Inspire Education Community Trust

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Learning together and inspiring success

Design and Technology Policy

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Statement of intent

Inspire Education Community Trust understands that Design and Technology allows pupils to solve problems, think creatively and develop ideas. Design and Technology offers children a chance to use creative thinking and activity within a defined purpose and tangible outcome. **Inspire Education Community Trust** is committed to nurturing children's curiosity and creativity, as well as preparing them for living in a modern world where technology is rapidly changing and advancing.

In teaching DESIGN AND TECHNOLOGY, we aim to help pupils:

- Develop their design and making skills.
- Develop their knowledge and understanding of design and technologies.
- Use a wide range of tools and materials.
- Learn about working safely and protective measures.
- Work individually and collaborate with other pupils in a variety of contexts.
- Develop the capability to create products of a high standard through skills and understanding.
- Evaluate products, made by themselves, their peer groups and companies.
- Explore the man-made world and encourage discussion of how we live and work within it.
- Develop an interest in and understanding of technological processes and the role of manufacturing in society.
- Learn the principles of nutrition, healthy eating and how to cook.
- Science garden utilised to support objectives from the food and nutrition strand.
- Talk in DT strategies used to support DT specific vocabulary.

1. Legal framework

1.1. This policy has due regard to statutory legislation, including, but not limited to, the following:

- DfE 'Design and technology programmes of study: key stages 1 and 2' 2013

2. National curriculum

2.1. **Inspire Education Community Trust** aims to assist pupils in achieving attainment targets set out in the national curriculum. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills, and processes specified in the national curriculum. Pupils will learn a broad range of subject knowledge and draw on disciplines such as maths, science, engineering, computing and art. Progression documents have been created to support teachers with year-group specific objectives and language.

2.2. In accordance with the national curriculum, **Inspire Education Community Trust** aims to ensure that all pupils:

- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- Build and apply a repertoire of knowledge, understanding, and skills in order to design and make high-quality prototypes for a wide range of users.
- Critique, evaluate and test their ideas and products and the work of others.
- Understand and apply the principles of nutrition and learn how to cook.

3. KS1

3.1. By the end of KS1, pupils will be taught to develop the abilities outlined in this section.

3.2. **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 and mock-ups and, where appropriate, information and communication technology.

3.3. **Make**

- Select from and use a range of tools and equipment to perform practical tasks, e.g. 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.

3.4. **Evaluate**

- Explore and evaluate a range of existing products.
- Evaluate their ideas and products against design criteria.

3.5. **Technical knowledge**

- Build structures, exploring how they can be made stronger, stiffer and more stable.
- Explore and use mechanisms, e.g. levers, sliders, wheels and axles, in their products.

3.6. Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed through a variety of creative and practical activites. They should work in a range of relevant contexts, e.g. the home, school, leisure, enterprise, industry and the wider environment.

4. KS2

4.1. By the end of KS2, pupils will be taught to develop the abilities outlined in this section.

4.2. **Design**

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, exploded diagrams and computer-aided design.

4.3. **Make**

- Select from and use a wider range of tools and equipment to perform practical tasks accurately, e.g. cutting, shaping, joining and finishing.
- Select from and use a wider range of materials and components, including construction materials, textiles, and ingredients, according to their functional properties and aesthetic qualities.

4.4. **Evaluate**

- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in DESIGN AND TECHNOLOGY have helped shape the world.

4.5. **Technical knowledge**

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products, e.g. gears, pulleys, cams, levers, and linkages.
- Understand and use electrical systems in their products, e.g. series circuits incorporating switches, bulbs, buzzers and motors.
- Apply their understanding of computing to program, monitor and control their products.

5. Cooking and nutrition

5.1. As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating.

Instilling a love of cooking in pupils will also open a door to one of the greatest expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

5.2. By the end of KS1, pupils will be taught to:

- Use the basic principles of a healthy and varied diet to prepare dishes.
- Understand where food comes from.

5.3. By the end of KS2, pupils will be taught to:

- Understand and apply the principles of a healthy and varied diet.
- Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.
- Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

6. Roles and responsibilities

6.1. Overall responsibility for monitoring the teaching of DESIGN AND TECHNOLOGY throughout the school lies with subject lead.

6.2. **The curriculum lead** will make decisions on:

- How DESIGN AND TECHNOLOGY should support, enrich and extend the curriculum.
- The provision and allocation of resources.
- The ways in which DESIGN AND TECHNOLOGY can benefit the aims and objectives of the school.

