**Design Technology**

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| **Year 1** |
| Autumn | Spring | Summer |
| **Research:*** Find out which ingredients are needed to make a simple biscuit.

**Design:** * Design a decorated biscuit for the Birches residents.

**Create:*** Make a biscuit using own designs.

**Evaluate:** * Reflect on the finished product and think of a way to improve it next time.

**Key vocabulary:** biscuit, ingredients, flour, butter, eggs, mixing, oven, temperature, design, plan | **Research:*** Find out about Lego, what it is made from and how it is used.

**Design:** * Design a Lego model that would appeal to a child.

**Create:*** Construct a Lego model from our own designs.

**Evaluate:** * Ask a friend/child to reflect on the finished product and think of a way to improve it next time.

**Key vocabulary:** plan, design**,** evaluate,join, build, construct, copy.  | Art focus |
| **Summary** |
| Design and make a biscuit. Take biscuit as a gift to The Birches residents. | Design and construct a Lego model for a child |  |
| **Year 2** |
| Autumn | Spring | Summer |
| **Research:*** Find out about Tudor houses and what materials they were made from.

**Design:*** Follow 3 specific criteria to design a Tudor house and label the materials and measurements.

**Create:*** Make Tudor houses using everyday materials by following one of our designs.

**Evaluate:** * Reflect on the finished product and make at least one improvement to it.

**Key vocabulary:** criteria, product, design, label, plan, materials, measurement, centimetre, metre, millimetre | **Research:*** Find out about fashions in different cultures.

**Design:*** Design an item of clothing suitable for a particular culture.

**Create:*** Use tie dye techniques to make an item of clothing by following our designs.
* Use stitching (running-stitch and back-stitch) to embellish and join fabrics.
* Cut a range of shapes into the fabric as necessary.

**Evaluate:** * Reflect on the finished product and think of a way to improve it.

**Key vocabulary:** backstitch, cross-stitch, design, label, materials, fabric  | **Research:*** Find out which ingredients can be grown.

**Design:*** Design and sketch a dish which could be made using at least 1 grown ingredient.

**Create:*** Cook a dish which uses at least 1 grown ingredient.
* Measure the ingredients using electronic scales.
* Understand how to cut, peel and grate foods safely.

**Evaluate:** * Discuss which tools were most useful for making the product.

**Key vocabulary:** cut, peel, grate, ingredients, measure, scale, grams, kilograms, safety, hygiene.  |
| **Summary** |
| Design and create Tudor houses with 3 specific criteria from everyday materials. | Design and make an item of clothing in the style of a particular culture.  | Sketch and safely cook a dish which uses at least 1 grown ingredient.  |
| **Year 3** |
| Autumn | Spring | Summer |
| **Research:*** Find out about materials that were typically used in pre-historic times. Find out about:
* Weapons
* Household objects
* Pottery
* Fashion
* Find out the processes by which the materials were made into objects.

**Evaluate:** * Compare the suitability of the materials used in pre-historic times, to materials used today.

**Key vocabulary:** materials, wood, metal, rock, pre-historic, product, suitable, invention. s  | **Research:*** Find out about the materials used to make boats throughout history and today.

**Design:*** Propose improvements to an existing boat design.
* Design a boat, thinking carefully about which materials are best suited to the purpose.
* Label designs with specific materials and measurements.

**Create:*** Make a boat using chosen materials from designs.

**Evaluate:** * Test the end product on the water. Propose a way to improve it to make it more suitable for its purpose.

**Key vocabulary:** Evaluate, design, create, suitable, justify, material, measurement, effective, purpose, improve | **Research:*** Research water-proof shelters and camping equipment.
* Find out about the equipment used to create water-proof shelters.

**Design:*** Design a water-proof shelter, given specific set of criteria.
* Label designs with materials and measurements.

**Create:*** Build a water-proof shelter using chosen materials and tools.
* Use non-electric tools safely.

**Evaluate:** * Evaluate effectiveness of our shelters in rainy conditions.
* Propose improvements if necessary.

**Key vocabulary:** Evaluate, design, create, suitable, justify, material, effective, purpose, porous, permeable, water-proof, water-resistant, safety, instructions. |
| **Summary**  |
| Find out about the materials used for objects in pre-historic times. Compare them to materials used today | Design and make boats using a range of materials and discuss which materials are most suitable for making a boat | Design and create a water-proof shelter using non-electric tools safely.  |
| **Year 4** |
| Autumn | Spring | Summer |
| **Research:*** Find out about the Egyptian pyramids and their structure.

**Design:*** Design a stable, weight-bearing structure inspired by Egyptian pyramid design.
* Label designs with own materials and measurements.

