

Curriculum Links Reference Book: Key Stage 3

English

The National Curriculum for English reflects the importance of spoken language in learners' development across the whole curriculum. Through our sessions, the benefits and curriculum links will vary greatly depending on the group, with each session being tailored to the needs of the group.

Sessions will particularly aid in the following:

- Learning of new vocabulary
- Use of descriptive English
- Using standard English confidently in a range of formal and informal contexts
- Classroom discussion and expression of own ideas
- Summarising and/or building on what has been said

The sessions provide multiple opportunities for extended learning, for example:

- Writing descriptive accounts
- Discussing outcomes
- Comparing and contrasting activities on site to those at school
- Presentation work

Mathematics

Mathematics is integral to many Field Studies sessions, helping studies become fluid in their approach. The extent to which Mathematics is covered will greatly depend on the needs of the groups.

Sessions may aid in the following:

- Extending KS2 knowledge of numerical values to include decimals and fractions
- Ordering positive and negative integers, decimals and fractions
- Using concepts and appropriate vocabulary
- Using standard units of mass, length, time, money and other measures
- Rounding numbers and measures
- Using scale factors, scale diagrams and maps
- Describe, interpret and compare observed distributions
- Construction and interpretation of appropriate tables, charts and diagrams
- Description of simple mathematical relationships between variables

Citizenship

We understand that citizenship education helps young people to develop the skills, knowledge and understanding required to prepare them to play a full and active part in society. The Citizenship curriculum is embedded within practice at Avon Tyrell. Learners are encouraged to work within a team environment, managing their own time and resources, making and debating reasoned arguments, and exploring social issues in a safe environment.

Science

The principle focus of the Science National Curriculum at KS3, is to help learners become aware of the big ideas underpinning scientific understanding, and how these ideas interrelate. Field Studies sessions address a wide range of curriculum topics, with a particular focus on the Biology syllabus.

Working Scientifically

Scientific attitudes

1. Pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
2. Evaluate Risks

Experimental skills and investigations

1. Ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience
2. Make predictions using scientific knowledge and understanding
3. Select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate
4. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety
5. Make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
6. Apply sampling techniques

Analysis and evaluation

1. Apply mathematical concepts and calculate results
2. Present observations and data using appropriate methods, including tables and graphs
3. Interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
4. Present reasoned explanations, including explaining data in relation to predictions and hypotheses
5. Evaluate data, showing awareness of potential sources of random and systematic error
6. Identify further questions arising from their results.

Subject content - Biology

Structure and function of living organisms

Cells and organisation

1. The structural adaptations of some unicellular organisms
2. The hierarchical organization of multicellular organisms

Nutrition and digestion

1. The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases
2. Plants making carbohydrates in their leaves by photosynthesis and gaining mineral nutrients and water from the soil via their roots

Reproduction

1. Reproduction in mammals
2. Reproduction in plants

Material cycles and energy

Photosynthesis

1. The dependence of almost all life on Earth and the ability of photosynthetic organisms such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of Oxygen and Carbon Dioxide in the atmosphere
2. The adaptations of leaves for photosynthesis

Interactions and interdependencies

Relationships in an ecosystem

1. The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops
2. The importance of plant reproduction through insect pollination in human food security
3. How organisms affect, and are affected by, their environment, including the accumulation of toxic materials

Genetics and evolution

Inheritance, chromosomes, DNA and genes

1. Heredity as the process by which genetic information is transmitted from one generation to the next
2. Differences between species
3. Changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction

Subject content – Chemistry

Earth and atmosphere

1. The composition of the Earth
2. The structure of the Earth
3. Earth as a source of limited resources and the efficacy of recycling
4. The carbon cycle
5. The composition of the atmosphere
6. The production of carbon dioxide by human activity and the impact on climate

Subject content – Physics

Motion and Forces

Balanced Forces

1. Opposing forces and equilibrium

Forces and motion

1. Forces being needed to cause objects to stop or start moving, or change their speed or direction of motion

Art and Design

At Avon Tyrrell, we aim to engage, inspire and challenge learners, encouraging them to experiment and create their own pieces of art, craft and design.

Key areas covered include:

1. To use a range of techniques to record observations in sketchbooks, journals and other media as a basis for exploring their ideas
2. To use a range of techniques and media, including painting
3. To increase their proficiency in handling of different materials

4. To analyse and evaluate their own work, and that of others, in orders, in order to strengthen the visual impact or applications of their work
5. About the history of art, craft and design and architecture, including periods, styles and major movements from ancient times up to the present day

Design and Technology

Developing a creative and technical understanding enables young people to perform task confidently and to participate successfully in a technological world. Learners need to learn to become resourceful, taking appropriate risks to develop ideas and solve problems.

Key areas covered include:

Design

1. Identify and solve their own design problems and understand how to reformulate problems given to them
2. Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools

Make

1. Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties

Evaluate

1. Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups

Technical Knowledge

1. Understand and use the properties of materials and the performance of structural elements to achieve functioning solution
2. Understand how more advanced mechanical systems used in their products enable changes in movement and force

Geography

The Geography National Curriculum aims to ensure that all learners develop an understanding of the key physical and human geographical features of the world, as well as geographical key skills. The New Forest offers a wide range of geographical features for study.

Human and physical geography

1. Understand, through the use of detailed place-based exemplars at a variety of scales, the key processes in:
 - a. Physical geography relating to: geological timescales and plate tectonics; rocks, weathering and soils; weather and climate, including climate change from Ice Age to present; and glaciation, hydrology and coasts
 - b. Human geography relating to: population and urbanization; international development; economic activity in the primary, secondary, tertiary and quaternary sectors; and the use of natural resources
2. Understand how human and physical processes interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems

Geographical skills and fieldwork

1. Build on their knowledge of globes, maps and atlases and apply and develop this knowledge routinely in the classroom and in the field
2. Interpret Ordnance Survey maps in the classroom and the field, including using grid references and scale, topographical and other thematic mapping, and aerial and satellite photographs.
3. Use fieldwork in contrasting locations to collect, analyse and draw conclusions from geographical data, using multiple sources of increasingly complex information

History

Avon Tyrrell is steeped in local History – the house is a Grade I Listed building and is situated on the edge of The New Forest National Park.

1. A local history study
 - a. A depth study linked to social, cultural and technological change in post-war British society
 - b. A study over time, testing how far sites locally reflect aspects of national history (some sites may predate 1066)
 - c. A study of an aspect or site in local history dating from a period before 1066
2. A study of an aspect or theme in British history that consolidates and extends pupil' chronological knowledge from before 1066

Physical Education

With a wide range of outdoor activities available at Avon Tyrrell, there are many ways to link to the National Curriculum for Physical Education, to enable all young people to succeed and excel in a wide range of physically demanding activities. Our activities provide the perfect opportunity for learners to become physically confident in a way which supports their health and fitness.

1. Take part in outdoor and adventurous activities, which present intellectual and physical challenges and can be encouraged to work in a team, building on trust and developing skills to solve problems, either individually or as a group
2. Take part in competitive sports and activities outside school through community links or sports clubs