magnification, real size and image size, giving answers in standard form, using the formula: $\text{magnification} = \text{size of image} / \text{size of real object}$
2 - Animal and plant cells	• Explain how organelles are related to their functions. • Estimate the size of organelles based on the size of a cell.
3 - Required practical activity 1	• Required practical activity 1: use a light microscope to observe, draw and label a selection of plant and animal cells. A magnification scale must be included.

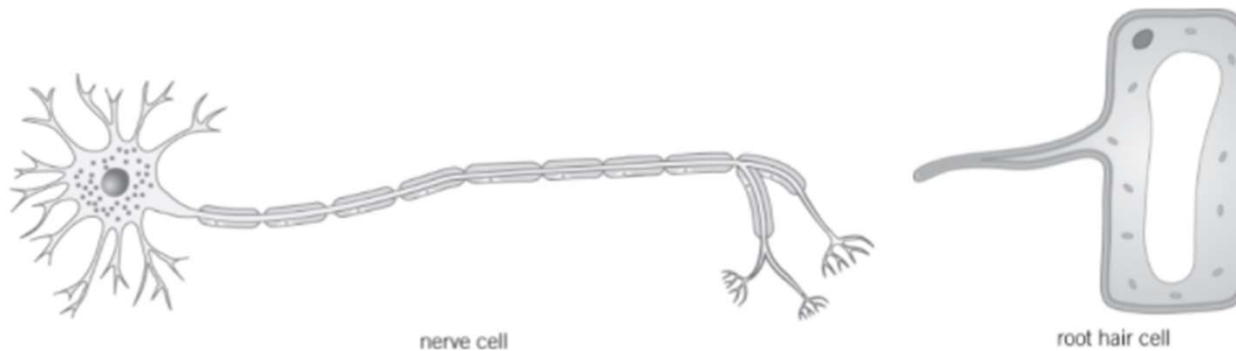
Step 4 Practise, practise, practise

- **Complete the exam questions from share point for the topic**

This question is about specialised cells.

Figure 1 shows a nerve cell and a root hair cell.

Figure 1



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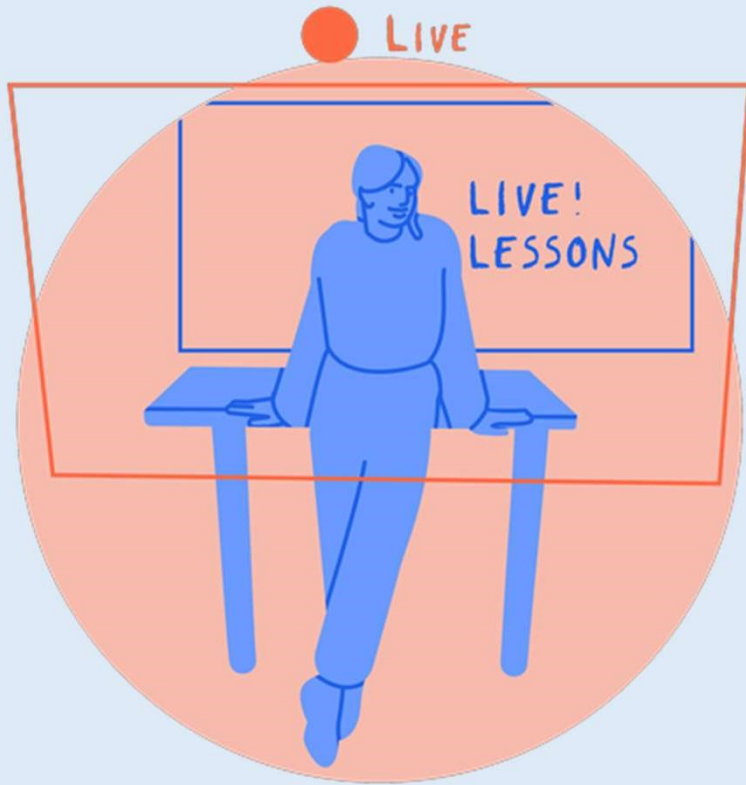
What is the function of a nerve cell?

(1 mark)

Step 5 Look at additional resources for those topics you are struggling with

- Review the **required practical**
- Use **GCSE Pod** to select specific areas (KS4 only)
- Use **Tassomai** for general revision
- Other sites to look at
- **Free Science Lessons**
- **GCSE Bitesize** (KS4 only)
- KS3 - Bitesize





Tassomai LIVE Online Group Tuition

*Free to access revision on a
range of topics across
Science, English and Maths*

<https://www.tassomai.com/live-lessons>

The screenshot displays the Tassomai web application. At the top is a blue header with the Tassomai logo. A left-hand navigation menu includes links for Quiz, Tree, Usage, Review, Topics, Resources, Account, How It Works, and Log out. The 'Tree' link is highlighted with a blue arrow. The main area features a tree diagram with a brown trunk and branches, and leaves in green, yellow, and orange. A blue arrow points to a yellow leaf. To the right of the tree is a quiz panel titled 'Biology [AQA] / 01: Cell Biology / 1.3: Cell Specialisation'. It shows 'Last Seen: 20/01/22' and 'Last 2 Attempts: [red X] [green checkmark]'. The question is 'Which of these cells is adapted for SWIMMING (because it has a flagellum)?'. Below the question are four answer boxes: 'Sperm cell' (highlighted in green), 'Ovum', 'Root hair cell', and 'Brain cell'. A 'Red and Orange Focus' checkbox is visible at the top right of the tree area.

You should be completing regular Tassomai activities as part of your homework and exam preparation (approximately 3 daily goals per week)

The Tree function will help you to identify areas of strength and areas needing targeting in your revision.

17/10/21