



Mr Wood – Head of Science

mwood@newfield.sheffield.sch.uk

Science mock exams

3 exams

Triple:

1 hour 45 minutes each

100 marks per paper

1 grade for Biology, Chemistry, and Physics

Trilogy:

1 hour 15 minutes each

75 marks each

2 grades (e.g. 44, 56, 34)

Please write clearly in block capitals.

Centre number Candidate number

Surname _____

Forename(s) _____

Candidate signature _____

I declare this is my own work.

GCSE
BIOLOGY

H

Higher Tier Paper 1H

Tuesday 17th May 2022 Morning Time allowed: 1 hour 45 minutes

Materials

For this paper you must have:

- a ruler
- a scientific calculator

Instructions

- Use black ink or black ball-point pen.
- Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer all questions in the spaces provided.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.
- In all calculations, show clearly how you work out your answer.

Information

- The maximum mark for this paper is 105.
- The marks for questions are shown in brackets.
- You are expected to use a calculator where appropriate.
- You are reminded of the need for good English and clear presentation in your answers.

For Examiner Use	
Question	Mark
1	
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9	
TOTAL	

AQA

Please write clearly in block capitals.

Centre number Candidate number

Surname _____

Forename(s) _____

Candidate signature _____

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GCSE
PHYSICS

H

Higher Tier Paper 1

Time allowed: 1 hour 45 minutes

Materials

For this paper you must have:

- a ruler
- a scientific calculator
- the Physics Equations Sheet (enclosed).

Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
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TOTAL	



JUN2184631H01

8866401E16

8463/1H

Science mock exams

Biology paper 1	Chemistry paper 1	Physics paper 1
B1 – Cell biology	C1 – Atomic structure and the periodic table	P1 – Energy
B2 – Organisation	C2 – Bonding, structure, and properties of matter	P2 – Electricity
B3 – Infection and response	C3 – Quantitative chemistry	P3 – Particle model of matter
B4 - Bioenergetics	C4 Chemical changes	P4 – Atomic structure
	C5 – Energy changes	

Please write clearly in block capitals.

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Candidate signature _____

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GCSE BIOLOGY

H

Higher Tier Paper 1H

Tuesday 17th May 2022 Morning Time allowed: 1 hour 45 minutes

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GCSE PHYSICS

H

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JUN2184631H01

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8463/1H

When are the Science mocks?

Biology paper 1 – Tuesday 29th November (AM)

Chemistry paper 1 – Tuesday 6th December (AM)

Physics paper 1 – Monday 12th December (AM)

What types of question are asked?

Multiple choice questions – tick the correct answer/s.

0 1 . 1 What are two similarities between a bacterial cell and an animal cell? [2 marks]

Tick (✓) two boxes.

Both have a cell membrane.

Both have a cell wall.

Both have a nucleus.

Both have cytoplasm.

Both have plasmids.

What types of question are asked?

'Give' questions – 'give' means to state/write down. No description or explanation is needed.

0 1 . 2 Salmonella food poisoning is caused by bacteria in food.

Give one symptom of salmonella food poisoning.

Do not refer to vomiting or diarrhoea in your answer.

[1 mark]

What types of question are asked?

'Describe' questions – 'describe' means to write about what you can see/what you would do/what happens. You don't need to give a reason why.

0 4 . 3

A student investigated the effect of different colours of light on the rate of photosynthesis at room temperature.

The student used pondweed in water.

A piece of pondweed was placed in red light, then in blue light and then in green light.

Each colour of light was the same intensity.

Describe how the student should make accurate measurements to obtain valid results for the rate of photosynthesis.

[4 marks]

What types of question are asked?

'Explain' questions – 'explain' means you need to give a reason why.

03.7

Explain how the structure of enzyme molecules is related to the effect of pH on the activity of amylase.

[6 marks]

What types of question are asked?

'Suggest' questions – 'suggest' means explain so you need to give a reason why.

0 1 . 6

Suggest why doctors do not give antibiotics to patients with minor infections.

[1 mark]

What types of question are asked?

'Compare' questions – 'compare' means to write about similarities and differences. These questions might ask you to compare advantages/disadvantages or to compare data from a table/graph.

