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|                              | <b>Half of Carousel rotation - Approx 6-7 weeks</b>  |
| <b>Subject</b>               | <b>Design and Technology</b>   |
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|                              | <b>Half of Carousel rotation - Approx 6-7 weeks</b>  |
| <b>Scheme title</b>          | <b>D&amp;T Materials - Using electronics and CAD/CAM to make a lamp</b>  |
| <b>Purpose of scheme</b>     | For this scheme pupils will be introduced to electronics as a manufacturing resource. This introduction will enable pupils to recognise and identify how electronic products are made up of inputs/ outputs and roles that different components have in a circuit. Pupils will also learn the advantages and disadvantages of CAD/CAM and further develop their understanding of the laser cutter and 2D design. For the project pupils will need to identify a client, and in doing so learn about the importance of identify and meeting customers needs and how this is crucial to the economy of product design.   |
| <b>Knowledge in sequence</b> | Pupils will initially learn about the importance of establishing an appropriate client and their specific needs. Pupils will learn about electronic systems and how they are made up of inputs and outputs. Pupils will then focus on the purpose of a resistor in a circuit and how resistance is measured. Using this initial knowledge, pupils will begin to build their electronic lamp by soldering their components to their PCB's in the correct order. In doing this, pupils will learn how to solder both safely and accurately. Pupils will need to manufacture a lamp shade and to do this they will use the laser cutter. Pupils will further develop their knowledge of 2D design, learning how to trace and vectorise images sourced from the internet, as well as drawing designs to a specific size. All practical elements will finally be pieced together to make a fully functioning lamp to take home. Final products will be evaluated, giving pupils an opportunity to further develop their understanding of evaluating practical outcomes. |
| <b>Skills</b>                | In no particular order, pupils will learn the following skills; 2D design, Soldering, using a screw driver and evaluative skills such as PEE.  |
| <b>Key words</b>             | Solder, CAD/ CAM, Resistor, LED, Acrylic, Thermoplastic, Thermosetting plastic, Input, output, client, brief, 2D design ,laser cutter, biodegradable   |

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| <b>Half of Carousel rotation - Approx 6-7 weeks</b>   |   |  |  |  |
| <b>Year Group</b>   | 8 |  |  |  |
| <b>Half of Carousel rotation - Approx 6-7 weeks</b>   |   |  |  |  |
| <b>D&amp;T Textiles - Using cultural influences to design and make a decorative cushion</b>   |   |  |  |  |
| For this scheme pupils will be introduced to surface decoration and embellishment. This introduction will enable pupils to recognise and identify how textile products are produced. Pupils will also develop their understanding of different cultures and their traditions. For the project pupils will need to identify a client, and in doing so learn about the importance of identify and meeting customers needs and how this is crucial to the economy of product design  |   |  |  |  |
| Pupils will initially learn about the importance of establishing an appropriate client and their specific needs. Pupils will learn about the traditional Mexican celebration of Day of the dead, reflecting on the use of imagery and colour. Pupils will develop their analytical thinking skills by analysing an existing product before they begin to create their own ideas. Pupils will then focus on designing a series of cushion covers influenced by their researching and incorporate a variety of surface embellishment techniques that they have explored, after analysis pupils will go onto manufacture a cushion cover. To do this they will use screen printing and other forms of embellishment including embroidery, applique, beadwork, dye sticks & fabric pens. Pupils will embed their knowledge of the sewing machine introduced in year 7 by firstly hemming then sewing the cushion cover together by using the overlocker, this will be a functioning cushion cover to take home. Final products will be evaluated, giving pupils an opportunity to further develop their understanding of evaluating practical outcomes. |   |  |  |  |
| In no particular order, pupils will learn the following skills; accurate and safe use of the craft knife, screen printing, free-motion machine embroidery, analytical thinking. Safe and accurate use of the overlocker.  |   |  |  |  |
| Client, Brief, Research, Analyse, Culture & Tradition, Imagery, Vibrant, Embellishment, Resist, Technique. Calico, Hem  |   |  |  |  |





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| <b>End point</b>          | By the end of this project, pupils will have a much better understanding of how electronic products function and how they are manufactured. They will have confidence in soldering and will be much more accurate when doing it. pupils will know the role of a resistor in a circuit and how resistance is measure. Pupils will be able to make design decisions about using a laser cutter and will have full understanding of its potential use in manufacturing. Pupils will end up with a good quality product and gain confidence in using the applied D&T process as well as continuing to develop their skills using practical tools and machinery. |
| <b>Assessment Methods</b> | Key assessment pieces includes <b>design, manufacturing</b> , literacy (Usually in the form or <b>evaluation</b> or analysis) and <b>technical</b> assessment (Socratic online assessment assessing theoretical understanding of the chosen materials and its processes.)   |

By the end of this project, pupils will have a much better understanding of how surface decoration can be applied to textile products. They will have confidence in many of these techniques mainly screen printing and will be much more accurate when working with them. Pupils will end up with a good quality product and gain confidence in using the applied D&T process as well as continuing to develop their skills using practical tools and machinery.

Key assessment pieces includes **design, manufacturing**, literacy (Usually in the form of **evaluation** or analysis) and **technical** assessment (Socratic online assessment assessing theoretical understanding of the chosen materials and its processes.)

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