

# Teaching notes

- NB a wigwam is not the same shape as a teepee – common misconception
- This activity is good for discussing 2D and 3D shapes – cone, cylinder, circular base
- In the first challenge children will find that it is hard to construct thin tent poles from paper! They only need to make a few to construct the teepee shape – even a pyramid frame from 3 poles would be fine. You could discuss the minimum number of poles required for this task.
- Including a base really helps put the structure together.

# STEM Challenge Project

Teepee  
challenge



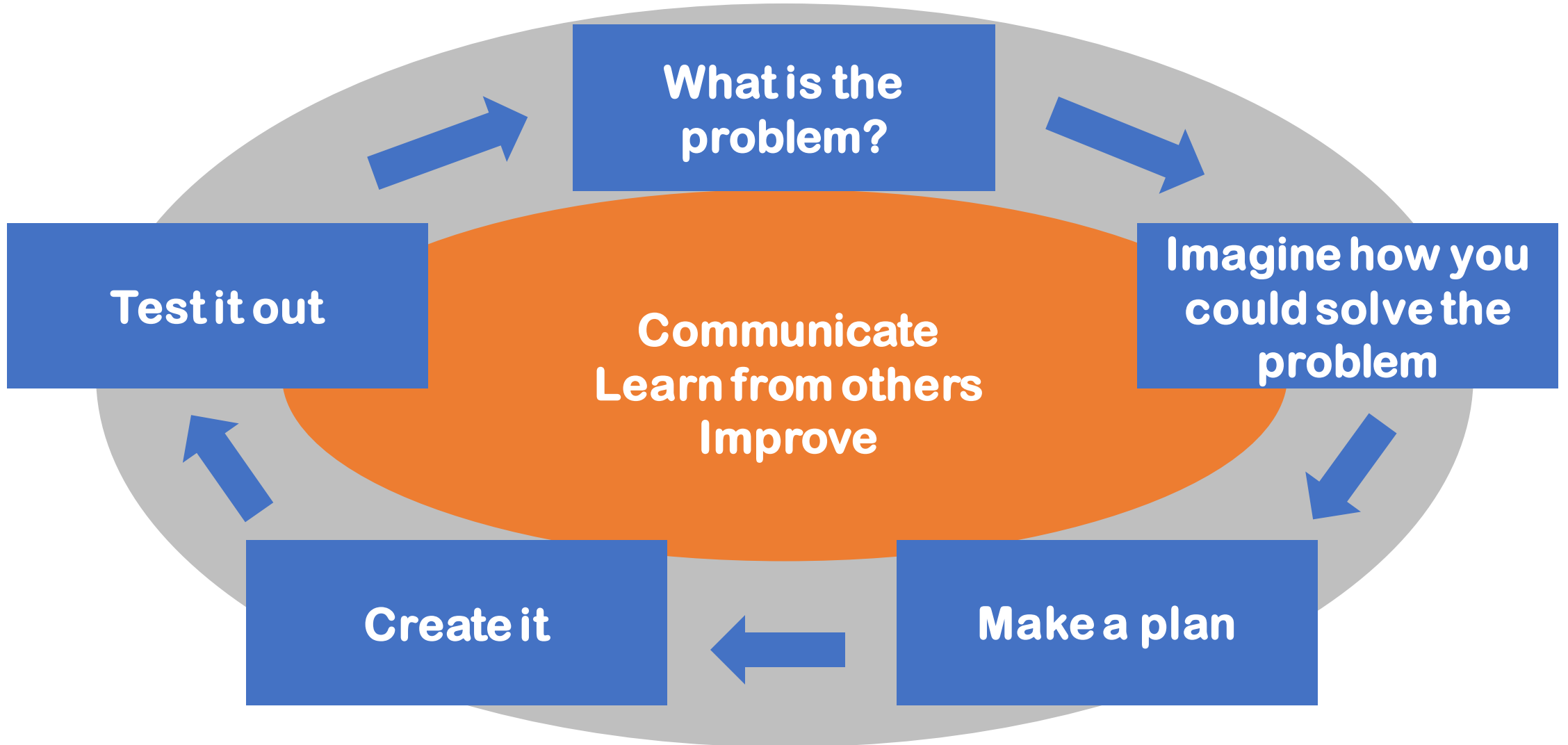
# Learning Intentions

- To build up our skills such as **teamwork** and **communication**
- To use the **engineering design process** to solve a problem

# How will you be successful today?

- What does successful **teamwork** look like?
- What can you do to be a good **communicator**?

# The Engineering Design Process



# Teepee challenge

- A teepee is a special kind of tent made from wooden poles in a cone shape, covered in material (originally animal skins). They were used by some Native American tribes.
- Your job is to design and build a teepee with flaps for a door.
- What would a good teepee look like?
- What shapes can you see?



# Teepee challenge

- What are the problems with this task?
- What can you predict being difficult?
- Imagine how you could solve this problem.



# Teepee Challenge

- Design and build a **teepee**.
- You must make flaps for a door.
- You must make sure there are no other gaps in the material.
  
- You will be given a choice of materials:
  - **Newspaper – max 2**
  - **A4 paper – max 4**
  - **Tissue paper and crepe paper scraps – max 1**
  - **20cm string – max 1**
  - **Sellotape**
  
- Evaluate your teepee and try to improve it.







# 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?

# STEM Challenge Project

## Teepee challenge

Part 2



# Learning Intentions

- To build up our skills such as **teamwork** and **communication**
- To use the **engineering design process** to solve a problem

# How will you be successful today?

- What does successful **teamwork** look like?
- What can you do to be a good **communicator**?



# What did we learn last lesson?

- 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?

# Teepee Challenge

- Design and build an improved, **waterproof teepee**.
- You must make flaps for a door.
- You must make sure there are no other gaps in the material.
- You will be given a choice of materials:
  - **Straws – max 6**
  - **A4 paper – max 3**
  - **A4 card – max 2**
  - **Plastic bag – max 2**
  - **20cm string – max 1**
  - **Sellotape**
- Evaluate your teepee and try to improve it.





# 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?

# Evaluation

- Discuss how your team approached the STEM challenge today
  - What did you learn today?
  - Which skills did you develop?
- How could you improve your design?
- 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:
  - Teamwork
  - Communication
- How do you think you have developed your skills?
- Which skills do you still need to improve?