|  |
| --- |
| Design and Technology Knowledge Map |
| **UKS2 Cycle A**Points to think about:Excellent knowledge maps showing great skill development across KS2, especially mechanisms and sewing skills. LKS2 covers all NC objectives in two years so could be spread out between you both between the 4 years. Just thinking about lessening the load for you but if you can manage this then great!!Only 1 design, make and evaluate once per year/cycleCould we use the DT subheading for the I know/can statements e.g. design, make, evaluate, technical knowledge so we can cross reference easierAll I know/can statements should match skills progression document.Great range of DT experiences for the children! |
| Autumn Term – Structures (Bridges)  |
| **Vocabulary*** I know that the term **‘Structure’** refers to the arrangement of the parts of something complex.
* I know that the term **‘Three dimensional’** means having length, breadth and width.
* I know that the term **‘Assemble’** means to fit together the separate component parts of an object.
* I know that the term **‘Innovative’** Featuring new methods and ideas and thinking creatively.
* I know that the term **‘Aesthetic Qualities’** are qualities seen by the viewer to create a certain feel or image (warm colours etc)
* I know that the meaning of **‘Accuracy’** is to be correct or precise.
* I know that the **‘Authentic’** means that an object is of undisputed origin and not a copy.
* I know that the term **‘Characteristics’** refers to a feature or quality belonging to something.
* I know the term **‘Freestanding’** means not attached to or supported by another structure.
* I know the term **‘Stable’** means it is not likely to give way or over-turn.
* I know the term **‘Engineer’** refers to a person who designs, builds or maintains engines, machines or structures
* I know the term **‘Tension Force’** refers to the force created by pulling by the means of a cable or chain
* I know the term **‘Compression Force’** refers to the forces created by the compression of an object

**Knowledge and design*** I know Brunel is remember for his work in the field of engineering
* I know Brunel designed many dockyards, tunnels and innovative bridges
* I know Brunel’s work was ground-breaking and he designed many engineering ‘firsts’
* I know Brunel designed the Clifton Suspension Bridge
* I know and understand how the design of a suspension bridge works e.g. cables are suspended between two towers as well as vertical suspender cables that hold up the deck

**Technical Knowledge*** I know how to strengthen structures e.g. creating corners into triangles and adding a length suspended, diagonally, between larger spaces
* I know suspension bridges rely on tension forces e.g. the deck pulls down on the suspension cables and transfer the weight to the pillars this creates compression forces

Do you make?**Examples** * **Isambard Brunel** - Clifton Suspension Bridge
 |
| Spring Term – Gears and Pulleys  |
| **Vocabulary** * I know the term **‘Mechanism’** means a system of parts that work together to make a machine
* I know that a **‘Mechanical System’** is a set of mechanisms working together to create movement
* I know the term **‘Gear’** refers to a toothed wheel (cog) that lock together and turn one another
* I know that the term **‘Turning Force’** is created by the movement of one cog onto the other using the teeth
* I know that **‘Pulleys’** are similar to gears, but the wheels do not lock. Instead they are moved by a **‘Drive Belt’**

**Knowledge and design*** I know how to design and build a toy vehicle that uses either a gear or pulley mechanism
* I know that my toy will need a Chassis, an Axle and wheels
* I know how to select appropriate materials for my toy
* I know how to sketch, annotate and plan my design

**Make*** I know how to build my design with accuracy

**Evaluate*** I know how to evaluate my product

**Technical Knowledge*** I know the effect the number of teeth on a cog will have on the ration of spins

**Examples** * **Flag pole-** an example of a pulley mechanism
* **Can Opener-** an example of a gear mechanism
* **Bicycle Gears-** an example of a multiple gear mechanism
 |
| Summer Term – N/A |
|  |

|  |
| --- |
| **UKS2 Cycle B** |
| Autumn Term – Textiles (Sewing) |
| **Vocabulary*** I know the term **‘Textiles’** refers to a flexible material woven from fibres
* I know that **‘Sewing’** involves the joining of different textiles fabrics using a needle and thread
* I know that the process of sewing is completed through **‘Stitches’**
* I know that a **‘Seam’** is a line of stitches that joins two fabrics together
* I know that the term **‘Aesthetics’** refers to how the product looks
* I know that **‘Embroidery’** is a method used to decorate items using needle and thread

