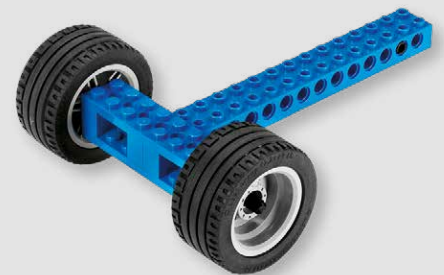


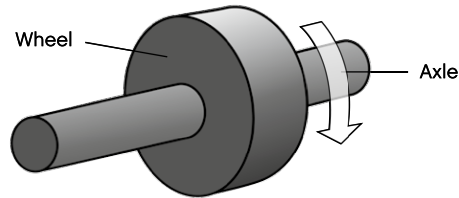
# Wheel and Axle

Student Worksheet



## Simple Machines: Wheel and Axle

Wheels and axles are usually circular objects, often a big wheel and a smaller axle, rigidly secured to one another.



The wheel and axle will always rotate at the same speed. Due to the bigger circumference of the wheel, the surface of the wheel will turn at a greater speed – and with a greater distance too.

Placing a load on a wheeled vehicle almost always reduces friction compared to dragging it over the ground. Wheels in science and engineering are not always used for transport. Wheels with grooves are called pulleys and wheels with teeth are called gears.

Common examples of wheels and axles are rolling pins, roller skates and pushcarts.



### Did you know?

The first constructed wheel found so far was made by the Sumerians some 5,600 years ago.

**B1**

**Build B1 book I, page 8 to 9**

Push the model along the table in a straight line.

Describe what happens.

Now try driving it in a zigzag pattern with sharp turns.

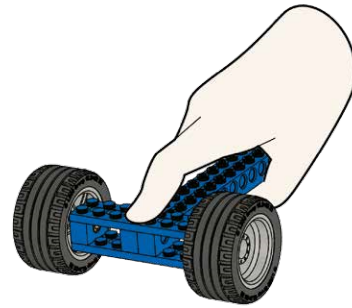
Describe what happens.

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**B2**

**Build B2 book I, page 10 to 11**

Push the model along the table in a straight line.

Describe what happens.

Now try driving it in a zigzag pattern with sharp turns.

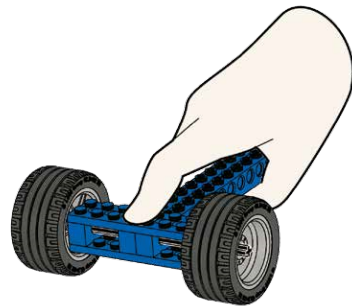
Describe what happens and compare with the model above.

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**B3**

**Build B3 book I, page 12 to 15**

Push the model along the table in a straight line.

Describe what happens.

Now try driving it in a zigzag pattern with sharp turns.

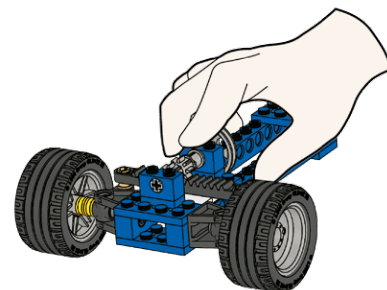
Describe what happens and compare with the models above.

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**B4**

**Build B4 book I, page 16 to 17**

Describe what happens and the movement of the universal joint when you turn the handle.

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