



Design Technology Policy

October 2015

Policy on Design and Technology

1 Aims and objectives

- 1.1 Design and Technology at Claregate 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. This stepped process also encourages the development of confidence and ability in children. Through the study of Design and Technology, they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as of 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.
- 1.2 Our objectives in the teaching of Design and Technology are:
- to develop creative imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making things;
 - to develop the technical and practical expertise to perform tasks confidently;
 - to understand our increasingly technological world
 - 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 and products, their manufacture and their contribution to our society;
 - to stimulate curiosity, to foster enjoyment, satisfaction and purpose in designing and making things;
 - to understand and apply the principles of nutrition and to learn how to cook;
 - to build a repertoire of knowledge understanding and skills to design and make high quality prototypes and products for a wide range of users;
 - to develop the cross-curricular use of Design and Technology in other subjects.

2 Teaching and learning style

- 2.1 Claregate 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 or 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.
- 2.2 Design and Technology is taught in class groups throughout Claregate. 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 to support the work of individual children or small groups
- providing specialist support where individual children have particular gifts or talents.

3 Design and Technology curriculum planning

- 3.1 Design and Technology is a foundation subject in the National Curriculum revolving around four creative and practical abilities:- Design. Make. Evaluate and Technical Knowledge as well as cooking. We have adapted the previous national schemes to the new curriculum and local circumstances of our school in that we use the local environment as the starting point for aspects of our work. We have also adapted these units specifically to develop creative curriculum opportunities to add value to the Design and Technology that is taught at Claregate.
- 3.2 We carry out the curriculum planning in Design and Technology in three phases: long-term, medium-term. The long-term plan maps out the units covered in each term during the key stage. The subject leader works this out in conjunction with teaching colleagues in each year group.
- 3.3 Our medium-term plans, which we have adapted from previous national schemes making changes where necessary to update lesson content. These list the specific learning objectives and expected outcomes for each lesson, and detail how the lessons are to be taught, details of group learning and how success will be measured. These also identify opportunities to extend higher order thinking skills. We identify learning objectives and outcomes for each unit, and ensure an appropriate balance and distribution of work across each term. The Deputy Head are responsible for monitoring and reviewing these plans.
- 3.4 We plan the activities in Design and Technology so that they build on 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 The Early Years Foundation Stage

- 4.1 At Claregate we encourage the development of skills, knowledge and understanding that help reception children make sense of their world as an integral part of the school's work. As the reception class is 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.
- 4.2 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.
- 4.3 We focus on the practical skills that will become important for future success such as cutting, sticking and joining via different media, shaping, constructing and evaluating. We use a variety of construction toys such as lego to build the children's conceptual understanding.

5 Contribution of Design and Technology to teaching in other curriculum areas

5.1 English

Design and Technology contributes to the teaching of English in our school by providing valuable opportunities to reinforce what the children have been doing during their English lessons. Discussion, drama and role-play are important ways that we employ for the children to develop an understanding of the fact that people have different views about Design and Technology. 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. Extended writing opportunities are also identified on medium-term plans and encourage children to use their written language skills e.g. informative, evaluative and instruction writing.

5.2 Mathematics

In Design and Technology, there are many opportunities for children to apply their mathematical skills through choosing and using appropriate ways of calculating measurements and distances. They learn how to check the results of calculations for reasonableness, and learn how to use an appropriate degree of accuracy for different contexts. Children learn to measure and use equipment correctly. They apply their knowledge of fractions and percentages to describe quantities and calculate proportions. The children will carry out investigations, and in doing so, they will learn to read and interpret scales, collect and present data, and draw their own conclusions. They will learn about size and shape, and make practical use of their mathematical knowledge, in order to be creative and practical in their designs and modelling.

5.3 Spiritual, Moral, Social and Cultural development (SMSC)

The teaching of Design and Technology offers opportunities to support the social development of our children through the way in which we expect them to work with each other in lessons. At Claregate class 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 cooperative 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 (See 11.1), 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 Design and Technology and ICT

6.1 Information and communication technology enhances the teaching of Design and Technology, wherever appropriate, in all key stages. Children use software to enhance their skills in designing and making things. Younger children are able to use simple desktop-publishing software to try out designs. Older children use an ICT control program to control mechanisms and to get them to move in different ways, either in a virtual world or via an infrared connection to working models. Children use computer software as part of their investigation and design procedures, before making their own. The children also use ICT to collect information and to present their designs through a range of design and presentation software.

6.2 Computer Aided Design is an important part of the new National Curriculum and is planned into the new curriculum maps.

