

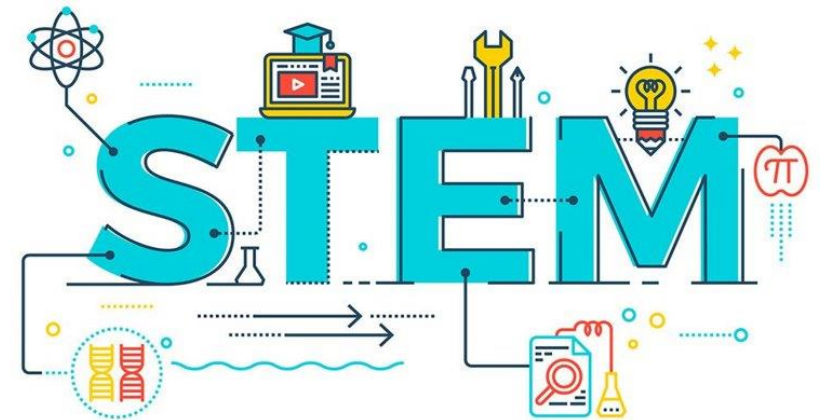
Teacher notes and tips

- In this STEM Challenge, learners design and build a trap for a naughty Elf on the shelf who is causing mischief (your learners will no doubt have plenty of examples of this). Younger learners might need to be reassured that most elves are friendly!
- Time – allow approx 1h30 including tidy up time!
- Suggest teams of no more than 3
- After you have explained the rules of the challenge, give learners time to share ideas and make a plan in teams, then 20 mins to build their designs. Look at each others' designs and talk about what went well with their design and how it could be improved.

- Avoid making STEM Challenges competitive
- Don't provide instructions, a video or photo of what a finished design might look like – richer learning happens when learners use their creativity to design something to solve the problem rather than copying a design they have seen
- Try to get the learners to solve problems themselves – use questioning to support them – avoid giving answers and suggestions!

Winter STEM Challenge

Elf on the shelf
trap!



Learning Intentions

- To **invent** something to solve a problem
- To build up our **skills** such as **creativity, problem-solving** and **communication**

Elf on the shelf trap

- What do elves like – how could we tempt them into the trap?
- What kind of thing could trap an elf without hurting it?
- How could the elf be released safely?
- What else do we need to think about?



Elf on the shelf trap

- We need to trap the naughty elf!
- **Invent** an elf on the shelf trap
- Think about what **bait** you could put inside to attract the elf into the trap
- What **parts** does it need to do the job?

- How will the trap be **powered**?
- Which parts **move**?
- What **materials** would you use to build it?



Build the trap

- **Materials:**
- **Card x 1**
- **Paper x 1**
- **Half a paper plate x 1**
- **String x 1**
- **Sellotape**





What can you learn from others?

- **Learning loop** – look at other people’s inventions.
- Ask 3 questions about their invention.
- How does it attract the elf inside?
- What parts does it have?
- 2 positives, 2 suggestions to improve

