



Glasgow Science Festival Creating Engineers 2018

Classroom Challenge

Design and Build a Passenger Lift

The scenario

Your school has been asked by the local council to install a passenger lift in the building. The headteacher needs your help and wants you to design and build a prototype.

The Challenge

You have **ONE HOUR**.

Your task is to design and build a passenger **lift** which can travel **up and down** within its shaft. The lift needs to have a **door** which will open and close to allow entry and exit.

The Specifications

Your lift shaft and lift within must:

- Be **at least** 30cm high (the height of a standard ruler)
- Have a strong robust structure to stand on its own
- Be able to move up and down within its shaft
- Have a door which can open and close.

Things to think of

- Remember to discuss plan and draw your design
- What K'Nex pieces have you been given? How do they connect together?
- Are smaller rods with more connectors better than long rods with less connectors?
- Can the structure stand without tipping?
- Does your lift move freely up and down – how is it going to do this (pulley)?
- Does the door open and close – how are you going to attach this (hinges)?
- Levers, pulleys and ropes will all gain more points as will any innovative designs!

GOOD LUCK!