

## Science - Year 9

**Key Contact:** Mrs Sinclair- j.sinclair@applemore.hants.sch.uk

### Subject Content

Students will continue to study the KS3 curriculum. We then have transition units to ensure that the students are confident with the key fundamental topics from KS3 learning which has recently been impacted by blended learning due to COVID. In Term 3 students will be getting prepared for the GCSE Science subjects.

Autumn	Spring and summer
Waves (light and sound)	B1-4 cells and organ systems
Essentials biology	C1-3 atoms, the periodic table and bonding
Essentials chemistry	P1-3 energy and resources
Essentials physics	Required practicals

### Assessment

Homework: At least 1 homework sheet every week.

Assessment: Students will complete 2 forms of assessment every term, usually in the form of a topic test and either an assessed longer answer question or practical investigation

### Useful Study Support Resources

- BBC KS3 Science Bitesize has many useful activities: best use by searching the appropriate topic in the search bar under KS3 Science Bitesize. Or Bitesize GCSE AQA combined science Trilogy or AQA single sciences
- Hub – there are all the home works from every topic, which can also be used to revise from.

### Anything else relevant / subject specific

Science is an exciting practical subject that students enjoy studying. Students are encouraged to take an interest in Science outside of school and appreciate that Science is all around us at all time. Many students visit zoos, wildlife sanctuaries and museums in their spare time, others choose to watch programmes such as 'Bang Goes the Theory' and Science documentaries that interest them or take an interest in new scientific discoveries that are reported in the media. Science club and ecoschools are available to students – more information to be given in tutor times.

## **Year 9 expectations:**

### **Application**

- 1 hour of homework a week
- Respond to all feedback given by teacher

### **Organisation**

- Bring all equipment to Science lessons, including your calculator
- Ask your teacher if you need additional help or have missed a lesson and need to catch up

### **Independence**

- Students should complete homework independently where possible, but feel free to support when help is required
- Students are encouraged to develop the skills required to work independently and to seek help in working out answers using the '4B's': *'brain* (can they work out an answer on their own?) *book* (could they look up the answer in their exercise/ textbook/ internet?), *buddy* (could they work out the answer by talking to a friend?), *boss* (ask a teacher).

### **Improving grades**

Students will be able to regularly access feedback to work that will tell them how to improve their grade. As a general overview, to achieve each grade, students are required to be able to do the following:

#### **Emerging (GCSE grade 1-2)**

- Label diagrams and use some scientific key terms. Recall basic scientific facts. Supported in their practical work

#### **Aspiring (GCSE grade 3-4)**

- Label diagrams and use more scientific key terms. Describe some basic scientific concepts and plan practical activities.

#### **Developing (GCSE grade 4-5)**

- Give the meanings of scientific key terms and correctly use these in sentences. Describe scientific concepts and patterns in data. Complete practical work referencing variables.

#### **Securing (GCSE grade 6-7)**

- Explain scientific concepts and the patterns in data using scientific knowledge and evidence. Plan and complete valid and fair experimental investigations

#### **Mastering (GCSE grade 8-9)**

- Evaluate scientific theories and evidence and understands its limitations. Link scientific concepts to real world examples. Plan and complete valid and fair experimental investigations with presentation of results and supported scientific conclusions.

## Extended resource List

Autumn	Spring and summer
Waves - sound	B1-4 cells and organ systems
Waves Light	C1-3 atoms, the periodic table and bonding
Biology fundamentals	P1-3 energy and resources
Chemistry Fundamentals	Required practicals
Physics Fundamentals	

### **Waves - Light and Sound waves**

[Waves - KS3 Physics - BBC Bitesize](#)

### **Biology Fundamentals**

[KS3 Biology - BBC Bitesize](#)

### **Chemistry Fundamentals**

[KS3 Chemistry - BBC Bitesize](#)

### **Physics Fundamentals**

[KS3 Physics - BBC Bitesize](#)

### **Biology 1-4**

#### **B1 cell and transport**

[Cell biology - GCSE Biology \(Single Science\) Revision - AQA - BBC Bitesize](#)

[Diffusion - Transport in cells - AQA - GCSE Biology \(Single Science\) Revision - AQA - BBC Bitesize](#)

#### **B2 cell division and stem cells**

[Chromosomes and DNA - Cell division - AQA - GCSE Biology \(Single Science\) Revision - AQA - BBC Bitesize](#)

#### **B3 organ systems and digestion**

[Levels of organisation - Animal organisation - gaseous exchange systems - AQA - GCSE Biology \(Single Science\) Revision - AQA - BBC Bitesize](#)

[Molecules of life - Animal organisation - digestion - AQA - GCSE Biology \(Single Science\) Revision - AQA - BBC Bitesize](#)

#### **B4 blood and circulation, transport in plants**

[The circulatory system - Animal organisation - transport systems - AQA - GCSE Biology \(Single Science\) Revision - AQA - BBC Bitesize](#)

[Plant organisation - Plant organisation - AQA - GCSE Biology \(Single Science\) Revision - AQA - BBC Bitesize](#)

### **Chemistry 1-3**

#### **C1 atoms**

[Chemical symbols - Atoms, elements and compounds - AQA - GCSE Chemistry \(Single Science\) Revision - AQA - BBC Bitesize](#)

[Early ideas about atoms - Atomic structure - AQA - GCSE Chemistry \(Single Science\) Revision - AQA - BBC Bitesize](#)

[Relative formula mass - Calculations in chemistry - AQA - GCSE Chemistry \(Single Science\) Revision - AQA - BBC Bitesize](#)

## **C2 periodic table**

[Mendeleev's periodic table - The periodic table - AQA - GCSE Chemistry \(Single Science\) Revision - AQA - BBC Bitesize](#)

[Group 0 - physical properties - Groups in the periodic table - AQA - GCSE Chemistry \(Single Science\) Revision - AQA - BBC Bitesize](#)

## **C3 bonding**

[Bonding, structure and the properties of matter - GCSE Chemistry \(Single Science\) Revision - AQA - BBC Bitesize](#)

## **Physics 1-3**

### **P1 energy stores and transfers**

[Types of energy store - Changes in energy stores - AQA - GCSE Physics \(Single Science\) Revision - AQA - BBC Bitesize](#)

[Work, power and efficiency - Work, power and efficiency - AQA - GCSE Physics \(Single Science\) Revision - AQA - BBC Bitesize](#)

### **P2 Heat transfer**

[Energy and heating - Energy and heating - AQA - GCSE Physics \(Single Science\) Revision - AQA - BBC Bitesize](#)

### **P3 Energy resources**

[National and global energy demands and resources - Energy demands - AQA - GCSE Physics \(Single Science\) Revision - AQA - BBC Bitesize](#)