

Unit 3 Chapter 1 Test Study Guide

What motion will the following actions cause? (assume no friction):

- Constant force applied to an object:
- Motion of an object after a quick push:
- Backwards force applied to a moving object:
- Perpendicular force (sideways force) applied to moving object:

Identify all forces acting on the following objects (include friction and drag when applicable). **Draw** and **label** force arrow diagrams for each situation.

- Boy on a cart after being pushed:
- A hockey puck after the puck is no longer in contact with the stick:
- A soccer ball after being kicked hits a net:
- A sailboat moving on the water is speeding up:

Draw a force arrow diagram representing balanced forces on a box. (Remember that force arrows represent both direction AND magnitude).

If a car is speeding up, what can we say about the forces acting on the object? Are they balanced? Why or why not? How do we know?

Draw a force arrow diagram representing a car that is slowing down. (Remember that force arrows represent both direction AND magnitude). Are the forces balanced?

Draw a force arrow diagram representing a car that is at constant speed. (Remember that force arrows represent both direction AND magnitude). Are the forces balanced?

Draw the direction of the force acting on an object that keeps moving in circular motion. Draw a second drawing of what would happen if there was a break in the circle.

What affect does increasing mass have on the acceleration of an object (assume equal force is applied)?

What affect does increasing force have on the acceleration of an object (assume equal masses)?

What two simple machines are used in a pair of pliers?

What three simple machines are used in a hand held can opener?

What three simple machines are used in a wheelbarrow? Draw it.

What do simple machines do to help get work done?

Why are compound pulleys rather than single pulleys used to raise heavy objects?

Draw a single pulley and a compound pulley.