

DT

Navigating the World

Year 6

What I should already know

- Describe what is meant by monitoring devices and provide an example.
- Explain briefly the development of thermometers from thermoscopes to digital thermometers.
- Write a program that monitors the ambient temperature and alerts someone when the temperature moves from a specified range.
- Identify errors (bugs) in the code and ways to fix (debug) them.
- Build a variety of brick models to invent Micro:bit case, housing and stand ideas, evaluating the success of their favourite model.
- Explain key pros and cons of virtual modelling vs physical modelling.
- Recall and describe the name and use of key tools used in Tinkercad (CAD) software.

Technical skills

- Incorporate key information from a client's design request such as 'multifunctional' and 'compact' in their design brief.
- Write a program that displays an arrow to indicate cardinal compass directions with an 'On start' loading screen.
- Identify errors (bugs) in the code and suggest ways to fix (debug) them.
- Self and peer evaluate a product concept against a list of design criteria with basic statements.
- Identify key industries that use 3D CAD modelling and why.
- Recall and describe the name and use of key tools used in Tinkercad (CAD) software.
- Combine more than one object to develop a finished 3D CAD model in Tinkercad.
- Complete a product pitch plan that includes key information.



Sticky Knowledge

- To know that accelerometers can detect movement.
- To understand that sensors can be useful in products as they mean the product can function without human input.
- To know that designers write design briefs and develop design criteria to enable them to fulfil a client's request.
- To know that 'multifunctional' means an object or product has more than one function.
- To know that magnetometers are devices that measure the Earth's magnetic field to determine which direction you are facing.

Vocabulary

Biodegradable	Materials that break down and form part of the soil as part of the natural decomposition process.
Boolean	A form of data, which consists of (true) 1s and (false) 0s values.
Biodegradable	Does not cause harm to nature (animals, plants etc).
Finite	Limited in number, will eventually run out.
If Statement	To instruct a program to respond based on two or more conditions (e.g. if it is below 10 degrees Celsius turn on the heating; else switch the heating off).
Product Lifecycle	How long an object is expected to last before becoming unusable.
Product lifespan	How long an object will last, before being recycled.
Smart	A device with processing capabilities
Sustainable	Can be maintained.

