



Eggvent 2 – Grand Prix

TO MAKE THE FASTEST RACE TRACK POSSIBLE.

Welcome to ... The Ecclesall

E^{OO}-lympics

Eggvent 1:
Shot putt



Eggvent 2:
Grand Prix

Eggvent 3:
Parachute jump



Eggvent 4:
Boat race

Eggvent 2: Grand Prix

Aim of the event.

To test different surface materials on a race track to establish which will allow a racing car to travel the furthest.

To make the best race track you need to think about how you can **reduce friction**. Both friction as the car's wheels travel across the surface and friction (air resistance) as the car travels through the air (streamlining).

Key Words

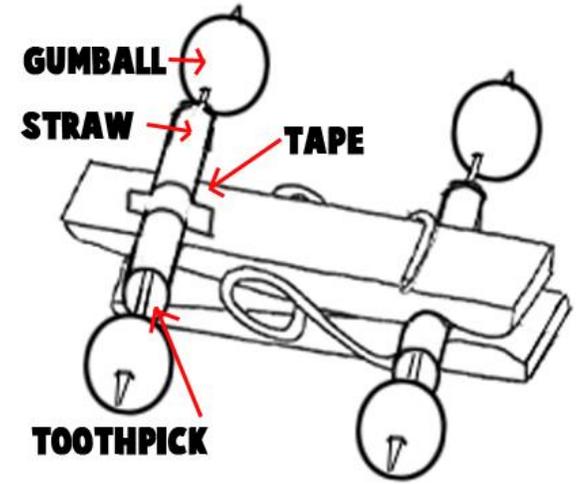
friction, grip, force, surface movement

Your Car

As well as designing a race track you could also **design your own race car** to carry you 'egg'.

However, if you do not have the materials to make your own car simply **use a toy car**.

Your car does not need to be powered as it will be travelling down a slope.

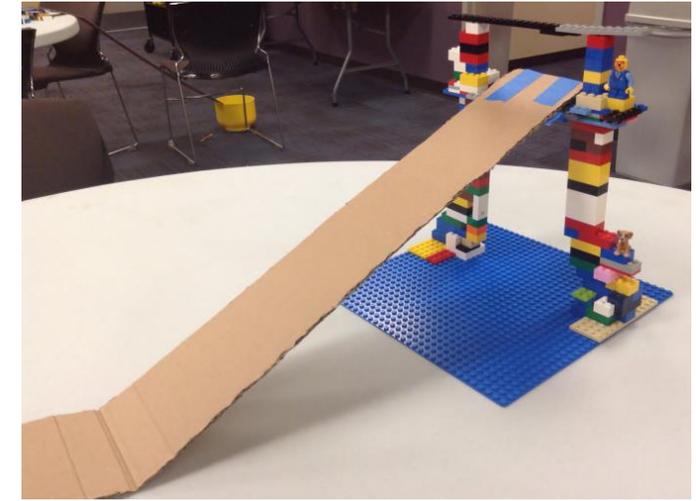


Your Start Ramp

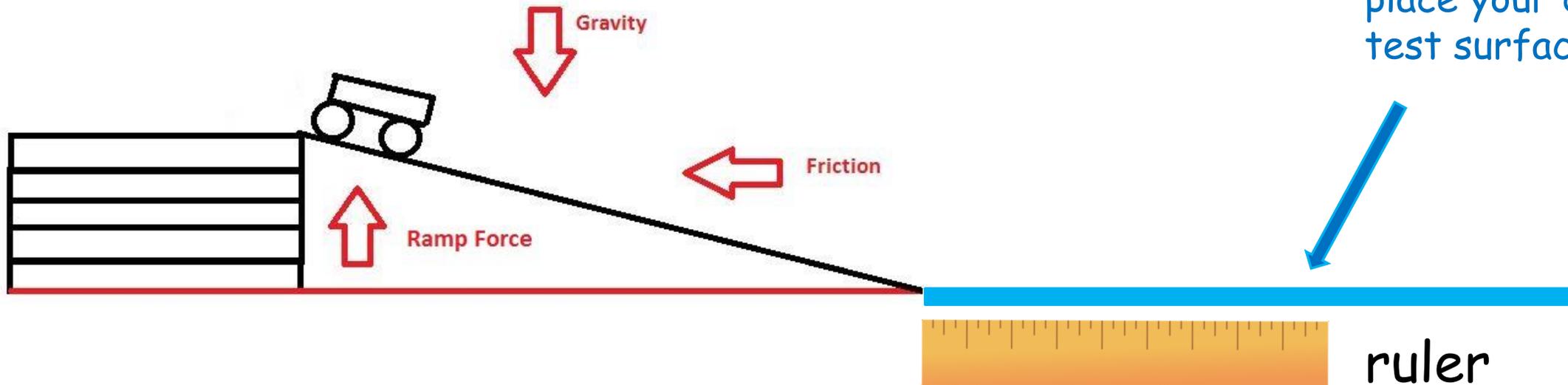
Step 1:

You will need to create your ramp for your car to roll down.

It can be a piece of wood, cardboard or a baking tray. Anything as long as it does not have a lip on it. You can create the angle of the slope by propping it up on some books, LEGO, a brick or another piece of wood.



This is where you will place your different test surfaces.



Your Test Track

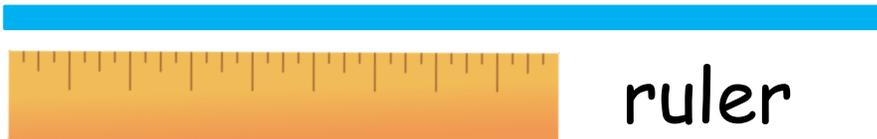
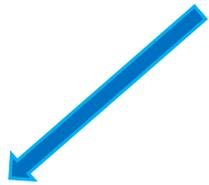
Step 2:

You will need to create your test track, this will sit at the end of the start ramp and will be able to take different test materials on its surface.

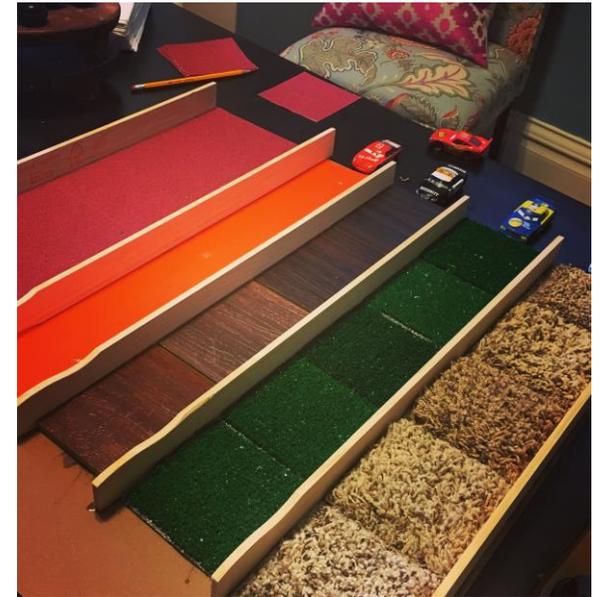
It can be a piece of wood or cardboard onto which you can attach your test materials.

You will also need a ruler or tape measure to measure how far your car travels along the test material.

You will place the different test materials at the end of the start slope and measure the distance the car travels each time.



ruler



Your Test Materials

Step 3:

Gather together a range of materials to use on the surface of your race track. Four to six different materials would be ideal, ensure they have different properties which may change how much friction they generate.

Example materials:

- Plastic
- Carpet
- Rubber
- Sandpaper
- Bubble wrap
- Cardboard
- Grass (outside)
- Gravel (outside)

Designing Your Experiment

Step 3:

Design your experiment.

You will need to complete your **Science Investigation sheet**.

- How are you going to run your experiment
- How are you going to ensure it is a fair test (start position, angle of slope, point of measurement etc)
- Method
- **Predictions** - these are very important, once you have collected the materials you need to think how they may impact the friction of the track.

Performing Your Experiment

Step 4:

Perform your experiment. Let your car run down the slope and over your test material then measure how far the car travels from the base of the slope. Do this multiple times for each material. **Record your results.**

Write Up Your Experiment

Step 5:

Draw a diagram of your experiment and write up your conclusion. What have you learnt. Which of the materials you have tested would make the best (low friction) track for a toy car. Look at the success criteria.

Extension:

Can you research how they reduce friction on real Grand Prix race cars.

Success Criteria

- I have shown my understanding of friction.
- My conclusion refers to my prediction.
- I have ensured it was a fair test.