**Friction**

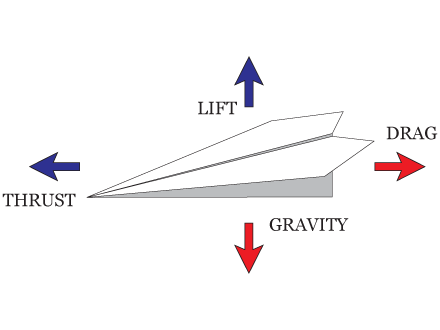
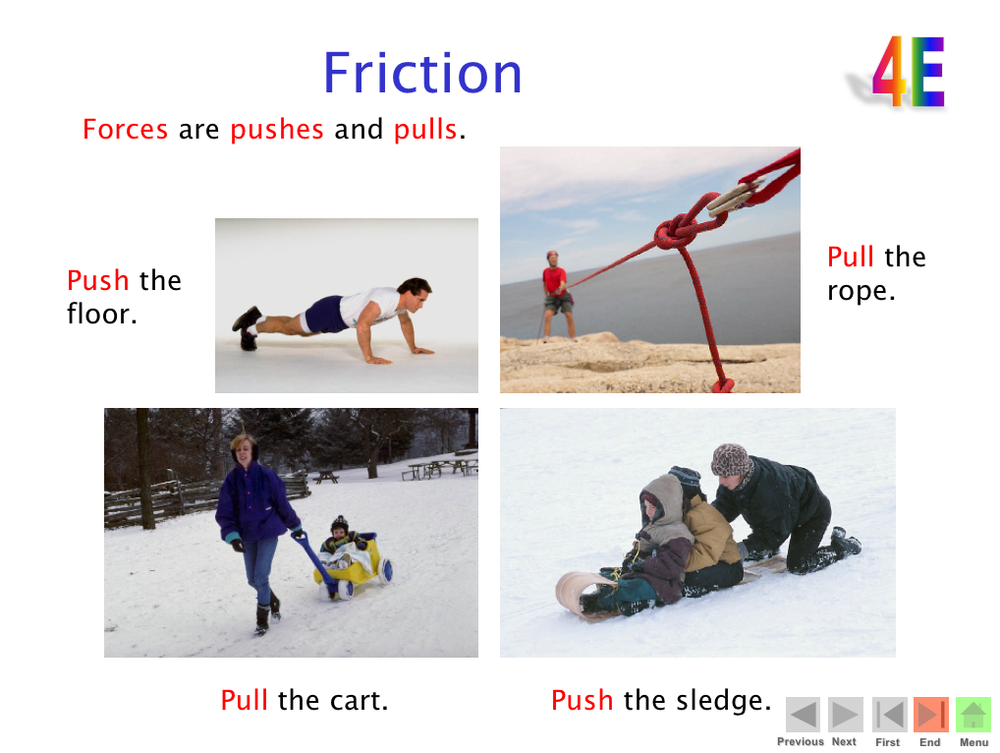
**Friction** is a **force** between two surfaces that are sliding, or trying to slide, across each other. For example, when you try to push a book along the floor, friction makes this difficult.

Friction always works in the direction opposite to the direction in which the object is moving, or trying to move. Friction always slows a moving object down.

The amount of friction depends on the materials from which the two surfaces are made. The rougher the surface, the more friction is produced. Friction also produces heat. If you rub your hands together quickly, you will feel them get warmer.

Friction can be a useful force because it prevents our shoes slipping on the pavement when we walk and stops car tyres skidding on the road. When you walk, friction is caused between the tread on shoes and the ground. This friction acts to grip the ground and prevent sliding.

Sometimes we want to **reduce** friction. For example, we use oil to reduce the friction between the moving parts inside a car engine. The oil holds the surfaces apart and can flow between them. The reduced friction means there is less wear on the car's moving parts and less heat produced.



## Air and water resistance

**Friction** occurs when objects move through water or air.

**Air resistance** is a type of friction between air and another material.

For example, when an aeroplane flies through the air, air particles hit the aeroplane making it more difficult for it to move through the air.

It's the same for an object moving through water. If you go swimming, there is friction between your skin and the water particles. This is known as **water resistance.**

**Name …………………………………………………………………………… Date…………………………………………**

**Comprehension**

1. **What type of text is this? …………………………………………………………………………………**
2. **Why are the words Friction and Air and Water resistance written in a larger font and underlined? ……………………………………………………………………………………………**
3. **Why are some words written in bold font?**

**…………………………………………………………………………………………………………………………….**

1. **Find one way to reduce friction (from the text). …………………………………………………………………………………………..**
2. **Complete the sentence. Friction occurs when two surfaces …………………………………………………………………………………………**
3. **Find an example from the text of when friction can be useful. ……………………………………………………………………………………………………………………………………………………………………………………………..**
4. **What makes it difficult for a plane to move through air? ………………………………………………………………………………………………**
5. **What are the two advantages of using oil in a car engine? Find examples from the text.**

**…………………………………………………………………………………………….**