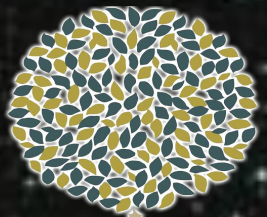


*Time to Shine*

*Sparkle in Science*



BUSHEY  
MEADS  
SCHOOL

## Overview

- Using the advance information in the optimal manner
- Using mark schemes and examiners reports effectively
- Keeping a revision timetable
- Understanding command words
- How to complete 6 mark questions and multi-step calculations
- Some more key advice

## ADVANCE INFORMATION, MARK SCHEMES AND EXAMINERS REPORTS

- This can be used to prioritise your revision for this year's exams.
- Use mark schemes in conjunction with past paper questions

### Paper 1H 8463/1H

For this paper, the following list shows the major focus of the content of the exam:

- 4.1.1 Energy changes in a system, and the ways energy is stored before and after such changes
- 4.1.2 Conservation and dissipation of energy
- 4.2.4 Energy transfers
- 4.3.1 Changes of state and the particle model
- 4.3.2 Internal energy and energy transfers

Required practical activities that **will be assessed**:

- Required practical activity 2: investigate the effectiveness of different materials as thermal insulators and the factors that may affect the thermal insulation properties of a material.
- Required practical activity 5: use appropriate apparatus to make and record the measurements needed to determine the densities of regular and irregular solid objects and liquids. Volume should be determined from the dimensions of regularly shaped objects, and by a displacement technique for irregularly shaped objects. Dimensions to be measured using appropriate apparatus such as a ruler, micrometer or Vernier callipers.

Topics **not assessed** in this paper:

- 4.2.1 Current, potential difference and resistance
- 4.2.2 Series and parallel circuits
- 4.2.3 Domestic uses and safety
- 4.3.3 Particle model and pressure
- 4.4.1 Atoms and isotopes
- 4.4.3 Hazards and uses of radioactive emissions and of background radiation
- 4.4.4 Nuclear fission and fusion



## EXAMINER'S REPORTS

- A sample of the comments made by examiners following physics exams is shown
- These can be useful to identify mistakes and misconceptions and make sure you don't make the same common mistakes.

- Students should be reminded that they *must* give both similarities and differences when the command word is 'compare'. [2019]
- Students lost marks because they simply restated the question, without adding any value. For example, when asked to suggest reasons why particular data was collected, many students simply rephrased the stem to state that the reason was the data was needed, rather than answering the question. [2019]
- Students must use the information given in questions. For example, some students used a commonly remembered value of 50 Hz carry out calculations and lost marks because the question stated the frequency was 55 Hz. [2019]
- In order for students to be awarded compensation marks on extended calculations they must show their working out, and it must be clear. No credit will be given for manipulating numbers with no evidence of an understanding of the underlying physics. [2019] On many occasions, students would have gained some marks for showing their working, even if they arrived at the wrong answer. [2018]



# COMMAND WORDS

- Make sure you apply command words to all parts of the question
- Ensure you know what the command words mean.
- Marks can easily be lost by ignoring the command word

**Calculate/ Determine** use maths to work out the answer

**Choose** circle the answer from the selection

**Compare** what are the similarities and differences

**Complete** fill in the gaps - pay attention to any given words, some may be used more than once some not at all

**Define** what does the word mean?

**Describe** what it looks like, or recall an event or process

**Design/ Plan** plan something

**Draw** draw a scientific diagram, not an arty sketch

**Estimate** give a sensible guess

**Evaluate** give good points, bad points your option and justify your opinion

**Explain** give reasons why something is the way it is

**Give/Name** a short answer

**Identify/Label** name a part

**Justify** give an answer and support it with a reason

**Measure** you might need to get your ruler out for this one

**Plan** write a method, don't forget your variables, controls and risk assessment

**Plot** mark points on a graph using an x

**Predict/suggest** what do you think is going to happen, you may need to use information

# LONG ANSWER QUESTIONS

- Worth up to 6 marks.
- 
- These are usually **levelled** answers – in order to score top marks it is important to answer in a clear, logical and detailed manner.
- **Unit conversions**
- Multi-step calculations
  - these are often worth 5 or 6 marks
  - Require the use of 2 or even 3 equations

02.1	<b>Level 3:</b> The method would lead to the production of a valid outcome. All key steps are identified and logically sequenced.	5–6	AO1 4.5.3
	<b>Level 2:</b> The method would not necessarily lead to a valid outcome. Most steps are identified, but the method is not fully logically sequenced.	3–4	
	<b>Level 1:</b> The method would not lead to a valid outcome. Some relevant steps are identified, but links are not made clear.	1–2	
	<b>No relevant content</b>	0	
	<b>Indicative content</b> set up a clamp stand with a clamp hang the spring from the clamp use a second clamp and boss to fix a (half) metre ruler alongside the spring record the metre ruler reading that is level with the bottom of the spring hang a 2 N weight from the bottom of the spring record the new position of the bottom of the spring calculate the extension of the spring measure the extension of the spring add further weights to the spring so the force increases 2 N at a time up to 10 N for each new force record the position of the bottom of the spring and calculate / measure the extension		

## How to answer 6-mark questions

1. Identify the command word; this tells you what the examiners are looking for. This is often describe, explain or evaluate.
2. Go back over the question and use highlighter pens or underline to pick out key bits of information.
3. Briefly, plan the structure of your question.
4. Write your answer. Make a point, then explain your point. Use data if it is given.
5. Check if your answer fully answers the question, and make sure it is balanced and covers all the points needed in the question.
6. Check your spelling, punctuation and grammar



1

**Read, underline, check.**

Identifying  
relevant/irrelevant  
information.

2

**Be aware of mark  
allocation.**

For one mark questions, a  
single word or a few words  
is often adequate.

3

**Time management.**

Keep an eye on the clock.

4

Follow question  
instructions carefully  
**and**  
**Show your working**

**GOOD LUCK!**