Toll Bar Primary School

Design and Technology Policy

1 Rationale

1.1 Design and technology can provide an enjoyable opportunity for pupils to work safely in a variety of practical problem solving activities. These will enable pupils to develop a variety of skills through working with a range of materials to produce outcomes which can be tested in use. Pupils also have opportunities to work on their own or in groups and to use a variety of means of communicating what they intend to do or have done.

1.2 Design and technology prepares children to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems. Through the study of design and technology they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Design and technology helps all children to become discriminating and informed consumers and potential innovators.

2 Aims and Objectives

2.1 The aims of design and technology are:

- to develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making;
- to enable children to talk about how things work, and to draw and model their ideas;
- to encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures;
- to explore attitudes towards the made world and how we live and work within it;
- to develop an understanding of technological processes, products, and their manufacture, and their contribution to our society;
- to foster enjoyment, satisfaction and purpose in designing and making.
- To develop a range of designing and making skills
- To work with a range of materials
- To develop the social skills required to work as a member of a team as well as the ability to work independently
- To encourage children to work through the design process, making a product and assessing their results.

2.2 The objectives of design and technology teaching are to help children acquire and apply knowledge and understanding of:

- Materials and components
- Mechanisms and control systems
- Structures

- Existing products and the need for quality
- Health and safety

3 Teaching and learning style

3.1 The school uses a variety of teaching and learning styles in design and technology lessons. The principal aim is to develop children's knowledge, skills and understanding in design and technology. Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products and then evaluating them. We do this through a mixture of whole-class teaching and individual/group activities. Within lessons, we give children the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. Children critically evaluate existing products, their own work and that of others. They have the opportunity to use a wide range of materials and resources, including ICT.

3.2 In all classes there are children of differing ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting common tasks that are open-ended and can have a variety of results;
- setting tasks of increasing difficulty where not all children complete all tasks;
- grouping children by ability and setting different tasks for each group;
- providing a range of challenges through the provision of different resources;
- using additional adults, when available, to support the work of individual children or small groups.
- Design Technology production day inviting parents to support.

4 Design and technology curriculum planning

4.1 Design and technology is a foundation subject in the National Curriculum. Our school uses national schemes of work as the basis for its curriculum planning in design and technology. We have adapted the national scheme to the local circumstances of our school in that we use the local environment as the starting point for aspects of our work.

4.2 We carry out the curriculum planning in design and technology in three phases: long-term, medium-term and short-term. The long-term plan maps out the units covered in each term during the key stage. The design and technology co-ordinator oversees this in conjunction with teaching stage.

4.3 Our medium-term plans, which we have adapted and developed from the national scheme, give details of each unit of work for each term. They identify learning objectives and outcomes for each unit, and ensure an appropriate balance and distribution of work across each term.

4.4 Class teachers complete a plan for each design and technology lesson. These list the specific learning objectives for each lesson and detail how the lessons are to be taught. The class teacher keeps these individual plans, and the class teacher and subject leader discuss them on an informal basis.

4.5 We plan the activities in design and technology so that they build upon the prior learning of the children. We give children of all abilities the opportunity to

develop their skills, knowledge and understanding and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school.

4.6 All tasks must involve some of the following objectives:

- Recognising similarities and differences in materials with respect to colour, pattern, texture, hardness, toughness and pliability etc.
- Evaluating of existing products to act as a stimulus for ideas and designing
- Making a working model
- Seeking out and recording information from a variety of sources
- Planning a course of action
- Using a range of simple hand tools effectively and safely
- Discussing the merits of a variety of solutions to problems
- Recognising how a finished product might be improved
- Developing knowledge of different sources of energy

5 The Foundation Stage

5.1 We encourage the development of skills, knowledge and understanding that help nursery and reception children make sense of their world as an integral part of the school's work. As these classes are part of the Foundation Stage of the National Curriculum, we relate the development of the children's knowledge and understanding of the world to the objectives set out in the Early Learning Goals. These underpin the curriculum planning for children aged three to five. This learning forms the foundations for later work in design and technology. These early experiences include asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control.

5.2 We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.

6 Contribution of design and technology to teaching in other curriculum areas

6.1 Speaking and Listening

Design and technology contributes to the teaching of English in our school by providing valuable opportunities to communicate what the children have been doing . The evaluation of products requires children to articulate their ideas and to compare and contrast their views with those of other people. Through discussion children learn to justify their own views and clarify their design ideas. Children must be helped to develop the correct technological language to communicate findings etc. Seeking information and data is also a valuable extension of research skills.

