## **Charlton Mackrell C of E Primary School**

'The one who gets wisdom loves life.' Proverbs 19:8

## Our core concepts in Design and Technology are: Design, Make, Evaluate and Technical Knowledge.

Our **Design and Technology** curriculum is based on the following principles:

- Ensure that children have a deep-rooted understanding of using creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.
- An acknowledgement that children need to revisit and systematically build on their learning by taking risks, becoming resourceful, innovative, enterprising and capable citizens.
- Children are immersed in age-appropriate creative and practical activities and taught the skills needed to engage in designing and making in all year groups to ensure that they have the subject-specific language skills required to communicate their understanding.
- The design and technology curriculum provides real-life opportunities to apply and deepen their skills and knowledge in the core curriculum subjects ensuring that they can understand the rationale behind learning in these areas.
- High quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

|                          | Key S           | Key Stage 1     |                  | Lower Key Stage 2 |                 | ey Stage 2      |
|--------------------------|-----------------|-----------------|------------------|-------------------|-----------------|-----------------|
| Curriculum Knowledge and | Food            | Food            | Make a Stone     | Shadow            | Cookery         | Make an         |
| Skills                   |                 |                 | Age weapon       | puppets           |                 | illuminated     |
|                          | Cut, peel or    | Cut, peel or    |                  |                   | To understand   | carnival float. |
|                          | grate           | grate           | Research and     | Select from a     | and apply the   |                 |
|                          | ingredients     | ingredients     | develop design   | range of          | principles of a | Design,         |
|                          | safely and      | safely and      | criteria to      | materials and     | healthy and     | research and    |
|                          | hygienically.   | hygienically.   | create a         | components        | varied diet.    | develop design  |
|                          |                 |                 | product that is  | according to      |                 | criteria of     |
|                          | To use basic    | To use basic    | fit for purpose. | their             | To prepare and  | innovative,     |
|                          | principles of a | principles of a |                  | characteristics.  | cook a variety  | functional,     |
|                          | healthy and     | healthy and     |                  |                   | of              | appealing       |

| varied diet |                       | Select from a    |                 | predominantly    | products that    |
|-------------|-----------------------|------------------|-----------------|------------------|------------------|
| prepare dis | shes. prepare dishes. | range of         | Build and apply | savoury dishes   | are fit for the  |
|             |                       | materials and    | a repertoire of | using a range of | purpose.         |
| To underst  |                       | components       | knowledge,      | cooking          | To generate,     |
| where food  |                       | according to     | understanding   | techniques.      | develop, model   |
| comes fror  | n. comes from.        | their            | and skills in   |                  | and              |
|             |                       | characteristics. | order to design | To understand    | communicate      |
|             |                       |                  | and make high-  | seasonality, and | their ideas      |
|             |                       | Cut materials    | quality         | know where       | through          |
|             |                       | accurately and   | prototypes and  | and how a        | discussion,      |
|             |                       | safely           | products for a  | variety of       | annotated        |
|             |                       | by selectin from | wide range of   | ingredients are  | sketches, cross- |
|             |                       | a range of       | users.          | grown, reared,   | sectional and    |
|             |                       | appropriate      |                 | caught and       | exploded         |
|             |                       | tools.           | Evaluate ideas  | processed.       | diagrams,        |
|             |                       |                  | and products    |                  | prototypes,      |
|             |                       | Select           | against design  |                  | pattern pieces.  |
|             |                       | appropriate      | criteria.       |                  | Make – select    |
|             |                       | joining          |                 |                  | from and use a   |
|             |                       | techniques.      |                 |                  | wider range of   |
|             |                       |                  |                 |                  | tools and        |
|             |                       |                  |                 |                  | equipment to     |
|             |                       |                  |                 |                  | perform          |
|             |                       |                  |                 |                  | practical tasks  |
|             |                       |                  |                 |                  | (for example,    |
|             |                       |                  |                 |                  | cutting,         |
|             |                       |                  |                 |                  | shaping, joining |
|             |                       |                  |                 |                  | and finishing),  |
|             |                       |                  |                 |                  | accurately.      |
|             |                       |                  |                 |                  | Select from and  |
|             |                       |                  |                 |                  | use a range of   |
|             |                       |                  |                 |                  | materials and    |
|             |                       |                  |                 |                  |                  |
|             |                       |                  |                 |                  | components,      |

|   |   |   | including        |
|---|---|---|------------------|
|   |   |   | construction     |
|   |   |   | materials, 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.      |
|   |   |   | Technical        |
|   |   |   | knowledge –      |
|   |   |   | Apply their      |
|   |   |   | understanding    |
|   |   |   | of how to        |
|   |   |   | strengthen,      |
|   |   |   | stiffen and      |
|   |   |   | reinforce more   |
|   |   |   | complex          |
|   |   |   | structures.      |
|   |   |   | Understand and   |
|   |   |   | use mechanical   |
|   |   |   | systems in their |
| I | l | l | systems in their |

