Force

11SCI - Mechanics

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Starter

Brainstorm situations where force is involved, things that cause force and how it can be used in a **Physics** context on the board!

Force

Force has lots of applications in our world! Everything from cars, to aeroplanes, tug-of-war, sports and even bio-mechanics!

Defining Force

Force is a **push** or a **pull** and is measured in **Newtons (N)**.

Forces have a size (1, 2, 3, 4) and a direction (left, right, up, down).

How Forces Act

Consider you sitting on your seat. What forces are acting upon you?

Draw a box to represent yourself, with arrows coming out of the box to represent the forces. Make sure to label them!

Force Diagram

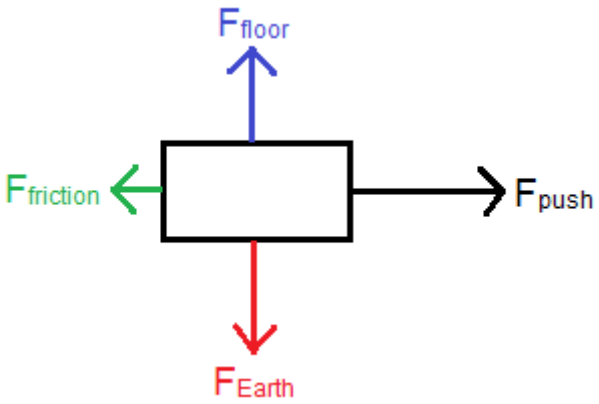

Figure 1: Force Diagram

Force Diagram

- The length of the arrow represent the **size** of the force
- The direction of the arrow represents the direction of the force
- Arrows should all be labelled with names and sizes if possible

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Balanced Forces

Think and discuss with the people around you:

Sitting on your chair, are the forces acting on you balanced or unbalanced? How do you know? What does it feel like?

Vertical and Horizontal Forces

- Vertical and horizontal forces are separate. They do not affect each other.
- We can *balance* them to find out the **net force** in the vertical and horizontal directions.
- If we compare them and they are the same, then forces are balanced. If they are different, forces are unbalanced.

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sciPAD Page 33-35