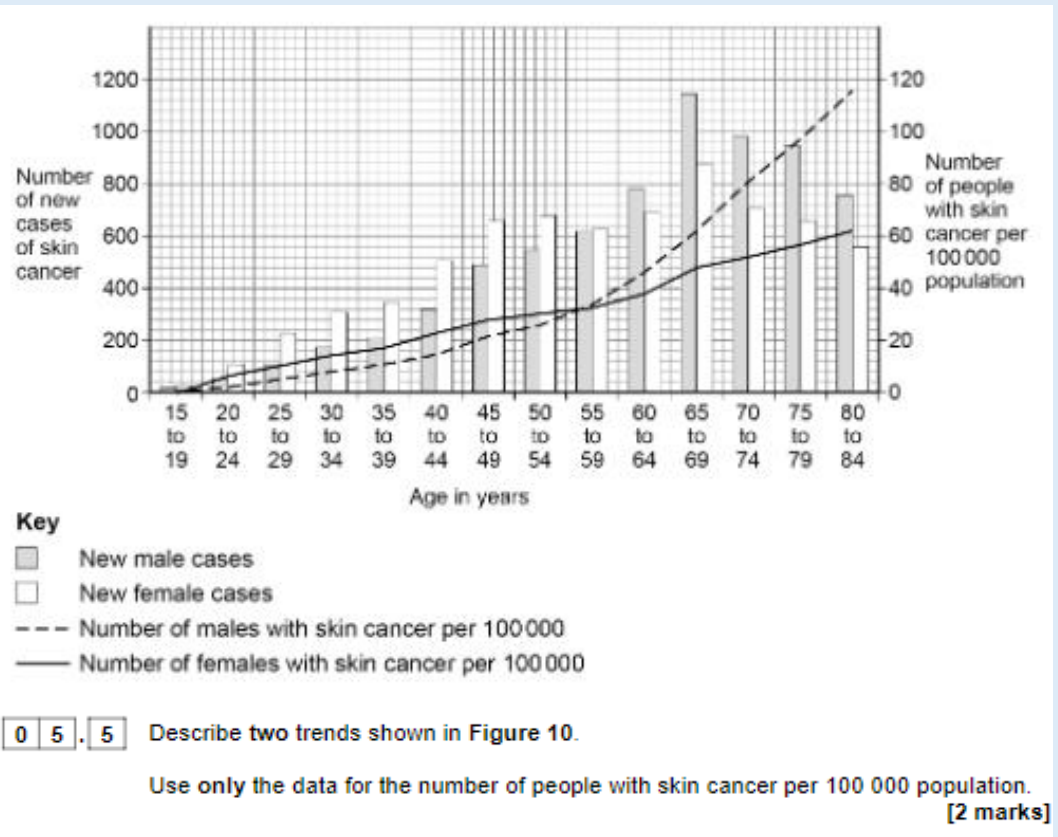
Compare the growth of boys with the growth of girls.

Use data from Figure 5 in your answer.

[6 marks]

What types of question are asked?

‘Describing graphs’ questions – you need to write about how the numbers/columns/lines change.



What types of question are asked?

'Looking up equation' questions – look up an equation on your equation sheet that has the things from the question in it and write it down!

Use the Physics Equations Sheet to answer questions 02.3 and 02.4.

0 2 . 3

Write down the equation linking energy transferred (E), power (P) and time (t).

[1 mark]

What types of question are asked?

‘Calculation’ questions – where you must use an equation to work something out.

0 2 . 4 The electric heater had a power output of 50 watts.

Calculate the time taken for the electric element to transfer 4750 joules of energy to the vegetable oil.

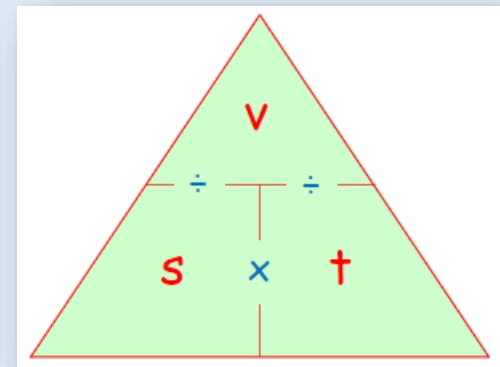
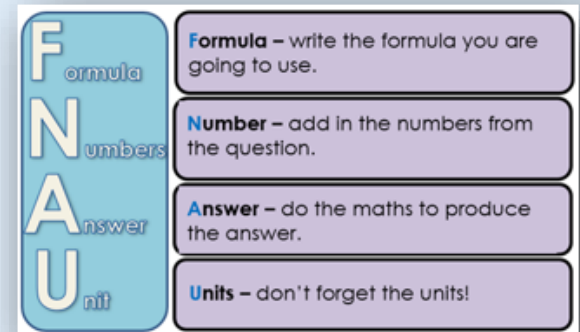
[3 marks]