|  |  |  | products, cams<br>and axles.<br>Understand and<br>use electrical<br>systems in their<br>products |
|--|--|--|--|
|  |  |  | (circuits  |
|  |  |  | incorporating  |
|  |  |  | switches and   |
|  |  |  | bulbs).  |

|                                 | Key S   | tage 1  | Lower Key  | y Stage 2   | Upper Ke  | ey Stage 2  |
|---------------------------------|---|---|--|---|---|---|
| Curriculum Knowledge and Skills | Construction  | Construction  | Cooking and<br>nutrition –   | Fire engine<br>Moving   | Sewing  | Sewing  |
|                                 | Use materials<br>to practise<br>drilling,<br>screwing,<br>gluing and<br>nailing<br>materials to<br>make and<br>strengthen<br>products | Use materials<br>to practise<br>drilling,<br>screwing,<br>gluing and<br>nailing<br>materials to<br>make and<br>strengthen<br>products | traditional dishes<br>within the UK<br>Research, create<br>and evaluate two<br>different types of<br>bread<br>Understand<br>where food<br>comes from and | vehicles<br>Understand<br>and use<br>mechanical<br>systems in<br>products<br>(winding<br>mechanisms).<br>Research and | To select from<br>and use a<br>wider range of<br>materials and<br>components<br>according to<br>aesthetic<br>qualities. | To select from<br>and use a<br>wider range of<br>materials and<br>components<br>according to<br>aesthetic<br>qualities. |
|                                 | Design, make,<br>evaluate,<br>improve   | Design, make,<br>evaluate,<br>improve   | the principles of<br>a healthy diet.<br>Prepare<br>ingredients<br>hygienically   | develop design<br>criteria to<br>inform the<br>design of fit for<br>purpose<br>products.                              |   |   |

| using appropriate | Generate,       |  |
|-------------------|-----------------|--|
| utensils.         |                 |  |
| utensiis.         | develop, model  |  |
|                   | and             |  |
| Measure           | communicate     |  |
| ingredients to    | ideas through a |  |
| the nearest       | variety of      |  |
| gram accurately.  | means.          |  |
| Follow a recipe.  |                 |  |
| Assemble or cook  |                 |  |
| ingredients       |                 |  |
| (controlling      |                 |  |
| the temperature   |                 |  |
| of the oven or    |                 |  |
| hob, if cooking). |                 |  |

|                          | Key S         | itage 1       | Lower K        | ey Stage 2         | Upper Ke       | ey Stage 2      |
|--------------------------|---------------|---------------|----------------|--------------------|----------------|-----------------|
| Curriculum Knowledge and | Textiles      | Textiles      | Fridge magnets | Cooking and        | To make a      | Axels and       |
| Skills                   |               |               |                | nutrition- bread   | Viking ship    | pulleys to      |
|                          | Join textiles | Join textiles | Design         |                    | sailing on the | operate a water |
|                          | using running | using running | purposeful,    | Research, create   | sea.           | system.         |
|                          | stitch.       | stitch.       | functional and | and evaluate two   |                | Design – Use    |
|                          |               |               | appealing      | different types of | Design – Use   | research and    |
|                          |               |               | products based | bread              | research and   | develop design  |
|                          |               |               | on design      |                    | develop design | criteria to     |
|                          |               |               | criteria.      | Understand         | criteria to    | inform the      |
|                          |               |               |                | where food         | inform the     | design of       |
|                          |               |               | Select from a  | comes from and     | design of      | innovative,     |
|                          |               |               | wide range of  | the principles of  | innovative,    | functional,     |
|                          |               |               | materials      | a healthy diet.    | functional,    | appealing       |
|                          |               |               | according to   |                    | appealing      | products that   |

| their<br>characteristics.Prepare<br>ingredientExplore and<br>evaluate<br>existing<br>products.Prepare<br>ingredientExplore and<br>evaluate<br>products.using appr<br>utensils.Explore and<br>evaluate own<br>products<br>against design<br>criteria.Measure<br>ingredient<br>the neares<br>gram accu<br>Assemble<br>ingredient<br>the tempe<br>of the ove | ly Generate, develop, model<br>and communicate<br>and communicate<br>communicate their ideas<br>their ideas through<br>discussion, annotated<br>annotated sketches, cross-<br>sectional and exploded<br>or cook exploded diagrams,<br>gg prototypes and pattern pieces.<br>n or exploted sketches, cross- |
|---|---|
|   | n or  |