**Create:*** Make a stable structure using own designs and chosen materials.

**Evaluate:** * Apply weight to finished structures and evaluate ways to make them more stiff and stable.

**Key vocabulary:** Evaluate, design, create, suitable, purpose, stiff, stable, structure, weakness, cross-stitch, ladder-stitch  | **Research:*** Find out about Mosaics created during Roman times, including the materials that were used and how pieces were joined.

**Design:*** Design a range of mosaics with varying patterns (at least 4).

**Create:*** Use clay to create a mosaic from own designs.

**Evaluate:** * Compare finished products to similar Roman designs and make changes or improvements if needed.

**Key vocabulary:** Evaluate, edit, improve, design, create, suitable, purpose, consumer | **Research:*** Find out about how castle drawbridges work.
* Find out about how gears, levers and pulleys work.

**Design:*** Design a castle with a drawbridge, labelling the gears, levers and pulleys.

**Create:*** Create a 3D model castle of own designs.
* Use gears, levers and pulleys to include a functioning drawbridge.

**Evaluate:** * Compare finished castles and discuss best mechanism for drawbridge.

**Key vocabulary:** Design, forces, push, pull, mechanism, functioning, rotate, lever, pulley, gear |
| **Summary** |
| Find out about the structure of Egyptian pyramids.Use Egyptian design to create our own stiff and stable structures.  | Design and create a Roman inspired mosaic. Edit and change designs as work progresses.  | Create a castle with a functioning drawbridge. Use gears, levers and/pulleys in their designs and products.  |
| **Year 5** |
| Autumn | Spring | Summer |
| **Research:*** Find out how linear and cylindrical CAMS work.

**Design:*** Design and sketch an orbit of the Sun, Moon and Earth and label the CAMs used for rotation around each other.

**Create:*** Make a small scale planetary orbit which includes the Sun, Moon and Earth.
* Include a linear or cylindrical CAM in the model.

**Evaluate:** * Throughout the process, test if the CAM is functioning correctly and adapt if necessary.

**Key vocabulary:** Evaluate, design, create, suitable, purpose, prototype, combine, mechanism, circular CAM | **Research:*** Find out about and compare Viking and Anglo-Saxon weaponry, including the materials used.

**Design:*** Design a Viking or Anglo-Saxon weapon based on research.
* Label designs with materials and measurements.

**Create:*** Create a to scale version of own weapon designs using cardboard.
* Finish using paint and art techniques taught this year.

**Evaluate:** * Reflect on the finish of the final product, including cutting and joining techniques used.

**Key vocabulary:** Compare, design, Viking, Anglo-Saxon, finish.  | Art focus |
| **Summary** |
| Design and create a small scale orbit including, the Sun, Moon and Earth.Use CAMS in designs and products to make them move in specific ways.  | Design and create a Viking/Anglo-Saxon weapon.Create products to a high standard with a good finish.  |  |
| **Year 6** |
| Autumn | Spring | Summer |
| **Research:*** Research parallel circuits.
* Find out about resistors, chips and LEDs.

**Design:*** Design a parallel circuit to include a functioning LED, chip and resistor.

**Create:*** Create the circuit from designs.

**Evaluate:** * Check if the finished circuit is functioning correctly and adapt as needed.

**Key vocabulary:** circuit, LED, resistor, chip, battery, design, edit, cause and effect.  | **Research:*** Find out about World War 2 propaganda, specifically posters.

**Design:*** Select imagery or techniques from a range of posters to use in own designs.

**Create:*** Make a World War 2 propaganda poster by following own designs.

**Evaluate:** * Reflect on final product’s likeness to World War 2 posters and suggest improvements.

**Key vocabulary:** propaganda, colour, message, evaluate, persuade, design, create, inspiration | **Research:*** Find out about cooking and food from a specific region or culture.
* Find out about food packaging and create criteria for good packaging.

**Design:*** Invent a recipe with the ingredients found during the research.
* Design packaging based on criteria found during research.

**Create:*** Cook our own recipes.
* Store and handle food safely.
* Use correct utensils to hygienically prepare food.
* Create food packaging using materials and tools of choice.

**Evaluate:** * After tasting, modify recipes to improve taste.
* Package finished product and reflect on the effectiveness of the packaging.

**Key vocabulary:** product, package, hygiene, safety, recipe, ingredients, sweet, sour, bitter, consumer, nutrition |
| **Summary** |
| Design and create a parallel and series circuit.Include LEDs, resistors and buzzers in designs and creations. | Design and create a poster for a specific purpose. Take inspiration from previous designs and use them in our work.  | Write our own recipes and make them using simple ingredients. Use utensils hygienically to prepare food. Understand how to store and handle food properly and safely. Design and create packaging that is appealing and suitable for food.  |