

AI and Data

Fighting fires with the Internet of Things



Activity created by



Project brief

In this project you will explore the needs of a modern firefighter, their working environment and the equipment they use. Using this research, you will generate a design for a new product which uses data collection to enhance the efficiency and/or safety of firefighters and those they help to protect.

The Internet of Things is a network of connected devices such as cameras, vehicles, and sensors which interact, exchange data and automate tasks. This exchange of data and automation of tasks can be used by firefighters to help them do their jobs more safely and more efficiently.

Do some research to find out more about the Internet of Things, what it is and how it is being used.

Find out about the types of tasks firefighters do. When they aren't working to put out a fire, what other tasks do they do as part of their job? Once you have a clear idea of the tasks that firefighters undertake, record the environments that they work in, the types of equipment that they currently use to do these tasks and the challenges or problems they face.

Using your research, think about where the Internet of Things or connected devices could make firefighters' jobs safer and more efficient (saving time, materials, money). You might choose to improve a piece of existing equipment or invent a completely new one.

Record all your ideas and decide which one you would like to continue to develop. You could use materials like cardboard, paper, textiles and sticky tape to create a model of the final idea.

If you have support from a teacher or mentor, you could try prototyping how the data collection part of your idea will work using a micro:bit or another programmable controller.

Things to think about

- When they aren't working to put out a fire, what other tasks do fire fighters do as part of their job?
- What tasks would a machine be better at than a human?
- What do you think the role of a firefighter will be like in the future?
- Could you contact a firefighter to see what they think of your idea?

Useful resources

- stemlearning.wistia.com/medias/i58xdbw1ma
- Programmable board (i.e. micro:bit, crumble etc.)
- Contact with a fire station visit or professional firefighter

Health and safety

To avoid any accidents, make sure you stick to the following health and safety guidelines before getting started:

- find out if any of the materials, equipment or methods are hazardous using science.clearpss.org.uk/Resources/Student-Safety-Sheets/
- assess the risks (think about what could go wrong and how serious it might be);
- decide what you need to do to reduce any risks (such as wearing personal protective equipment, knowing how to deal with emergencies and so on);
- check your plan for using tools and materials with a teacher before beginning any practical work;
- make sure your teacher agrees with your plan and risk assessment.