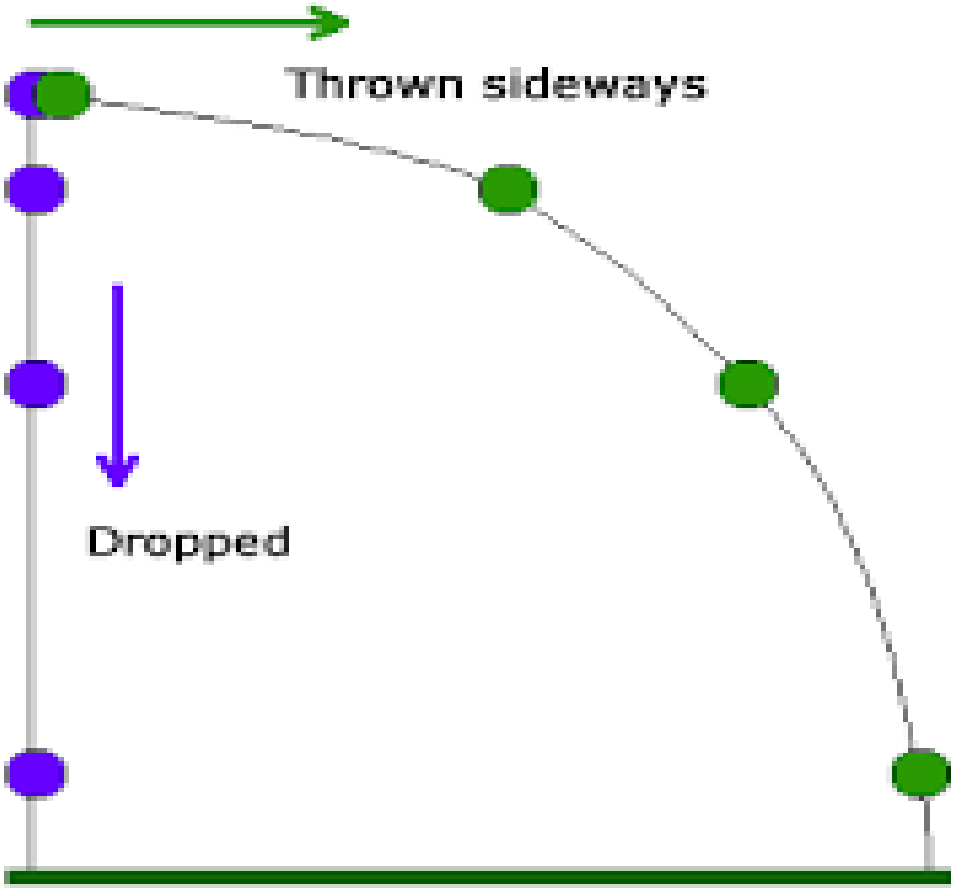
Chapter 3 Test Review Physical Science

Answer the following questions on a separate piece of paper. If you are working on a problem make sure to show your work to receive credit! If the answer requires units, make sure to include the unit.

1. What is the equation for momentum?
2. What is the unit for momentum?
3. What is the momentum of a person that has a mass of 75 kg and is running at a velocity of 1.22 m/s?
4. If a car runs into a semi and loses 5500 kg x m/s of momentum, then how much momentum does the semi gain?



5. In the picture above, which ball will hit the ground first? Explain your answer.
6. What are two differences between mass and weight?
7. If you travel in an airplane, does your mass change? If so …how?

8. Does your weight change as you travel in an airplane? If so …how?
9. Why do people sometimes hit the windshield in a car accident if they are not wearing their seatbelt? Use one of Newton's laws to explain your answer.
10. If an airplane pilot dropped an apple core from the cockpit of a plane 500 feet straight above you, would the apple hit you? Use one of Newton's laws to explain your answer.
11. If you were to run into a wall, you would bounce off. Why is this? Use one of Newton's laws to explain your answer.
12. What is the equation for Newton's second law?
13. Explain Newton's third law of motion.
14. What is Newton's first law in one word? What does that word mean?
15. If a person uses a force of 20 N to push a bicycle that has a mass of 11 kg, how quickly will the bicycle accelerate?
16. What is terminal velocity?
17. How can a skydiver change their terminal velocity, before they release the parachute?
18. If a force of 75 N is pushing to the right and is opposite to a force of 30 N, what is the net force and direction?
19. What is the difference between a balance and an unbalanced force?
20. What sort of a force is needed to cause acceleration?
21. What sort of a force will keep an object at a constant speed?
22. What is the rate of acceleration for gravity here on Earth?
23. Explain why gravity on the moon is less than on the Earth.
24. What force always tries to stop motion?
25. What type of friction is trying to be reduced by sloping windshields on cars?
26. How can you change sliding friction to fluid friction?
27. Why is there less friction on roller skates than just walking on flat shoes?
28. What is the type of force that holds a car to the road when moving around a curve on a road?
29. What actually causes the force that is mentioned in question 28?
30. What two force act on the moon to keep it in orbit around the Earth?
31. What created more friction on the highway…a car with three people riding in it, or a semi with one person riding in it? Give two reasons you chose this answer (Hint: there were three things studied in the friction lab we did in class).