## 1.  WE BELIEVE

Design and Technology plays a part in all of our lives.  With constant advances in technology across the world it is increasingly important for children to have a good understanding of design and the processes involved in producing a quality product in a range of relevant contexts.

## 2.  AIMS AND OBJECTIVES

- To create an interest and enthusiasm for designing and making in children of all abilities and ages.
- To provide a developmental range of activities to increase the children's capability and confidence in their own ideas.
- To help children gain an understanding of the ways in which people from the past and present have used design and Technology to meet their needs and how this is relevant to them.
- To develop children's confidence and skills in using and selecting from a wide range of tools and materials.
- To help the children to become increasingly proficient across the range of media used.
- To encourage children to be self critical, to evaluate and seek to improve their work and solve problems.
- Understand and apply principles of nutrition and learn how to cook.

## 3.  PLANNING

**Long Term Plan**
Design and Technology has been allocated the following times

| KEY STAGE | %OF TIME | TIME PER YEAR |
|-----------|----------|---------------|
| KS1 | 4% | 32 hours |
| KS2 | 4.5% | 36 hours |

This time is then distributed across the media in which the children will work with as shown on the Key Stage Long Term Plans for Design and Technology.

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## 4. RELATIONSHIP WITH THE REST OF THE CURRICULUM

In both Key Stages the positioning of the Technology modules is designed to compliment the Focus Link (Topic) for that term.
FOR EXAMPLE In Key Stage 2 the FOOD element 'Biscuits' is designed to coincide with work on Christmas in RE and is timed to coincide with the children's Charity Fund Raising fortnight.

When arranging the distribution of the Technology Units across the years it was a priority to enable teachers to profit from links with the rest of the Curriculum.  However the Design and Technology time is not used falsely in order to make models for other subjects.  Should the links with other subjects not enable the proper aims and objectives of Design and Technology to be met then the subject will stand alone.  Where cross curricular links are sound however it helps greatly to achieve the aim:

*"To help children gain an understanding of the ways in which people from the past and present have used Design and Technology to meet their needs and how this is relevant to them."*

Within the term the teachers decide how to best apportion the time allocation.  Usually the work is done as a block, which may mean a very intense but productive fortnight of Technology, with every afternoon possibly being devoted to the subject.  It is highly unlikely that the subject will be taught as a weekly lesson as this would be an inefficient use of the time particularly as there are so many resources to gather together.  In addition it is permissible for teachers to have full D&T days.  This really allows the pupils to get to grips with a project.  It is also a way of maximising time and not wasting time having to set up and pack up at frequent intervals.  The Literacy and Numeracy time allocations allow for special D&T days.

## 5. MEDIUM TERM PLANS-SCHEMES

The QCA Scheme supplemented by the DATA materials provide good guidance and a range of options for each unit of work.
These have been contracted to specific terms.  They:
- Provide clear guidance and enable differentiation and extension activities to be arranged.
- Give staff who are not experts in Design & Technology the confidence to tackle the subject well with their pupils and to meet the requirements of the National Curriculum fully.
- Provide a starting point.
- Provide a focus for discussions between the teacher and co-ordinator.
- Avoid the stage of having to think what to do.
- Avoid activities which are less than adequate.

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- **Enable confidence to grow which will over time enable staff (coupled with more training) to use the models given and to adapt the activities (as already happens) or to change them altogether (as already happens) and produce original medium term plans based on a well tested approach.**

## 6. ORGANISATION PROCESS

The decision making process involved as teachers prepare to implement a Design and Technology module is as follows:

1. Does the D&T project involve the three types of D&T activity?
a) investigate, disassembly and evaluative activity (IDEA)  ]
b) focused practical task/s (FPT)                                   ] Technical Knowledge
c) design and make assignment (DMA)                        ]
(it should be noted that IDEA activities do not have to be taught before a FPT but each unit of work should always have a DMA, this will be at the discretion of the Class Teacher based on the needs of the children being taught and the nature of the D&T project).
2. How and when is the D&T module to be blocked?
3. Agreements need to be sought over access to materials particularly across Key Stage 2.
4. Which resources are required? Are any extra resources required? Approach co-ordinator to order these if necessary.
5. If colleagues feel insecure about a particular project or require support in a particular element of it, classroom support from the co-ordinator has to be booked.
6. Volunteer Helpers have to be arranged, particularly if there are potentially hazardous activities (e.g. hot glue guns, sharp knives)
7. Is setting appropriate particularly for mixed aged classes or is the skill distribution across such classes more valuable? (See also Special Needs section).
8. What needs to be gathered to enable children to evaluate and disassemble related products? (If this approach is being used).
(Note; disassembly does not necessarily mean taking the toaster apart!  It can be an evaluation of a product without its destruction.  Similarly it could involve making a working model in Technical Lego to establish how it works and how linkages are made.)
9. Which skills need to be taught/revised before the children can begin making e.g. use of hacksaw and bench hook.
10. Are children to be working as individuals, in pairs or small groups?
There is a need for all of these during a two year cycle.
11. What are the essential rules of the classroom when hazardous activities are being tackled?