|                      | Key Stage 1    |                | Lower Key Stage 2 |                       | Upper Key Stage 2 |               |
|----------------------|----------------|----------------|-------------------|-----------------------|-------------------|---------------|
| Curriculum Knowledge | Castles and    | Castles and    | Building-         | Buildings             | Cams – Viking     | Axels and     |
| and Skills           | bridges        | bridges        | structures        | Structures – link to  | boats             | pulleys       |
|                      |                |                |                   | settlements           | continued.        | continued.    |
|                      | Materials      | Materials      | Generate,         |                       |                   |               |
|                      |                |                | develop, model    | Generate, develop,    | Make – select     | Make – select |
|                      | Cut materials  | Cut materials  | and               | model and communicate | from and use      | from and use  |
|                      | safely using   | safely using   | communicate       | ideas.                | a wider range     | a wider range |
|                      | tools provided | tools provided | ideas.            |                       | of tools and      | of tools and  |

|                  |                  |                  |                          | equipment to         | equipment to         |
|------------------|------------------|------------------|--------------------------|----------------------|----------------------|
| Demonstrate a    | Demonstrate a    | Carefully select | Carefully select         | perform              | perform              |
| range of         | range of         | ,<br>materials.  | ,<br>materials.          | ,<br>practical tasks | ,<br>practical tasks |
| cutting and      | cutting and      |                  |                          | (cutting,            | cutting,             |
| shaping          | shaping          | Build            | Build structures with    | shaping,             | shaping,             |
| techniques       | techniques       | structures,      | increasing independence. | joining and          | joining and          |
| such as          | such as          | exploring how    |                          | finishing)           | finishing)           |
| tearing,         | tearing,         | they can be      | Begin to demonstrate a   | accurately.          | accurately.          |
| cutting, folding | cutting, folding | made stronger,   | growing understanding    | Evaluate –           | Evaluate –           |
| and curling      | and curling      | stiffer and      | of how to reinforce and  | Investigate          | Investigate          |
|                  |                  | more stable.     | strengthen finished      | and analyse a        | and analyse a        |
| Design           | Design           |                  | products.                | range of             | range of             |
| products that    | products that    | Select           |                          | existing             | existing             |
| have a clear     | have a clear     | appropriate      | Select appropriate       | products.            | products.            |
| purpose and      | purpose and      | joining          | joining techniques.      | Evaluate their       | Evaluate their       |
| an intended      | an intended      | techniques.      |                          | own ideas.           | own ideas.           |
| user             | user             |                  |                          | Technical            | Technical            |
|                  |                  |                  |                          | knowledge.           | knowledge.           |
| Make             | Make             |                  |                          | Understand           | Understand           |
| products,        | products,        |                  |                          | and use              | and use              |
| refining the     | refining the     |                  |                          | mechanical           | mechanical           |
| design as work   | design as work   |                  |                          | systems in           | systems in           |
| progresses.      | progresses.      |                  |                          | their cams.          | their gears          |
|                  |                  |                  |                          |                      | and pulley           |
| Explore          | Explore          |                  |                          |                      | system.              |
| objects and      | objects and      |                  |                          |                      |                      |
| designs to       | designs to       |                  |                          |                      |                      |
| identify likes   | identify likes   |                  |                          |                      |                      |
| and dislikes of  | and dislikes of  |                  |                          |                      |                      |
| the designs.     | the designs.     |                  |                          |                      |                      |

|                      | Key S            | tage 1           | Lower Key S          | itage 2          | Upper Ke | y Stage 2       |
|----------------------|------------------|------------------|----------------------|------------------|----------|-----------------|
| Curriculum Knowledge | Materials        | Materials        | Catapults            | Balloon /        |          | Structures to   |
| and Skills           |                  |                  |                      | rubber band      |          | make a shelter. |
|                      | Cut materials    | Cut materials    | Use scientific       | powered boats    |          |                 |
|                      | safely using     | safely using     | knowledge of the     |                  |          | Design – use    |
|                      | tools provided.  | tools provided.  | transference of      | Design           |          | research and    |
|                      |                  |                  | forces to choose     | purposeful,      |          | develop design  |
|                      | Demonstrate a    | Demonstrate a    | appropriate          | functional,      |          | criteria to     |
|                      | range of         | range of         | mechanisms for a     | appealing        |          | inform the      |
|                      | cutting and      | cutting and      | product (such as     | products based   |          | design of       |
|                      | shaping          | shaping          | levers,              | on design        |          | innovative,     |
|                      | techniques       | techniques       | winding mechanisms,  | criteria.        |          | functional,     |
|                      | such as          | such as          | pulleys and gears)   |                  |          | appealing       |
|                      | tearing,         | tearing,         |                      | Generate,        |          | products that   |
|                      | cutting, folding | cutting, folding | Choose suitable      | develop, model   |          | are fit for     |
|                      | and curling.     | and curling.     | techniques to        | and              |          | purpose.        |
|                      |                  |                  | construct products   | communicate      |          |                 |
|                      |                  |                  |                      | ideas through    |          | Generate,       |
|                      |                  |                  | Strengthen materials | talking and      |          | develop, model  |
|                      |                  |                  | using suitable       | drawing.         |          | and             |
|                      |                  |                  | techniques           |                  |          | communicate     |
|                      |                  |                  |                      | Select from and  |          | their ideas     |
|                      |                  |                  |                      | use a wider      |          | through         |
|                      |                  |                  |                      | range of         |          | discussions,    |
|                      |                  |                  |                      | materials, tools |          | annotated       |
|                      |                  |                  |                      | and              |          | sketches,       |
|                      |                  |                  |                      | components,      |          | cross-sectional |
|                      |                  |                  |                      | according to     |          | and exploded    |
|                      |                  |                  |                      | their            |          | diagrams,       |
|                      |                  |                  |                      | characteristics. |          | prototypes,     |
|                      |                  |                  |                      |                  |          | pattern pieces. |
|                      |                  |                  |                      | Evaluate ideas   |          |                 |
|                      |                  |                  |                      | and products     |          |                 |

