

DESCRIBING FORCES

Use the resources on Mr. Hanna's website to complete the following assignment.

VOCABULARY:

- 1) FORCE -
- 2) NET FORCE -
- 3) UNBALANCED FORCES –
- 4) BALANCED FORCES –
- 5) APPLIED FORCE –
- 6) GRAVITY –
- 7) NORMAL FORCE –
- 8) FRICTION –

SHORT ANSWER:

- 9) How are forces described (two pieces of information)?

- 10) Of the four fundamental forces...
 - a. Which one is the strongest?

 - b. Which one is the weakest?

 - c. Which one is responsible for most of the “every-day” forces we observe (*such as pushing or pulling*)?

 - d. Which one is responsible for radioactive decay in atoms?

 - e. Which one is responsible for holding nuclei together (*keeping protons so close together despite their similar charges*)?

- 11) How do balanced forces affect motion? How do unbalanced forces affect motion?

- 12) Which objects exert a gravitational force on the objects around them?

- 13) What two variables affect the strength of the gravitational force between two objects?

- 14) If gravity is pulling down on you now as you are sitting on your seat, why aren't you falling down? (*include the concepts of balanced/unbalanced forces in your answer, as well as the forces responsible*)

15) What two variables affect the friction force between two objects?

16) Which direction does the friction force act compared to the motion of the object?

PRACTICE:

17) Draw a force diagram of a box resting (*not moving*) on the floor. What is the net force?

18) Draw a force diagram of the same box being slid across the floor at a **constant speed** (*be careful here...ask yourself, "Is the motion changing? What does that mean about the forces?"*). What is the net force?

19) Are the forces balanced or unbalanced in #17 and #18 above? How can you tell?

20) What would happen to the box in #18 if it was not experiencing balanced forces (*if the applied force pushing it forward was stronger than the friction force*)?