The Rapid Ruler and the Slowpoke Yardstick

Everyone knows that babies are likely to take a lot of tumbles when they are learning to walk. This is because they are learning how to control their bodies. Did you know that people's height has something to do with how fast they fall?

**What to do:** Begin by standing a ruler and a yardstick side by side with a few inches between them. Steady each of them with just the tip of your finger as shown in the illustration. If you don't have a ruler and a yardstick, two dowel rods or other straight pieces of wood will work perfectly.

Lean the ruler and yardstick forward just a tiny bit to make sure both of them will fall in the same direction. Be sure they both have the same amount of forward lean. Now let go.

**What happens:** The ruler will win the race to the ground every time. Try it and see! What you've just seen helps to explain why if a child and a taller adult start to fall forward at the same instant, the child will finish falling first. This also helps explain why babies sometimes seem to fall so fast.

**Why:** The center of the balance for the yardstick is higher than it is for the ruler. The farther that center of balance is from the ground the longer it will take the object to complete its fall. This does not mean that a high center of gravity makes an object steadier than one with a low center of gravity. Just the opposite! Automobile manufacturers try to keep the center of gravity as low as possible so that cars are less likely to tip over. And that's the reason big trucks and trailers are sometimes required to pull off the highway during high winds. Not only do they have lots of surface to catch the wind, but their center of gravity is high. They are, therefore, more likely to turn over than are cars with a lower center of gravity.

**YOU NEED**
- yardstick (1 m)
- 12 inch (30 cm) ruler