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# Simulation & Webquest: Forces

## PART 1 Simulation

Directions: Go to http:/phet.colorado.edu  Play with Simulation  Phyics on left  Forces and Motion: Basics Simulation [[https://phet.colorado.edu/en/simulation/forces-and-motion-basics]](https://phet.colorado.edu/en/simulation/forces-and-motion-basics)

Select “Download”

* When the APP opens select “Net Force”
* Checkmark the “Sum Forces” and “Values” at the top right

## Net Force

1. Select one blue 50N person and a 50N red person. Move them up to the rope. Draw a Free Body Diagram with vector arrows, labels and a box below.

1. What is the sum of the forces and direction for problem #1? Explain.

1. Select one blue 150N person, 100N blue person, two 50N red people. Move them up to the rope. Draw a Free Body Diagram with vector arrows, labels and a box below.

1. What is the sum of the forces and direction for problem #3? Explain.

1. Select 5 people red or blue. Move them up to the rope. Draw a Free Body Diagram with vector arrows, labels and a box below.

1. What is the sum of the forces and direction for problem #5? Explain.

1. Explain how a Free Body Diagram allows you to solve force problems.

## PART 2

<http://www.darvill.clara.net/enforcemot/forces.htm>

1. **Friction tab** **(top left)**: click on the friction tab on the right and answer the questions below
	1. What is friction?
	2. What are the two main types of friction?
	3. What does friction depend upon?

*Watch and read the animation about fiction!!*

* 1. What is fluid friction?
	2. What does fluid friction depend upon?
	3. What is drag?
	4. What is a viscous liquid?
	5. What is terminal velocity?

*Click on the terminal velocity graph to watch what happens to the graph when the sky diver descends*

* 1. List 3 to 5 ways to reduce friction.
	2. List 3 to 5 ways to use friction to your advantage.