Check Your Understanding: How does an external force affect speed and direction?
***Forces and Motion* activity #1**

1. *Joe has just been promoted and is pushing a file cabinet down the hall to his new office. He begins by looking at the file cabinet and considering how to best go about his task (scene 1). He then begins pushing on the file cabinet, which, at first, does not move at all (scene 2). Eventually the file cabinet begins to slide across the floor, slowly moving towards Joe's new office.*

a. Draw all the forces you think are acting on the file cabinet in each scene.

Scene 1: Man not pushing	Scene 2: Man pushing but file cabinet not moving	Scene 3: Man pushing and file cabinet moving to right
		

b. Why do you think the file cabinet moves in scene 3 but not in scene 1 or 2?

2. *When Annette finishes her physics homework, she closes her book and shoves it (scene 1) to the other end of the table. The book slows down as it crosses the table (scene 2) until it eventually stops (scene 3).*

a. Draw all the forces you think are acting on the book in each scene.

Scene 1: Annette pushing book and book moving (to the right)	Scene 2: Book moving (to right) across table	Scene 3: Book stopped at end of table
		

b. Why do you think the book moves when Annette pushes it (scene 1)?

c. Why do you think the book continues to move when she takes her hand away from the book (scene 2)?

d. Why do you think the book eventually stops moving (scene 3)

3. *At the park, Emily is sliding into home plate. Inside the ice rink, Fran fell and is sliding across the ice.*
a. On the back of your paper, draw a picture of both Emily and Fran sliding.
b. Draw the forces you think are acting on Emily and Fran.
c. Describe what will happen to each one's speed and direction and explain why sliding on dirt different from sliding on frictionless ice.