



You might be surprised to discover all the information that can be learned from a simple set of footprints. Footprints can tell detectives and investigators a lot more than just what size shoe a person was wearing. They can help investigators figure out the approximate height, weight, and walking pattern of a suspect. They can also show if someone was walking, running, or carrying a heavy object. Using this activity, you can learn how valuable footprints are in solving a crime. You'll measure the stride of several people of different heights and make a graph to decide if height and stride are related.

What You'll Need:

Flour
Meter stick or yardstick
Several volunteers of different heights
Stopwatch
Broom

Directions:

1. Find a flat, smooth space where you can spread out the flour. This may get a bit messy, so make sure that whatever area you choose is appropriate. Sprinkle the flour in an area about 2-feet wide by 12-feet long.
2. Mark a starting line and a finish line in the flour using your finger. The lines should be at least 10 feet apart. Use your yardstick or meter stick to measure the actual distance between the two lines. You'll need to know this distance to calculate the average walking speed of your volunteers.
3. Using the meter stick or yardstick, measure how tall your first volunteer is. Make sure he/she is wearing the shoes they'll wear for the experiment. Record the height.
4. Next, ask the volunteer to walk across the flour naturally so that there are at least three to four even footprints in the flour. While the volunteer is walking, use the stopwatch to time how long it takes to walk between the start and finish lines. Record this time next to the volunteer's height.
5. Divide the distance between the start and finish line by the time it took the volunteer to walk the distance. This will give you the average walking speed of the volunteer. For example, if your start and finish lines are 20 feet apart and it takes the volunteer 10 seconds to walk between them, your average walking speed is 2 feet per second.
6. Next, measure the distance between the volunteer's footprints in the flour. Measure from the toe of one foot to the heel of the next. Calculate the average distance between the footprints. This is your volunteer's "stride." Record this next to the walking speed.
7. Use the broom to smooth out the flour before the next volunteer walks. You may need to sprinkle more flour to cover up any open spots. Repeat steps 3-7 for each of your volunteers.