Time taken = _____ s

What types of question are asked?

'Calculation' questions – tips...

1. Use FNAU to show all your working out!
2. Use equation triangles to rearrange equations.
3. Check for units you might need to convert.
4. Does the answer line have units? If not, you need to give this!



What types of question are asked?

‘Multi equation calculations’ questions – questions where you will need to use 2 different equations to work out an answer.

0 3 . 2

When the child is at position A, each trampoline spring is stretched by 0.056 m

The elastic potential energy of each spring is 4.9 J

When the child is at position B, the elastic potential energy of each spring increases to 8.1 J

Calculate the extension of each spring when the child is at position B.

Use the Physics Equations Sheet.

[5 marks]

Extension = _____ m

What we are offering

- Lessons with lots of retrieval, checking of understanding, and exam practice.
- Breakfast clubs – every Thursday in M16 from 8am with either Mr Wood or Mrs Webster
- After school revision – every Thursday in the Science classrooms with different teachers each week.
- How to revise homeworks
- Exam skills homeworks
- Revision packs (available from your teacher or in form)
- Past papers



Newfield Science - Upper School Exam Skills Homework



The meaning of 'describe'

In science, describe means to:

1. Say what you can see/to say what happens.
2. You don't have to include reasons why something happens
3. If you're asked to describe a table, you should write about how the numbers change. E.g. As 'X' increases then 'Y' decreases.
4. If you're asked to describe a graph, you should write about how the graph line changes. E.g. as 'A' increases then 'B' increases also. In fact there is a directly proportional relationship because the graph line is straight and passes through the origin (0,0).

Physics (P1 Energy)

Insulation



Read through the information below on electrical power and make revision materials:

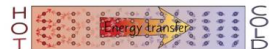
You **DON'T** need to be able to explain the ins and outs of **conduction** and **convection**, but you need to know about them so you can understand energy transfers **by heating** (and how to reduce them — see next page).

Conduction Occurs Mainly in Solids

CONDUCTION is the process where **VIBRATING PARTICLES** TRANSFER ENERGY TO NEIGHBOURING PARTICLES.

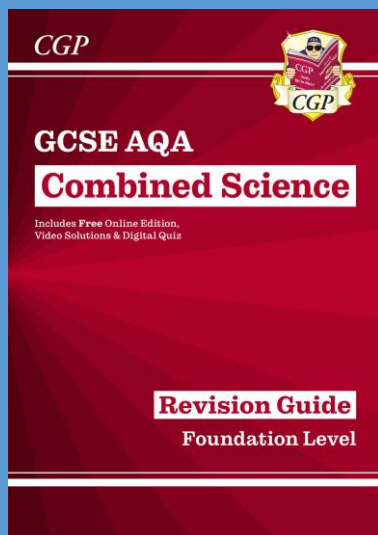
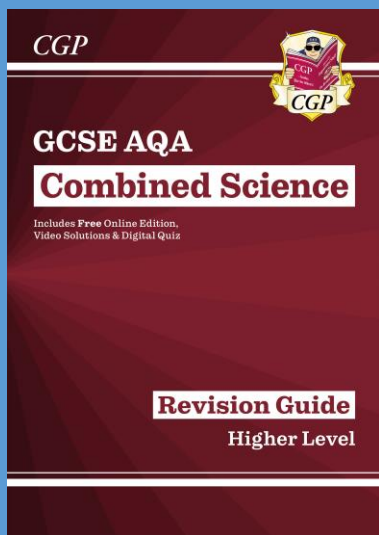
Particles in liquids and gases are much more free to move around, which is why they usually transfer energy by convection instead of conduction.

