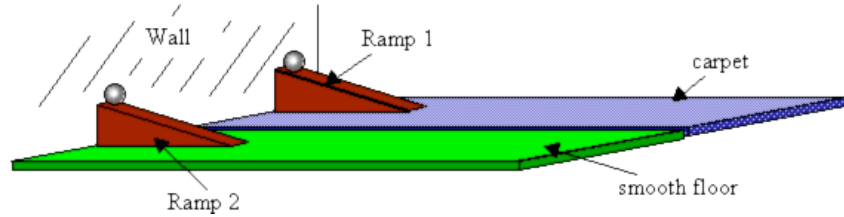


# Rolling marbles II

**This task is about fair testing.**

Follow the instructions below and then answer the questions that follow.



## Instructions

1. Find a place where there is a carpet and smooth floor beside each other, and set up your two ramps so they are even. They should both have the same slope.
2. Place the marble at the top of Ramp 1.
3. Let the marble go (do not push it).
4. Place a red sticky dot where it stops.
5. Repeat this 10 times, each time putting a red sticky dot where the marble stops.
6. Place the marble at the top of Ramp 2.
7. Let the marble go (do not push it).
8. Place a sticky blue dot where it stops.
9. Repeat this 10 times, each time putting a blue sticky dot where the marble stops.

a) What do you notice about the pattern of red and blue dots?

b) Complete the sentence by choosing the right word in the gap.

"A marble rolls further on a *rough* / *smooth* surface."

c) Look carefully at the smooth floor and the carpet. Why do you think the marble rolls further on one than the other?

d) Why is it fairer to roll the marble quite a few times for each test?

