**National Curriculum:**

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

**Aims**

The national curriculum for art and design 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 and products 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.

**EYFS**

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| **Vocabulary**  **By the end of EYFS they will be able touse the words:** | **Outcomes for the end of EYFS. Children will be able to:** |
| Cut  Join  Fasten  Secure  Straight  Curved  Words relating to texture and feel such as furry, smooth, hard, soft etc.  Words related to the look of materials shiny, dull, colourful,  function  Paint  Draw  Model  Form  Sticky tape  Glue stick  Runny glue  Pencil  Scissors  Clay tools  Rolling pin  Cutters  Collage  Select / choose  Colour - the names of the primary and some secondary and tertiary colours | * Children should be able to use a range of vocabulary of textures when creating i.e. rough, smooth, bobbly, fuzzy, and adults will expect them to use the appropriate descriptive vocabulary in expanded descriptive sentences relating to what they have created i.e. I have made a collage of a brown, fuzzy, hairy bear. * children should be able to describe the effect they are wishing to achieve when working with creative materials. * Children should be using a widening vocabulary to show that they are cutting, joining, and selecting equipment. * Children should now be confidently explaining the choices they have made about selecting certain materials and media for their properties i.e. runny glue, sellotape, shiny paper, tissue paper etc. * Children should be able to share effective practice with other children, enabling them to achieve success. * Children should be able to verbalise what they see when the properties of the media that they are using changes i.e. when colours change during mixing or when glue dries, clay hardens etc. * Cut and join successfully when using a variety of different media i.e. paper, boxes, dough/clay.   **Early Learning Goals:**  **Creating with materials**  **Children at the expected level of development will:**   * Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. * Share their creations, explaining the process they have used. * Make use of props and materials when role playing characters in narratives and stories. |

**Key stage 1**

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts (for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment).

**Pupils should be taught:**

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

**Make**

* Select from and use a range of tools and equipment to perform practical tasks [for example, 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.

**Evaluate**

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

**Technical knowledge**

* Build structures, exploring how they can be made stronger, stiffer and more stable.
* Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

**Key stage 2**

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

**Pupils should be taught:**

**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, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.

**Make**

* Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.
* 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.

**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.

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| **EYFS**  **&**  **Year 1**  Constructing a windmill | **Flashback** | **Key Objective** | **Skills** | **Key Questioning** | **Key Vocabulary** | **Lesson context (Teacher notes)** |
| **Week 1** | What does manipulate mean? | I will be able to create a stable structure. | I can find the centre of an object.  I can puncture a hole.  I can add weight to a structure. | What is a structure?  Can you identify some structures in the room?  What is a windmill? | base  rotate  rotor  rotor blade  sail  stable  structure |  |
| **Week 2** | What is a natural material? | I will be able to use tools and equipment accurately to make part of a structure. | I can hold scissors correctly.  I can begin to estimate equal distances.  I can cut carefully.  I can fold to make the shape of the structure. | What are windmills used for?  How tall are they?  Can you go inside a windmill?  What kept the sails moving | equal  fold  length  rotor blades  sails  same  scissors  width |  |
| **Week3** | What is a sculpture? | I will be able to join parts of a structure. | I can widen a hole.  I can join parts together.  I can attach a supporting structure.  I can test a structure. | Have you seen a wind turbine before?  What is electricity used for?  How is it different to modern wind turbines? How do you think it was the same? | attach  join  rotate  structure  test  turn |  |
| **Week 4** | What colours would you use if you were painting a picture in the Summer? Why? | I will be able to evaluate a structure. | I can test my windmill.  I can make my design better.  I can decorate my windmill for the user. | What was successful about my windmill?  What could I do better next time? | evaluate  improve  test |  |

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| **Year 2 & Year 3**  **Pouches** | **Flashback** | **Key Objective** | **Skills** | **Key Questioning** | **Key Vocabulary** | **Lesson context (Teacher notes)** |
| **Week 1** | Name the primary colours.  Name the secondary colours  Name the tertiary colours | I will be able to sew a running stitch. | I can thread a needle.  I can sew a running stitch.  I can use neat and evenly spaced stitches to join fabric. |  | **fabric**  **knot**  **needle**  **needle threader**  **running stitch**  **sew**  **thread** |  |
| **Week 2** | What paint brushes can you remember – when/why would you use each one? | I will be able to sew a running stitch. | I can remember how to use a template.  I can cut fabric neatly.  I can pin fabric accurately.  I can design a pouch. |  | **fabric**  **knot**  **needle**  **needle threader**  **running stitch**  **sew**  **template**  **thread** |  |
| **Week3** | What was the Pop art movement? | I will be able to join fabrics using a running stitch. | I can sew neat, even stitches.  I tie a knot at either end of the thread.  I can design decorations for my product. |  | **fabric**  **knot**  **needle**  **needle threader**  **running stitch**  **sew**  **thread** |  |
| **Week 4** | 1.What is tone?  How do different pencils give different tone?  2.What is texture? How would you try to create different textures? | I will be able to decorate a pouch using fabric glue or stitching. | I can join items using fabric glue or stitching.  I can decorate fabric using different items.  I can evaluate my own designs. |  | **fabric**  **knot**  **needle**  **needle threader**  **running stitch**  **sew**  **thread** |  |

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| **Year 4,5,6**  **Electronic greeting card – Easter theme** | **Flashback** | **Key Objective** | **Skills** | **Key Questioning** | **Key Vocabulary** | **Lesson context (Teacher notes)** |
| **Week 1** | What do the different letters mean on a pencil? | I will be able to make a functional graphite circuit | I know that circuits are made up of different electronic components  I can name key circuit components used to create a functioning circuit  I know that graphite is a conductor and can be used as part of a circuit | what makes the LED brighter or weaker  which were conductors (pencil lead, copper wires) and insulators (tape). How did they know?  explain what each of the components are | Circuit  Graphite  Conductor  Properties  Bulb  Equipment  Switch  LED |  |
| **Week 2** | How could you create tone and texture using a pencil? | I will be able to design an electronic card | I can design a card with a working circuit with no breaks  I can label the LEDs with positive and negative legs  The positive leg of the LED branches towards the positive side of the battery | Who is your card for?  For what occasion is the card for?  Why is it important to know this before designing it? | Circuit  Graphite  Conductor  Properties  Bulb  Equipment  Switch  LED |  |
| **Week 3** | Describe how you would draw a 3D landscape? What are the different stages? | I will be able to create a greetings card | I can create the front cover for a greetings card  I can refer to a design to keep my ideas focused  I can map out where different components of my circuit will go |  | Circuit  Graphite  Conductor  Properties  Bulb  Equipment  Switch  LED |  |
| **Week 4** | Describe the difference between Layering, Shading and  Blending | I will be able to make a circuit and integrate it into my greeting card | I understand that breaks in a circuit stop it from working  I can lay copper tape down in straight lines and ensure corners are never broken  I know that at the legs of the LED need to be the correct way round for the circuit to work | revisit their design sheets and compare them to their finished product.  What  modifications would you make to improve their cards, this may be to make them work more reliably, to make them look nicer or to incorporate another type of electronic device, eg: buzzer to create sound. | Circuit  Graphite  Conductor  Properties  Bulb  Equipment  Switch  LED |  |