SWITCHED ON Computing

5 words to remember

accelerometer: a hardware component that provides data based on changes in motion, for example when a device is tilted or moved in a certain direction

augmented reality (AR): a digital layer, which is laid on a view of the real world

photosphere: a spherical collection of photographs that, stitched together, allows for an image to be viewed from different directions

quick response (QR) code: a 2-D array of light and dark squares used to encode text in a way that can be read using a smartphone or tablet camera

virtual reality (VR): a simulated, immersive 3-D representation of a real or imagined scene

Knowledge check: QR codes

QR codes are 2-D images made up of light and dark squares that, together, can store URLs (website addresses) or other information. QR codes were first used in the 1990s to track automobile parts in a car-production factory. We can now find QR codes all around us, for example in magazines, adverts and food packaging.

Test yourself:
1) What does QR stand for?
2) What are the benefits of using QR codes?
3) Explain when a QR code may stop working.

Key takeaways

☐ Virtual reality (VR) represents the real world in other media. VR content is immersive, meaning it makes users feel as if they are surrounded by VR images, sound or other content. For the full effect, VR content is best viewed using special hardware, such as Google Cardboard headsets.

☐ VR technology is based on three main technologies:
  ○ Stereographic display – where slightly different images are shown to each eye to create the illusion of depth
  ○ **Accelerometer** – an electronic component that tracks user motion and changes the view accordingly
  ○ Interactivity – where users interact through the use of buttons, controllers, gloves, and so on to move through the virtual world.

☐ **Augmented reality (AR)** adds a digital layer to things or places in the real world. Everyday examples of AR include games such as 'Pokémon Go' and apps where people can view what a new piece of furniture may look like in their home before buying it.
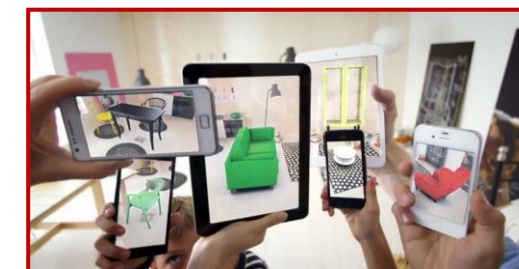

☐ Tools such as Google Maps makes use of VR in its Street View images, which are made up of stitched photographs that provide a panoramic or **photosphere** view.

Google creates Street View images using 360° cameras mounted on cars, tricycles (for going off-road) and backpacks.

Knowledge check: CoSpaces

CoSpaces is a tool that can be used to create or view **virtual-reality** content. The app also has an augmented-reality mode.
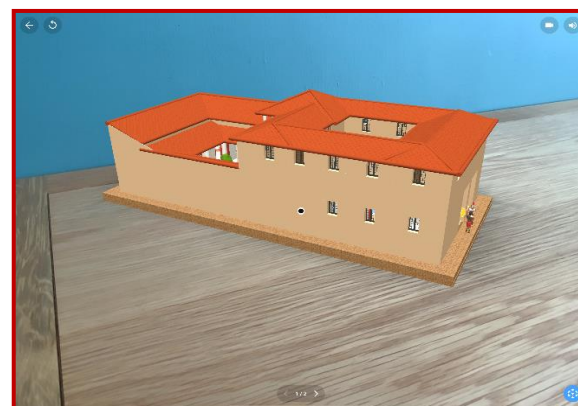
Test yourself: Once you have experienced viewing content in CoSpaces, explain the features of a good VR experience.

Once scenes are created in CoSpaces, block coding (CoBlocks) can be used to program character movement and interaction.
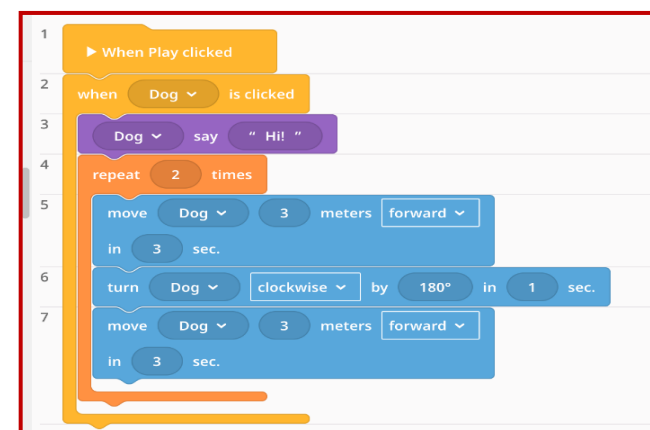
Test yourself: The code above has been written in CoBlocks. Read the code line by line and explain what the dog will do when the program begins.