

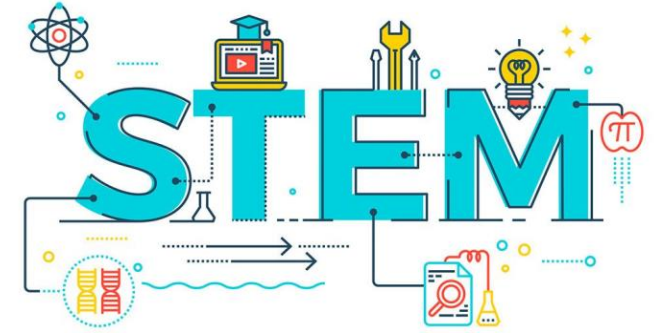
Teaching notes

- This challenge is suitable for First or Second Level
- You may wish to change the materials available to suit what you have in your setting
- Learners should consider what makes a good slide e.g. angle/slope of the slide, barriers, safety, how to climb up safely...
- Many different designs are possible!



Build a park!

STEM at the park?



- Why is **engineering** important for designing and building parks?
- Problem solving
- Safety
- Structures
- Stability
- Engineering Design Process

STEM Challenge Project



Slide



Learning Intentions

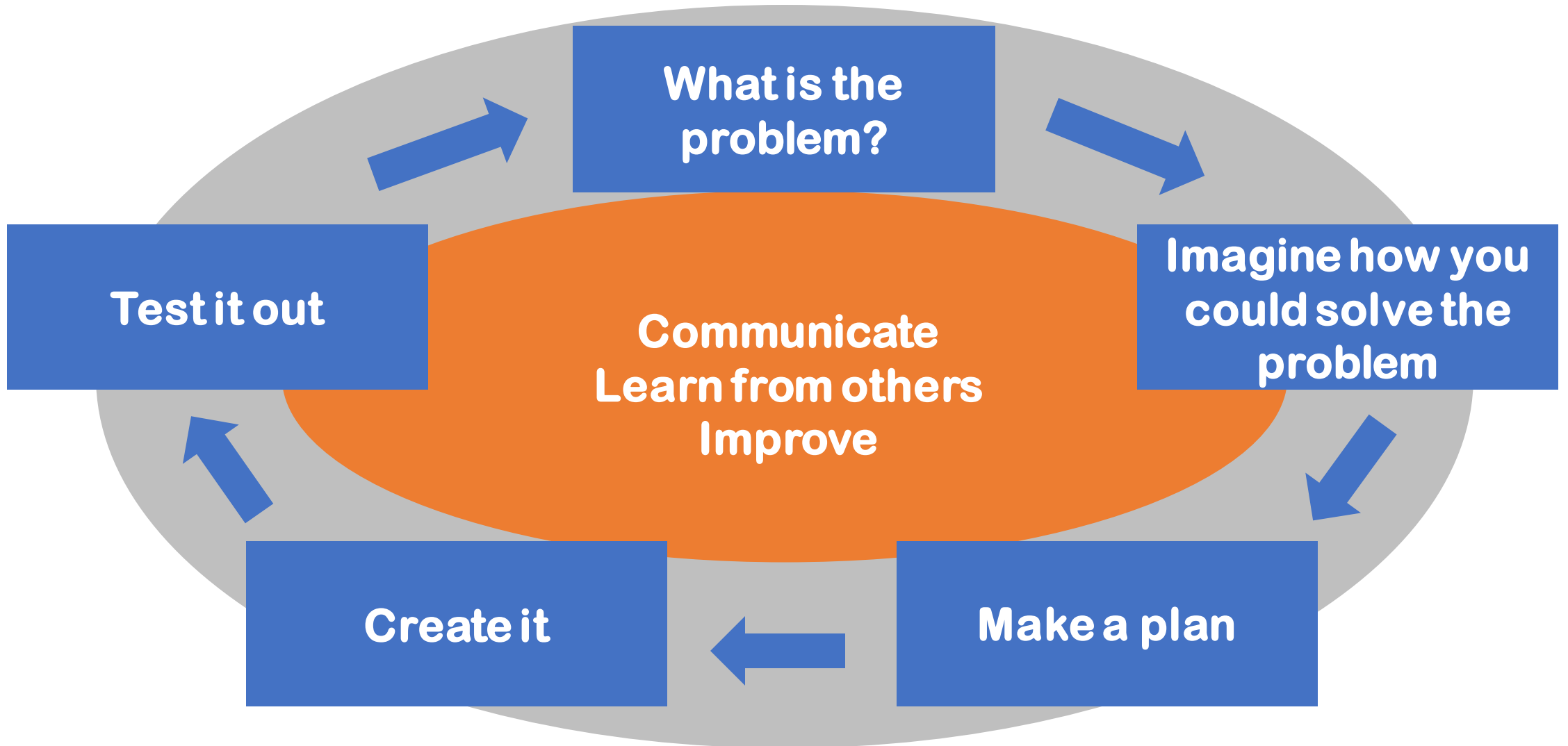
- To build up our **skills**:
 - Teamwork
 - Communication
 - Creativity
 - Critical Thinking
 - Resilience

- 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

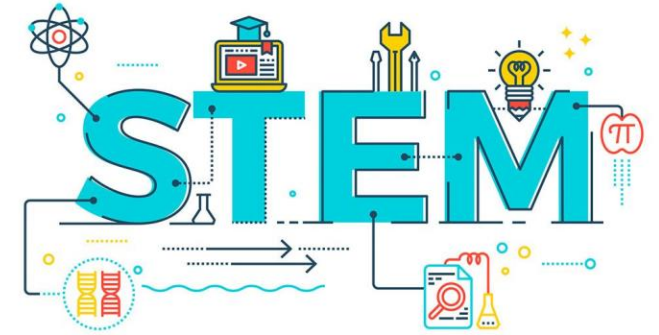


Imagine and plan



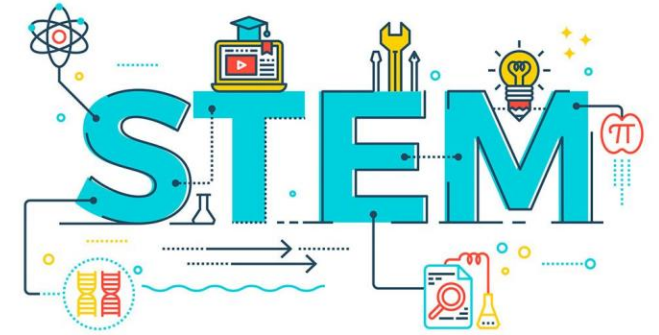
- Design a **slide**
- Materials available:
 - **A4 paper x 3**
 - **Card x 1**
 - **Recycled materials such as packaging**
 - **Sellotape**
- How can you make sure that your design is **strong** and **stable**?
- What **could go wrong** when building your design? How could you **solve** these problems?

Create



- **Build** your design using your materials
- Try to make your design **strong** and **stable**
- How could you **test** your design?
- Ask **questions!**

Improve



- How could your design be **improved**?
- You could try **re-building** it with your improvements

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?