

D&T MTP

Year 4 Autumn 2

Context							
Unit		Structure: Pavilions Linked to History: Roman Britain					
Assessment		Evaluation of product at end of unit.					
Concepts - How does this unit fit in?		Significant Designers / Products Anish Kapoor (Orbit), Gustav Eiffel (Eiffel Tower)		Noteworthy Products in our Daily Lives ArcelorMittal Orbit', London Eye, Eiffel Tower		Purpose and Use To build a robust, aesthetically pleasing, load-bearing structure for everyday use.	
Kapow Lesson		Learning Intention	DT Skills Skills Progression	Knowledge Concepts	GRADES	Local Art	Curriculum Links
1	L1 Exploring frame structures	To apply my knowledge of constructing a secure structure, to create different frame structures.	D16			ArcelorMittal Orbit and London Eye UK.	
2	L2 Designing a Pavilion	To apply my knowledge of constructing a pavilion, to design and correctly label a structure, for my target audience.	D17, D18				Science: Forces
3	L4 Pavilion cladding	To justify my pavilion design choices, referring to the design criteria.	M17, M18				
4							
5	L3 Pavilion frame	To apply my knowledge of combining and joining materials, to construct a pavilion frame.	M22				
6							
7	L7 - Evaluate my design	To present and evaluate my pavilion to the class by discussing	E9, E10,E11				

		the process of designing and making the product.					
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Lesson 1

Kapow Lesson	L1 Exploring frame structures
Learning Intention	To apply my knowledge of constructing, to create different secure frame structures.
SOLO SC: Uni- Structural <i>Bronze</i>	I can name historical architects who have built geometric pavilion structures.
SOLO SC: Multi- Structural <i>Silver</i>	I can outline key features of a pavilion structure.
SOLO SC: Relational <i>Gold</i>	I can apply my knowledge of constructing a secure structure, to create different frame structures.
SOLO SC: Extended Abstract <i>Platinum</i>	I can justify and explain my construction method.
Activity (What will the children do to demonstrate their understanding of the LI?)	<p>Chn should learn about influential designers through history and how their work impacts and inspires our imagination and ideas.</p> <p>Design brief - "A letter dated 43 BC has just been found in a time capsule dug up in West Drayton, London. Signed by Julius Caesar who stated in it that he wished a great pavilion would be designed and built honouring his strength and guidance of the Roman Empire. He wishes a light yet magnificent pavilion to be erected in celebration of their recent battle victory."</p> <p>Introduce the children to the ArcelorMittal Orbit Tower, Eiffel Tower and the London Eye - all geometric, 'lightweight' structures, built in celebration of key historic events. Discuss similarities and differences. Discuss history in brief and chn to be familiar with the famous architects.</p> <p>Chn to understand the key technical vocabulary as well as the definition of 'pavilion'.</p> <p>Follow Kapow lesson and use examples of geometric building design to further the children's understanding of the term 'pavilion'.</p>

	<p>Watch instructional videos on how to construct pavilions using sweets / Blu-Tak, etc and cocktail sticks.</p> <p>Take photos of children's build experiments, which can be printed and displayed on the class DT working wall as well as used in the slides of the next lesson. Display design brief and architecture examples clearly on DT working wall, for reference over the following lessons.</p> <p>Encourage chn to use the technical vocabulary as they work, so that they become familiar with these terms.</p> <p>Date and LI - encourage children to record and sketch their frame structures, in their sketchbooks. Chn can annotate their sketches, explaining / justifying why cocktail sticks have been used in specific configurations. Photos of work can also be stuck in.</p>
Key Vocabulary for the lesson	Design criteria, natural, structure, innovative, 3D shapes, pavilion
Curriculum Links	History
Resources	Gum sweets / Blu-Tack / plasticine, toothpicks

Lesson 2

Kapow Lesson	L2 Designing a Pavilion
Learning Intention	To apply my knowledge of constructing a pavilion, to design and correctly label a structure, for my target audience.
SOLO SC: Uni- Structural <i>Bronze</i>	I can draw a simple structure that represents my pavilion design.
SOLO SC: Multi- Structural <i>Silver</i>	I can describe how to make a solid structure.
SOLO SC: Relational <i>Gold</i>	I can apply my knowledge of constructing a pavilion, to design and correctly label a structure, for my target audience.
SOLO SC: Extended Abstract <i>Platinum</i>	To justify my design choices and prove that I have met the requirements of the design brief.

