

## Science Phase One Curriculum

### Curriculum Intent:

At Trinity Academy St Edwards (TASE) the science curriculum is designed to recognise previous learning in KS2 science topics and develop this into lifelong skills that can be used to interpret and understand the world. Learners will develop skills to feed their **curiosity** for understanding their surroundings, becoming inquisitive and conscientious citizens. Learners will gain the skills, knowledge and confidence to interact with current global challenges and make a positive contribution to society.

TASE achieves this by delivering a science curriculum that provides a complete and accessible scheme of learning. Topics will be delivered explicitly to ensure that learners gain robust substantive knowledge. Mastery of recall for subject knowledge is an integral part of the day to day learning of a TASE science learner. Experiments are embedded into each topic to advance practical skills and enhance disciplinary knowledge, both in a laboratory and in the field.

At the end of year 11 a science learner at TASE will leave with **ambition** to make appositive change in the world. They will have acquired knowledge and become **skilled** in biology, chemistry and physics. They will be well prepared to use their knowledge and learning to make a sustained, positive contribution to society, with a focus on the impact of human activity on the world, how to protect the world we live in and moral and ethical implications of potential technological advances. Our science learners will be **adaptable** to a constant changing world environment.

### Year 7

#### Overview:

The KS3 curriculum at TASE builds upon science learning in KS2. The spiral structure of the curriculum ensures that learners build upon existing knowledge in a meaningful way, without overloading memory at any one time, thus developing a deeper understanding of scientific concepts. The curriculum is broad and balanced, designed to encompass the entire of the national curriculum. Lessons provide learners with mathematical, scientific and practical skills needed to be able to carry out scientific investigations. This provides learners with the tools needed to become a curious, ambitious and resilient science learner and builds a strong foundation for KS4 learning.

**Content:**

| Term 1  | Term 2   | Term 3   | Term 4   | Term 5   | Term 6   |
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| <p><b>Biology</b> – Organs, cells and Microscopes.<br/> <b>Chemistry</b> - States of Matter<br/> <b>Physics</b> - Forces</p>  | <p><b>Biology</b> - Nutrition and Diet<br/> <b>Chemistry</b> - The Periodic Table<br/> <b>Physics</b> - Forces and their Effects</p>   | <p><b>Biology</b> - Gas Exchange<br/> <b>Chemistry</b> - Chemical Reactions<br/> <b>Physics</b> - Gravity</p>  | <p><b>Biology</b> - The skeleton and Muscles.<br/> <b>Chemistry</b> - Acids and Alkalis<br/> <b>Physics</b> - Earth’s Magnetic Field and Seasons</p>   | <p><b>Biology</b> - Plant Reproduction<br/> <b>Chemistry</b> - The Rock Cycle<br/> <b>Physics</b> - Observed Waves</p>   | <p><b>Biology</b> - Transport Systems<br/> <b>Chemistry</b> - Chemical Reactions 2<br/> <b>Physics</b> – Sound</p>   |
| <p><b>Biology – Organs, cells and Microscopes.</b><br/> This topic builds on previous knowledge of organs and organ system and introduces the concept of cells. Learners use microscopes and prepare an onion cell specimen for observation.</p> <p><b>Chemistry - States of Matter</b><br/> This topic builds on prior learning about solids, liquids and gases and introduces the particle model. Learners carry out a practical investigation to determine the</p> | <p><b>Biology - Nutrition and Diet</b><br/> This topic recaps the 5 food groups and introduces learners to the 7 nutrients and their role in a healthy diet. Practical investigations are carried out to determine the energy content of different foods.</p> <p><b>Chemistry - The Periodic Table</b><br/> This topic introduces learners to the history of the periodic table and how the modern periodic table was constructed. Learners become familiar with</p> | <p><b>Biology - Gas Exchange</b><br/> This unit build on previous learning about the respiratory system, introducing learners to the mechanism of breathing and diffusion in plants and animals.</p> <p><b>Chemistry - Chemical Reactions</b><br/> This topic looks at the signs of a chemical reaction. Learners will carry out simple reactions to make observations and are introduced to combustion and oxidation as chemical reactions.</p> | <p><b>Biology - The skeleton and Muscles.</b><br/> This unit looks at the function of the skeleton and muscles and introduces learners to antagonistic muscle pairing to allow movement.</p> <p><b>Chemistry - Acids and Alkalis</b><br/> Learners will gain skills to identify substances as either acid or alkali and understand the dangers of working with chemicals.</p> <p><b>Physics - Earth’s Magnetic Field and Seasons</b></p> | <p><b>Biology - Plant Reproduction</b><br/> This topic build on previous learning of the structure of a flower, learners dissect flowers and identify and name the male and female parts of a flower. The unit finishes looking at seed formation and dispersal in a range of plant species.</p> <p><b>Chemistry - The Rock Cycle</b><br/> Learners will identify different types of rock and study In detail the formation of each type. Learners are introduced to the</p> | <p><b>Biology - Transport Systems</b><br/> The role of the heart is studied in detail, learners will be able to describe the flow of blood through the body of a mammal. Learners are introduced to xylem and phloem for transport in plants.</p> <p><b>Chemistry - Chemical Reactions 2</b><br/> This unit introduces the concept of conservation of mass and learners carry out investigations to show that reacting masses are equal to products in chemical reactions.</p> |

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| <p>freezing point of stearic acid.</p> <p><b>Physics - Forces</b><br/>This unit builds on prior knowledge that forces can be pushes or pulls. Learners investigate the uses of unbalanced forces in everyday life and use Newton meters to calculate forces exerted on everyday objects.</p> | <p>using the periodic table.</p> <p><b>Physics - Forces and their Effects</b><br/>Building on the last topic this unit looks at how forces can affect the motion of an object. Practical investigations are carried out to investigate speed.</p> | <p><b>Physics - Gravity</b><br/>This unit builds on previous knowledge about gravity, introducing it as a non-contact force. Learners will learn the difference between mass and weigh and carry out calculations to determine the weight of everyday objects on Earth and compare this to its weight on other planets.</p> | <p>Learners recap previous learning on magnets and are introduced to the earth as a magnet. The topic looks at how the movement of the earth can affect day, night and seasons.</p> | <p>concept that earths resources are finite and the need for recycling.</p> <p><b>Physics - Observed Waves</b><br/>In this unit, learners learn the names of the parts of waves and study waves in everyday situations. Observations are carried out using a ripple tank to allow the calculation of resultant height of a wave during superposition.</p> | <p><b>Physics – Sound</b><br/>This unit looks at the properties of soundwaves, learners carry out investigations to calculate the speed of sound using echoes and describe uses of insulating materials in everyday life.</p> |
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Who to contact about Phase One Science:

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