

Medium Term Plan: Supporting Implementation of LTP/Progression Grid

<p>Subject: DT – Free-standing structures Year: 1 (KS1)</p> <p>NC/PoS:</p> <ul style="list-style-type: none">- Design purposeful, functional, appealing products for themselves and other users based on design criteria- Generate, develop, model and communicate their ideas through discussion and annotated sketches.- Select from tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately.- Select from and use a wide range of materials and components, including construction materials, according to their characteristics- Explore and evaluate a range of existing products- Evaluate their ideas and products against design criteria- Build structures, exploring how they can be made stronger, stiffer and more stable
<p>Prior Learning (what pupils already know and can do)</p> <ul style="list-style-type: none">- Know how to use basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card.- Know of different methods of joining card and paper – glue and tape.- Know how to use various construction materials.- Know how to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces.- Know how to join construction pieces together to build and balance.- Know about the needs of different animals from science – food, water, oxygen, shelter.- Children have visited Knowsley Safari Park and have seen the different types of enclosures and have experienced being a visitor - one of the intended users.
<p>End points (what pupils MUST know and remember)</p> <ul style="list-style-type: none">- Know how to design a structure and can explain the user and purpose. For example: an animal enclosure for people to visit.- Know how to draw an annotated sketch of their free-standing structure and can label it with materials.- Know how to select from PVA glue, glue sticks and scissors to cut and join materials (card and cardboard).- Know how to name free-standing structures: Eiffel tower (European. More familiar example) and The Burj Khalifa in Dubai (tallest example)- Know how to discuss the different types of animal enclosures – penguins have to have water to swim in and land, lions need high fences so they don't jump out, giraffes need trees to eat from.- Know if their structure is suitable for the intended user and purpose. They can offer a way to improve their structure with some guidance.- Know how to strengthen a structure using stronger materials, like card instead of paper or lolly pop sticks instead of cardboard.
<p>Key Vocabulary</p> <p>Free-standing structure, framework, strengthen, user, purpose, appeal, evaluate</p>
<p>Session 1:</p> <p>Evaluating existing products</p> <ul style="list-style-type: none">- Discuss definition of a free-standing structure and framework- Look at and research free-standing structures, Eiffel tower and The Burj Khalifa in Dubai (tallest example)

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- Explore zoo enclosures, link back to Knowsley safari park visit in the autumn term. Consider the user (both visiting user and permanent resident (animal)), purpose and appeal of the enclosures.
- Consider the zoo keeper and how they will look after the animals and feed them.
- Moral – Discuss the positives and drawbacks of having animals in zoos.
- Rule of law – Discuss the rules for keeping animals both at home and at zoos.

Vocab: Free-standing structure, framework, user, purpose, evaluate

Session 2:

Practising skills

- Practise assembling, joining and combining materials and components together using a variety of methods – glue, tape, string etc
- Explore making their structures more stable and able to withstand greater loads: explore the use of paper vs card vs cardboard vs wood (like lolly pop sticks.)
- Know how freestanding structures can be made stronger, stiffer and more stable – fold the card, reinforce with cardboard or lolly pop sticks.

Vocab: Free-standing structure, framework, strengthen

Session 3:

Designing

- Create a design criterion that considers the user, purpose and appeal.
- Generate ideas based on simple design criteria and their own experiences, explaining what they could make: animal enclosure
- Develop, model and communicate their ideas through talking and annotated sketches.
- Children receive a message from the zoo requesting the children create a prototype of an animal enclosure for a new animal that is joining the zoo (elephant, penguin, monkey, lion)
- Children's design to be done as an aerial view (geography link)

Vocab: Free-standing structure, framework, strengthen, user, purpose, appeal, evaluate

Session 4:

Making – DT consultant to supply high quality materials and support for this session.

- Plan by suggesting what to do next.
- Select and use tools, skills and techniques, explaining their choices.
- Select new and reclaimed materials and construction kits to build their structures – paper, card, cardboard, lolly-pop sticks, straws etc. (children may choose to use their own resources from home to make their enclosure unique/more suitable)
- Use simple finishing techniques suitable for the structure they are creating e.g. the penguin enclosure may have a clear window to look through.
- Resilience – during the entire making process, we discuss keeping on trying and never giving up even if the task gets tricky.

Vocab: Free-standing structure, framework, strengthen, user, purpose, appeal

Session 5:

Evaluating

- Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.
- Consider if it is appealing.
- Honesty – during the evaluation stages discuss being honest with ourselves (self-reflection) and others to ensure we can improve ourselves and our work.
- Evaluate: How has the free-standing structure been stabilised?

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- Functionality: How does the enclosure appeal to the users (animal and zoo visitor)?
- Honesty – during the evaluation stages we discuss being honest with ourselves (self-reflection) and others to ensure we can improve ourselves and our work

Vocab: evaluate

Future learning this content supports:

LKS2 – Shell structures

UKS2 – Frame structures