Subject: Science

Subject Leader: Vicki Capstick

Concepts / Themes / Big Questions

Science at Shap is all about igniting pupils' inquisitiveness and encouraging them to confidently explore and discover the world around them, so that they develop a deeper understanding of the world we live in. Through our practical and enjoyable curriculum, we aim to inspire, excite and enthuse our children and foster a desire for knowledge. We believe that these opportunities will ensure that our children are confident, life-long learners who will and will continue to explore Science around them.

Please see 2 Year Science Overview.

Concepts

- Plants
- Animals, including Humans
- Materials
- Seasonal Changes
- Living Things and their Habitats
- Rocks
- Light
- Forces and Magnets
- States of Matter
- Sound
- Electricity
- Earth and Space
- Evolution and Inheritance
- Working scientifically

NC / Other Links

The 2014 National Curriculum for Science has been used to ensure the statutory content and coverage is covered in our Shap Science curriculum.

Cultural Capital

At Shap, our aim is to give children the knowledge and skills to prepare them for what comes next in their lives, in Science, this includes:

- Progressive and ambitious expectations for the teaching and use of appropriate vocabulary that will be used.
- A range of high quality Science fiction and non-fiction books that can be accessed in class reading areas.
- School visits – KS1 AND LKS2 – Dalemain Mansion and Country Gardens. LKS2 Orton Scar with Westmorland Dales, Heysham Nuclear Power Station. UKS2 – Carla Weild heart dissection workshop.
- Equipment loans in classroom provision.
- Village walks

Enrichment: People, Locality and County

- Eden Rivers Trust
- Nicola Estile – Yorkshire Dales National Park
- Chris Queen – Tata Steel
- Heysham Power Station
- Shap Doctors Surgery
- Penrith Dentists
- Becky Grace – UCC
- Eve – Birds
- Heart Dissection – Carla Weild (Lowther Endowed Primary School)
- Rivers & Nature restoration/ conservation – Faith Garvey
- Bankwood Farm
- Jamie – Cumbria Wildlife Trust
- Allonby Beach
- Maryport Aquarium

Enrichment: Resources

- Digital microscopes
- Data loggers
- Light Resources from UCC
- Real hearts
- Magnifying glasses
- Thermometers
- Electricity circuit sets and equipment
- Test tubes and droppers
- Filter papers
- Measuring cups, cylinders, syringes, etc
- Torches

Links to Christian Vision and Values

Science closely links to our school vision. The Science curriculum has been planned by putting the children at the heart of it and by thinking about the breadth of Science that is important to our children and can be enhanced through our local environment. Through Science children will be able to live out 'living in harmony, within our community, nurturing one and other; by understanding how to look after our local environment. With a hands on and practical approach to Science, this should allow all of our children to soar.

Science closely links to our school values:

Friendship – children are encouraged to work together to discuss ideas, set up investigations, explore Science theories and they understand when predicting, other may have different opinions and they need to value these.

Peace – with a rural village location and by accessing this as much as possible during or Science learning , children may come to find piece in the natural environment.

Compassion – Science allows the children to think about the habitats in their environment and how to care for these correctly.

Creation – Science allows children to explore all aspects of creation of everything around them. Also within Science children are encouraged to be creative with their thinking and ideas, as well as ways of recording their work.

Links to other Subjects

PSHE and RSE

- the characteristics and mental and physical benefits of an active lifestyle. The importance of building regular exercise into daily and weekly routines and how to achieve this. The risks associated with an inactive lifestyle. What constitutes a healthy diet (including understanding calories and other nutritional content). The principles of planning and preparing a range of healthy meals. The characteristics of a poor diet and risks associated with unhealthy eating (including, for example, obesity and tooth decay) and other behaviours (e.g. the impact of alcohol on diet or health). about dental health and the benefits of good oral hygiene and dental flossing, including regular check-ups at the dentist. About personal hygiene and germs including bacteria, viruses, how they are spread and treated, and the importance of handwashing.

Maths

- Measure – mass, capacity
- Statistics – interpret, draw, collect and represent data

English

- Explanation texts – how the digestive system works,
- Instructions – how to make a minibeast house/hotel

Design & Technology

- Design and make a torch – linked to electricity and light
- Design and make an electric poster – linked to electricity and animals and their habitats

Computing

- Branching databases

Art and design

- Observational drawings/paintings of flowers, fruits, vegetables, etc

Links to SDP and School Priorities

- Priority 2 – to promote equality of opportunity and diversity effectively.
- Priority 4 – to refine assessment procedures.

Assessment / Proof of Progress

Both formative and summative assessment is used in Science.

Formative assessment is used during weekly Science lessons by teachers and teaching assistants. Formative assessment can be done in many ways, including: marking and verbal feedback during or after the lesson, questioning, discussions and creating their own enquiries. In Science, formative assessment is used to inform future planning, grouping, interventions and to correct any misconceptions that arise.

Summative assessment is used at the end of each Science unit. The final lesson in each unit is an assessment where the children can share what knowledge they now have, this can be done through double page spreads (non chronological style), quizzes using the Plicker software, drama, animation.

Teachers and teaching assistant will use the Science progression map to assist their teacher assessment judgments in Science.

Monitoring Procedures

Throughout the year, both formal and informal monitoring takes place.

Each term, formal monitoring takes place and consists of:

- A book scrutiny
- Pupil voice
- Learning walks

Different children of differing abilities are selected for the pupil voice, this is to ensure we gain a broad spectrum of views to aid improvements to the Science curriculum and the children's learning. During the pupil voice, children have their books, to aid and support discussions. These are then used for the book scrutiny. Becky Grace is the link governor for Science. Every term, link governor monitor meetings are organized so the link governor and member of staff can get together to discuss the subject Science.

Main Subject Action Areas

- Embed the new Science curriculum.
- Ensure all classes are using the long term map, curriculum overview and medium term plans to include: NC objectives, misconceptions, vocabulary, possible activities and evidence and possible visits and visitors.
- Develop links with the local area and local people to have a range of enrichment opportunities so children can see the links between their learning and their local environment.
- Develop POP tasks for the Science Curriculum for all year groups.