



Before you answer these questions, look over your summary sheets and the success criteria from this topic.

### 1. FORCES

- What are the two types of forces?
- What can forces do to objects?
- What is the name of the forces that acts downwards?
- What device is used to measure force?

### 2. FRICTION

- What is friction?
- Give an example of when friction is useful.
- Give an example of when friction is not useful.
- Try to explain why your hands heat up when you rub them together.
- What is friction due to moving air particles called?
- What is friction due to water called?

### 3. REDUCING FRICTION

- A car is designed to be 'streamlined'. What does this mean?
- Egyptians used to use wooden rollers to move large stones when building the pyramids. Why did they do this?
- Car's need oil to lubricate the moving parts inside them. Why is this?

### 4. MASS AND WEIGHT

- What is mass?
- What is weight?
- On which planet in the solar system would your weight be largest?
- How do you figure out the weight of an object?
- If an object on earth (which has a gravity of  $10 \text{ Nkg}^{-1}$ ) has a mass of 50kg, what is its weight?

## 5. SPEED

- Write down the equation to calculate the speed of an object.
- A car travels 5000 meters in 500 seconds. What speed is the car travelling at?
- A person runs around a 400m track in a time of 60s. What speed did the person run around the track?

## 6. PARACHUTES

- What is the name of the force that acts downwards on falling objects?  
(It's **not** gravity!)
- Parachutes are designed to increase the force that acts upwards on falling objects. What is this force called?
- For objects to travel at constant speed, do the forces need to be balanced or unbalanced?
- For objects to accelerate, do the forces need to be balanced or unbalanced?

## 7. SCIENCE SKILLS

- The speed of a car is measured at various times over its journey. The table of results is shown below:

<b>Time (s)</b>	0	5	10	15	20	25	30	35	40
<b>Speed (ms<sup>-1</sup>)</b>	0	2	4	6	6	5	4	3	2

Display this information as a line graph.

- The breaking distance of a car in different conditions is shown to the right.  
Display this information as a bar graph.

<b>Driving Conditions</b>	<b>Breaking Distance (m)</b>
Dry	15
Raining	23
Snow	35
Ice	47

- BMW redesigned the M2 so that it could drive even faster. To start with the car had a top speed of 155 mph. After redesign the car had a top speed of 168 mph.  
What is the increase in speed?
- 600 red cars were sold in 2019 and 2100 grey cars were sold.  
Show this as this simplest ratio of red cars: grey cars.