Hallcroft Infant & Nursery School

Design & Technology Knowledge Organiser

Spring 1 - Year 2

Mechanisms- Wheels and Axels

What we already know, remember and can do:

- That a type of mechanism is a side-to-side slider or an up-and-down slider and can determine what movement the mechanism will make.
- Clearly label drawings to show which parts of their design will move and in which direction
- Make a picture that meets the design criteria, with parts that move purposefully as planned.
- Evaluate the main strengths and weaknesses of their design and suggest alterations

	Learning Objective	What will be known and remembered (Substantive)	What will be… (Disciplinary)	Revisited Vocabulary	New Vocabulary
1	***Learning Objective*** *I can understand how wheels move.*	✓ To know that wheels need to be round to rotate and move. ✓ To understand that for a wheel to move it must be attached to a rotating axle. ✓ To know that an axle moves within an axle holder which is fixed to the vehicle or toy. ✓ To know that the frame of a vehicle (chassis) needs to be balanced.	✓ Testing wheel and axle mechanisms, identifying that a wheel needs an axel in order to move.	• wheel	• axle • axle holder • diagram • mechanism

2	**Learning Objective** I can identify what stops wheels from turning.	✓ I know what stops a wheel from turning.	Testing wheel and axle mechanisms. Identifying what stops the wheels from turning.	• wheel	• equipment • axle • axle holder • mechanism
3	**Learning Objective** I can design a moving vehicle.	✓ To know some real-life items that use wheels such as wheelbarrows, hamster wheels and vehicles.	✓ Designing a vehicle that includes wheels, axles and axle holders, that when combined, will allow the wheels to move. ✓ Creating clearly labelled drawings that illustrate movement.	• wheel	• chassis • axel • axle holder • mechanism
4	**Learning Objective** I can build a moving vehicle.	✓	✓ Adapting mechanisms, when: ● they do not work as they should. ● to fit their vehicle design. ● to improve how they work after testing their vehicle	• wheel	• dowel • axle • axle holder • chassis • mechanism
	Future Learning: Mechanisms -Making a Moving Monster				

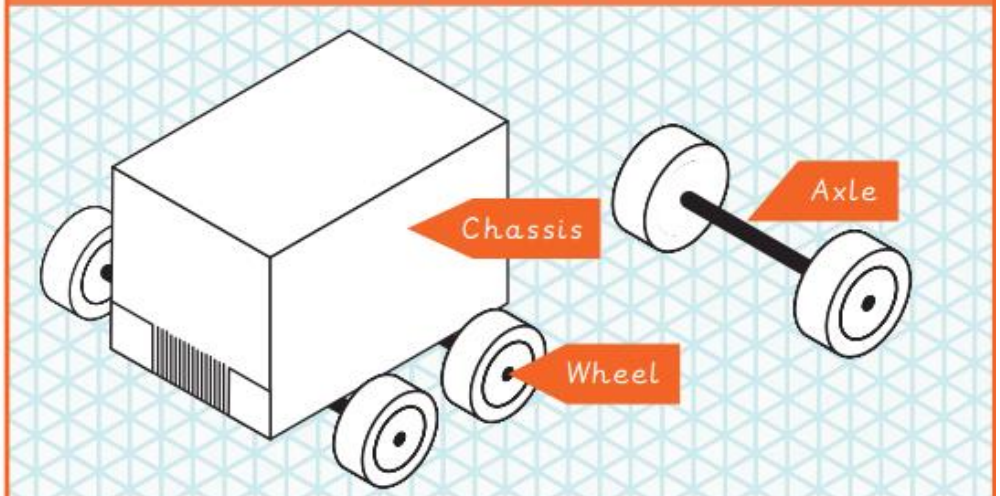
Mechanisms - Wheels and axles

Accurate	Neat, correct shape, size and pattern with no mistakes.
Axle	A long straight rod which connects to a rotating part (e.g. the wheels of a car).
Axle holder	The part of a mechanism which holds the axle steady.
Chassis	The body of a car.
Design	To make, draw or write plans for something.
Fix	To mend something so that it will work properly again.
Mechanic	A person who can build or mend vehicles or other machines.
Mechanism	Parts of an object that move together to make something work.
Model	A practise version that lets you test out your idea and see how it will look and work.
Test	To find out whether something works as it should.
Wheel	A circular object that turns round. It can be fixed to a vehicle like a car or bicycle to allow the vehicle to move easily over the ground.

Wheels are on many objects, not just vehicles.
Have you seen any of these?

Key facts

How do wheels move?
The wheels need to be round and balance the body of the vehicle.



The wheels need to be attached to an axle.
The axle needs to fit inside the axle holder but must not be attached to the axle holder otherwise the wheels will not turn properly.