6.3. **The curriculum lead** will also be responsible for overseeing the review of this DESIGN AND TECHNOLOGY Policy with the subject leader.

6.4. The subject leader will be responsible for monitoring the progression of teaching and learning. The subject leader is also responsible for:

- Implementing this DESIGN AND TECHNOLOGY Policy across the school.
- Maintaining resources and advising staff on the use of materials.
- Assisting **senior management** in deciding on the allocation of resources.
- Supporting teaching staff, advising and offering to share their expertise and experience.
- Leading staff training on new initiatives.
- Helping staff to plan future lessons and assessments and advising teachers on teaching methods they may wish to explore.
- Encouraging staff and pupils to be creative.
- Assisting **senior management** in the review of this DESIGN AND TECHNOLOGY Policy.

6.5. Classroom teachers are be expected to:

- Plan and deliver interesting and engaging lessons that adhere to the national curriculum.
- Provide equality of opportunity through their teaching approaches and methods.
- Keep up-to-date assessment records (progression documents)
- Ensure pupils' development of skills and knowledge progresses through their learning and understanding of DESIGN AND TECHNOLOGY.

- Set pupils suitable targets based on prior attainment from progression documents.
- Maintain an enthusiastic approach to DESIGN AND TECHNOLOGY.

7. Equal opportunities

7.1. We are an inclusive school that ensures all children are provided with equal learning opportunities, regardless of social class, gender, culture, race, disability or learning difficulties.

7.2. In order to ensure pupils with special educational needs and disabilities (SEND) achieve to the best of their ability, outcomes are adapted and the delivery of the DESIGN AND TECHNOLOGY curriculum is differentiated for these pupils. Similarly, if pupils who are gifted and talented and pupils with English as an additional language are catered for, as DESIGN AND TECHNOLOGY can benefit the variety of learning styles a class of children may have.

7.3. The planning and organising of teaching strategies for each subject will be consistently reviewed to ensure that no pupil is at a disadvantage.

7.4. Pupils are exposed to a range of designers from varied backgrounds, to whom they could aspire.

7.5. **Inspire Education Community Trust** aims to maximise the use and benefits of DESIGN AND TECHNOLOGY as one of many resources to enable all pupils to achieve their full potential.

8. Links to other parts of the curriculum

8.1. DESIGN AND TECHNOLOGY contributes to the teaching of a number of other subjects in school, for example, pupils must apply their knowledge of fractions and percentages to describe different quantities.

8.2. **English:**

- DESIGN AND TECHNOLOGY offers the opportunity to reinforce what pupils have been learning during English lessons. Discussion, drama and role-play are important methods that **Inspire Education Community Trust** employs to help pupils develop an understanding of people's different views and opinions of DESIGN AND TECHNOLOGY and society.
- Evaluating products requires pupils to articulate and formulate their ideas to compare their views with other pupils'; through discussion, pupils will learn to justify their own views and clarify their design ideas.
- Text maps provide a clear structure for evaluating products through providing children the technical language for specific DT strands.
- Actions are utilised to support all learners to ensure key knowledge and technical language is embedded into long term memory.

8.3. **Maths:**

- DESIGN AND TECHNOLOGY will assist children in learning about shape and size and will make use of what they have already learned in maths lessons. Pupils will carry out investigations, by doing this they will learn to read and interpret scales, collect and present data, as well as draw their own conclusions.

8.4. **Personal, social and health education (PSHE):**

- DESIGN AND TECHNOLOGY lessons will be used to teach pupils how to discuss their own work and the work of others; in addition, pupils will be taught about health and hygiene, including diets, and how to prevent disease from spreading when working with food.

8.5. **Spiritual, moral, social and cultural development:**

- Teaching DESIGN AND TECHNOLOGY offers opportunities to support the social development of pupils through the way they are expected to work with each other in lessons; DESIGN AND TECHNOLOGY helps pupils develop a respect for other children's abilities. Working in groups encourages collaboration and gives pupils the opportunity to learn from each other and share ideas and feelings.

8.6. **Computing:**

- Computing enhances the teaching of DESIGN AND TECHNOLOGY and provides children with additional equipment, extending the possibilities for developing, sharing and recording their work.
- Utilising Computing also benefits pupils by helping them collect information and present their designs and ideas through a range of design and presentation software.

