

# Teaching notes

- The first challenge involves creating a stationery holder. If you wish to extend this activity, you could ask learners to design a stationery holder that could hook over the edge of the table or will be attached so it hangs below the table.
- Emphasise that the stationery holder does not need to look like the examples in the pictures – it must be their own design.
- Learners may like to include a theme in their design.

# STEM Challenge Project



Stationery holder  
challenge



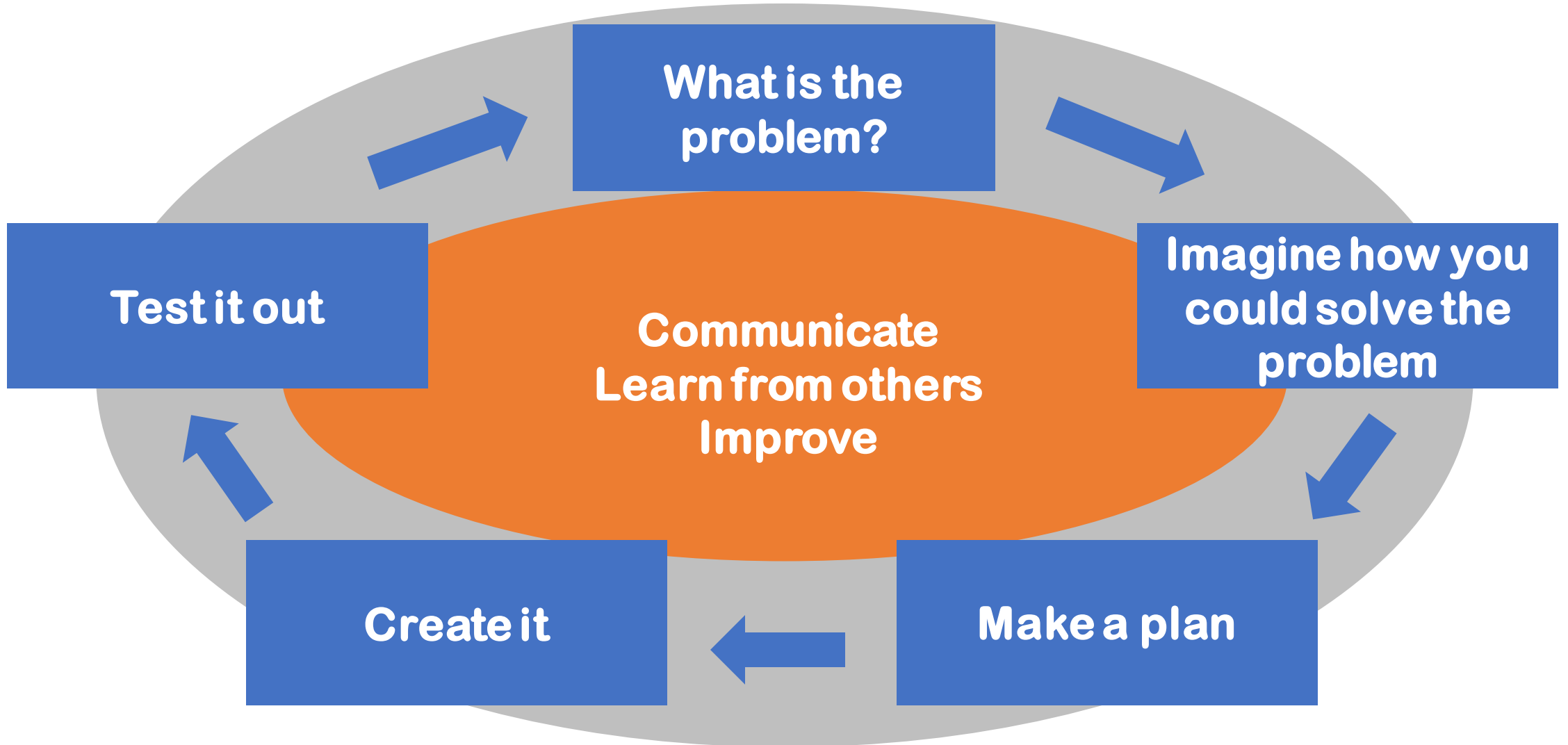
# Learning Intentions

- 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



# Stationery holder challenge

- Each desk needs a stationery holder to carry pencils, rubbers and rulers.
- You need to design and make one stationery holder for your desk.
- It must not get in the way of people working on or around the desk.
- It must be removable.
- You could include a theme for your stationery holder.



# STEM Challenge

- Design and build a **stationery holder** to hold 6 pencils, 2 rubbers and 3 rulers.
- You must make sure the stationery does not fall out.
- It must not get in anyone's way.
- It must be removable – you cannot stick it to the desk.
- You will be given a choice of materials:

- **A4 paper – max 2**
- **A4 card – max 2**
- **Card boxes – max 1**
- **Plastic cup – max 1**
- **Sellotape**

- Test your stationery holder and try to improve it



# Stationery holder challenge

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







# 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

## Stationery holder 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?

# Stationery holder challenge

- Design and build a **stationery holder** to hold 4 pencils, 2 rubbers and 3 pairs of scissors.
- The stationery holder **must include a drawer**.
- It must not get in anyone's way.
- It must be removable – you cannot stick it to the desk.
- You will be given a choice of materials:
  - **A4 paper – max 2**
  - **A4 card – max 3**
  - **Card scraps – max 2**
  - **Card box – max 1**
  - **Sellotape**
- Test your stationery holder and try to improve it



# Stationery holder challenge

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







# 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?