Teaching notes – Outdoor classroom

- Learners consider what might be needed in an outdoor classroom, design an outdoor classroom, build a model and consider how it could be improved

- First and Second Level challenges provided

- Resourcing – you can add other resources if you have them, e.g. card, recycled packaging, card tubes, yoghurt pots, etc.

- You could also add in other materials and requirements e.g. stability in windy conditions and waterproofing the roof.

STEM brain warm-up – First Level

- Design a **school desk**
- What **shape** would it be?
- What would it be able to **store**?

STEM brain warm-up – Second Level

- Design the ultimate **school desk** with everything you need
- What would it be able to **store** and how?
- Could it **fit together** with other desks to create an interesting **shape**?

STEM Challenge Project

Outdoor classroom

Learning Intentions

- To build up our **skills**:
  - Teamwork
  - Communication
  - Creativity
  - Critical Thinking
  - Resilience

- To use the **engineering design process** to solve a problem

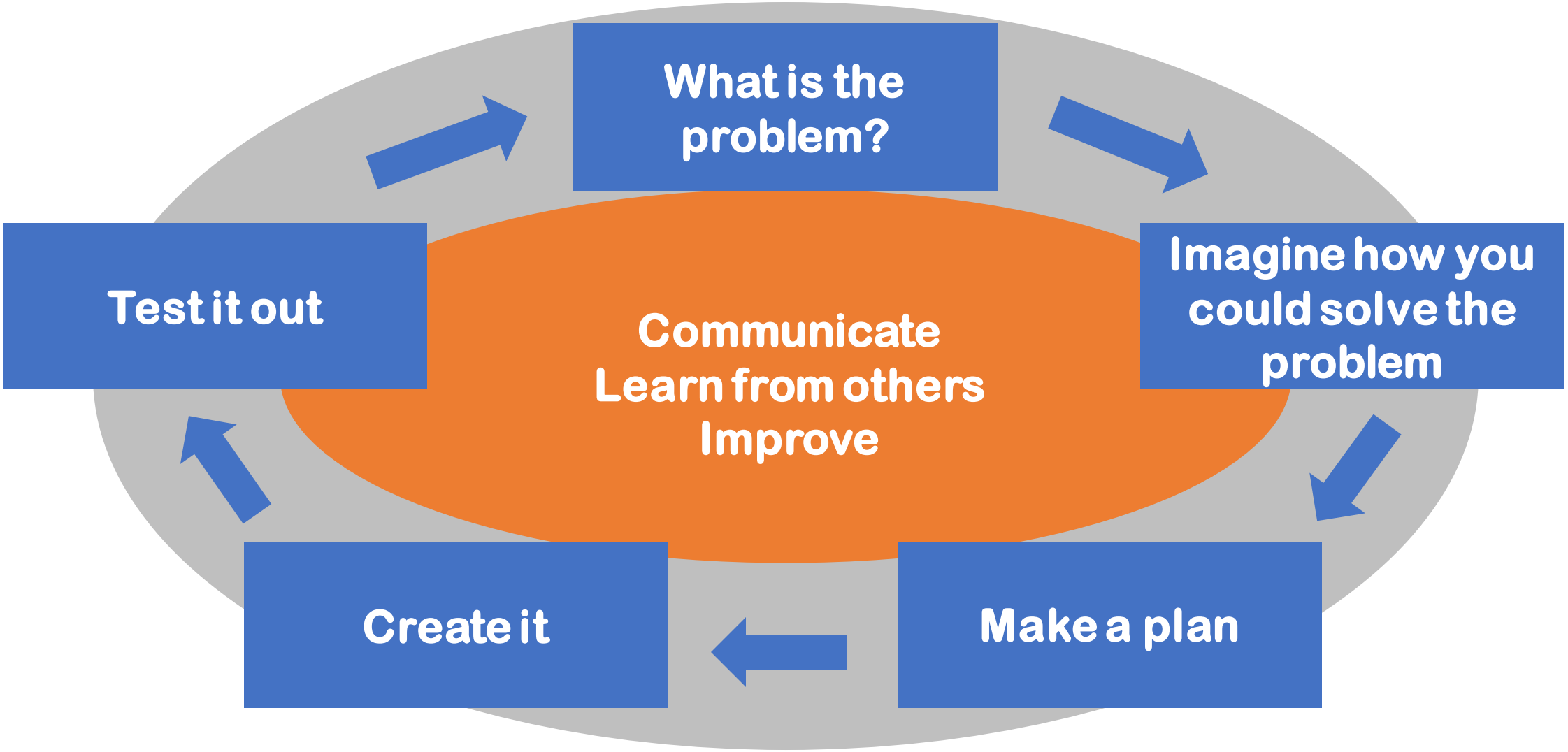
What are your success criteria for this project?

