HOLY FAMILY CATHOLIC PRIMARY SCHOOL

Science – Year 3 – Forces

1. To explore and define a push and pull force.	2. To investigate the contact force of friction.	3. To plan a friction experiment exploring how different materials affect the amount of friction between two objects.	4. To carry out the friction experiment and write simple results.

push	To apply a force to try and move an object away	 push
pull	To apply a force to try and move an object closer	 pull
force	A push or a pull	
contact force	A push or a pull that affects different objects which are touching	
friction	A contact force that is caused by one object being pushed across the surface of another	 friction
smooth	An even surface	 smooth
rough	An uneven surface	 rough
independent variable	The material on the surface of the ramp (that will change)	 independent variable
dependant variable	The distance that the car travels from the end of the ramp (what will be measured)	 dependant variable
control variables	The height of the ramp, the starting point of the car, the force that the car is released with and the type of car. (kept the same)	 control variables
data	Information collected, such as facts, information or numbers	 data
prediction	Using what you know to suggest what might happen in the future	 prediction

Force

Forces are **pushes** or **pulls**. They can make an object start or stop moving, change speed, change direction or change shape.

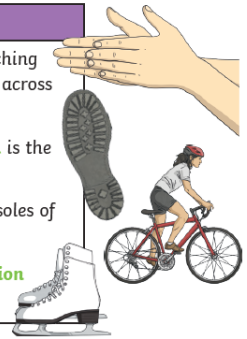
Friction

Friction is a type of **contact force**. It occurs between two touching surfaces that are either trying to move or are already moving across each other.

When you rub your hands together, you feel warmth. **Friction** is the **force** that is producing this heat.

Friction can be helpful. Bumpy surfaces, such as tyres or the soles of shoes, help to reduce the risk of slipping or skidding.

Sometimes, **friction** can be unhelpful. For example, more **friction** would make it harder for ice skates to glide on the ice.



Friction on Rough or Smooth Surfaces

The **rougher** the surface, the more **friction** that is produced. **Friction** is a **force** that makes it harder for objects to move, as it slows objects down. The **smoother** the surface, the less **friction** that is produced.

I **predict** that the **rough** surfaces will slow the car down because they are bumpy.