Bedwas Junior School
Science Policy

Aims and objectives
Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and reflect on their scientific learning. Children will begin to appreciate the way science will affect their future on a personal, national and global level.

The aims of science are to enable children to:

- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment, including
- I.C.T. correctly;
- know and understand the life processes of living things;
- know and understand the physical processes of materials, electricity,
- light, sound and natural forces;
- know about the nature of the solar system, including the Earth;
- evaluate evidence and present their conclusions clearly and accurately;
- reflect on the success of their investigations.

Teaching and learning style
Teachers recognise the need to develop strategies that allow all children to learn in ways that best suit them. Teachers take into account these different styles of learning when planning and teaching. Teachers recognise that learning is an active and reflective process and time must be allowed for this.

The school recognises the links between the well being of children and their ability to learn. This includes:
supporting the emotional well-being of the children;

- healthy eating and exercise;
- encouraging regular drinking of water;
- brain breaks to aid concentration.

The school will offer opportunities for all children to learn in different ways. These include:

- investigating and problem solving;
- researching and finding out;
- differentiating work;
- group work;
- paired work;
- independent work;
- whole class work;
- asking and answering questions;
- fieldwork and visiting places of educational interest;
- inviting speakers to school;
- creative activities;
- oral presentations;
- using I.C.T.

Teachers will encourage children to take responsibility for their own learning, to review and reflect on how they learn and what helps them to learn.

A variety of teaching and learning styles will be used in science lessons. The aim is to develop children's knowledge, skills and understanding over the five area focuses. Children will be encouraged to ask, as well as answer, scientific questions. They will have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They will use I.C.T in science lessons where it enhances their learning. They will take part in discussions and they will present findings to the rest of the class. They will engage in a wide variety of problem-solving activities. Wherever possible, pupils will be involved in 'real' scientific activities, for example, carrying out a practical investigation and analysing the results.

Teachers recognise that there are children of widely different scientific abilities in all classes and ensure that they are provided suitable learning opportunities for by matching the challenge of the task to the ability of the child. This will be achieved in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of
- responses;
- setting tasks of increasing difficulty;
- providing resources of different complexity, matched to the ability of the child;
- using learning support assistants to support the work of individual children or groups of children.

Curriculum Planning

The school uses a scheme of work that covers 'the range' stated in the 2008 WAG science curriculum document as the basis of its curriculum planning. The national scheme has been adapted to the local circumstances of the school, in that the local environment is used for fieldwork. Each lesson aims to achieve scientific skills directly linked to the science skills ladder.

Curriculum planning in science is carried out in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage.

The medium-term plans give details of each unit of work for each term, including the 'Literacy and Numeracy Framework' (LNF) links.

The class teachers in the year group are responsible for writing the daily lesson plans for each lesson (short-term plans). These plans list the specific scientific skills of each lesson and, where possible, link to LNF skills. The class teacher keeps these individual plans, and s/he and the science coordinator often discuss them on an informal basis.

The topics in science are planned so that they build upon prior learning. Opportunities for children of all abilities are made to develop their skills and knowledge in each unit.

Cross Curricular Links

Information and communication technology (I.C.T)

Children will use I.C.T in science lessons where appropriate. They will use it to support their work in science by using the internet and apps. Children will use I.C.T to record, present and interpret data.

Assessment, Recording and Reporting

Children's work in science is assessed by making informal judgements as they are observed during lessons. On completion of a piece of work, the teacher marks the work following the marking policy. These levels are used as the basis for assessing the progress of each child, and are passed on to the next teacher at the end of the year.

Children's work can be recorded written or verbally.

The science coordinator keeps samples of children's work in a portfolio and uses these to demonstrate what the expected level of achievement is in science for each year group in the school. This portfolio is used for moderating science levelling across the school's cluster as well.

Inclusion

Teachers will provide suitable learning challenges, responding to children's diverse learning needs and overcoming potential barriers to their learning whatever age, gender, ethnicity, attainment, physical ability and background.

Science is taught to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through science teaching learning opportunities are provided that enable all children to make progress. This will be done by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows the teacher to consider each child's attainment and progress against expected levels.

More able and talented children should be identified as early as possible and developed.

When planning work for children with special educational needs, their targets contained in the children's Individual Education Plans (IEPs) are considered.

Role of the Subject Leader

It is the responsibility of the science coordinator to monitor the standards of children's work and the quality of teaching in science. The science coordinator is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science coordinator has allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject. The science coordinator must ensure resources needed for schemes of work are available.

Resources

The library contains a good supply of science topic books to support children's individual research. Resources will be stored neatly and looked after by all staff in the school, ensuring that if resources are removed it is replaced immediately after use.

Health and Safety

Teachers will ensure that they identify risks of scientific investigations. Any risks will be addressed inline with the CLEAPSS 'Model Health and Safety Policy in Science for Primary Schools' (L224). Children at risk will be identified e.g. children with pacemakers must not take part in lessons that involve magnets.

Policy Written by
Adam Ankin January 2017
Date of review: January 2020 (in light of current WG changes)

Signed by Chair of Governors 

Bedwas Junior School			Science Long Term Curriculum Map		Year 5/6	
Year	**Autumn**		**Spring**		**Summer**	
Year 1	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**
	Electricity	Earth, Sun and Moon (Enquiry – space exploration)	Dissolving/separating materials	Digestion (Enquiry – Something to Chew On)	Changing state of materials	Light
	Thematic Link:	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**
		Doctor Who and the Daleks	Wreck of the Zanzibar			
	Further Opportunities:	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**
	Using ICT simulations to visualise electric currents.	Developing oracy skills through explanations using models.				Techniquest trolley
Year 2	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**
	Life cycles of plants	Sound	Forensic science (Enquiry – Forensic science)	Impact of humans on environment (Enquiry - Climate Change)	Forces	Human body
	Thematic Link:	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**
			Storm Breaker	Eco-tourism – Caring for our world Sculpture – Eco Footprint		
	Further Opportunities:	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**
	Visit linked to Science.	Techniquest trolley ICT - Digital Media (Podcasts)	Forensic scientist visit.			

Bedwas Junior School			Science Long Term Curriculum Map		Year 3/4	
Year	**Autumn**		**Spring**		**Summer**	
Year 1	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**
	Light	Waste and Recycling (Enquiry – Recycling)	Weather (Enquiry – Weather)	Properties of materials (increase teaching of thermals)	Plants (Enquiry – fruit)	Sound
	Thematic Link:	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**
	Art - Use of lines.	Paper Bag Prince	Poetry linked to weather Geography - Cold places ICT – Digital research	Geography -Cold places	Food – eating healthily	
	Further Opportunities:	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**
Year 2	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**	**Science Topic:**
	Forces	Rocks and Soils	Electricity	Interdependence of animals	Human body	Food and exercise (Enquiry – Sport and Leisure)
	Thematic Link:	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**	**Thematic Link:**
						P.E. - Competitive sports
	Further Opportunities:	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**	**Further Opportunities:**
		Visit to the Newport Wetlands				