- I would like to get better at
  - teamwork
  - communication
  - creativity
  - critical thinking
  - resilience

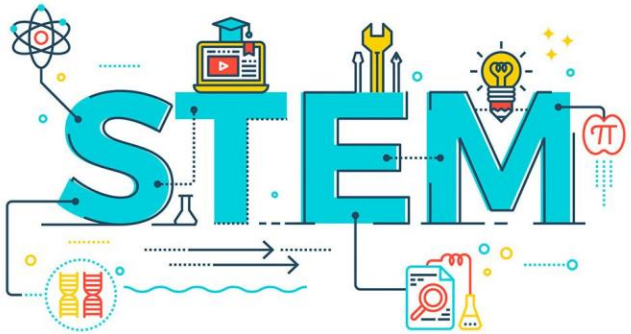
- How can you get better at this? Write down some strategies for yourself.

- As you progress through the project, you will decide if you have been successful at developing this skill.

The Engineering Design Process



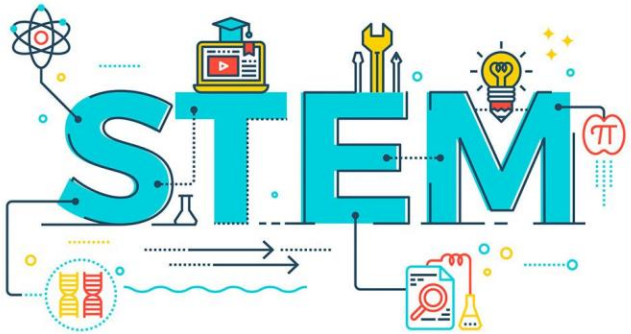
Outdoor classroom



- What is an **outdoor classroom**?

- What do we need to **think about** when designing an outdoor classroom for Scotland?

Design and build First Level

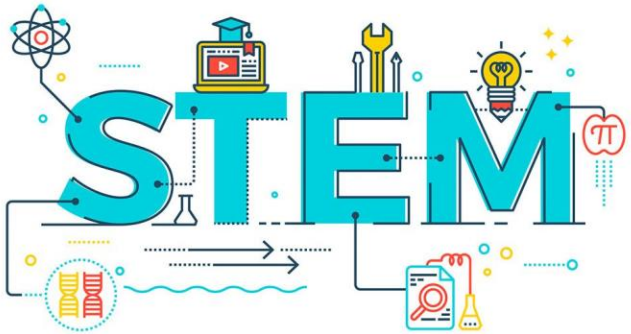


- **Design** the **shelter** for an outdoor classroom for up to 33 children and a teacher.

- **Build a model** of the shelter
- Use one sheet of paper as a **base**
- Materials:
  - **Paper**
  - **Sellotape**

- **Label** the key parts on your model

Design and build Second Level



- **Design** an outdoor classroom for up to 33 children and a teacher including the **shelter** and **furniture**.

- **Build a model** of the shelter and furniture
- Use one sheet of paper as a **base**
- Materials:
  - **Paper**
  - **Sellotape**

- **Label** the key parts on your model

Evaluation

- On a pink post-it, write down what you are Tickled Pink about – what is good about your design?
- On a green post-it, write down what is Green For Growth – what needs to be improved about your design?

- Or you could use pink and green highlighters to draw straight on to your design!

What can you learn from others?

- **Learning loop** – look at other people's work.
- How did other groups tackle the STEM challenge?
- Which ideas did you see that were successful?
- What did you see that hadn't worked, or that you wouldn't use?
- **Feed back to your group**

Evaluation

- Discuss how your team approached the STEM challenges in this project
  - What did you learn?
  - Which skills did you develop?

- How could you improve your designs?

- Can you think of another similar STEM challenge you could set yourself to try at home?

Self-assessment at end of project

- We have been developing our skills by doing STEM challenges:
  - Collaboration
  - Communication
  - Critical thinking
  - Creativity
  - Resilience

- Have you followed your strategies?
- Have you been successful in developing your chosen skill?
- Have you developed other skills during this project?