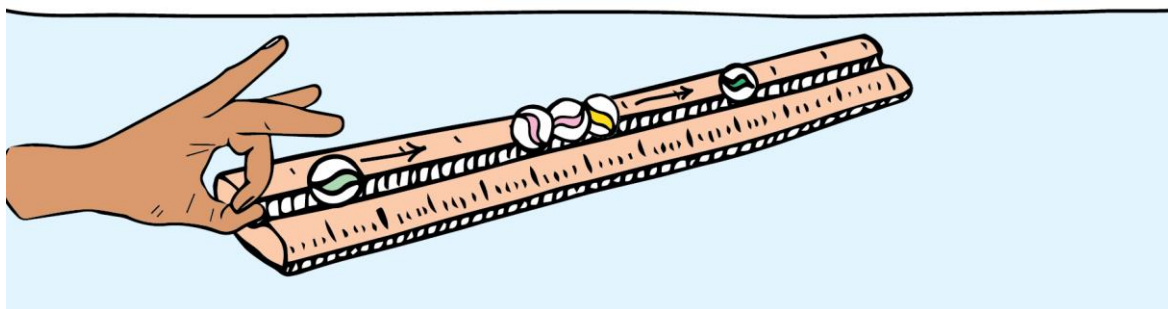


STRAIGHT LINE IMPACTS

Science in motion | Colossal Collisions | Activity B3



CHALLENGE

Trial 1: Using your ruler or rulers, place two marbles so that one is at about the 15cm mark and the other is at the 20cm mark.

Place one more marble at the end closest to the marbles and flick it along the channel. Let everyone in your group have a turn at flicking the marble.

- What do you observe?
- Why does this happen?

Trial 2: Place two marbles so that they are touching each other some distance in (maybe 20cm).

Place one more marble at the end closest to the lined-up marbles and flick it along the channel. Let everyone in your group have a turn at flicking the marble.

- What do you observe?
- Why does this happen?
- What would happen if you put three marbles in the middle? Four? Or more?
- What else would you like to try?
- Can you describe what is happening to the energy in this activity?

Trial 3: What other combinations would you like to try? Can you see any patterns emerging?

Things you'll need

A metre ruler with a centre groove, per group

OR, 2 rulers held together with blu tack to make a centre groove, per group

4-6 marbles for each group

One larger marble per group

Things to think about and discuss

What will happen if you flick two touching marbles at the line-up of marbles?

What will happen if you use a bigger marble to flick? Or to be crashed into?

Can you make this activity measurable and repeat it 5 times to be sure of your findings?

Is your flick the same every time? How could you make it consistent every time?

Recording Findings

Add the observations and findings of your investigation to the chart. Do these findings help us answer the big question?

Do they add evidence that your ideas are correct or bring up something new that needs to be considered?

| WHAT HAPPENS WHEN MARBLES CRASH? | | | |
|----------------------------------|-------------------------|--|--|
| Activity | Observations / Patterns | What do we think was the cause of this observation or pattern? | How does this help us answer the big question? |
| Bang! | Already filled out | | |
| Straight line impacts | | | |
| | | | |

Teacher support material

For further activities and curriculum support:

[Science in motion \(Waka Kotahi Education Portal\)](#)