These issues are debated by planning teams at their **short term planning** meetings.

## 7.  SPECIALIST TEACHING

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As indicated above, although class teachers are expected to teach their own Design and Technology, the co-ordinator can be booked to work along side colleagues.

## 8. HEALTH AND SAFETY ISSUES

1. Lessons must be safe (see **The Use of Tools in Connection with Technology)**
2. Children must never use a tool until they have been taught how to use it and proved that they can use it properly.
3. Children should appreciate the properties of the materials they are handling and any dangers associated with them.
4. **Food**
   - Particular care should be taken when handling food.
   - Every lesson should start with a review of do's and don'ts with food.  All children must wash their hands.  This should be witnessed if there is any doubt.
   - All equipment should be washed before and after use.
   - Equipment specifically purchased for food technology must be used and not from the staff or school kitchen.
   - Any child seen to put their fingers in their mouths (or any other unclean place) must wash them immediately.
   - All other equipment and clothing must be moved away from the work surface.
   - Children should do everything for themselves (except near an oven).
   - This includes weighing, measuring, mixing and cutting.  Use of knives however must be closely supervised by an adult.
   - All surfaces must be cleaned thoroughly using yellow cloths only used for this purpose.
   - Ingredients must be stored appropriately.
   - Children must not use ovens.
   - Ovens must be cordoned off.
   - Baking should be consumed on the day or sent home that night.

5. **Health  and Safety Staff**
HEALTH AND SAFETY CO-ORDINATOR IS THE HEAD TEACHER
THERE IS A STAFF HEALTH & SAFETY REPRESENTATIVE
THERE IS A DEDICATED FIRST AIDER
THERE ARE FIRST AIDERS IN ALL YEAR GROUPS

## 9. OTHER PRIORITIES OF THE DESIGN AND TECHNOLOGY PROCESS

1. Children should know the range of materials available to them before they start designing, and work with appropriate economy with the available resources.
2. Everyone must appreciate that quality is expected at every stage.
3. Designing, drawing, modelling, and making the final product are all important and should receive a quality input and response from the teacher and pupil.

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4. Evaluation of every stage of the process is vital and pupils must accept as normal the need to continually seek improvements.
5. Display of finished products should celebrate the whole process.

## 10. EQUAL OPPORTUNITIES

Clearly there still exists in society an inequality in the involvement of girls and boys in technological areas.  The danger and practice has been that this has become self perpetuating.

In the Primary School this can easily be entrenched so that by the time the pupils enter secondary education girls in particular do not see Design and Technology as being relevant to them.

At this school every effort must be maintained to demonstrate members of both sexes being involved in all technological activities. (e.g. men and women working with textiles and food, women and men working as engineers)

In addition careful groupings of pupils must avoid situations where children become sidelined into only certain aspects of a design and make task.  The worst case scenario is where the girls do all the drawing and measuring while the boys do all the sawing and gluing.

## 11. SPECIAL EDUCATIONAL NEEDS & GIFTED & TALENTED PUPILS

The S.E.N. policy expects that there will be appropriate differentiation for pupils in Design and Technology.

Teachers should ensure that a special need in reading or writing for example does not hinder a child's performance in Design and Technology.

Such children should have the necessary support to give the children a level of independence equitable with their peers.

It is also worthy of note that children who do not have S.E.N. in other areas of the curriculum do sometimes have special needs in Design and Technology.  This may come as a shock to the pupils and produce unsatisfactory attitudes to their work.  Strategies need to be prepared to ensure that these needs are met.  There will also be pupils who have particular gifts for Design and Technology.  Staff must be aware and enable such pupils to extend and to put greater demands on such pupils.

Examples will include those who have developed a high level of skill in technical activities at home and those who have worked at an advanced level with construction kits.  Indeed in the area of construction kits there will be a huge discrepancy between those who have hardly touched the equipment (again often girls) and those who can create a hydraulic JCB. Gifted children can often be extended by posing increasingly difficult problems on the basic idea.

"Ah but have you considered this?" or

"What if ****** how could you solve this?

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Sometimes particularly gifted pupils will need to have the freedom to press ahead on their own.  However team work is an important part of the process and those who seem particularly talented in D&T may actually only be talented in certain areas of the subject. Most successful products in the market have had a team input, even if invented by one person.

Teachers may find it helpful to take note of these factors when planning a differentiated D&T project particularly with children with Special Educational Needs in mind:

- Could the child/children work on shorter more focused assignments rather than longer open tasks as shorter tasks provide small elements of success, rewarding and motivating children regularly?
- It may be more beneficial for the activity to be adapted so that the child/children are using contexts they are familiar with.
- It may be more appropriate for the child/children to adapt or make improvements, or add a new feature to the design of a product rather than 'invent' a whole new product.
- Could they design a product where they are given alternative solutions?
- Could they manage a project where certain aspects are restricted?

These factors are to be used as guidance only for class teachers when taking account of SEN children in their planning, thus they may or may not be relevant depending to the needs of the group of children.

