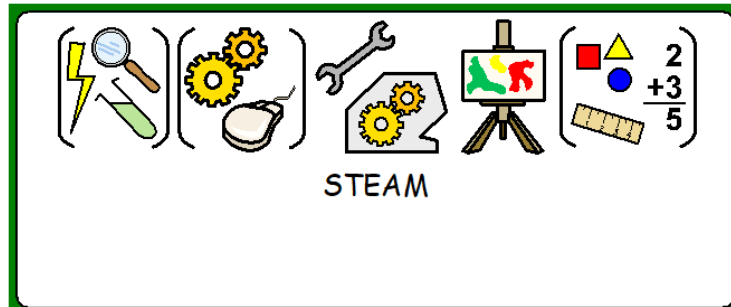


# STEAM Policy



Science, Technology, Engineering, Arts & Maths.



Community Special School

April 2020

## **Aims**

At Alfreton Park Community Special School, we aim to provide pupils with powerful ways of exploring, investigating and understanding the world. STEAM focused activities develop reasoning abilities, promotes logical thought and problem-solving, hands on strategies, skills and techniques to stimulate interest. Pupils will experience the practical application of science, technology, engineering, the arts and maths; which will promote independent thinking. Pupils will be given opportunities to practise their skills in many and varied settings including work in the community. The individual needs of each pupils will be carefully evaluated to provide a programme that will enable each individual to use knowledge and skills effectively. The curriculum at Alfreton Park will be relevant and manageable and relate to ILP's.

The main focus of STEAM is to enable pupils to experience and observe phenomena and systems, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of ideas by using different types of enquiry skills to answer their own questions.

Students should begin to use simple language relating to each of the areas to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most STEAM learning should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

## **The Five Curriculum Areas of STEAM**

### **Science**

- To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
- To build on pupils' curiosity and sense of awe of the natural world
- To use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science
- To introduce pupils to the language and vocabulary of science
- To develop pupils' basic practical skills and their ability to make accurate and appropriate measurements
- To explore different materials including their uses and properties.
- To develop pupils' use of computing in their scientific studies.
- To extend the learning environment for our pupils via our environmental areas and the locality

## **Technology Design**

- Design purposeful, functional, appealing products for themselves and other users based on design criteria
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
- Explore and evaluate a range of existing products
- Evaluate their ideas and products against design criteria
- Build structures, exploring how they can be made stronger, stiffer and more stable
- Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

## **Engineering**

- Design purposeful, appealing and functional products for themselves and other users based on design criteria
- Understand different types of materials and their uses.
- Select from and use a wide range of materials and components
- Build structures, exploring how they can be made stiffer, stronger and more stable
- Understand and use electrical systems in products, such as bulbs, buzzers and motors
- Understand and use mechanical systems, such as gears and pulleys

## **Arts**

Art is also vitally important in blending and supporting learning across Art is about discovering and creating ingenious ways of problem solving, integrating principles or presenting information.

- Produce creative work
- Develop skills and techniques
- Evaluate and analyse art
- Learn about artists/designers and understand the historical and cultural developments of art
- Use and express their creative imagination in two and three dimensions
- Develop their ability to use a range of materials, tools and techniques
- Learn new and improve a variety of artistic skills and techniques
- Develop their visual awareness of colour, tone, texture, line, pattern and shape
- Develop confidence in their own ideas
- Use ICT creatively
- Enjoy, appreciate and evaluate their own work and the work of others (historical and cultural)

## **Maths**

Mathematic knowledge and skills link to all of the areas above.

See Additional Maths Policy.

## **The Curriculum**

Alfreton Park Community Special School has its own curriculum based on the pupil-centered learning model. There are four key areas which include Cognition and learning, Physical and Sensory, Communication and Interaction. The curriculum at Alfreton Park is taught through Cornerstones Specifically Designed Curriculum through a new theme per term and with meaningful links. There are links to the national curriculum when this is relevant.

Pupils access the curriculum through Cornerstones 'Topics'. See long term plan. These are delivered to ensure a broad and balanced curriculum across all areas of learning.

## **STEAM Week**

There will be a specific STEAM week at Alfreton Park Community Special School in the Spring Term. Although STEAM learning should be carefully planned for throughout the year, this week should be used to inspire and challenge all relating areas and develop these skills through lots of exciting and fun hands on activities. This should also tie in with National Science Week.

## **Assessment, Recording and Reporting**

On-going recording of individual pupil's work will take place to agreed Key Stage outlines. Pupils' contributions and achievements are recognised and valued as part of the Alfreton Park School teaching approach. A written assessment of work covered and skills developed is a part of the Annual Report for each pupil along with the ROA. Each Teacher is responsible for setting and assessing SMART targets and record progress onto BSquared Assessment system. Students learning and experiences will also be recorded through written work, observations, photographs.

## **Evaluation and Review**

Evaluation of teaching and learning is also a part of the on-going review of department and whole school practice. The co-ordinator/phase leader for Cognition and Learning will be responsible for the monitoring and evaluation of the the teaching of STEAM. The policy will be reviewed every three years.

## **Equal Opportunities**

Pupils will have access to a relevant curriculum that meets their individual needs and provides a breadth of experience and balance of subjects to achieve individual aims. Materials will reflect the multicultural society in which we live and will be checked for race, disability or gender stereotyping.

## **Staff Development**

Staff will undertake in-service training as appropriate. Information on courses will be disseminated via the subject leader/leader for Cognition and Learning.

## **Examples of STEAM Activities**

- Build a bridge out of drinking straws
- Design a vehicle that could drive on land and sea
- Create an aircraft that can transport an egg without breaking it
- Build a model of a tower that would strong enough to survive an earthquake
- Make a simple electronics circuit including a bulb and a switch
- Design and make a Christmas card with moving parts
- Nuts and bolts board

## **Resources**

The physical resources in school will be kept in the central resource area in Larch Class, the Art cupboard and also with individual teachers.

- Cornerstones- Full curriculum with resources and ideas.
- Young Engineers: a school-based engineering club that also runs national competitions, including Crazy Racers – using K'Nex to create a unique passenger vehicle.
- Mini-Engineers: after-school classes, workshops and holiday camps where children build simple machines and learn STEM concepts using LEGO.
- Other construction resources and bricks of other varieties.
- <https://www.stem.org.uk/resources/stem-clubs>