<table>
<tr><td colspan="2">Year 6 National Curriculum objectives: 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.</td></tr>
<tr><td>Year 6 Areas of study:
Playgrounds
Automata Toys
Steady Hand Game</td><td>Design:
Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs.
•Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement • Understanding how linkages change the direction of a force • Making things move at the same time • Understanding and drawing cross-sectional diagrams to show the inner-working. Designing a steady hand game - identifying and naming the components required • Drawing a design from three different perspectives • Generating ideas through sketching and discussion • Modelling ideas through prototypes.</td></tr>
<tr><td>Make:
Building a range of play apparatus structures drawing upon new and prior knowledge of structures • Measuring, marking and cutting wood to create a range of structures • Using a range of materials to reinforce and add decoration to structures. Measuring, marking and checking the accuracy of the jelutong and dowel pieces required • Measuring, marking and cutting components accurately using a ruler and scissors • Assembling components accurately to make a stable frame • Understanding that for the frame to function effectively the components must be cut accurately and the joints of the frame secured at right angles • Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set.
Constructing a stable base for a game • Accurately cutting, folding and assembling a net • Decorating the base of the game to a high quality finish • Making and testing a circuit Incorporating a circuit into a base.</td><td>Evaluate:
Improving a design plan based on peer evaluation • Testing and adapting a design to improve it as it is developed • Identifying what makes a successful structure. Evaluating the work of others and receiving feedback on own work • Applying points of improvements • Describing changes they would make/do if they were to do the project again.
Testing own and others finished games, identifying what went well and making suggestions for improvement.</td></tr>
<tr><td>Technical:
To know that structures can be strengthened by manipulating materials and shapes. To understand that the mechanism in an automata uses a system of cams, axles and followers • To understand that different shaped cams produce different outputs
To know that batteries contain acid, which can be dangerous if they leak • To know the names of the components in a basic series circuit including a buzzer.</td><td>Additional:
To understand what a 'footprint plan' is • To understand that in the real world, design, can impact users in positive and negative ways • To know that a prototype is a cheap model to test a design idea. To know that an automata is a hand powered mechanical toy • To know that a cross-sectional diagram shows the inner workings of a product • To understand how to use a bench hook and saw safely • To know that a set square can be used to help mark 90° angles.
To understand the diagram perspectives 'top view', 'side view' and 'back'.</td></tr>
</table>

<table>
<tr><td colspan="2">Year 6 National Curriculum objectives: 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.</td></tr>
<tr><td>Year 6 Areas of study:
Come Dine With Me
Navigating The World</td><td>Design:
Writing a recipe, explaining the key steps, method and ingredients • Including facts and drawings from research undertaken.
Writing a design brief from information submitted by a client • Developing design criteria to fulfil the client's request • Considering and suggesting additional functions for my navigation tool • Developing a product idea through annotated sketches • Placing and manoeuvring 3D objects, using CAD • Changing the properties of, or combine one or more 3D objects, using CAD.</td></tr>
<tr><td>Make:
Following a recipe, including using the correct quantities of each ingredient • Adapting a recipe based on research • Working to a given timescale • Working safely and hygienically with independence.
Considering materials and their functional properties, especially those that are sustainable and recyclable (for example, cork and bamboo) • Explaining material choices and why they were chosen as part of a product concept • Programming an N,E, S,W cardinal compass.</td><td>Evaluate:
Evaluating a recipe, considering: taste, smell, texture and origin of the food group • Taste testing and scoring final products • Suggesting and writing up points of improvements in productions • Evaluating health and safety in production to minimise cross contamination. Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool • Developing an awareness of sustainable design • Identifying key industries that utilise 3D CAD modelling and explain why • Describing how the product concept fits the client's request and how it will benefit the customers • Explaining the key functions in my program, including any additions • Explaining how my program fits the design criteria and how it would be useful as part of a navigation tool • Explaining the key functions and features of my navigation tool to the client as part of a product concept pitch • Demonstrating a functional program as part of a product concept.</td></tr>
<tr><td>Knowledge:
To know that 'flavour' is how a food or drink tastes • To know that many countries have 'national dishes' which are recipes associated with that country • To know that 'processed food' means food that has been put through multiple changes in a factory • To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides • To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork.)
To know that accelerometers can detect movement • To understand that sensors can be useful in products as they mean the product can function without human input.</td><td>Additional:
To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request • To know that 'multifunctional' means an object or product has more than one function • To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.</td></tr>
</table>