Gravity is a force that pulls objects toward the center of the earth. If you dropped a tennis ball and a sponge ball at the same time, would one ball fall faster than the other?

Why or why not?

Try it and see. What happened?

Try the investigation with a long pencil and a short pencil. Did you get the same results?

Tie a paper clip to one end of a 30 cm piece of string. Tie the free end of the string to the center of a ruler. Stand 2 books about 25 cm apart on your desk or table. Set the ends of the ruler on the books so that the paper clip hangs down. Look at the position of the string and the paper clip. Make a sketch or picture showing what the system looks like in the space below. Now, hold one end of the ruler, and raise it about 10 cm above the top of the book. Observe the paper clip and draw a second picture showing how the system looks now.

1. In this passage, the word equilibrium means--
   ○ centered
   ○ gravity
   ○ forces
   ○ balanced

2. The best title for this passage would be
   ○ Objects
   ○ Center of Gravity
   ○ Science
   ○ Using Your Fingers
Objects have weight because gravity pulls them toward the center of the earth. The greater the pull of gravity on an object, the more it weighs. Use what you know about gravity to solve the problems below.

1. Bill, an astronaut, weighs 190 pounds on the earth. Because the force of gravity on the moon is less than that of the earth, Bill weighs about 32 pounds on the moon. How much more does Bill weigh on the earth than on the moon? Mark your answer.
   - 158 pounds
   - 162 pounds
   - 222 pounds
   - 232 pounds

2. An object on Jupiter weighs a little more than twice as much as the same object on Earth. If the object weighs 40 kilograms on the Earth, which is a reasonable weight for the same object on Jupiter? Mark your answer.
   - 38 kilograms
   - 50 kilograms
   - 362 kilograms
   - 94 kilograms

Imagine that you are on a planet with a much stronger gravitational pull than the earth. On the lines below write what would be hard for you to do. Could you walk? Run? Eat? Could birds fly? Could plants grow? Write down how your body might change to work well on the planet.