



DESIGN & ENGINEERING: MAKING ROBOTS

Jordan is a robotics engineer. Robots have been the superheroes and supervillains in the imaginations of writers and filmmakers, but in reality their use is becoming more widespread across a variety of applications; from intelligent vacuum cleaners to emergency search and rescue devices. Their ability to sense what's going on around them is critical for robots to be able to react to a situation.

PUPILS BUILD A ROBOT'S SENSOR

Have you ever wondered ...

... how robots sense the world around us?

Imagine ...

... you want to build a robot to help you in the home. You decide to design and build a sensor circuit for a simple robot, so it can perform a useful function in the home.

Some things for pupils to think about

- What functions do household robots currently perform?
- What do you want your robot to sense – light, temperature, moisture, pressure?
- What do you want the robot to do when it senses something?
- Will you need a motor in your circuit to allow movement of some kind?

Suggestions for supporting pupils

This practical project will require some initial research into simple household robots.

Students may need a basic background knowledge of electronics, such as the functions of simple components and how to solder safely. Alternatively, students may require the help of a technician to carry out the soldering on their behalf. A teacher with knowledge and/or experience of electronics and design technology would be ideal for this activity.

Possible equipment, materials and resources

Depending what sensor the pupils are designing, they may need access to a variety of materials, including general circuitry, protobloc, digital multimeter, connecting wire, stabilised DC supply, soldering equipment and specific sensors.

Useful resources

http://4science.org.uk/assets/files/pdf/engineering/robots_P_Activity_1.pdf