



Home Alone Challenge

Trap the Burglars!

STEAM Project



Challenge

***Help Kevin catch the burglars by designing three traps.
Choose your favourite trap and build a prototype.***

Before you begin, it may be a good idea to explore Forces with your class. With junior classes, try the Investigating Slopes activity from DPSM. With senior classes focus on levers, pulleys, cogs & winches.

Question Prompts

- What will your trap do? How will it do it?
- What materials do you need?
- What is unique about your trap?

Possible criteria for pupils:

You need to draw your designs of your traps. Colour where possible.

Please consider the following;

- Label your design with the materials needed to create these traps.
- Include any levers, cogs, twists, pull strings, push buttons or other mechanical features that allow your trap to function.
- If your drawing is not to scale, include the measurements on the design.
- Build your prototype no bigger than 60cm in height. Remember to Explore, Plan, Make and Evaluate.
- Include a short paragraph explaining how your prototype will trap the burglars.

**Decoration & visual presentation will get extra credit.*

Extensions to criteria to increase challenge

Teachers consider some of the following suggestions to challenge pupil's learning further;

- Apply a budget. Offer pupils a link to a DIY store. Ask pupils to budget the overall cost of the design.
- Integrate recyclable material. Can you design & make a trap using only material from your Recycling Bin? What will you use and why?
- Incorporate knowledge of circuits for added challenge, increasing the interactivity of the trap.

Supports to scaffold the challenge

- Simplify the challenge for Infants and pupils with Special Educational Needs to design & make a trap to catch an elf, a leprechaun or a ghost depending on the season.

**This STEAM challenge card is to assist teachers in planning their STEAM unit of work. Please adapt as necessary. Key to this challenge is to nurture pupils creativity & let their individuality shine in their final results!*