Beech Hill Primary School Knowledge Organiser

Topic: Mechanisms	Year group	Term
Wheels and Axels	Year 2	Summer 1 6 sessions

Background knowledge

The **wheel and axle** is a machine consisting of a **wheel** attached to a smaller **axle** so that these two parts rotate together in which a force is transferred from one to the other.

What should I already know?

Wheels can be added to an object to make it move or roll along.

You can make things move by connecting pieces together eg. Levers and sliders (Y1)

National Curriculum Objectives / Key Skills

- **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.
- **Select** from and use a range of tools and equipment to perform practical tasks,
- **S**elect from and use a wide range of materials and components according to their characteristics
- **Explore and use mechanisms, (sliders, levers, wheels and axles) in their products.**
- **E**xplore and evaluate a range of existing products
- •**Evaluate** their ideas and products against design criteria

- I can evaluate existing products to understand how they work.
- I can think about the purpose and audience when I come up with my design.
- I can think of an idea and plan what to do next
- I can use my ideas to make something that moves using wheels or axels.
- I can make informed choices about tools and materials
- I can join materials in different ways (glue, tape, fasteners)
- I can check if my design is suitable for the purpose

The Journey

1. WALT: Understand how wheels and axels work. Exploring these mechanisms through existing products.
2. WALT: Make a wheel and axel mechanism. Model how to make the mechanism. Children experiment with the wheels and axels, draw and label a picture of it.
3. WALT: Design a moving product- Design a moving toy for a child, discuss the materials used and how they will put it together.
4. WALT: Make wheels and axels to make a moving product- Begin to make the product. Model making the wheels and axels again
5. WALT: Make wheels and axels to make a moving product
   Complete making the product, decorate and test?- take photos
6. WALT: Evaluate my product

Model identifying things that worked really well, and things that they would change next time to make it better.

Outcomes

An overview of what children will know / can do

Working towards: I follow instructions and work with support to make a wheel and axel mechanism.

Expected: I can make a wheel and axel mechanism to make a product move

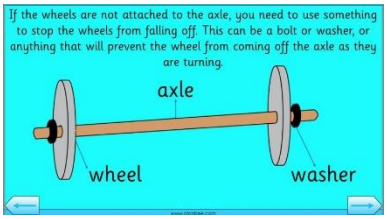
Exceeding: I can make an appealing moving toy that is finished well.

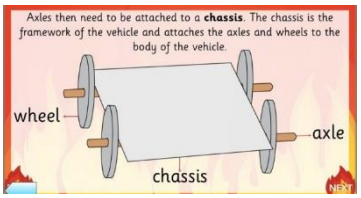
Key Vocabulary

Axel- The **wheel** is the round circle and the **axle** is the rod that goes right through the very center of the **wheel** to help it move and stay in place.
Rotate- spin round
Chassis- the framework being carried by the wheels and axel.

Material- What you choose to make your levers and sliders out of.

Timeline / Diagrams





Key people / places

Assessment questions / outcomes

Can you tell me what an axel is?
Can you label this diagram?
Can you tell me what is wrong with this mechanism?
Were you happy with your moving toy?
What would you change?

Did it match your design?