Key Stage 1: Design and Technology

Term: Autumn 2022 - Summer 2023

National Curriculum: Design and Technology

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to:

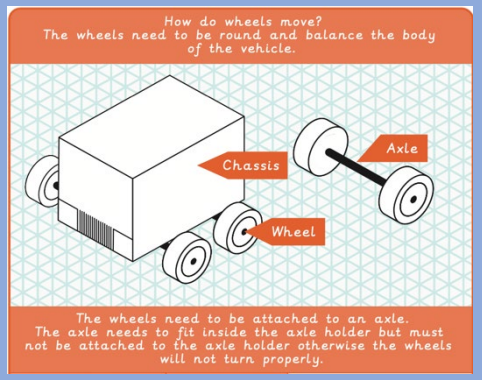
Design:

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make:

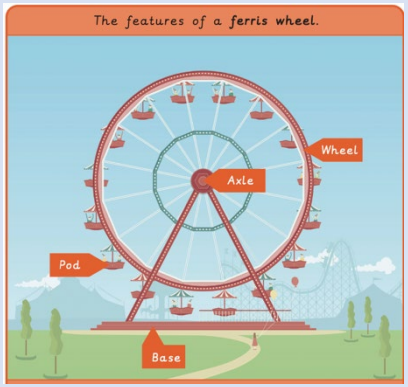
- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

Topics

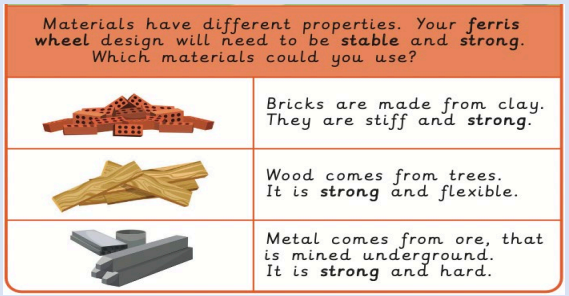


Mechanisms - Wheels and Axles

Food - A Balanced Diet



Mechanisms - Fairground Wheels



Key Vocabulary

Axle - a bar or shaft on which a wheel or wheels turn.
Chassis - the frame that supports the body and engine in a vehicle.
Diagram - a drawing or plan that shows the parts of something or how the parts work together.
Dowel - a peg or pin that is placed into corresponding holes in two pieces of wood in order to fasten them together.
Equipment - things made, or used, for a particular activity.
Mechanism - the whole or parts of a machine, mechanical system, or device.
Wheel - a round frame that turns on the axle. Wheels are found on cars, trucks, bikes, wagons and other things.
Balance - a state in which opposite forces are equal.
Diet - the food and drink usually eaten and drunk by a person or animal.
Carbohydrate - foods, such as breads, potatoes, and grains, that contain high amounts of carbohydrates, which are compounds made of carbon, hydrogen, and oxygen that are found mainly in plants. The human body uses carbohydrates as a ready source of energy.
Dairy - food made from milk or having to do with milk products.

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- select from and use a wide range of materials and components, including
- construction materials, textiles and ingredients, according to their characteristics

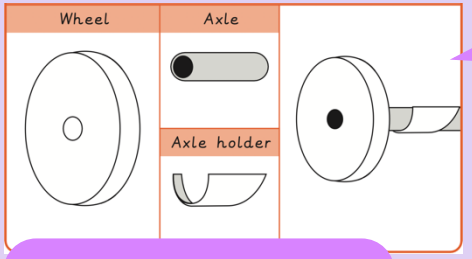
Evaluate:

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria Technical knowledge
- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Technical knowledge:

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Key Questions



How do wheels move?

Can we use our designs to make a model vehicle?

What is hidden in our food?

Can you make a healthy lunch?

Can you design a Ferris wheel?

Would you change anything about your Ferris wheel?

Key Vocabulary

Fruit - the part of a plant that has seeds and flesh, such as apple or strawberry. Most fruits are sweet and can be eaten raw.
Ingredients - one of the parts of a mixture.
Oils - any one of the greasy liquids that come from minerals, animals, plants or chemicals. Oil can be dissolved in alcohol, but not water.
Sugar - a sweet substance in a crystal form that comes mainly from sugar cane and sugar beets. Sugar is used to flavour, preserve, and ferment food.
Protein - a substance that is made up of nitrogen, carbon, oxygen, hydrogen, and possibly other elements. Proteins are found in all living things and are a necessary part of life processes.
Vegetable - a plant or part of a plant, such as carrots, beans, or lettuce, that is used for food.
design - to make or draw plans for the structure or form of.
Ferris wheel - a ride at a carnival or amusement park made of a very large upright wheel with seats hanging from the rim. A motor turns the wheel while people sit in the seats.
Pod - the seats of a Ferris Wheel
Frame - a structure made of parts that are joined together and that supports a larger object.

Key Stage 1: Design and Technology **Term: Autumn 2022 - Summer 2023**

Topic: Mechanisms - Wheels and Axles	**Term: Autumn 2023**
1	**How do wheels move?** Learning: To understand how wheels move.
2	**What is not working and how can we fix it?** Learning: To identify what stops wheels from turning.
3	**How does a wheel work and how can this knowledge help our vehicle design?** Learning: To design a moving vehicle.
4	**Can we use our designs to make a model vehicle?** Learning: To build a moving vehicle.
Topic: Food - A Balanced Diet	**Term: Spring 2023**
1	**What is hidden in our food?** Learning: To know what makes a balanced diet.
2	**What can you taste?** Learning: To taste test food combinations
3	**Can you design a healthy lunch?** Learning: To design a healthy wrap
4	**Can you make a healthy lunch?** Learning: To make a healthy wrap
Topic: Mechanisms - Fairground Wheel	**Term: Summer 2023**
1	**Can you design a Ferris wheel?** Learning: To explore wheel mechanisms and design a wheel
2	**Which materials do you need to build a Ferris wheel?** Learning: To select appropriate materials
3	**Can you use your design to build and test your Ferris wheel?** Learning: To build and test a moving wheel
4	**Would you change anything about your Ferris wheel?** Learning: To make and evaluate a structure with a rotating wheel