**Health tech**

**Lesson 2: Health tech innovations**

**Introduction**

In this lesson students are introduced to the health tech challenge and work in teams to brainstorm and choose a health tech innovation idea to address a real-life problem. They learn the importance of prototyping, are introduced to the criteria for their prototype and begin designing their innovation.

**Time:** @60 minutes

**Materials needed:** Lesson plan, lesson guide, flip-chart paper and pens, worksheet (paper or computer)

**Learning objectives**

* To develop ideas for health tech innovation innovations to meet a UK healthcare need
* To understand the importance of prototyping
* To select an innovation idea and begin to develop a prototype

**Lesson summary**

1. Recapping health tech (5 minutes)
2. Health tech innovation challenge (10 minutes)
3. Understanding prototyping (5 minutes)
4. Health area choice & brainstorming (10 minutes)
5. Developing an innovation (15 minutes)
6. Presenting innovation research (10 minutes)
7. Review & wrap up (5 minutes)

**Introduction: Recapping health tech (5 minutes)**

* Use **slide 2** for think/pair/share questions to recap health tech and the learning from last lesson.
* Discuss as a class, encouraging students to give a range of answers and addressing any misunderstandings.
* Also recap the skills students used in the previous lesson (research, summarising, evaluation, presenting, team work etc) and highlight that these will be important in their next challenge.

**Health tech innovation challenge (10 minutes)**

* Explain to students that their challenge is going to be to create a prototype of a health tech innovation to help solve a UK health problem using micro:bit (**slide 3**).
* If you wish you can make this a challenge set by the [Health Secretary](https://www.gov.uk/government/ministers/secretary-of-state-for-health-and-social-care).
* Advise them that their first challenge is to decompose this larger problem into smaller steps they will need to take to solve this challenge.
* Put students into the small teams they will be working in for the challenge, give out large sheets of paper and pens and ask them to write down the steps they think they need to take to complete the challenge (suggestions on **slide 4**).
* Introduce the learning objectives if you wish (**slide 5**).

**Understanding prototyping (5 minutes)**

* Invite students to consider their current understanding of prototyping.
* Ask them to think/pair/share in their teams why prototyping is important and discuss as a class (**slide 6**).
* Go through your expectations of what their prototype should include (suggestions on **slide 7**, though adjust if wished according to your students’ experience).
* Explain this is the criteria for their innovation and they must make sure they follow it (you can say it is the Health Secretary’s criteria if you are taking this approach, or that this is the criteria their innovations are being judged on if you wish to make it a competition).

**Health area choice & brainstorming (10 minutes)**

* Ensure each team has a **worksheet** (on paper or computer).
* Give them a set amount of time (say 5 minutes) to decide what area of health they wish to focus on and complete the first question on their worksheet.
* Give teams 5 minutes to discuss and brainstorm different ideas for innovations on the other side of their flip chart paper.
* Depending on their level of experience with micro:bit, you may need to set expectations around what they could prototype while encouraging creativity and reminding them they only have to present a representation (an abstraction) of their innovation.

**Developing an innovation (15 minutes)**

* Give teams a short amount of time to choose the innovation they wish to prototype and develop their initial ideas for it on flip chart paper.
* Ask each team to complete question 2 on their worksheet.

**Presenting innovations (10 minutes)**

* Invite each team to briefly share with the class their innovation idea and encourage constructive feedback to help teams develop their thinking.
* Give teams time to note down feedback and set team actions for the next stage in their prototype development on their worksheet.

**Review & wrap up (5 minutes)**

* Ask teams to discuss the learning review questions on **slide 8** and review the learning objectives on **slide 9** if you wish.

**Extension ideas:**

* Instead of completing the worksheet, teams could start a vlog or blog and be tasked each week with summarising their learning (using the questions on the worksheet as a guide). This can be a more appealing way of assessment and improve digital literacy skills.
* Students could explain and collect feedback on their ideas from home or other peers in school and bring this to the following lesson to discuss with their team.

**Differentiation**

**Support:**

* Sensitive groups can help to ensure active participation.
* You could give the first steps for the decomposition activity so students have more structure.
* Extra adult support may be helpful at the start of the brainstorming activity to help ideas to flow and to help with the choice and initial development of the idea.

**Stretch & challenge:**

* Encourage more detailed breakdown of the tasks involved in the challenge and a variety of ideas in the brainstorming task.
* Stretch students’ ideas with additional questioning when they are choosing their innovation to encourage them to give consideration to which ideas might be most workable & effective and why.

**Opportunities for assessment:**

* Informal observation of students’ during team activities.
* More formal assessment of worksheets if wished.