

POLICY FOR DESIGN & TECHNOLOGY

INTRODUCTION

This document is a statement of the aims, principles and strategies for teaching and learning design and technology at St Margaret's C E Primary School, Angmering.

It was developed through a process of consultation with teaching staff. It was approved by the governing body. It was reviewed and updated in the Summer 2010.

THE AIMS OF DESIGN & TECHNOLOGY TEACHING

At St Margaret's we consider our main aims to be:-

- To give children the confidence and competence to identify, examine and solve practical problems involving the design and production of good quality products using a variety of approaches, materials and methods.
- To encourage pupils to make judgements about the aesthetic, economical, social and technological quality of their own work and others.
- To give pupils a sense of enjoyment and pride in their ability to design and make.
- To encourage respect for the ways in which people of different cultural backgrounds, past and present, have shown their ability to enrich the environment.
- To develop pupils' understanding of the ways in which products or systems might be controlled and how they might be made to work more effectively.
- To make pupils aware of the essential similarities and differences between designing and making in school and in industry and commerce.
- To encourage the flexibility and openness of mind necessary to meet practical challenges.
- To put to use elements of pupils' previous learning and experience, which will assist in the satisfactory solution of the problem.
- To develop pupils' abilities to communicate in practical contexts.
- To help pupils develop the social skills required to work as a member of a team as well as the ability to work independently when the situation demands.

OBJECTIVES FOR DESIGN & TECHNOLOGY TEACHING

By the end of their time in St Margaret's C E Primary School the majority of pupils should be able to:-

- Recognise similarities and differences in a wide range of materials with respect to their physical properties.

- Use effectively and safely a variety of simple hand tools to fashion a range of materials.
- Cut, join and re-arrange a range of materials.
- Use a range of ingredients in food technology and act with increased skill and awareness of food hygiene
- Make prototypes and temporary models as a stage leading to the production of more permanent products.
- Make working models.
- Share ideas about ways of carrying out a task.
- Seek out and record information from a variety of sources, including existing models and products.
- Bring together ideas and formulate a plan or procedure which seems likely to work.
- Explain to each other what they are doing as their work proceeds, giving and accepting advice as required.
- Judge the relative merits of various solutions to a problem.
- Recognise how the finished product may be improved.
- Convey and communicate their ideas to other people using a variety of differing techniques and media.

KNOWLEDGE AND UNDERSTANDING

The knowledge and understanding that relates to Design & Technology for Key Stages 1 and 2 can be summarised as:

1. Practical ways in which different forms of energy can be put to use.
2. How energy can be controlled.
3. How movements of different kinds can be generated.
4. The physical properties of a wide range of materials.
5. The visual and tactile properties of materials finished in different ways.
6. The ways in which structures can be made, strengthened or otherwise modified.
7. Practical applications of simple mechanisms, for example levers, linkages, cranks, cams, gears and pulleys.
8. How energy, materials and mechanisms may be combined to produce a desired result.

9. Food Technology – how design can be incorporated in the combining of ingredients during the making of food.

CLASSROOM MANAGEMENT FOR DESIGN & TECHNOLOGY

Although the activities associated with design and technology can provide exciting and challenging situations, motivation alone does not provide a high quality of learning experience. Careful organisation of the classroom environment and management of the teaching groups are essential if everybody is to get as much out of the experience as possible.

Organising the Children

Things to think about:-

- ❖ Skills being taught
- ❖ Aims of the lesson
- ❖ Method of working
 - individually
 - in pairs
 - in groups
 - whole/half class where appropriate

Organising the Working Space

Space for DT activities within St Margaret's is limited to the classroom or using any other available space. Within the classroom it is necessary to ensure that adequate space is provided – particularly for when children are engaged in working with equipment such as the junior hacksaws.

Organising the Children's Work

Each teaching group will need time to:-

- ❖ Use the tools and equipment
- ❖ Research, plan and design
- ❖ Record and illustrate
- ❖ Evaluate

Before activities start, check things through by asking yourself:-

- Does each group of children know what they are going to do?
- Do they know when they will be able to start, and how long they will have?
- Do they know why they are involved in the activity?
- Do they know where, when and how to get help?
- Do they know what other work is available if, for any reason, their particular activity is curtailed?
- Do the children have the requisite skills to carry through their ideas?

