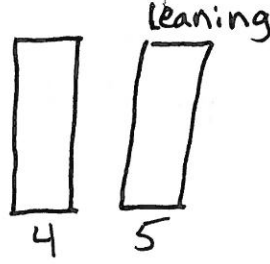
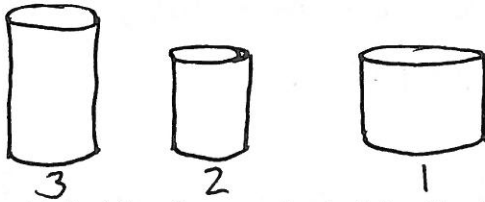
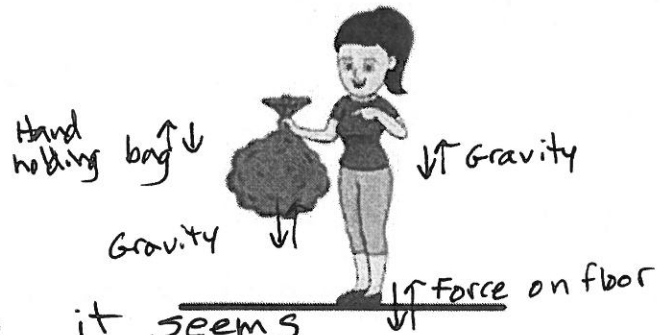


Physical Science Review for Test 1

1. Rank the items from most stable (1) to least stable (5)



2. Draw and label the force pairs in this situation (do not forget gravity...)



3. Describe Center of Mass The point where it seems like all of the mass of an object could be concentrated.

4. What is the name of the lead weight used by the Romans that points to the center of the Earth? Plumb Bob

5. What is a force? a push or a pull - can be touching or not

6. Which repair people get their name from the ancient Romans, and why?
Plumbum is Latin for lead. Romans had lead pipes. Romans that worked with lead pipes were plumbers.

7. What is meant when someone says that a door is plumb? What about level?
Plumb straight up and down
Level perpendicular to plumb, same height on both/all sides

8. Describe gravity on the Earth as compared to the moon.
Pull of gravity on the moon is much less ($\frac{1}{6}g$) than the Earth.

9. What are three types of forces that we discussed that can act at a distance?

- a. Magnetic
- b. Gravitational
- c. electrical

10. What is Gravitational Potential Energy? The energy stored in an object because of its height. Higher is more.

11. What is Chemical Potential Energy? The energy stored because of its chemical properties. wood, gasoline, Food, dynamite, etc

12. What is the name of the toy used to demonstrate collisions as it swings back and forth and it has 5 or 7 balls? Newton's Cradle

13. Unbalanced forces always cause a change in motion

14. What is friction and which direction does it act? a force that opposes motion. It always acts opposite to the intended motion,

18. Newton's First Law of Motion is also called the Law of inertia.

19. An object will remain in motion in a straight line, or at rest, unless there is an outside net Force acting on it. what is a net force?

20. Mass is a measure of an object's inertia and is measured in grams

21. An object is considered to be stable when its center of mass is over its base of support.

22. What is weight? the force that gravity has on a mass

23. How much pressure is there normally around us? 15 $\frac{lb}{in^2}$ ~~14.7 $\frac{lbs}{in^2}$~~

24. The pressure described in question 23 is called Atmospheric Pressure.

25. Newton's Third Law states: For every action force there is an equal, but opposite, reaction force. How does a table know how much to push back when you press on it?

26. The equation for pressure is $P = \frac{\text{Force}}{\text{area}}$

27. Calculate the area of a circle with a radius of 3 inches. (show work) $\frac{28.26 lb}{in^2}$ $\pi r^2 = 3.14 (3 in)^2 =$

28. A man weighs 175 lbs and is standing on a large book that is 14 inches tall and 11 inches wide.

What is the pressure under the 15 lb book? $1.23 \frac{lb}{in^2}$ $\frac{175 + 15 lbs}{14 \times 11 inch} = \frac{190 lbs}{154 in^2} = 1.23 \frac{lb}{in^2}$

29. Potential energy is the energy an object has based on its Position or condition. It is also the ability to do work

30. How is it that you can drink with a straw? Include pressure throughout your answer. Low pressure in mouth. High pressure pushes on surface of drink, water goes from the high area to the low.

31. In the activity with the syringe and the marshmallow, what did you have to do to get the marshmallow to get larger? Pull the plunger to make a low pressure area inside the syringe.

What was it about the marshmallow that caused it to get larger? it has air pockets that expand in the low pressure area.

32. Why did the balloon get larger in the bell jar?

We lowered the air pressure in the Bell Jar, since outside pressure was lower. Air in the balloon expanded.

33. List at least four things you have to do to make the tablecloth trick work. Lower use smooth surfaces; use objects that are stable; very fast pull on the tablecloth; no seams or wrinkles in tablecloth; use "dishes" that have lots of inertia/mass; keep "dishes" far from table edge.