Global Challenge
Design & create your innovation
Safety
The challenge:

- Design and create an original innovation using micro:bit to help to improve safety for children.

- 7 key tasks:
  - Defining the problem
  - Designing
  - Prototyping
  - Coding
  - Evaluating
  - Presenting
  - Entering the micro:bit Global Challenge competition
Overall Learning objectives:

● To design and create an original, creative innovation using the micro:bit to help to improve safety for children.
● To choose a problem and explain why it is important
● To design an original innovation and explain how it will address the problem
● To create a paper prototype to explain how the innovation will work
● To code, test and debug a micro:bit prototype
● To evaluate an innovation effectively
● To present an innovation clearly to an audience
● To enter the micro:bit Global Challenge competition
Safety

Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.
Safety when travelling or in towns and cities, especially for vulnerable people.

Goal 4: Quality education
Safety when at school for all children.

Goal 16: Peace, Justice and strong institutions
Safety at home.
Safety
● travelling to school and around your local area
● at home
● at school
● safe air to breath
● safe places to sleep
● safe from accidents
The problem

Learning objective:
● To choose a problem and explain why it is important

Your task:
● Research and choose a specific problem to focus on
● Complete your presentation (slide 3) to explain:
  ○ the problem are you focussing on
  ○ why this is an important problem
  ○ the impact this problem has on individuals and communities
  ○ why you personally care about it
Research links

Road traffic injuries: [http://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries](http://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries)

Drinking water
[http://www.who.int/news-room/fact-sheets/detail/drinking-water](http://www.who.int/news-room/fact-sheets/detail/drinking-water)

Air pollution:

Violence against children:
Designing your innovation

Learning objective:
● To design an original innovation and explain how it will address the problem

Your task:
● Design an innovation to help address the problem
  ○ brainstorm ideas
  ○ narrow them down
  ○ pick one to prototype
  ○ get feedback on your idea & revise as necessary
  ○ complete slide 4 of your presentation
Innovation criteria

Your innovation must be:
● original
● help individual users and communities of people
● help to address the problem you have identified
● have a positive impact
● easy to use
Prototyping

An initial, basic version of an innovation.

It allows you to quickly and easily:
- show how your innovation would work
- test and trial it
- get feedback
- decide what works and what doesn’t
Prototyping

Learning objective:
- To create a paper prototype to explain how the innovation will work

Your task:
- Create a paper prototype using the available materials
- Your prototype should show:
  - how your innovation will work
  - the instructions of how to use it (an algorithm)
- Complete slide 5
Coding

Learning objective:
● To code, test and debug a micro:bit prototype

Your task:
● use your algorithm to program micro:bit
● use https://makecode.microbit.org
● Test and debug your code regularly
● Use paired programming if you can
● Get feedback on your prototype
● Complete slide 6
Evaluating

Learning objective:
● To evaluate your innovation effectively

Criteria:
Your innovation must be:
● original
● help individual users and communities of people
● help to address the problem you have identified
● have a positive impact
● easy to use
Evaluating

Your task:
● How does your innovation meet the criteria?
● What else have you learnt from this challenge? Consider:
  ○ Safety
  ○ creating and refining original ideas
  ○ paper & coding prototypes
  ○ problems you encountered and how you solved them
  ○ what you would do differently next time
Presenting your innovation

Learning objective:
● To present an innovation clearly to an audience

Your task:
● Present your innovation to the class
  ○ 5 minutes max
  ○ make it interesting for your audience
  ○ ensure you include:
    ■ what you have created
    ■ why you have created it
    ■ How it will help address the problem
Entering the micro:bit Global Challenge

- Enter your details
- Complete the written application including:
  - what you have created
  - why you have created it
  - how it will help address the problem
- Upload an image of your paper prototype including the instructions of how to use it
- Upload your hex file from your Micro:bit prototype