9. Health, safety and hygiene

9.1. In order to maximise their learning experience, pupils are allowed full access to a wide range of materials in DESIGN AND TECHNOLOGY lessons; however, health and safety concerns are inherent with DESIGN AND TECHNOLOGY, including storing materials and tools, and the use of equipment.

9.2. Personal protective equipment (PPE); such as gloves, head protection, eye protection and hearing protection is made available to all pupils and teachers.

9.3. The risks of each task will be assessed by the **classroom teacher** and **subject leader** before lessons and relevant PPE will be compulsory based on their decisions.

9.4. Equipment will be tested before the start of every lesson by the **classroom teacher**.

9.5. Pupils will be supervised at all times during DESIGN AND TECHNOLOGY lessons. Additional adults will be present in lessons which require high staff to pupil ratios (see individual risk assessments).

9.6. All tools, such as glue guns, are checked before use by the classroom teacher and are PAT tested every year. It is also the duty of staff to recognise and assess the hazards and risks associated when working with food and other materials.

9.7. All pupils will be taught how to use all equipment properly by the classroom teacher before doing so; similarly, pupils will also be fully briefed on the importance of how to correctly use equipment and tools.

9.8. Pupils are only allowed to use a lower temperature glue gun under one-to-one supervision – an adult must use the glue gun at all other times. Glue guns will be considered alongside all viable alternatives such as adhesive tapes, blue tack and other fasteners, to ensure the most suitable materials are used for each project.

9.9. Perishable food will be stored sensibly and refrigerated if necessary. Care must be taken by teachers and teaching assistants to ensure food is not used after the given sell by date

9.10. A fire safety blanket must be kept next to the cooker at all times.

10.Teaching

10.1. **Inspire Education Community Trust** uses a variety of teaching and learning styles in DESIGN AND TECHNOLOGY lessons, the main aim of these lessons is to develop pupils' knowledge, skills and understanding. Teachers ensure children apply their knowledge and understanding when developing ideas, planning and making products, and then evaluating them.

10.2. **Inspire Education Community Trust** aims to do this through a mixture of whole-class teaching, group work, and individual activities. Pupils are given the opportunity to work on their own and collaborate with others, listening to their classmates' ideas and treating these with respect.

10.3. Principles for effective teaching include:

- Setting tasks in the context of pupils' prior knowledge.
- Promoting active learning that is centred around discussion and talk.
- Inspiring, exciting and motivating pupils to know more.

10.4. Strategies for effective teaching include:

- Text maps to develop children's evaluative skills.
- Actions are used to develop pupils knowledge and language.
- Lesson will consist of the 4-part structure (Review, Teach, Practise, Apply)
- Evaluating real-life products against design briefs verbally at the start of each DT lesson.
- Using a design brief with a clear user and purpose for all tasks.
- Each session should consist of modelling a skill and allowing sufficient time for children to practise the skill required during for the making stage.
- Allowing children enough choice in their designs to encourage innovative designs that fulfil the brief.

- Allowing enough time, resources and adult support to ensure high-quality outcomes during the making stage.
- Ensuring final products incorporate skills that were taught throughout the unit.
- Evaluating their own products against the design brief in writing at the end of the unit.

11.Assessment

11.1. Pupils' DESIGN AND TECHNOLOGY work may be assessed throughout the design process and by teachers judging recorded work. Teachers will also assess pupils':

- Knowledge of tools, materials and equipment.
- Ability to record and communicate their design ideas in a clear manner.
- Personal qualities and attitudes towards their work.
- Ability to explain what they have created and how.
- Ability to use tools and materials safely and effectively.
- Ability to evaluate their work and the work of others.

11.2. The majority of assessments will be conducted through observations and discussion.

11.3. Assessments will be recorded in the end of year reports to parents. A selection of work may be retained as evidence or photographed for this purpose.

12.Resources and equipment

12.1. All materials are stored within classrooms and other allocated areas. These are ordered annually out of year group budgets by year group leaders.

12.2. At the **end of every school year**, the subject leader and **year group leaders** will assess the school's DESIGN AND TECHNOLOGY tools and materials to ensure there is sufficient equipment for pupils, allowing funds to be allocated where necessary.

13.Monitoring and review

13.1. This policy will be reviewed every year by the **DESIGN AND TECHNOLOGY subject leader** and the **CEO.**

13.2. Any changes made to this policy will be communicated to all members of staff.

13.3. All members of staff directly involved with the teaching of DESIGN AND TECHNOLOGY are required to familiarise themselves with this policy.