<p style="text-align: center;">Activity (What will the children do to demonstrate their understanding of the LI?)</p>	<p>Chn will be designing their pavilions, with their target audience in mind. Chn will consider the scale of their structure to fit a constrained footprint / space and what the interior space within (and outside) the structure will be used for. Chn must think about their target audience and the purpose and use of the structure. What materials would be at hand at that time and how might the client like the structure to be decorated / what material might the roof be made of?</p> <p>Follow Kapow lesson</p> <p>Refer back to the design brief. Model the high expectation of a completed design sheet - lines drawn with rulers and pencil. Diagrams labelled with neat handwriting. Ideally the class teacher will have made a live model prior to the lesson, to show the children, as well as the Kapow video.</p> <p>Provide chn with images of how Roman decorated pottery, fabrics, architecture, statues, etc, to inform their design ideas. Discuss what natural resources the Roman may have used to decorate and build with. Can these be incorporated into the design? How will the children endeavour to make their structures aesthetically pleasing to a Roman?</p> <p>Look at examples of work created by children from other schools - https://buildyourownpavilion.serpentinegalleries.org/your-pavilions/</p> <p>Use photos on Google slides, taken from the previous lesson, to create discussion about stable structures and amendments to their designs.</p> <p>https://www.bbc.co.uk/teach/class-clips-video/design-and-technology-ks2-making-structures-stronger/z626hbk</p> <p>Do not mark drawn work but do correct incorrect spellings of technical vocabulary. Encourage the use of neat handwriting and presentation.</p>
<p>Key Vocabulary for the lesson</p>	<p>Design criteria, natural, structure, innovative, 3D shapes</p>
<p>Curriculum Links</p>	<p>History</p>
<p>Resources</p>	<p>A4 stiff card, pencils, image examples, photos taken from previous lesson.</p>

Lesson 3

<p>Kapow Lesson</p>	<p>L4 Pavilion cladding</p>
<p>Learning Intention</p>	<p>To justify my pavilion design choices, referring to the design criteria.</p>

SOLO SC: Uni- Structural <i>Bronze</i>	I can identify key features that my target audience would like.
SOLO SC: Multi- Structural <i>Silver</i>	I can list key Design Criteria which I will use to make my pavilion.
SOLO SC: Relational <i>Gold</i>	I can justify my pavilion design choices, referring to the design criteria.
SOLO SC: Extended Abstract <i>Platinum</i>	I can reflect on how these design criteria will appeal to the product audience.
Activity (What will the children do to demonstrate their understanding of the LI?)	<p>Chn will make considered design decisions about the final aesthetic of their construction - the cladding. Enthuse ideas by showing L4 Pavilion cladding Teacher video, where various cladding ideas (made from paper and wool) can be seen. This will aid the children's creative design ideas.</p> <p>Refer back to the design brief.</p> <p>Chn should consider the final aesthetic look of their pavilion and sketch ideas in sketchbook and consider how their target audience / consumer, will use the space - what key features should be included so that they will enjoy using / be willing to buy the product?</p> <p>Chn to create Design Criteria (a success criteria) to refer to, so as to ensure they meet the Design Brief. E.G. - 'Has a rigid, study frame', 'cladding appeals aesthetically to the consumer/audience', 'Pavilion has features that the consumer/audience will use.' Class to agree on 3-4 design criteria - display this and/or record this in sketchbooks.</p> <p>Chn must make a list of materials that they require so as to create their desired cladding: L4 Pavilion cladding teacher video. Discuss aesthetic and what a good finished design should look like. Add these ideas / sketch and record these ideas in sketch book.</p> <p>Stick swatches / examples of materials that will be used to make the cladding, into sketchbooks. Chn to make annotated notes about these ideas and why they have chosen them - explain by referring to the design criteria. If time, chn can experiment with materials to recreate some of the cladding ideas suggested in the video - paper weaving, paper concertinas, etc - these examples can be displayed on Art/DT working wall or if flat (weaving), can be stuck into sketchbooks.</p>
Key Vocabulary for the lesson	Design criteria, natural, structure, innovative, 3D shapes, reinforce, consumer, target audience
Curriculum Links	History
Resources	Sketchbooks, decorative materials for cladding ideas (card, wool, other), scissors, glue.