|  |  | against design<br>criteria. |  |
|--|--|-----------------------------|--|
|  |  |                             |  |

|                                 | Key Stage 1                    |                                | Lower Key Stage 2           |                              | Upper Key Stage 2             |  |
|---------------------------------|--------------------------------|--------------------------------|-----------------------------|------------------------------|-------------------------------|--|
| Curriculum Knowledge and Skills | Materials                      | Materials                      | Textiles –<br>create a flag | Textiles- make a fabric fish | Structures<br>Continued.      |  |
|                                 | Cut materials                  | Cut materials                  | _                           |                              |                               |  |
|                                 | safely using                   | safely using                   | Research and                | Research and                 | Make – select                 |  |
|                                 | tools provided                 | tools provided                 | develop                     | develop appealing            | from and use a                |  |
|                                 |                                |                                | appealing                   | products aimed at            | wider range of                |  |
|                                 | Demonstrate a                  | Demonstrate a                  | products                    | particular groups.           | tools and                     |  |
|                                 | range of                       | range of                       | aimed at                    |                              | equipment to                  |  |
|                                 | cutting and                    | cutting and                    | particular                  | Select from a                | perform                       |  |
|                                 | shaping                        | shaping                        | groups.                     | wider range of               | practical tasks.              |  |
|                                 | techniques                     | techniques                     |                             | textiles according           |                               |  |
|                                 | such as tearing,               | such as tearing,               | Select from a               | to their functional          | Select from and               |  |
|                                 | cutting, folding               | cutting, folding               | wide range of               | properties and               | use a wider                   |  |
|                                 | and curling                    | and curling                    | materials.                  | aesthetic                    | range of                      |  |
|                                 | During                         | Desta                          |                             | qualities.                   | materials and                 |  |
|                                 | Design                         | Design                         | Join textiles               |                              | components.                   |  |
|                                 | products that                  | products that                  | with                        | Measure and                  | Firebiete                     |  |
|                                 | have a clear<br>purpose and an | have a clear<br>purpose and an | appropriate                 | mark out to the              | Evaluate –<br>Investigate and |  |
|                                 | intended user                  | intended user                  | stitching.                  | nearest millimetre           | analyse a range               |  |
|                                 | intended user                  | intended user                  |                             | lain toutilee with           | of existing                   |  |
|                                 | Make products,                 | Make products,                 | Select the                  | Join textiles with           | products.                     |  |
|                                 | refining the                   | refining the                   | most                        | appropriate                  | products.                     |  |
|                                 | design as work                 | design as work                 | appropriate<br>techniques   | stitching.                   | Evaluate their                |  |
|                                 | progresses.                    | progresses.                    | to decorate                 | Select the most              | ideas and                     |  |
|                                 | 1. 30                          | 1. 0                           | textiles.                   | appropriate                  | products                      |  |
|                                 |                                |                                | textiles.                   | techniques                   | against their                 |  |

| Explore objects<br>and designs to<br>identify likes<br>and dislikes of<br>the designs. | Explore objects<br>and designs to<br>identify likes<br>and dislikes of<br>the designs. | Understand<br>the need for a<br>seam<br>allowance. | to decorate<br>textiles.<br>Evaluate products<br>against a design | own design<br>criteria and<br>consider the<br>views of others<br>to improve   |
|--|--|--|---|---|
|  |  |  | criteria.   | their work.<br>Understand<br>how key events<br>and individuals<br>in design and<br>technology<br>have helped<br>shape the                                 |
|  |  |  |   | world.<br>Technical<br>knowledge –<br>Apply their<br>understanding<br>of how to<br>strengthen,<br>stiffen and<br>reinforce more<br>complex<br>structures. |