7 Design and Technology and inclusion

- 7.1 At Claregate, we teach Design and Technology to all children, whatever their ability and individual needs. Design and Technology implements the school curriculum policy of providing a broad and balanced education to all children as outlined in Every Child Matters. Through our Design and Technology teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see separate policies: Special Educational Needs; Disability Discrimination; Gifted and Talented Children; English as an Additional Language (EAL).
- 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. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This helps to ensure that our teaching is matched to the child's needs.
- 7.3 Intervention through SEN Support and Education, Health and Care Plans (EHCP) will lead to the creation of an Individual Education Plan (IEP) for children with special educational needs and/or disability. The IEP may include, as appropriate, specific targets relating to Design and Technology.
- 7.4 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 e.g. in a museum or on a factory trip, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils. (For further details see separate Health and Safety policy, risk assessment policy and/or off site visits information policy.)

8 Attitudes

- 8.1 Through Design and Technology we endeavour to foster the following qualities: excitement, curiosity, perseverance, open-mindedness, self-discipline, sensitivity to others, independence, adaptability, co-operation, and care for living things, in addition to 'Habits of Mind'.

9 Special Educational Needs

We support children in a manner that acknowledges their entitlement to share the same learning experiences that their peers enjoy. Teachers use a range of strategies to meet children's special educational needs to enable them to:

- understand the relevance and purpose of learning activities;
- experience levels of understanding and rates of progress that bring feelings of success and achievement.

10 Equal Opportunities

- 10.1 Claregate not only ensures but promotes equal opportunities as part of the Equalities Act 2010. We ensure a good balance of interests for different genders, promote high profile skills in girls e.g. cams and levers that may lead to good engineering follow on. Whenever

possible we include genres from different ethnic cultures e.g. different cultures use puppets to tell stories, homes provide for diverse needs, musical instruments created for different purposes.

11 Assessment for learning

- 11.1 Teachers assess children's work in Design and Technology by making assessments as they observe them working during lessons. Verbal feedback and developmental marking (See separate marking policies for KS1 and KS2 details) help guide children's progress. They record the progress that children make by assessing the children's work against the learning objectives for their lessons. Children are given opportunities to evaluate their own products and conduct peer evaluations at appropriate stages of the whole school Design and Technology curriculum. Teachers then use the assessment that they make to plan the future work, and to make an annual assessment of progress for each child, as part of the annual report to parents and carers. Each teacher passes this information on to the next teacher at the end of each year.

12 Resources

- 12.1 Our school has a wide range of resources to support the teaching of Design and Technology across the school. Classrooms have a range of basic resources, with the more specialised equipment being kept in the Design and Technology store. This room is accessible to children only under adult supervision.

13 Health and safety

- 13.1 In this subject, the general teaching requirement for health and safety applies. (Further detailed information can be accessed in: *Health and Safety for Design and Technology in Schools and Similar Establishments – Code of Practice, BS 4163:2007*, www.data.org.uk)
- 13.2 At Claregate we understand the requirements of having risk assessments in place for certain activities. These will be reviewed prior to any activities commencing. Copies of these are given to the subject co-ordinator and are added to the appendices. (See appendix 2)
- 13.3 At Claregate we encourage the children to consider their own safety and the safety of others at all times. Children should be given suitable instruction on the operation of all equipment before being allowed to work with it. They should be strictly supervised in their use of equipment at all times. Children should be taught to respect the equipment they are using and to keep it stored safely while not in use. Children should be taught to recognise and consider hazards and risks and to take action to control these risks, having followed simple instructions. (See appendix 1 for recommendations of how specific tools and resources can be used safely.)
- 13.4 Tools, such as hacksaws, glue guns and drills, that may present a safety hazard need to be secured in the locked Design and Technology cupboard when not in use.
- 13.5 Tools need to be appropriate for the task, age and ability of individual children.
- 13.6 If resources become broken during use, the Design and Technology leader should be informed as soon as possible.
- 13.7 At Claregate we teach children how to follow proper procedures for food safety and hygiene.

14 Monitoring and review

14.1 The coordination and planning of the Design and Technology curriculum are the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by keeping them informed about current developments in Design and Technology, and by providing a strategic lead and direction for this subject in the school;
- complete stock orders and manage resources in school.

14.2 The quality of teaching and learning in Design and Technology is monitored and evaluated by the headteacher as part of the school's agreed cycle of lesson observations.

Subject Leader: Mrs Wilde

Signed:

Date: November 2015

Appendix 1

Recommendations for use of tools and resources.

Clamps: Pliers/Vices/Punches

Children may use these pieces of equipment when their strength of grip enables them to operate the tool. N.B. eyelet punches require a considerable amount of strength to control so should be used only by teachers or older children.

Drills

Hand drills: These may be used by children, after training, under supervision. When the teacher is satisfied that the child has become competent in the use of this tool they may use the drill in the classroom by themselves. Material to be drilled should be clamped to the table.

Children should be taught how to change twist drills, how to hold a hand drill and how to keep it at right angles to their work. When drilling turn the handle in a clockwise direction and continue turning the same way when removing the drill bit from the hole.

