KEELMAN'S WAY SCHOOL,
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Date: 11 March 2019 Your Ref: Our Ref:

Science Policy- Keelman's Way School

Aims

Throughout Science, we aim to develop in pupils, a curiosity, an enjoyment, skills and a growing understanding of science knowledge, through an approach in which pupils raise questions and investigate the world in which they live.

Children will be encouraged to understand the world around them through play and exploration. This is an essential process for all complex needs students. Only when understanding of the world through the application of schema is achieved can further learning progress.

Many of our pupils/students have visual, auditory or physical disabilities and some are multi-sensory impaired. It is therefore important that our pupils/students have access to a range of science activities that accommodate their individual needs and allow individuals to reach their potential within the subject. Our students use a range of ICT/ communication systems and resources to access a wide variety of activities.

Curriculum Organisation

The Science Curriculum is designed to give pupils experience of all aspects of Science through as many different means as possible, depending on each pupils' ability to access subject content and individuals learning preferences. All pupils will be given opportunities to experience a wide range of Science activities with access to the resources, ideas and questions Science brings to our lives. All pupils will be involved in the development of all Science skills at their own level, including, Life processes and

Living Things, Materials and their Properties and Physical Processes. Scientific enquiry is embedded throughout each area of science.

Early years

Children in the Early Years will follow the Early Years Framework which covers the following areas:

Prime areas:

- Communication and language
- Physical development
- Personal, social and emotional development

Specific areas

- Literacy
- Mathematics
- Understanding the world
- Expressive arts and design

A continuous provision is provided and within this there will always be opportunities for scientific learning through the kinds of activities and investigations available to the children. Some weekly sessions will be geared more specifically to scientific activities and there will be group work or focused individual work for students who will benefit from this.

Key stages 1 – 3 pupils will be identified as being Pre KS NC and Subject Specific Learners.

Children who have been identified as being Pre KS NC learners will have targets set relating to their individual needs. They will still experience science related activities but the focus will be on their individual targets.

Children who have been identified as Subject Specific Learners will be taught Science using Keelman's Way School's long term plan. Children will be planned for with their achievement as the main focus. Curriculum coverage has been broken down into Levels which gives teachers all the activities for that level. Teachers are then able to plan activities to meet their student's needs.

Staff should teach knowledge, skills and understanding in ways that match and challenge their pupil's abilities.
Planning is done on an annual, half termly and weekly/daily basis.

Key stage 4 and Post 16
Pupils learn scientific concepts through the life skills curriculum. The different aspects of Scientific learning will be taught through Cookery, Horticulture, SRE and Creativity, this will include Plants and Growth, Seasonal Change, Changing Materials, Heating and Cooling, Body Parts and functions, Reproduction, Personal Hygiene, The Senses.

Teaching Styles

It is important to use a range of teaching styles to reflect the different learning abilities of individuals in any group of children. Teaching will be delivered on an individual basis, small groups or whole class groups as appropriate.

Teaching content

Science will be taught to the developmental level of understanding of individual students. Breadth and variety of experience will be maintained through the use of imaginative and motivating resources and activities.
At the early stages the focus will be on early developmental schema, as exemplified by the long term curriculum guidance.
As children progress they will continue to explore their environment in a concrete way and will be beginning to use this to develop thought internalised action. They will be encouraged and given opportunities to use symbolic thought to interact with the environment and consider the relationships and patterns therein.
As they become more confident, concrete explorations and demonstrations will still be important but more emphasis will begin to be placed on scientific inquiry and investigations, using these to explore and reason for events and factors.

Throughout all of the stages students will be given opportunities to:

- Explore their environment and a wide range of materials and objects with a particular emphasis on opportunities to develop their schema through the provision of activities to encourage and support this. This includes any schema that individual children are motivated by but particularly the more common ones of trajectory, orientation, connecting, rotation, enclosing, enveloping, positioning, transporting, thought internalised action and play.
- Explore their environment to get concrete experience of similarities and differences in objects.
- Explore their environment to develop an awareness of objects that are always present and those which can change and the rules and patterns surrounding this.
- Use this awareness to anticipate and predict across a wide range of experiences and activities.

- More able children will be given the opportunity to suggest and follow a line of enquiry. They will be encouraged to investigate using scientific understanding and represent their findings accordingly. They will explore the world around them and will be encouraged to question what they encounter.

Planning

Planning for Science is taken from Equals scheme of work and from the Science coverage documentation. The Equals scheme is used as a basis and the progression documentation to assist them in designing a science curriculum that is appropriate for the children will benefit from. This is used as a starting point from which objectives can be drawn and coverage checked. The Science curriculum should show coverage of the full range of Science areas for each pupil across the year. The assistant heads for the primary and secondary departments have produced suggested science areas to fit alongside the topics that are being covered.

Science planning is covered over three levels; long, medium and short term.

- Long term planning is currently in the format of a year by year range of scientific areas, which cover the three main areas of Science.
- Medium term planning contains differentiated objectives for each pupil and the learning they will experience to work towards these objectives.
- Short term planning will be present during times of observation and scrutiny, noting whether the plans fit with the medium term plans and individual pupil targets.

Delivery of Science

The delivery of Science to groups and individuals across Keelman's Way School will vary widely depending on pupils' preferred learning style. Some groups of pupils may prefer a more visual and practical lesson, exploring and observing Science in action, whereas others may prefer to undertake more complex scientific experiments, predicting and recording using a more structured format.
The Science lesson must always collaborate with the pupil's preferred method of understanding and communicating. Therefore the use of varying methods of communication is paramount, iPad, PEC's Files, Makaton, communication aids, and the body.
More able children will be challenged with their curiosity and understanding as well as developing explanations of scientific investigations. They will use scientific equipment to expand their reasoning and use increasingly abstract ways of sorting abstract phenomena.

Assessment and objective setting

The majority of pupils' at Keelman's Way School are working at Routes for Learning or early National Curriculum levels, with many pupils' learning through a multi-sensory approach to access and respond to Science activities. Individual pupil assessment is completed on a daily, half-termly and annual basis by class teachers through lesson evaluations, assessment against targets, evaluation of medium term plans, photographic assessments, annual review reports and evidence through Evidence for Learning APP. All progress is monitored against each pupil's own developmental progress and individual objectives are incorporated into class planning.

Resources

Keelman's Way School is well resourced for Science and the main resources can be found in the central area within school. The Science resources are currently organised into areas, and contain useful teaching resources and ideas for all areas within them. Individual teachers also produce class and pupil-specific resources to enable all pupils' in a group to access a particular topic or investigation. An on-going audit of resources is overseen by the Science leader to ensure that resources are still appropriate to the topics being taught and the changing needs of pupils. This is done through liaison with teachers, evaluation of planning and specific audits.

Signed

D.Camps
28th February 2019
To be reviewed February 2021