SAFETY

The following sheets contain the County guidelines on safety within design and technology.

It is necessary for teachers to ensure that they and other adults are familiar and comfortable with these requirements before embarking on any design and technology activity.

SAFETY AND THE CHILDREN

The teacher must make the children aware of the safety rules which are expected of them within the class.

ACCIDENTS

Teachers must make children aware of what to do in the event of an accident.

- Put down any equipment.
- Inform the teacher immediately.

PROGRESSION AND CONTINUITY

Progression and continuity is necessary within Key Stages and across Key Stages. This will be achieved, in part, by reference to the QCA scheme of work which is to be used as a working document.

When starting on a design and technology activity, in conjunction with the schemes of work, it is a good idea to ask:-

- Are the children using materials in a technological way, i.e. to solve purposeful problems?
- Are the skills associated with these materials being taught within a planned and progressive structure?
- Are the children given adequate opportunities to make decisions and choices about their work?
- How are you recording and monitoring who has done what and when?

Through using agreed QCA schemes of work, together with records of children made during assessments which are passed on to new teachers, progression should be achieved during and through Key Stages, thus avoiding repetition and providing opportunities to build upon and extend children's learning.

ASSESSMENT

Assessment in design and technology can be monitored through a number of different ways:-

1. Observation - of the child's abilities to solve problems.

- of the child's abilities to handle and use materials and equipment.
2. Talking and listening to individual children.
 3. Evaluation of the finished product:
 - by the teacher
 - through the child's self assessment
 4. Teacher assessment against the QCA expectation statements.

OBJECTIVES FOR DESIGN AND TECHNOLOGY

By the end of Key Stage 1 children should:

Designing skills

1. Be able to explain the purpose of what they are doing.
2. Be able to give reasons for the choices that they have made.
3. Be able to predict what tools, materials and resources they might need and how they might go about their task.
4. Understand how a drawing can convey information about an object or idea.
5. Be able to make freehand, annotated drawings of their ideas and to try out some of their ideas using models.
6. Be able to critically examine their work and say what is, and what is not working well and suggest ways to improve it.

Making skills

1. Be able to cut along pre drawn lines on a variety of materials.
2. Be able to cut through a piece of thin wood with a saw.
3. To hold their work securely when cutting.
4. To measure, mark out and cut simple shapes in a variety of materials.
5. Be able to join materials in a variety of ways, both with and without using adhesives.
6. Be able to devise and make simple moving joints.
7. Be able to mix or otherwise prepare foods, to measure foods, and to cut and mix them using equipment which allows a degree of precision and control.
8. Be able to explain the risks and hazards in their activities and take appropriate action to control the risks to themselves.
9. Be familiar with these materials:
 - Reclaimed materials
 - Textiles
 - Food
 - Construction kits
 - Wood in thin strip form and dowel rod
 - Components such as wheels and axles

By the end of Key Stage 2 children should:

Designing skills

1. Be able to explain some of the criteria that designers need to consider when designing for other people.
2. Be able to communicate their ideas by annotated drawings that show at least the front and side views of their proposal.
3. Be able to make 3D models that develop and communicate their ideas.
4. Understand how aesthetic factors can influence their designs.
5. Be able to make choices about materials based on knowledge of some of the properties of those materials.
6. Be able to test some of their products and to suggest improvements as a result of their testing.

Making skills

1. Be able to measure, mark out and cut more complex forms, leaving an allowance for fine finishing.
2. Be able to cut materials so that they fit together with some degree of accuracy.
3. Be able to join materials in a semi-permanent, and then permanent, way.
4. Be able to select and combine foods in varying proportions to create products with different sensory characteristics.
5. Be able to experiment with combining foods to create and modify products in order to improve their sensory characteristics.
6. Be familiar with materials that include:
 - Frameworks to be made - e.g. wood and dowel strip
 - Stiff sheet material – e.g. corrugated card or plastic
 - Components for mechanical or electrical systems
 - Construction kits
 - Textiles
 - Food
7. Begin to familiarise with computer control.