

YEAR 7 PRACTICAL DESIGN

CRACKING CONTRACTIONS 2

DESIGN YOUR OWN MARBLE RUN MACHINE

Before you start this project you must watch this you tube video:

<https://youtu.be/IN0Wn0XgPXQ>

The brief

Use a cardboard box or anything you have at home to create a marble run. The marble must run for either **15** seconds or **60** seconds. If you don't have a marble use any small ball. Even a round bead will work.

Keep improving your design until the marble takes exactly **15** or **60** seconds to reach the bottom. You can fold 8 cm wide strips of cardboard in half to create a V shape for the ball/marble to roll along.

You will be required to submit a video of your completed marble run. You can use any household items in your design or toys such as lego. Work on the design until it takes **15** or **60** seconds and no longer. Good luck!

How does it work?

To help you to control the time your marble takes to run its course you'll need to consider a few factors: *Potential energy = mass x gravity x height*. The heavier your marble and higher your slope, the more energy your marble will have. *Friction* The rougher or stickier the surface, the slower your marble will travel. *Angle of the slope* The less steep the angle of the slope, the longer the marble will take to reach the bottom.

Some fun videos to watch:

<https://youtu.be/QLY1s-V0wUQ>

<https://youtu.be/liFpLbN3UDQ>

<https://youtu.be/qxOZbmROfew>