Food Hygiene

Children should be made aware as early as possible of the need for hygienic food preparation. Teachers should train the children to prepare food hygienically and supervise preparation. (See also Cooking Safety - Appendix

Glues

Pritt-Sticks: These may be used by children as soon as they are competent not to get any in their eyes, mouth etc...

PVA: As above in addition to some training and then general supervision.

Wood Adhesive: This should only be used by the teacher or under direct supervision

Papier Mache paste: This glue may be used after training and then under general supervision.

Glue Guns: Only low temperature glue guns should be used. They should be used by the teacher only until years 5 and six, where they may be used by the child under close supervision of an adult. (Children should experience a variety of ways of joining materials other than a glue gun. However, a glue gun is very useful for joining wood and certain plastics.)

Hammers

Children may use a hammer as soon as their motor skills allow them to hit the nail accurately and as soon as they are disciplined enough to stay on task.

Smaller weight hammers are sufficient for most jobs in the classroom.

Knives

While use of scissors is preferable, children may be required to use knives for their Design and Technology work. They should only be used by older children (years 5 and 6) and can be used once they have learnt the rules, techniques and skills for cutting. They should be closely supervised while working with a knife.

Paints

Children should use water based paints only. These may be used under general supervision.

Sanding/Filing

Sandpaper/Emery paper/Files: Sanding and filing may be carried out using these tools under general supervision as soon as the children's motor skills are sufficient.

Saws – Hand

Hacksaws and Junior Hacksaws: These are suitable for most jobs and may be used by the children providing they have undergone some training and have the appropriate motor skills. Never saw directly on the table. Use bench hooks and clamps as appropriate.

Scissors

Paper cutters: These should be used by the youngest pupils until they have the motor coordination to use scissors.

Blunt ended scissors: These may be used as soon as the children can actually handle them under general supervision.

Sharp ended scissors: These may be used under general supervision once the children can be relied upon to use the correct techniques. (Usually upper KS2)

Left handed scissors: While most children are right handed, left handed scissors and snips should be made available for left handed children.

Nails and Pins

These may be used under general supervision once the children have been trained in their use.

Staplers

Mini staplers may be used by children under general supervision. Heavy duty staplers may be used under close supervision until the children are competent. Electric staplers are never to be used in the classroom. Staple guns are to be used only by trained adults.

Appendix 2

Risk Assessments

See detailed information within the school Health and Safety electronic documentation:
'Risk Assessment Steps' (Also available at <http://www.hse.gov.uk/pubns/indg163.pdf>)

See below for an example of a completed Risk Assessment and a Blank Form.

RISK ASSESSMENT – Primary Design and Technology Classroom



HAZARDS	ACTION	RISK RATING
Fragments/Brittle Material	<ul style="list-style-type: none"> Provision and use of suitable safety spectacles. 	Low
Hand Tools – Sharp Edges	<ul style="list-style-type: none"> Clear instruction issued to pupils as to the hazards associated with the tools, and demonstration of how to use them. Close supervision of pupils throughout the course of the lesson. Distribution of tools only when pupils are ready to use them. Distribution of the minimum number and type of tools needed for the lesson. Immediate collection of all tools when they are finished with, or at the end of the lesson. Lock away all tools at the end of the lesson to prevent unsupervised use. 	Low
Hand Tools – Crushing	<ul style="list-style-type: none"> Instruction in dangers and demonstration of use of tools 	Low
All the Above Hazards	<ul style="list-style-type: none"> All first aid supplies should be kept properly stocked and readily available 	Low
General	<ul style="list-style-type: none"> Appropriate clothing to be worn. Sensible footwear to be worn (not sandals, high heels etc.). Each pupil to have adequate workspace. Eye protection should be provided if appropriate Elements contained within this risk assessment may also be repeated in other curriculum subjects i.e. Science & Art. 	Low

Signed: Head Teacher _____



RISK ASSESSMENT – Primary Design and Technology Classroom

HAZARDS	ACTION	RISK RATING
	•	Low/Medium/High
	•	Low/Medium/High
	•	Low/Medium/High
	•	Low/Medium/High
	•	Low/Medium/High