Lesson 4

Kapow Lesson	L3 Pavilion frame
Learning Intention	To apply my knowledge of combining and joining materials, to construct a pavilion frame.
SOLO SC: Uni- Structural <i>Bronze</i>	I can identify the materials and tools I will need.
SOLO SC: Multi- Structural <i>Silver</i>	I can use tools and perform joining skills safely.
SOLO SC: Relational <i>Gold</i>	I can apply my knowledge of combining and joining materials, to construct a pavilion frame.
SOLO SC: Extended Abstract <i>Platinum</i>	I can prioritise ways to strengthen my frame.
Activity (What will the children do to demonstrate their understanding of the LI?)	<p>Chn will build a free-standing structure, using appropriate building materials and will know how to reinforce their structure using card. Chn will refer to their sketchbook designs throughout this lesson, annotating any design changes they make along the construction journey. Chn will work in design construction teams to build their structures. Chn will be given minimal class teacher support. To meet LI, chn <u>must</u> rely on peer support, discussion and continuous formative evaluation of their product during the building process. This is a key part of the design process and photos must be kept as a record of this lesson. Teacher must circulate and pose questions about construction decisions to enthuse the use of technical vocabulary and for chn to openly discuss their thought processes and how their design meets the design criteria, so that the final product will meet the design brief. Encourage chn to test their product's rigidity through the task.</p> <p>Refer back to the design brief. Follow Kapow lesson: L3 Pavilion frame</p> <p>Ideally the class teacher will have made a live model prior to the lesson, to show the children, modelling the use of cardboard corners to reinforce the structure. Allow chn time to look over structure and arrive at their own conclusions about how the rigid form has been created.</p> <p>Q: What technique have I used to reinforce the joins of my frame? Q: What materials have been used?</p> <p>Leave design teams to consider this technique and let them decide upon whether they will employ this technique or to try and devise their own..</p> <p>Glue guns can be used by Year 4 - class teacher to demonstrate safe use of glue gun. HEALTH & SAFETY - Enforce glue gun safety warning - hot glue and metal will burn, so not to touch with fingers. Glue guns must be placed carefully on paper which will catch drips from the metal nozzle. Glue guns do not cause serious burns, if used safely. Glue guns must be turned off when not in use. Run glue-covered fingers under cold tap and send to Medical, if burn occurs.</p>

Key Vocabulary for the lesson	Design criteria, natural, structure, innovative, 3D shapes, reinforce, consumer, target audience, 3D shapes, permanent join
Curriculum Links	History
Resources	Card, toothpicks, lolly sticks, straws, pipe cleaners, glue guns , glue gun sticks, PVA glue, glue spreaders,

Lesson 5 & 6

Kapow Lesson	L4 Pavilion cladding
Learning Intention	To apply measuring and cutting techniques to assemble components to make my cladding.
SOLO SC: Uni- Structural <i>Bronze</i>	I can identify the materials and appropriate tools I will need.
SOLO SC: Multi- Structural <i>Silver</i>	I can combine and weave materials, for a purpose.
SOLO SC: Relational <i>Gold</i>	I can apply measuring and cutting techniques to assemble components to make my cladding.
SOLO SC: Extended Abstract <i>Platinum</i>	I can perform accuracy in my measuring and cutting.
Activity (What will the children do to demonstrate their understanding of the LI?)	<p>Chn will make the cladding for their frames, in these sessions.</p> <p>Chn will be selecting appropriate tools and materials (including ones specified in their materials list from previous lessons), to join and combine these components to create cladding for their frames. Chn will refer to their sketchbook designs throughout this lesson, annotating any design changes they make along the construction journey.</p> <p>Chn will work in design construction teams to build and apply their cladding. Chn will be given minimal class teacher support.</p> <p>Encourage chn to test their product's rigidity through the task.</p> <p>Teacher must circulate and pose questions about construction decisions to enthuse the use of technical vocabulary and for chn to openly discuss their thought processes and how their design meets the design criteria, so that the final product will meet the design brief.</p> <p>Refer back to the design brief.</p>

