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| **Technology in sports** | | | | | |
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| Practice your presenting skills | | | | | |
| **Subject(s): Design and Technology, Physical Education**  **Approx time:** 10 miutes | |  | | | **Key words / Topics:**   * BBC micro:bit * sports technology * technological literacy * oral presentations * programmable systems |
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| **Stay safe**  Whether you are a scientist researching a new medicine or an engineer solving climate change, safety always comes first. An adult must always be around and supervising when doing this activity. You are responsible for:    • ensuring that any equipment used for this activity is in good working condition  • behaving sensibly and following any safety instructions so as not to hurt or injure yourself or others    Please note that in the absence of any negligence or other breach of duty by us, this activity is carried out at your own risk. It is important to take extra care at the stages marked with this symbol: ⚠ | | | | | |
| **Suggested Learning Outcomes** | |  | | |  |
| * To describe how technology can be used in sport. * To present an oral presentation on the topic of technology in sport. * To work as part of a tram to develop their knowledge of technology in sport. | | | | | |
| **Introduction** | |  | | |  |
| This is one of a series of resources to support the use of the BBC micro:bit in Design and Technology lessons.  Technology can be used in sports to enhance performance and help participants to improve their fitness and stamina. For example, automated beep tests can be used to monitor fitness levels during training sessions and set targets for future improvement.  In this unit of learning, learners will use the BBC micro:bit to develop a prototype for an electronic beep test that can be used to help people monitor and improve their fitness levels. | | | | | |
| **Purpose of this activity**  In this activity, learners will work in groups to share their knowledge of the use of technology in sport. They will each give a 60 second oral speech about the topic to their group.  This could be used as a starter activity with ‘Create a portable beep tester’ as the main activity. It is an ideal exercise for learners to both demonstrate and develop their knowledge of the topic of technology in sport and share with their peers. | | | | | |
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| **Activity** | |  | | | **Teacher notes** |
| **1. Introducing the activity**  Introduce the activity. Learners will begin by working as individuals but will get into pairs later. The activity will focus around the topic of programmable systems.  Place learners into groups of four.  **2. Just a minute – Technology in sport**  State to students that they will be demonstrating their existing knowledge of the use of technology in sport. They will also be developing their knowledge further by working with other learners in their group and listening to their presentations.   1. Get learners into teams of four. 2. State that their topic to talk about will be ‘the use of technology in sport’. 3. Ask each learner in the group, in turn, to speak about this topic to their team for 60 seconds. Explain that they must try not to hesitate, deviate or repeat any information! 4. During each speech, the audience must add up the number of hesitations, deviations and repetitions. 5. At the end, the group should give the presenter feedback on the content, structure and clarity of their speech.   **3. Feedback to class**  Each group to four to feedback a summary of the main points learnt to the class. This can be both in terms of knowledge of the topic and oral presentation techniques used.  Teacher to lead a brief discussion – what new knowledge has been discovered? | |  | | | The IET TV video – Beep Tester <https://tv.theiet.org/?videoid=7822> can be shown as an introduction or starter for activities in this unit of work.  In this activity it is recommended that learners are placed in groups of four but could be placed in groups of up to six depending on class size.  This activity can be used to encourage learners to recall information about the topic and to allow them to develop further knowledge by listening to other presentations.  It can also be used to help learners to develop their oral presentation skills – the teacher could provide feedback on this where appropriate.  It encourages learners to work together to develop their knowledge, both in pairs and in a larger group.  Learners may wish to focus on how technology can help boost performance, monitor fitness or support officiating in sports, e.g. goal line technology in football.  The teacher may wish for learners to write down the key points from each presentation in their folders or exercise books as a written record, or to write down any feedback received by each presented from their group. |
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| **Differentiation** | |  | | |  |
| **Basic** | |  | | | **Extension** |
| All learners should be able to describe in some detail one or more applications of technology in sports. However, pre-prepared prompt cards could be given to individuals or groups that are struggling. Alternatively, the teacher could present examples of how technology is used in sport as a starting point for learners who are struggling to find a starting point for their presentation. | |  | | | Learners could use the internet or books to research one of the applications of sports technology further. For example, looking at specific ways in which technology can be used to help monitor and improve fitness.  Learners should write down their main research findings in their exercise books or folder. |
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| **Resources** | |  | | | **Required files** icon-docicon-pdficon-ppt |
| * Projector/Whiteboard * Paper/exercise books/learner folders | |  | | | icon-ppt Technology in sports presentation |
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| **Additional websites** | |  | | |  |
| The following websites can be used for additional context and support for the activity.   * **IET TV – Beep Tester:** Supporting IET TV video - ideal for use as part of a starter or introductory activity to support this resource. <https://tv.theiet.org/?videoid=7822> * **Wikipedia – Beep Test:** Information about sports fitness tests, known as beep tests. <https://en.wikipedia.org/wiki/Multi-stage_fitness_test> * **YouTube – Beep test Audio:** Full audio track for a multi-stage fitness test. <https://www.youtube.com/watch?v=L9OTnZI9gYo> * **Bitesize – Technology in Sport:** Useful revision notes about the use of technology in sports. <https://www.bbc.com/bitesize/guides/zgfpv4j/revision/4> | | | | | |
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| **Related activities (to build a full lesson)** | |  | | |  |
| **Starters**   * ACTIVITY: Technology in sports   **Main**   * ACTIVITY: Create a portable beep tester | | | **Plenary**   * ACTIVITY: Testing the beep tester * Opportunities within activity for presentations, peer/self assessment * Reflection on Objectives and PLTS skills used | | |
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| **The Engineering Context** |  | | |  | |

Electronic counting is an ideal topic for teaching about programmable components and embedded intelligence in products. These are key parts of the 2014 programme of study for Design and Technology at key stage 3.

It is also an ideal vehicle for using the BBC micro:bit in the classroom and developing the product integration skills of learners

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| **Curriculum links** |  | |  |
| **England: National Curriculum**  Design & Technology   * KS3 1a, 1e, 3a, 3d   Physical Education  KS3 Pupils should be taught to:  analyse their performances compared to previous ones and demonstrate improvement to achieve their personal best.  **Scotland: Curriculum for Excellence**  Technologies   * TCH 3-01a, TCH 3-02a | | **Northern Ireland: Curriculum**  Technology & Design   * Objective 2 - Explore technical inventions and designs that have met a social need cost-effectively.   Learning Outcomes:   * work effectively with others * communicate effectively in oral, visual (including graphic), written, mathematical and ICT formats showing clear awareness of audience and purpose   **Wales: National Curriculum**  Design and Technology  KS3 Skills: Designing 1, 4 | |
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| **GCSE D&T**  AQA D&T   * 3.1.4   Edexcel D&T   * 1.1.4b, 1.2.1c, 1.2.2b, 1.2.3c, 1.15.1b/c/d   Eduqas D&T   * 2.1 Core: 1, 4 * 2.2 Core: 1, 2, 8   OCR D&T  1.1a, 1.2a i, 2.2a iv/vii, 2.2 b, 3.1aii | | **GCSE Engineering**  AQA Engineering  3.3.3 | |
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| **Assessment opportunities** |  | |  |
| Learners can peer assess and feedback on each other’s responses. Regular teacher questioning throughout the activity. Formal assessment of any points that are written down by learners. | | | |
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| **Personal, learning & thinking skills (PLTS)** |  | |  |
| * Team worker * Creative thinker * Independent enquirer * Self manager * Effective participator | | | |