



## 02 – Tommy Who?

### Teachers' Notes – CREST SuperStar Challenge

#### Tommy Flowers the inventor

Take inspiration from Tommy Flowers and Colossus to design a new machine to fix a problem. Students will write a class questionnaire and analyse this data to identify a need. They will sketch their design and consider what resources are needed to make their creative idea a reality.

#### Background information

- Tommy Flowers was an engineer at the GPO Research Station at Dollis Hill.
- Tommy is not a famous figure from the Second World War. However, his invention played a vital role, helping to shorten the length of the war by months, saving many lives.
- Tommy initially struggled to gain support and funding to build the first Colossus.
- Colossus dramatically increased the speed and accuracy of breaking coded messages between Hitler and his generals.

#### Learning outcomes

- Use research, data collection and analysis to identify a problem.
- Use teamwork, problem solving skills and creativity to design a machine-based invention.

#### CREST SuperStar

- This CREST SuperStar Challenge is accredited by the British Science Association.

#### Key words

Apprentice | Invention | Colossus

#### Prepare for the activity

- Download classroom PowerPoint.
- Prepare film clip.
- Print student challenge cards.

#### Run the challenge

- Show the film clip.
- Use the PowerPoint to introduce key words and Colossus, to explain the task and provide inspiration for invention ideas.
- Students write their questionnaire, ask classmates to fill it in and analyse the results (homework idea: ask family and friends).
- Students sketch their design and choose a catchy name.
- Top tip: If students need inspiration, allow them to work as a team to discuss and share their ideas.

#### Extension activities

- Develop machine designs into prototype models using craft materials e.g. tin foil, pipe cleaners, coloured paper, wool and felt.
- Pitch designs to the class. Select a group of students to be Chief Engineers (like Tommy) and sit them in row like Dragons' Den to listen to pitches.
- Encourage the Chief Engineers to ask questions like: Has the machine been tested? Is it safe? Who is it for? Does it come in different colours?
- Top tip: Ask the students to swap roles to take turns to make a pitch.