	<p>Recall Kapow teacher video: L4 Pavilion cladding - to create a variety of cladding, to ultimately meet the aesthetic design criteria</p> <p>Some chn may still be completing their frame structures. This is okay as chn will be working at their own pace and overcoming construction issues.</p> <p>HEALTH & SAFETY - Enforce glue gun safety warning - hot glue and metal will burn, so not to touch with fingers. Glue guns must be placed carefully on paper which will catch drips from the metal nozzle. Glue guns do not cause serious burns, if used safely. Glue guns must be turned off when not in use. Run glue-covered fingers under cold tap and send to Medical, if burn occurs.</p> <p>Unless highly necessary, glue guns should only be required to construct the frame - not decorative cladding or other aesthetic features.</p> <p>This can be used as a discussion point - Q: When joining materials, what part of the product would require the use of the glue gun? Which parts of the product do not require the use of a glue gun?</p>
Key Vocabulary for the lesson	Cladding, Design criteria, structure, innovative, 3D shapes, natural, reinforce
Curriculum Links	History
Resources	Card, toothpicks, lolly sticks, straws, pipe cleaners, glue guns , glue gun sticks, PVA glue, glue spreaders, decorative materials for cladding ideas (card, wool, other), scissors.

Lesson 7

Kapow Lesson	L6 - Evaluate my design
Learning Intention	To present and evaluate my pavilion to the class by discussing the process of designing and making the product.
SOLO SC: Uni- Structural <i>Bronze</i>	I can identify what went well with my finished product.
SOLO SC: Multi- Structural <i>Silver</i>	I can describe what went well and what I must improve.
SOLO SC: Relational <i>Gold</i>	I can present and evaluate my pavilion to the class by discussing the process of designing and making the product.
SOLO SC: Extended Abstract <i>Platinum</i>	I can reflect upon the design process and discuss what designers must consider when creating a product.

<p style="text-align: center;">Activity</p> <p>(What will the children do to demonstrate their understanding of the LI?)</p>	<p>Chn will be evaluating their own products and design process as well as providing feedback to their peers in this lesson.</p> <p>Tell the chn that they will be having their own gallery exhibition in school. Have their products ready on their tables for their gallery walk.. Ask the chn to have some reflecting time and think about 3 things they like about their product and 2 things they would like to improve. Have a class discussion about this and ask chn what they would do differently next time. Ask chn to present their work to the class and discuss their feedback, this could be a good time for a Q&A session to allow the chn to feel like a designer and talk about their design and making process.</p> <p>Ask chn to stand up with a whiteboard and pen and walk around different tables for their gallery walk. They must now pick at least 3 pavilion structures they like and why they like them (encourage chn to use technical vocabulary). They must then respectfully give suggestions of improvement to 1 person (use this sentence frame to help chn when giving back critical feedback:</p> <p>I really like the way you used _____ to create your pavilion structure. In the future I think you should _____.</p> <p>Ensure photos of the final pavilion structures are printed and stuck into sketch books, ask chn to now write down 2 or 3 things that went well and what they need to improve in the future. This could be feedback that they received from their peers.</p> <p>If time, chn could test the strength of their pavilion structures by adding different weights onto the structures. This can then lead onto further discussion about the strength of different materials and any feedback can be added into sketchbooks.</p>
<p>Key Vocabulary for the lesson</p>	<p>Evaluate, reflect, design, process</p>
<p>Curriculum Links</p>	
<p>Resources</p>	<p>Pavillion finished product, photo of finished product, sketch books, pencils</p>

Lesson 7

<p>Assessment Think! Question</p>	<p>'The emotions in my art would be the opposite, if I had chosen the complementary colour to the hue that I have used.'</p>
<p>Tasks</p>	<p>See lesson outline above.</p>
<p>Key Vocabulary for the lesson</p>	
<p>Curriculum Links</p>	

Resources