Global Challenge

Design & create your innovation
The challenge:

- Design and create an original innovation using micro:bit to help to address the problem of non-communicable diseases (NCDs)

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 address the problem of non-communicable diseases (NCDs)
- 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
Goal 3: Health
Ensure healthy lives and promote wellbeing for all at all ages.

3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
Non-communicable diseases (NCDs)

- Long and slow
- Big 4:
  - heart disease, cancer, breathing diseases (e.g. asthma), diabetes
- Largely preventable
- 4 main risks:
  - unhealthy diets, physical inactivity, exposure to tobacco smoke, harmful use of alcohol
- Kill approximately 41 million people every year
- 82% of deaths in low and middle income countries
- Children and elderly particularly at risk
- Prevention and education can help
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

Tobacco: http://www.who.int/news-room/fact-sheets/detail/tobacco

Alcohol: http://www.who.int/news-room/fact-sheets/detail/alcohol

Physical activity: http://www.who.int/news-room/fact-sheets/detail/physical-activity

Obesity: http://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
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:
  ○ NCDs
  ○ 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