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| **Unit Overview: YEAR 8****Themed Clocks for the Design Museum & Acrylic Key Rings****Extension Project: Line bent Egg Cups or Fruit holders** |
| **Termly Rotation** | AUT 1 | AUT 2 | SPR 1 | SPR 2 | SUM 1 | SUM 2 | **No of Lessons:** | **20** |
| **Key Focus for Unit:***What is the key knowledge being delivered?* *What is the intent of this unit?* |
| This **Year 8** Product Design project empowers students as Product Designers by learning how to Design and Make a History of Art themed clock in Acrylic. Students learn about the role materials play in Sustainable design specifically the dangers of plastics and what Bio Polymers are. Students are also introduced to the History of Design and learn 3D and 2D drawing techniques using CAD and develop knowledge of CAM – the Laser Cutter. The unit has three key aims: * To develop students understanding of Polymers and understand which Plastics are considered more Sustainable options and why. Students learn about 4 design Movements – Art Deco, Bauhaus, Retro, and Memphis. As well as understand the role of a designer in developing a product for a client – In this case, The Design Museum.
* For students further develop their competency, dexterity and safe practice in working with woods and how to use Coping saws. Files, glass paper and CAM laser cutting machine to form and shape plastics.
* To develop hand drawing design skills with Oblique and 1 Point perspective drawing and further develop knowledge of how to use CAD – Computer aided Design.
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| **Key Knowledge and Big Ideas:** *What* ***Powerful Knowledge*** *and* ***Big Ideas*** *are explored in this Unit?* *How have these progressed from previous learning? What* ***gaps in knowledge*** *have you identified from* ***baselining*** *and how are the being closed?* |
| **Big Ideas:** **Explore**: Polymers – Thermo and Thermo Setting and Bio Polymers. History of Design – 4 Design Movements.**Design:** Develop 3D drawings using 1-point perspective or Oblique drawing – using a Geometry set. **Create:** Create a template / Prototype of the clock in card and Technical drawing of the clock on CAD**Make:** Acrylic key ring, Acrylic clock – Extension Line bent egg holder**Evaluate:** Evaluate and Test skills and Critically evaluate the design and suitability of the final product **Literary Convention Knowledge:** * Students will be able to discuss and explain the different types of Polymers
* Students will read text about the 4 design movements: Art Deco, Bauhaus, Retro and Memphis
* Students will be able to articulate the use of different tools, techniques and the outcomes different techniques achieve

**Contextual Knowledge:** * Students will be able to explain the benefits of avoiding specific plastics
* Students will be able to describe various design movements and styles
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| **Unit Assessment:***How will this unit be assessed?* *What is the frequency of assessments – baselines etc?* |
| This unit aims to build and develop Design, Make and Evaluate and therefore will be assessed through designing, modelling and making Students will be assessed on the following criteria: * Accurate use of Coping Saw, File, Finishing materials and CAD
* Tools and manufacturing skills with Hand and machine tools and the quality of design and manufacture
* Knowledge on Polymers and Design Movements
* Accuracy of final product – Clocks for the Design Museum
* Accuracy and Creativity in design and make of products

**Baseline Assessment**: Students will be assessed on a Teams quiz on Design History and Polymers knowledge**Final Assessment: Production of Final Product and Design Stages**Students will be assessed on their understanding of the role the product plays by writing a Specification, The final products, the design and manufacture and quality of the clock and their design’s suitability for the theme.Recall strategies such as starter quizzes, HW quizzes and drawing techniques and prototyping skills will be used to assess student knowledge.**General Assessments:** Teams - 2 every half term, Yellow Sticker - 2 every half term, Low Stakes Quiz – 2 every half term, End of Term Assessment – Week 10 |
| **Key Skills Explored** | **Vocabulary Selected for DVI** | **Links to Subsequent Units** |
| Students will be assessed on the following criteria: * **Explore:** How to write and Specification, Knowledge on Polymers and Design Themes
* **Design:** Creating Design ideas as 1 Point Perspective Drawings and Oblique Drawings
* **Create:** Templates on CAD and Technical Drawings
* **Make:** How to use Hand tools with Acrylic, CAD for Graphic Design – CAM – laser Cutting Extension – Line Bending
* **Evaluate:** Testing and Evaluating final designs
 | **Level 2**Polymers & Plastics, Thermo plastic, Thermo Set plastic, Retro Design, Oblique Drawing, 45 Degree set square, CAD, CAM, Laser Cutter**Level 3**Art Deco, Bauhaus, Memphis Design, Sustainability, Adhesives, Tessellation, End of Life disposal, Bio Plastics  | In Years 7 students learn about Timbers and are introduced to Sustainable materials by looking at Sustainable Forests and understanding which Timbers are environmentally safer options. Students learn how to use Graph paper to design. Students learn how to use simple hand tools to shape wood. **In Year 8** students learn about Polymers Thermo and Thermo setting Polymers and learn to assess the advantages and disadvantages of different Polymers and their uses. Students are also introduced to the History of Design and learn about Art Deco, Bauhaus, Retro and the Memphis design movements. They also learn about Oblique 3D drawing and 1 Point perspective. Students learn how to use saws, files and CAM – Laser cutter to shape plastics.In Year 9 Students review their knowledge on Timbers and Sustainable materials focussing specifically on Manufactured boards. Students develop their knowledge about Design History by understanding the Arts and Crafts and Zaha Hadid. Students also learn to further develop knowledge on CAD and CAM by making flat pack lighting structures for Ikea and revisit hand tools for wood. The Metals extension project looks at FE and non-FE metals and students explore Pewter casting.  |
| **Links to Careers/Employability** | **How does this unit prepare students for the next unit?** |
| On this project students learn to work as Product Designers and learn about how to Design for a client ‘Design Museum’ and how to create Designs for clocks on CAD and learn about Design movements and the History of Design. | This unit prepares students for the next unit by strengthening their hands-on practical knowledge with a Coping saw, File and finishing techniques and CAD and CAM. In Year 9 students revisit CAD and CAM by designing for IKEA and learn about Flat Pack furniture. Students also learn about how to design for a client and how to create a product using CAM – the laser cutter. Students material knowledge of tools is strengthened by understanding how the same tools can be used for different materials and adaptations you may need to make. Students also learn about adhesives that can be used with acrylic.  |