6.2 English

Children will use opportunities to plot the process involved in creating a product and will record their findings in a variety of ways. They will make notes, label diagrams and record instructions in the Design, Make and Assess process.

6.3 Information and communication technology (ICT)

We use ICT to support design and technology teaching when appropriate. Children use software to enhance their skills in designing and making, and use draw-and-paint programs to model ideas and make repeating patterns. They use databases to provide a range of information sources and CD-ROMs to gain access to images of people and environments. The children also use ICT to collect information and to present their designs through draw-and-paint programs.

6.4 Personal, social and health education (PSHE) and citizenship

Design and technology contributes to the teaching of personal, social and health education and citizenship. We encourage the children to develop a sense of responsibility in following safe procedures when making things. They also learn about health and healthy diets. Their work encourages them to be responsible and to set targets to meet deadlines, and they also learn through their understanding of personal hygiene, how to prevent disease from spreading when working with food.

6.5 Spiritual, moral, social and cultural development

The teaching of design and technology offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Our groupings allow children to work together, and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and co-operative work across a range of activities and experiences in design and technology, the children develop respect for the abilities of other children and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important, and that the needs of individuals are not the same as the needs of groups.

6.6 Mathematics

At Toll Bar the teaching of Design and Technology incorporates all principles of mathematics. The use of mathematical thinking is encouraged to solve problems and issues arising in the making process. Use of scales and measures is essential whilst using and applying maths is integral to the process of designing and making a product.

7 Teaching design and technology to children with special educational needs

7.1 At our school we teach design and technology to all children, whatever their ability. Design and technology forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our design and technology teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National

Curriculum allows us to consider each child's attainment and progress against expected levels.

7.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

7.3 We enable pupils to have access to the full range of activities involved in learning design and technology. Where children are to participate in activities outside the classroom, for example, a museum or factory trip, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

8 Assessment and recording

8.1 Teachers assess children's work in design and technology by making assessments as they observe them working during lessons. They record the progress that children make by assessing the children's work against the learning objectives for their lessons. At the end of a unit of work, teachers make a judgement against the expected outcomes and National Curriculum levels of attainment. Teachers then use the levels that they record to plan the future work of each child and to make an annual assessment of progress for each child, as part of the annual report to parents. Each teacher passes this information on to the next teacher at the end of each year.

8.2 The design and technology co-ordinator keeps evidence of the children's work in a portfolio. This demonstrates what the expected level of achievement is in design and technology in each year of the school.

8.3 Assessment for Learning – children are expected to consider how well they have planned and made a product. They are encouraged to consider how to improve their design and self-assess whether it was successful or not.

9 Resources

9.1 Our school has a range of resources to support the teaching of design and technology across the school. These are kept in a central resource area. These resources are continually updated in line with future planning and will always extend childrens learning and development.

10 Health and safety

10.1 The general teaching requirement for health and safety applies in this subject. We teach children how to follow proper procedures for handling tools and food safety and hygiene.

10.2 When food is used health and safety issues mean consideration must be given to:

- Food storage
- Hygiene rules for children
- Maintenance and use of equipment
- First aid procedures

10.3 When using tools pupils must be taught:

- To handle and use tools safely
- To store tools appropriately
- Which tools can be used freely, which need the express permission of the teacher and which are for teacher use only

10.4 The progression with cutting tools is:

- Safety scissors
- Junior hacksaw
- Craft cutters
- Olfa cutters
- Gents saw
- Shaper saw
- Art knife – to be used with cutting mat and expressed safety rules
- Craft knife – only to be used under strict supervision by Y5/6 using a cutting mat

11 Monitoring and review

11.1 The monitoring of the standards of children's work and of the quality of teaching in design and technology is the responsibility of the design and technology co-ordinator. The work of the subject leader also involves supporting colleagues in the teaching of design and technology, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The design and technology co-ordinator gives the headteacher and governors an annual report in which she evaluates the strengths and weaknesses in the subject and indicates areas for further improvement. The design and technology co-ordinator will have release time on the co-ordinator rolling programme to undertake lesson observations of design and technology teaching across the school.

11.2 The subject leader keeps an up to date portfolio of evidence of termly work created each term. Where retaining the end product is not possible, the evidence may be in the form of notes, diagrams or pictorial representation. Photographic evidence will also be kept and stored on the shared drive in a specific Design and Technology folder. Photographs will be used on displays as ongoing evidence of Design and Technology within the schools and as evidence of any visitors supporting the process. These photographs will also form an intrinsic and vital part of the Every Child Matters folder of evidence.

11.3 This policy will be reviewed every three years or earlier if initiatives require it.

Date of Review: November 2010

Date of Next Review: November 2012

Signed:

Date: