

Teaching notes

- There are 3 parts to this project.
- For projects 2 and 3, soft foam balls about tennis ball size work well.
- This is a good opportunity to learn about wide bases, using 3-D shapes in design, spires, pillars...

STEM Challenge Project



Tall towers



Part 1

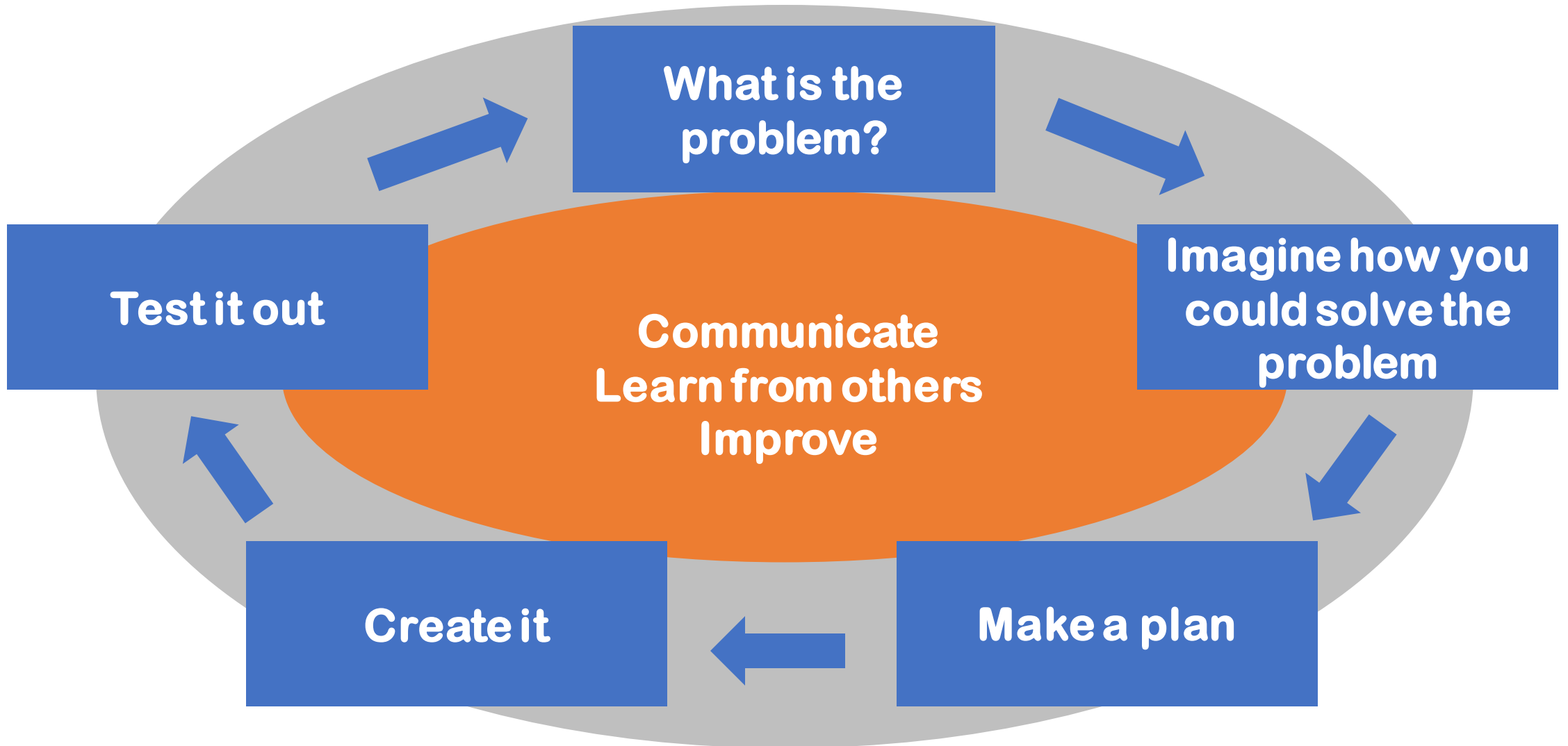
Learning Intentions

- 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



STEM challenge

- To build the **tallest structure** you can
- You can only use
 - **3 straws**
 - **3 sheets of paper**
 - **Sellotape**
- Your structure must not be sellotaped to the table
- Consider how to make your structure strong and stable – which **3-D shapes** could you use?
- Work as a team!





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



Supporting a
weight



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?

STEM challenge

- To build the **tallest structure** you can which will **support a ball**
- You can only use
 - **3 straws**
 - **4 sheets of paper**
 - **Sellotape**
- Your structure must not be sellotaped to the table and you cannot tape the ball on
- Consider how to make your structure strong and stable – which **3-D shapes** could you use?
- Measure up to the top of the ball





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?

STEM Challenge Project



Supporting a
weight



Part 3

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?

STEM challenge

- Design and create a **structure that can hold a ball on top of your head**
- You can use
 - **3 pieces of A4 paper**
 - **2 pieces of A5 card**
 - **3 straws**
 - **Sellotape**
- Someone in your team must be able to wear the design
- The ball must be able to be lifted in and out





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?
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