Technology at work

Unit 1 · New and emerging technologies · matches the "Technology at work" lesson slides (about 60 minutes)

Teacher notes for someone teaching this lesson without a Design and Technology background, including a cover or supply teacher standing in for the usual class teacher.

IF YOU ONLY DO ONE THING (RUSHED COVER LESSON)

If you only do one thing: make sure every pupil can say what "Automation" means in their own words before the lesson ends. Using technology to do tasks with little human input. Ask two or three pupils to explain it back to you - do not just ask "does that make sense?".

Key facts in plain language

These are the facts this lesson depends on. They are written in plain English, not subject jargon, so you can say them in your own words while you teach.

Automation:
Using technology to do tasks with little human input.

Robotics:
Machines programmed to carry out physical tasks.

Crowdfunding:
Raising money from many people, usually online, to fund a product.

Co-operative:
A business owned and run by its members.

Fairtrade:
A scheme that guarantees producers a fair price and decent conditions.

Obsolete:
No longer used or useful.

Common misconceptions

Drawn from the wrong answers pupils pick in this lesson's own question bank, paired with the explanation that is already written for the right answer.

Pupils may think: "Interviewing new staff for a factory" is correct.
Why it is wrong: the correct answer is "Spray painting 500 identical car doors". Robots suit repetitive, accurate or hazardous tasks. They cannot show empathy, be creative or negotiate.

Pupils may think: "The Web is the network; the Internet is the pages" is correct.
Why it is wrong: the correct answer is "The Internet is the network; the Web is pages on it". The Internet is the global network of connected computers. The Web is the collection of pages you reach through it.

Pupils may think: "How strong the prototype materials really are" is correct.
Why it is wrong: the correct answer is "Whether people actually want the product". If few people back the idea, few would buy it, so crowdfunding is a way of testing demand.

Pupils may think: "So that each machine can be used for any product" is correct.
Why it is wrong: the correct answer is "So people and parts travel less and output rises". Arranging work in production order cuts walking, moving and waiting, increasing output.

Pupils may think: "Products become more consistent in their quality" is correct.
Why it is wrong: the correct answer is "Some jobs are lost and retraining is needed". Automation replaces some manual jobs, so workers may need to retrain for new roles.

Talking points to follow the slide deck

The slide deck for this lesson follows the usual DT Classroom shape: a retrieval starter, then each key term below in turn, worked examples, exam-style practice, then an exit ticket. Use these lines as you reach each part - they are the same facts as above, just phrased as something you can say out loud.

When the deck reaches "Automation": say — Using technology to do tasks with little human input. Ask: "can someone give me an example?"

When the deck reaches "Robotics": say — Machines programmed to carry out physical tasks. Ask: "can someone give me an example?"

When the deck reaches "Crowdfunding": say — Raising money from many people, usually online, to fund a product. Ask: "can someone give me an example?"

When the deck reaches "Co-operative": say — A business owned and run by its members. Ask: "can someone give me an example?"

When the deck reaches "Fairtrade": say — A scheme that guarantees producers a fair price and decent conditions. Ask: "can someone give me an example?"

When the deck reaches "Obsolete": say — No longer used or useful. Ask: "can someone give me an example?"

Worked answers to this lesson's questions

The same question bank used for this lesson's knowledge organiser self-check and worksheet exam practice. Use this page as the answer key, or cover the right-hand explanation and hand out the questions as a silent task (see the cover lesson box below).

1. Which job is a robot best suited to?

a) Interviewing new staff for a factory, b) Agreeing prices with a new supplier, c) Designing a one-off chair for a client, d) Spray painting 500 identical car doors

Answer: d) Spray painting 500 identical car doors. Robots suit repetitive, accurate or hazardous tasks. They cannot show empathy, be creative or negotiate.

2. What is the difference between the Internet and the World Wide Web?

a) The Web is the network; the Internet is the pages, b) The Internet is the network; the Web is pages on it, c) The Internet is wireless only; the Web uses wired cables, d) The Web is a newer name for the same network

Answer: b) The Internet is the network; the Web is pages on it. The Internet is the global network of connected computers. The Web is the collection of pages you reach through it.

3. What does crowdfunding also help a new business to test?

a) Whether people actually want the product, b) How strong the prototype materials really are, c) Which factory layout will be quickest, d) How much tax the business will owe

Answer: a) Whether people actually want the product. If few people back the idea, few would buy it, so crowdfunding is a way of testing demand.

4. Why might a factory be laid out in the order things are made?

a) So that each machine can be used for any product, b) So more stock can be stored next to each machine, c) So people and parts travel less and output rises, d) So workers can rotate between every job each day

Answer: c) So people and parts travel less and output rises. Arranging work in production order cuts walking, moving and waiting, increasing output.

5. Which is a disadvantage of automation for workers?

a) Products become more consistent in their quality, b) Some jobs are lost and retraining is needed, c) Dangerous tasks are taken away from people, d) Machines can work through the night

Answer: b) Some jobs are lost and retraining is needed. Automation replaces some manual jobs, so workers may need to retrain for new roles.

READY-TO-RUN COVER LESSON

Project the existing lesson slides as normal; read the key facts and talking points above before the lesson starts.

Low-prep silent task (needs no workshop tools or machinery): write or display the numbered questions above without the "Answer:" line, and have pupils answer them in silence on paper. Mark from the answers above at the end, or next lesson.

If the lesson plan calls for tools, machinery, heat or anything hands-on, do not run that part as a non-specialist cover teacher - set the silent task above instead and leave the practical for the subject teacher. See the general workshop safety guide in the Teachers hub.