

Slo-Mo Marble Challenge



What's it about?

This exciting primary school Challenge is to design and build a slo-mo marble run using materials from a given list, which maximises the time taken by a standard glass marble to roll from the top to the bottom.

Judges will be looking for evidence of STEM learning through research into gravity; energy; friction; gradient and material properties, together with innovative design and construction methods.

The run must incorporate a minimum of three different methods of slowing the marble's descent.

Eligible school year groups: Years 3-6

Entries accepted from: Individuals or teams of 2-5 students. Schools may submit a **maximum of 3 entries** for the Challenge. Teams may be mixed age if desired.

Open to: Bracknell Forest and Wokingham Authority schools, academies and private schools. Home-educated children may also participate. See our [Terms and Conditions](#).

Watch the [video](#) to see the creative entries in the 2019 competition.

Testing

- The dimensions of the marble run will be checked
- The marble will be released from the top of the marble run and allowed to roll to the bottom
- The time taken for the marble to complete its journey will be measured using a digital stopwatch
- If the marble stops during its run and fails to reach the bottom, the time taken to reach the point at which it stopped will be taken as the time for the run
- Each entrant/team will be allowed a maximum of 3 runs, and the longest time taken will be used for judging purposes

Materials list 2020

Permitted materials

- K'Nex® – basic structural elements only (no marble track)
- Lego®
- Wood – including cocktail sticks, matchsticks, skewers, lollipop sticks, dowel or sheet
- Metal – including cans, foil, thin sheet, wire, springs
- Plastic – including bottles, straws, rod, sheet, film, foam, tubes, cord, packaging materials
- Paper or cardboard in any form
- Rubber or latex in any form
- Thin rope, string, wool or other thread
- Fastenings such as paper clips, staples, glue, tape, pins or other similar connecting materials
- Surface coatings/treatments
- Any decorative materials including, but not limited to, stickers, paint, pen, pencil, crayon, glitter and feathers

Excluded materials

- Purchased marble run parts, kits or elements

Dimensions

- The marble run must not extend beyond a plan area of 600 x 600mm at any point
 - The marble must start its run no more than 700mm above the bottom of the marble run
 - There is no restriction on the height of any decorative feature or framework
 - The marble run must incorporate an area or container to catch the marble at the end of its run, which must be contained within the 600 x 600mm plan area
 - The marble run must be clearly marked with a finishing line just before the catch/stop area
 - The marble used for testing must be a standard glass marble of between 14–17mm diameter. Textured marbles are not permitted. No coatings, coverings or attachments may be made to the marble itself. The marble should be brought with the marble run to the judging session at 3M
- Important: the marble run must incorporate a minimum of three different methods of slowing the marble's descent. Additional methods will score more marks.