



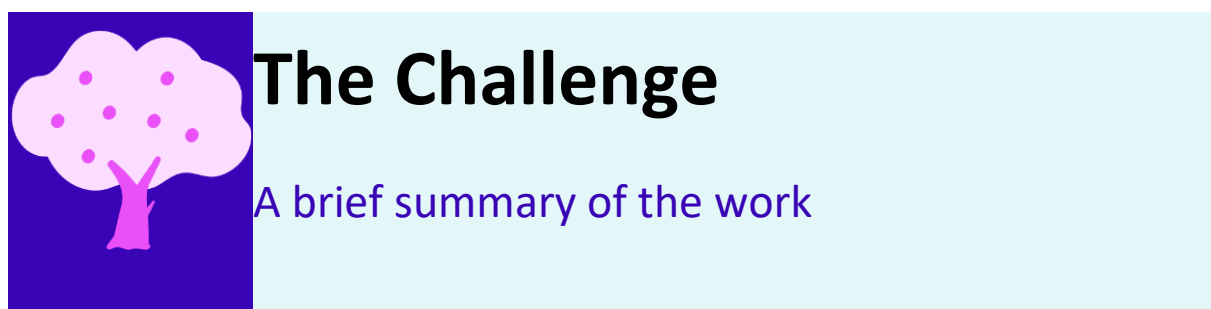
This Year's Family Christmas Science Activity is all about FORCES and snowballs.



Can you design a CATAPULT to launch your SNOWBALLS as far as they can go?

A catapult is a simple machine to help ease the force needed to perform an action – in this case launching a fake snowball.

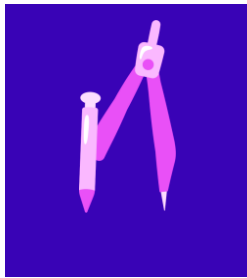
You could use **cotton balls** for snowballs, or **scrunched-up paper** – it is not very safe to use anything too heavy in case it hits someone or something.



This homework is designed to be a family piece of work. All the family may work on the challenge together. It will, however, need **adult supervision**.

Some children and families may wish to simply make a snowball catapult and others may wish to carry out a fully science investigation finding out about the effectiveness of different designs of catapult.

How far you go with this is up to you but **PLEASE BE SAFE** with your practical work!



The Science

Here is some information on FORCES to get you started:

FORCES:

THIS IS A REALLY GOOD FILM OF A VARIETY OF FORCES IN ACTION TO GET THE FAMILY THINKING!

<https://www.bbc.co.uk/bitesize/topics/zrdmsbk/watch/zv8f9j6>

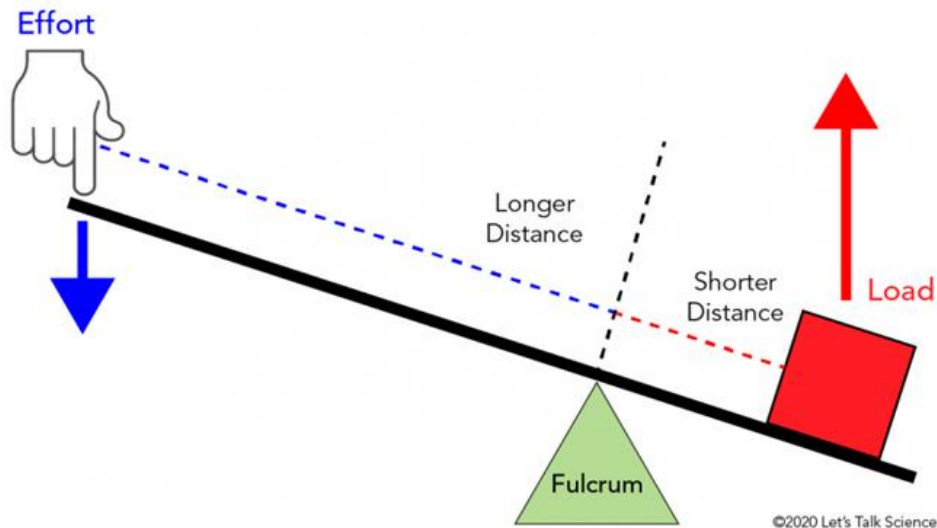
Can you see pushes and pulls?

Can you see GRAVITY?

Can you see FRICTION, AIR RESISTANCE...ANYTHING ELSE?

IF YOU WANT TO EXPLORE FURTHER YOU COULD LOOK AT THIS LIVE LESSON:

<https://www.youtube.com/watch?v=o94794kPSIs>



Some ideas to get you started

1. SPOON CATAPULT – you do not NEED lolly sticks for this. Maybe choose something suitable from home to use as the FULCRUM.

<https://www.youtube.com/watch?v=A6hQsJxzlws>

2. LOLLY STICK CATAPULT

<https://www.youtube.com/watch?v=XchdUB-ZnKc>

There are many other design ideas out there that you can adapt!



The response is very open-ended. It is up to you how you would like to present your ideas.

HOW SHOULD WE RECORD THE FAMILY SCIENCE HOMEWORK?

- · FILM – you could email a short film to
- A working model
- · PHOTOS – print or email to
- · DIAGRAMS AND WRITING – explain your investigation through writing and diagrams
- · OTHER ...

**Please submit your challenge to
share on Friday 9th January
(please bring to the main hall by 9am)**

All entries will be celebrated and the winning entry will receive a special prize.