Signed: Head Teacher _____

Appendix 3

Cooking Safety Risk Assessment

Cooking Safety	Claregate Primary School
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<i>Hazard / Risk</i>	Who is at risk?	Normal Control Measures <i>(Brief description and/or reference to source of information).</i>	Additional Control Measures <i>(to take account of local/individual circumstances).</i>	Risk Rating H/M/L
Hot surfaces liquids / Burns, scalds	Staff, pupils, volunteer helpers	<ul style="list-style-type: none"> • Lifting lids off pans & kettles, moving hot tins, dishes and water to be restricted to adults only. • Adequate supervision and safe working procedures in place • Position pan handles not to overhang the edge of the cooker • Ensure adequate space is available around the ovens at all times when handling hot items. 	<p>Children are reminded of safe behaviour when cooking prior to session.</p> <p>Use oven gloves/ cloth when needed.</p>	L
Sharp equipment / Cuts		<ul style="list-style-type: none"> • Controlled storage and use of knives. • Pupils taught correct techniques for use of knives and use under supervision. • Knives are kept sharp as blunt knives can cause serious injuries. These are kept in a locked cupboard. • Wash separately do not leave in sink 	<p>Knives are used by all age groups but are shown how to hold them safely.</p> <p>Knives must not be pointed or serrated and must be stored securely. Food can be ripped or cut with scissors.</p>	L
Kettle use/ Scalds and burns		<ul style="list-style-type: none"> • Adequate supervision and safe working procedures in place. • Ensure kettle is placed on a solid surface with no trailing wires. 	Children are reminded of safe behaviour when cooking prior to session.	

<p>Slippery floors / Slips and trips</p>		<ul style="list-style-type: none"> • No obstacles in walkways and regular cleaning of floors • Prompt maintenance of defects • Spillages should be dealt with immediately. • Paper towels to be used on small areas of water-based contamination. • Ensure good housekeeping and that any spills / food debris are cleared up immediately. 	<p>Ensure that paper towels are available and a safety triangular stand to put over wet areas.</p>	<p>M</p>
<p>Use of cookers (Electric / gas)</p> <p>Electric shock Fire, explosion</p>		<ul style="list-style-type: none"> • Electrical equipment is subject to regular safety inspection and test ('PAT testing) • Children must be supervised at all times. • Portable cookers must only be plugged into an electrical socket by an adult. • Ovens for food preparation not to be used for other purposes e.g. heating plastics. • Fire blanket kept in the area and staff should know how to use it. • Cookers and ovens should be sited away from flammable materials, doorways, passageways and fire escape routes. • There should be no wall displays, pin boards etc in the close vicinity. 	<p>Run a safety meeting to update fire safety</p>	<p>M</p>

<p>Food poisoning Poor standards of hygiene Incorrect storage of food)</p>		<p>Personal hygiene</p> <ul style="list-style-type: none"> • Pupils taught the need for personal hygiene. Staff and pupils to wash hands before handling food and after visits to the toilet. • Ensure that warm water, soap and towels (disposable) are available. • Cuts etc. are covered with waterproof adhesive dressings. • Tie back long hair. • Aprons hygienically maintained <p>Storage</p> <ul style="list-style-type: none"> • Avoid the use of foods that require refrigeration if safe temperatures cannot be maintained • Only small quantities of food should be stored, and correct stock rotation should be ensured. • “Use by” and “best before” dates should be checked. • Food stored in suitable containers. (covered / protected from contamination) • Foods appropriately covered / wrapped and stored prior to taking home. Pupils provided with instruction on safe storage / consumption. 	<p>Ensure pupils are told to wash their hands</p>	<p>M</p>
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		<p>Food handling</p> <ul style="list-style-type: none"> • High risk / raw foods kept apart at all times • Separate chopping boards and utensils used for raw and cooked foods. • Equipment, including cutlery, should be stored in secure, clean conditions and used only for food preparation. <p>Cleaning</p> <ul style="list-style-type: none"> • Work surfaces cleaned with a multi-purpose cleaner and then disinfected prior to any food preparation. • Where a classroom table has to be used for food preparation it should be covered with a clean plastic sheet • Equipment, including cutlery, should be stored in secure, clean conditions and used only for food preparation. • Adequate rubbish bins for waste food and they must be emptied daily. 	<p>Separate chopping boards and utensils should be used for raw and cooked foods. If this is not practical, the chopping board should be cleaned and disinfected between use.</p> <p>Ensure disinfectant available although this is kept in a locked cupboard when not in use.</p> <p>Purchase cover sheets</p>	M
<p>Pupils with food allergies</p> <p>Inadvertent contact</p> <p>Staff not aware of pupil's allergies</p>		<ul style="list-style-type: none"> • All staff/volunteers are made aware of pupils who are sensitive to foods and food additives. • Staff should be aware of ingredients/food additives present in foodstuffs. 	<p>Staff ensure the parents know that there must be no nuts used and who the 'at risk' children are</p>	H

Appendix 4

Before you cook ... Checklist for portable cooker. (Enlarged notice on the side of the cooker trolley.)

Before you cook have you...

Checked that the fire blanket is on the cooker trolley?

Checked that there are no trailing wires?

Checked that the trolley is positioned away from flammable materials, doorways, passageways and fire escapes?

Checked that the trolley wheels have been locked in place?

Checked that you have got oven gloves or cloth?

Reminded the pupils of health and safety when near hot surfaces?