Armfield Academy – Department of Science

Year 10 Physics Curriculum Overview

- ✔ Each lesson will start with a series of questions linked to both the previous lesson and topics studied previously.
- ✔ Formative assessment of skills linked to practical work will enable students to demonstrate their acquisition of new skills.
- ✔ Students are encouraged to consolidate learning at least once a week and seek tutor help if unsure on any topics.
- ✔ Within each unit, time will be allocated for consolidation and recall before assessment, this includes for mock exams.
- ✔ The following questions will be explored within the units
- ✔ Content in blue is only taught to the A pathway (students on the triple science route)

Half Term 1	
Date	**Topic**: Particle model of matter
Week 1	Introduction to science (expectations, standards, health and safety, introduction of key skills and assessing prior knowledge).
Week 2	How are particles arranged? How do we calculate density?
Week 3	How do we measure the density of a regular shapes, irregular shapes and liquids? **Required practical: Density.**
Week 4	What is internal energy?
Week 5	What is specific latent heat?
Week 6	How do particles behave in a gas?
Week 7	What happens to pressure when volume is changed? How does temperature affect the pressure in a gas?
Half Term 2	
Date	**Topic**: Electricity
Week 8	How do we draw electrical components? What is current?
Week 9	What's the relationship between current, resistance and potential resistance?
Week 10	How does the length of a wire affect resistance?
Week 11	How does resistance change in series and parallel circuits? **Required practical: Series and parallel resistors**
Week 12	How does resistance change with different components? **Required practical: I–V characteristics**
Week 13	What's the difference between series and parallel circuits?
Week 14	How is electricity supplied in our homes? How do I wire a plug?
Half Term 3	
Date	**Topic**: Electricity & Forces
Week 15	How do we calculate the power of our electrical devices?
Week 16	How is energy transferred in our domestic appliances?
Week 17	How does electrical power get to our homes?
Week 18	How do static charges build-up? What are electric fields?
Week 19	What can I remember from year 7? What is Newton's 3rd Law of motion?
Week 20	What is a resultant force? How do we calculate work done?
Half Term 4	
Date	**Topic**: Forces
Week 21	What is the relationship between force and extension? **Required practical: Force and extension**
Week 22	How can I lift an elephant using the principle of moments? How do I calculate pressure?
Week 23	What is atmospheric pressure? How are displacement and distance different?
Week 24	What's the difference between speed and velocity? How do we represent speed, distance and time?
Week 25	What happens when objects speed up/slow down? What is terminal velocity?
Week 26	What is Newton's 1st Law of motion? What is Newton's 2nd Law of motion?
Half Term 5	
Date	**Topic**: Forces
Week 27	How do force and mass affect acceleration? **Required Practical: Investigating force and acceleration**
Week 28	How quickly can a vehicle stop? How fast can you react?
Week 29	Which factors affect braking distance?
Week 30	How does energy transfer during braking? What is momentum and how do we calculate it?
Week 31	How does the change of momentum affect the force on an object?
Week 32	**Year 10 Mock exams**
Half Term 6	
Date	**Topic**: Waves
Week 33	**Year 10 Mock exams**
Week 34	**Year 10 work experience**
Week 35	What types of waves are there?
Week 36	How do we represent waves?
Week 37	How suitable is apparatus to measure the frequency, wavelength and speed of waves? **Required practical: Waves**
Week 38	What happens when waves hit a surface? **Required practical: Reflection**
Week 39	How do we use waves?
	What is the electromagnetic spectrum?