**Knowledge*** I know that different fabrics have different properties which makes them more suited for a particular purpose
* I know there are lots of different stitches that have different purposes
* I know the ‘Running Stitch’ is the simplest stitch, it creates a a dotted effect
* I know the ‘Back Stitch’ is similar to the running stitch however the thread doubles back so there are no visible spaces. It is a very strong and secure stich
* I know the ‘Over Sew Stitch’ is a good way to neaten the raw edge of a fabric and involves sewing over the edge of the fabric
* I know the ‘Blanket Stitch’ is another way to reinforce the edges of thick material

**Examples*** **Mayan Textiles**
* **Tapestries**
* **William Morris**
 |
| Spring Term – Electrical Systems  |
| **Vocabulary*** I know a **‘Circuit’** is the path the electric current follows
* I know a **‘Series Circuit’** is where two output devices are controlled by one switch
* I know a ‘**Parallel Circuit’** is where two output devices are controlled by separate switched
* I know that **‘Control Boxes’** can be used to set up timed systems and monitoring systems
* I know that a **‘Light Dependent Resister’** operates when light is shined on it
* I know a **‘Reed Switch’** is a switch that is operated by a magnet
* I know a **‘Tilt Switch’** is a switch works when held at an angle

**Knowledge** * I know electricity is a type of energy that is used to power many things
* I know electricity can flow through circuits
* I know that a circuit is the path the electric current follows
* I know the circuit must have no breaks in order for the electricity to flow
* I know some of the symbols used in an electrical circuit
* I know the electricity flowing through a circuit is known as the current
* I know the current can be used to power an output device
* I know switches can be used to stop the electrical current
* I know you can use control boxes to alter an output device

**Examples*** **Light bulb** – invented by Thomas Edison, he investigated different materials for filament that allowed immediate and long-lasting lighting.
* **Traffic lights –** basic traffic lights work on a timer system to ensure there is a consistent flow of tragic in all directions
* **Burglar Alarms –** an example of a monitoring system
 |
| Summer Term – Food and Nutrition (Greek) |
| **Vocabulary*** I know that the phrase **‘ Healthy and Varied Diet’** refers to the suggested ratio of different food groups you should consume daily to keep your body healthy
* I know that the term ‘**Calories’**
* I know that **‘Saturated Fats’**
* I know that the process **‘Griddling’** refers
* I know that the process of **‘steaming’**
* I know that the process of **‘Poaching’**
* I know that the term **‘Seasonal’** in relation to food means
* I know that the term **‘Sustainable’** in the relation to food is finding the right balance between your food needs and your food choices and living as much off the land as possible

**Knowledge** * I know the process of preparing food safely and correctly is important to avoid food poisoning
* I know the process of preparing food often includes cleaning, slicing, mixing, weighing etc.
* I know how to follow instructions to prepare food
* I know how to measure accurately the volume and weight of food products
* I know that the process of cooking can include; boiling, baking, frying, grilling, steaming and poaching
* I know about different food groups including; fruit and vegetables, carbohydrates, proteins, dairy and fats and sugars
* I know how to create a meal plan to include a healthy and varied diet of food across each day and the week
* i know where food comes from
* I know that some food is caught, some food is raised and some food is caught
* I know and understand the process of how food comes from the farm to its consumer and how that has changed over time
* I know that eating sustainably is important to reduce our carbon foot print
* I know that food around the world differs because of many factors e.g. Weather dependant crops and cultures
* I know that Greek food includes a lot of seafood because Greece is made up of many islands
* I know that different foods can be seasonal and only available at certain times of the year

**Examples** * **Baklava**- A popular Greek dessert
* **Dolmadakia –** Stuffed grape leave
* **Greek Salad –** A salad including feta, tomatoes and olives with an oregano dressing
* **Moussaka –** similar to lasagne made with aubergine potatoes and lamb mince
 |