- 1) Energy transferred to an object **by heating** is transferred to the **thermal store** of the object. This energy is shared across the **kinetic** energy stores of the **particles** in the object.
- 2) The particles in the part of the object being heated **vibrate** more and **collide** with each other. These **collisions** cause energy to be transferred between particles' **kinetic** energy stores. This is **conduction**.
- 3) This process **continues throughout** the object until the energy is transferred to the **other side** of the object. It's then usually transferred to the **thermal** energy store of the **surroundings** (or anything else **touching** the object).
- 4) **Thermal conductivity** is a measure of how **quickly** energy is transferred through a material in this way. Materials with a **high thermal conductivity** transfer energy between their particles **quickly**.



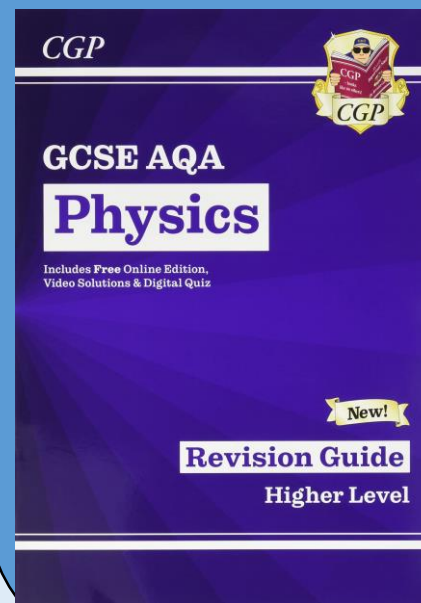
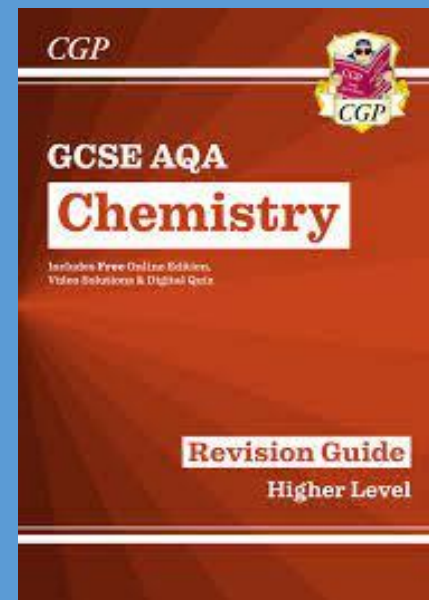
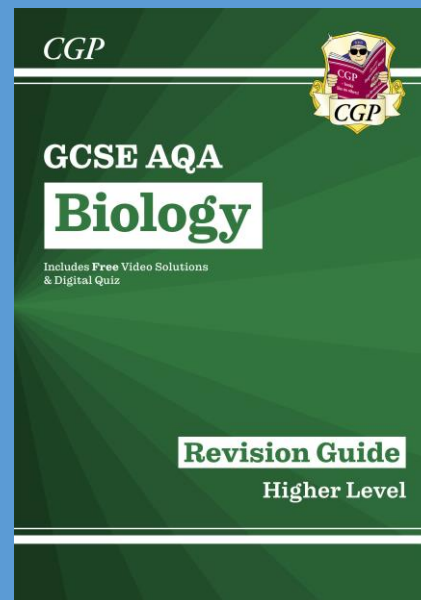
How do you prepare?

Revision guides:



11ab2 to 11ab8 these are what you need.

If you're not sure about whether foundation or higher is best for you – ask your teacher.



Triple science students need these.

All revision guides can be purchased through ParentPay at reduced prices compared with shops.

How do you prepare?

- Revise all three sciences from the beginning.
- Use your topic lists so you know you are revising the right stuff.
- Come to breakfast club and after school revision.
- Use revision strategies that work:
 - Make flash cards
 - Make mind maps
 - Make condensed notes
 - Past papers/exam questions
- Practice, practice, and more practice – keep revising a topic until you know it without having to look anything up!
- Speak to Mr Wood/your class teacher if you are struggling or want extra things from us (past papers/exam questions/revision packs).

Thank you

Questions?

Things you can take home tonight:

- Topic lists
- Trilogy or Triple practice exam question booklets