



# Cycle A Autumn Term Year 1/2 DT Knowledge Organiser - Mechanisms

## Key Vocabulary

vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, design, make, evaluate, purpose, user, criteria, functional.

## Glossary

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 chassis is the frame or base on which the vehicle is built. A chassis should be strong and rigid enough to hold the vehicle.
Design	To make, draw or write plans for something.
Fix	To mend something so it will work properly.
Mechanism	Parts of an object that move together to make something work.
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.



A **Ferris Wheel** is one example of a wheel and axle mechanism in action. Normally, Ferris Wheels are **fixed to the axle**. **Force** is applied to the axle which makes it spin. This makes the giant wheel spin too!



**Roller skates** are another example of wheel and axle mechanisms. Obviously, there are four wheels here instead of one, and the wheels are much smaller. Often, the **wheels rotate free from the axle**, but sometimes they are fixed.



**Toy cars** (and real cars) use wheel and axle mechanisms to move. On toy cars, the **wheel is normally fixed to the axle, meaning both the wheel and axle spin**. This makes it really important that there is not too much friction on the axle, or the wheel will not move!

## Learning Objectives

- I can talk about existing products with wheels
- I can generate ideas and draw a design
- I can try out different wheel fastenings
- I can identify a wheel, an axle and a chassis
- I can create a moving vehicle
- I can evaluate my design against my product.

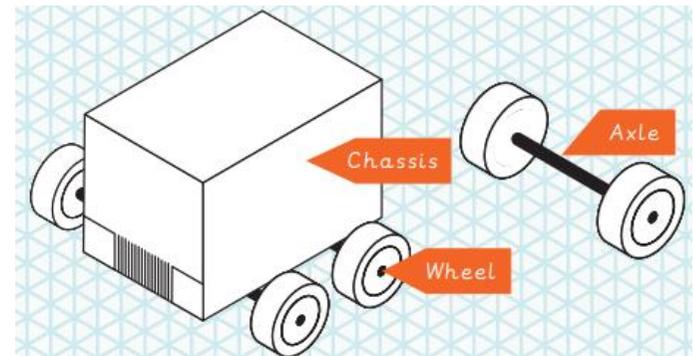
## (Sticky) Knowledge & Skills that I need to remember

Mechanisms are the parts that make something work.

- Mechanisms are all around us! Most objects that help us in our lives are made up of different mechanisms. Wheels and Axles are mechanisms that help things to move.
- Wheels are circular objects that roll on the ground, helping vehicles and other objects to easily move.
- Axles are rods that help wheels to rotate.
- The wheel can either rotate freely on the axle, or be attached to (and turn with) the axle.

### How wheels move:

The wheels need to be round and balance the body of the vehicle.



Wheel	Axle	
		The is attached to an axle, the axle is fitted inside the axle holder but must not be attached to the axle holder otherwise the wheels will not turn properly.

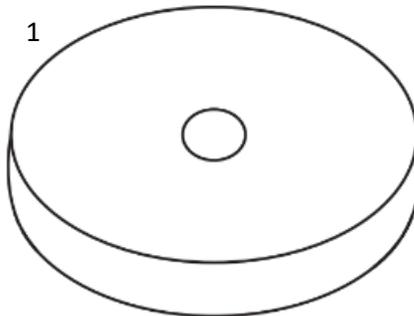
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## DT Quiz – Mechanisms Year 1-2



1) What is the name of this part?

- a. Axle
- b. Chassis
- c. Wheel



2) What is the name of this part?

- a. Chassis
- b. Axle
- c. Axle Holder



3) What is the name of this part?

- a. Chassis
- b. Axle
- c. Axle Holder

4) What is the car chassis?

- a. Boot
- b. Wheels
- c. Body

5) How do the Wheels spin?

- a. They are attached to the car chassis
- b. They are attached to the axle that rotates
- c. They spin on the axle holders

6) What do we mean by the word fix?

- a. To paint and decorate ready for sale
- b. To make, draw or write plans for something
- c. To mend something so that it will work properly again

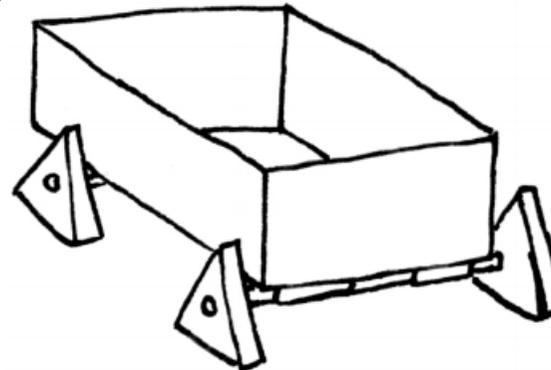
7) What does accurate mean?

- a. Quick, roughly cut, to test the design
- b. Neat, correct shape, size and pattern with no mistakes
- c. Larger than is needed so it can be cut down to size

8) What is wrong with this car?

- a. The wheels are not round
- b. The wheels are attached to the chassis
- c. There is no axle

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9) What is wrong with this car?

- a. There is no chassis
- b. The wheels are attached to the chassis
- c. There are no wheels

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