

What is a Force? Lesson Notes

A **force** is a **push or pull** that acts upon an object as a result of its **interaction** with other objects.

Two types of interactions:

- Contact interactions (objects are touching)
- Field interactions (gravity, magnetism, and electrostatics)

Strategy for identifying Contact Forces:

- Forces result when objects contact or touch other objects.
- To identify the existence of a force, consider what surrounding objects are being interacted with through contact. That is, ask: "What surrounding objects are being interacted with through contact?"

Example 1: A book is at rest on the table.

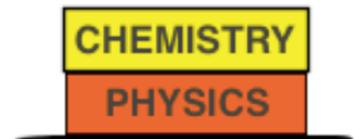


The interaction force pair is:

1. _____

2. _____

Example 2: A Physics book is on a desk. A Chemistry book is on top of it. Identify the forces on the Physics book.



The interaction force pair is:

1. _____

2. _____

Example 3: A book is sliding to the right across a desk.

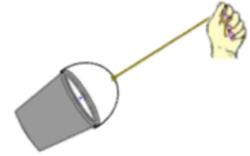


The interaction force pair is:

1. _____

2. _____

Example 4: A bucket is whirled in a circle using a rope.



The interaction force pair is:

1.

2.

Example 5: A student is doing a pull-up using a pull-up bar.



The interaction force pair is:

1.

2.

Strategy for Identifying Field Forces:

Analyze the physical situation and ask:

Is there a planet (or other very massive object), a magnet, or a charged object nearby?

Planet nearby? → Gravitational Force

Magnet nearby? → Magnetic Force

Charged object nearby? → Electric Force