## 12.  LEVEL OF ADULT SUPPORT

Wherever possible children should do all their own work.  This is regardless of age or ability.  If children are regularly struggling, then clearly the task was beyond them and inappropriate.  Children however should not be underestimated and even in the Foundation Stage are clearly able to bake without a volunteer touching their food, except to put it in or out of the oven.

Adult help is constantly required to suggest, question, inform and advise.  Adults need to teach specifically how to use equipment properly and this will include demonstrations.

On occasions there will be a need for an adult to offer greater help.  This will be when:

- A pupil has tried to solve his/her own problems and failed;
- A pupil needs help over a hurdle which will then open up a whole new range of possibilities for the child.
- A pupil has become de-motivated and needs success to fire them on to the next challenge.
- The area of help is not linked to the specific objectives of the lesson.
- The skill required is way in advance of the pupil, but the design task from the pupil is a reasonable suggestion from the pupil (i.e. not in the realms of fantasy).
- An example of this could be in the use of a glue gun.  Perhaps due to the age of the child the actual gluing of an object with a glue gun is acceptable by an adult providing.
  a) Gluing with other glue would be unsatisfactory
  b) Gluing is not an objective of the lesson
  c) Not gluing would deny a child any hope of success and prevent a design task from being completed satisfactorily.

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## 13. ASSESSMENT

Assessment is carried out in line with the School Assessment Policy.
Assessment is based on a single grid. This grid is displayed in all classrooms and in the Hall and Music Room. Assessment is designed to occur within the plenary of lessons focussing on the relevant strand to that lesson i.e.

**Exploring Ideas**
**Developing Skills**
**Making, Designing, Composing**
**Performing, Demonstrating, understanding**
**Evaluating**

At each level there is advice given to guide pupils and teachers to support pupils in moving to the next level.

The system is intended to be oral. Within an assessment session pupils will be asked to assess their own achievement within a strand. Pupils will be required to justify orally why they believe they have attained a particular level and not another. Pupils will also be encouraged to evaluate the work of others through the same system. At the end of a particular unit, pupils from Y2 and older highlight their agreed performance according to each strand across a unit. This forms a valuable record and is particularly relevant to older pupils. Even so the most important part of the assessment process here is the engagement of the pupils in their own assessment and their appreciation of what they should do next to move up a level.

The cross reference to National Curriculum levels has been tested and works as least as well as any other system. It is essential that the teacher knows the secure level at which the unit of work is pitched. Particularly when dealing with creative and performance subjects statistically relevant assessment is notoriously difficult and often relies on personal preference and interpretation. We believe we have a system here which achieves a cross reference without forgetting the most important aspect of any assessment system, i.e. the need to move pupils forward in their understanding and attainment.

A Record of work which is too large to keep or which includes elements from construction kits can be photographed and used in displays and in children's books.

We have developed the Annual Report significantly to incorporate ongoing assessments of pupils' performance in units of work covered. These report formats are prepared in advance in accordance with the Long Term Plan. For each unit pupils are assessed to have met the HIS OR HER expected targets, exceeded them or not met them. In addition the key processes of each subject are listed. Similarly pupils' performance is recorded; however their performance is measured against expectations for pupils' of their age.

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## 14.  RESOURCES

Resources are stored in a comprehensive central Science and Technology store.  Storage in the school is at a premium and therefore the central store was created to become the entitlement for the school.

It is however made up of stackable storage boxes.  Therefore when a class is to begin a block of Technology work the storage boxes are all shipped to the classroom area to set up a mobile temporary classroom Technology store so that everything the pupils need is to hand.  When the work is complete the storage boxes are returned to the central store.  There are wheelie bins for the collection of reclaimed materials.

(Note: Staff must lift boxes down using a foot stool when required, probably at the start of the day, and then pupils may carry them to the classroom.  The same in reverse applies when the boxes are being returned.  Pupils must not help themselves to equipment from behind the curtain as many boxes are too high and the contents are tempting to children to play with.

There is an annual stock take and the co-ordinator is responsible for bidding for funding for Design Technology.  The co-ordinator is responsible for the requesting of materials, their organisation and good management.  Children are not expected to pay for their work and often products are kept at school for exhibition.

There is no charge for Food Technology though pupils are sometimes asked to bring ingredients to school.

## 15.  FOUNDATION STAGE

The children in the Foundation Stage are exposed to elements of Design and Technology on a daily basis through their on going provision.

Examples are:

* Table / floor construction kits
* Sand and water play
* Large construction equipment
* Play-doh
* Workshop area

In addition the children are engaged in specific projects such as designing and making articles linked to a specific theme.  These young children should also be exposed to 'disassembly' as described above.  Role play also plays an important part in developing a context for the appreciation of the designs and processes in the world around the children.

Food technology is a key area of the Foundation Stage D&T programme. This is a much enjoyed and very successful area in which the pupils can work within the D&T curriculum.

**The Foundation Stage Policy describes in detail how children are engaged in formative Design and Technology work.**

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