| Our Values | Enjoy learning | Try our best | Make good choices | Respect each other & our surroundings | Work together | Celebrate our successes |
|---|---|---|---|---|---|---|
| | learn | try | choices | respect | together | success |

## D&T MEDIUM TERM PLANNING -

| **Year Group:** Y2 | **TERM:** Aut 1 | **Theme:** Around the World |
|---|---|---|

**National Curriculum:** Ensure pupils develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world; build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users; critique, evaluate and test their ideas and products and the work of others.

| **Context:** - | **Concepts:** | **Vocabulary:** |
|---|---|---|
| Explain the use of wheels and axels to make an object move. Explore and use mechanisms, wheels and axels.<br>Explore and evaluate a range of existing products.<br>Make an aeroplane with moving parts – link with location, location, location topic.<br>Explore and evaluate different aeroplanes from old and new. | Product, construction, materials, evaluate, purpose, mechanisms. | Design, wheels, axles, aeroplane, mechanisms, evaluate, moving parts, old, new. |

**Prior Knowledge:**

- Children know how to generate their own design ideas and show them through drawings.
- Children know how to explain the tools that they used to attach materials together
- Children know how to successfully use a range of tools and equipment to cut, shape, join and finish their designs
- Children know how design a product following a given brief and evaluate to ensure their product is fit for purpose.

**Future Knowledge:**

- Children will be able to use a range of materials to create a purposeful product
- Children will be able to create a moving product.
- Children will be able to evaluate their own and their peer's product to check it meets the design brief

**End points /by the end of this unit pupils will…**

Children will be able to understand why there is a brief for a product. Children will be able to explore and evaluate a range of existing products and to use that knowledge to design their own aeroplane. Children will be able to follow a brief to design a moving aeroplane using wheels and axels using their historical knowledge of vehicles from the past and present. (History link)

**Lesson Number 1**

**Key learning:**
Children understand what characteristics make a good set of wheels and axles.

**Concepts:**
Product, materials, evaluate, purpose, mechanisms.

**Success Criteria:**
Explore and investigate a range of wheels and axles to know what characteristics make a good set of wheels and axles.

**Suggested resources:**
WAGOLL

Dowels

Washers (rubber bands, pipe cleaners, cello tape)

**Introduction:**
Explain the use of wheels and axels to make an object move.

**Direct teaching**
Ask the children to explore and investigate a range of wheels and axles to gain an understanding of what characteristics make a good set.
Discuss similarities and differnces between old and new vehicles.

**Activity**
Children explore and use mechanisms, wheels and axels.
Children explore and evaluate a range of existing products.
Children explore and evaluate different vehicle from old and new.

**Key Questions**
What differences/ similarity have you observed between the different wheels and axels?
What characteristics make a good set of wheels and axels?

**Challenge:**
**Adaptive teaching for SEND:**

**Vocabulary:** wheels, axles, vehicle, mechanisms, evaluate, moving parts, old, new

<table>
<tr><th colspan="3">Lesson Number 2</th></tr>
<tr><td>Key learning:<br>Children create their own wheels and axles.</td><td>Concepts:<br>Constrcuction, product, materials, evaluate, purpose, mechanisms.</td><td rowspan="2">Introduction:<br>Recap on previous findings. What characteristics make a good set of wheels and axles?<br><br>Direct teaching<br>Ask the children to use their prior knowledge to design and create their own set of wheels and axles.<br><br>Activity<br>Use a range of materials, tools and techniques to create your own wheels and axles.<br>Discuss findings of previous investigation to inform your product design<br><br>Key Questions<br>What materials can you use to create your product?<br>Why did you pick those materials/ tools?<br>Where would you put the hole in the wheel for the axel?<br>How big do the wheels/ axels need to be?<br><br>Challenge:<br>Adaptive teaching for SEND:</td></tr>
<tr><td>Success Criteria:<br>Explore and investigate a range of wheels and axles to know what characteristics make a good set of wheels and axles.</td><td>Suggested resources:<br>Dowels<br>Washers (rubber band, pipe cleaners, celoo tape…)<br>Hole punchers<br>Strws<br>Cocktail sticks<br>Cotton buds<br>Lids<br>Card, cardboard paper</td></tr>
<tr><td colspan="3">Vocabulary: Design, wheels, axles, vehicle, mechanisms, evaluate, moving parts, old, new</td></tr>
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<tr><th colspan="3">Lesson Number 3</th></tr>
<tr><td>Key learning:<br>Children design their own vehicle based on their new knowledge of wheels and axles</td><td>Concepts:<br>Constrcuction, product, materials, evaluate, purpose, mechanisms.</td><td rowspan="2">Introduction:<br>Recap on previous findings.<br><br>Direct teaching<br>Encourage children to generate own design ideas and to think of which tools and resources to respond best to the brief<br><br>Activity<br>Children use the TASC wheel to design their own moving vehicle.<br>They choose which material, tools and resources they will need to best respond to the brief.<br>Children discuss their ideas with their peers.<br><br>Key Questions<br>What have you found out about wheels and axels in previous sessions?<br>What tools and resources will you need to respond to the brief?<br>Can you communicate ideas with your peers?<br><br>Challenge:<br>Adaptive teaching for SEND:</td></tr>
<tr><td>Success Criteria:<br>Use previous knowledge to design a moving vehicle that uses wheels and axles</td><td>Suggested resources:<br>TASC sheet<br>Pencil<br>Colouring pencils</td></tr>
<tr><td colspan="3">Vocabulary: Design, wheels, axles, vehicle, mechanisms, evaluate, moving parts</td></tr>
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| Lesson Number 4 | | |
|---|---|---|
| **Key learning:**<br>Children make their own moving vehicle and evaluate their product | **Concepts:**<br>Constrcuction, product, materials, evaluate, purpose, mechanisms. | **Introduction:**<br>Recap on previous findings.<br><br>**Direct teaching**<br>Encourage children to use a range of tools and equipment to cut, shape, join and finish their designs.<br>Children to evaluate their aeroplane to ensure their product is fit for purpose.<br><br>**Activity**<br>Children use their TASC sheet to create their own moving vehicle.<br>They use a range of tools and equipment to make their prouct.<br>Children evaluate and review their finished product.<br><br>**Key Questions**<br>What equipment do you need?<br>What resources do you need to make your aeroplane?<br>Is your product fit for purpose?<br>Have you responded to the brief?<br><br>**Challenge:**<br>**Adaptive teaching for SEND:** |
| **Success Criteria:**<br>Use wheels and axles knowledge to create a moving vehicle | **Suggested resources:**<br>TASC sheet<br>Plastic bottle<br>Cardboard bottle<br>Glue<br>Cello tape<br>Masking tape | |
| **Vocabulary:** Design, wheels, axles, vehicle, mechanisms, evaluate, moving parts | | |