Scales of production

Unit 4 · Common specialist technical principles · matches the "Scales of production" 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 "One-off" means in their own words before the lesson ends. A single product made to order, such as a wedding dress. 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.

One-off:
A single product made to order, such as a wedding dress.

Batch:
A set number of identical products made together.

Mass:
Large numbers of identical products on a production line.

Continuous:
Non-stop production, often 24 hours a day.

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: "Mass" is correct.
Why it is wrong: the correct answer is "Batch". A set quantity is made, then the line changes over.

Pupils may think: "Batch" is correct.
Why it is wrong: the correct answer is "One-off". Made individually to a client's needs.

Pupils may think: "One-off" is correct.
Why it is wrong: the correct answer is "Continuous". Stopping and restarting would be very costly.

Pupils may think: "Products can be customised for each individual buyer" is correct.
Why it is wrong: the correct answer is "Set-up costs are spread over many products". Economies of scale spread fixed costs.

Pupils may think: "A high cost per item" is correct.
Why it is wrong: the correct answer is "High set-up cost and little flexibility". Changing the line for a new product is costly.

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 "One-off": say — A single product made to order, such as a wedding dress. Ask: "can someone give me an example?"

When the deck reaches "Batch": say — A set number of identical products made together. Ask: "can someone give me an example?"

When the deck reaches "Mass": say — Large numbers of identical products on a production line. Ask: "can someone give me an example?"

When the deck reaches "Continuous": say — Non-stop production, often 24 hours a day. 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. A bakery making 200 loaves of one type, then switching, is…

a) Mass, b) Batch, c) Continuous, d) One-off

Answer: b) Batch. A set quantity is made, then the line changes over.

2. Which scale suits a bespoke engagement ring?

a) Batch, b) Mass, c) One-off, d) Continuous

Answer: c) One-off. Made individually to a client's needs.

3. Petrol refining runs 24/7. This is…

a) One-off, b) Continuous, c) Batch, d) Mass

Answer: b) Continuous. Stopping and restarting would be very costly.

4. Mass production lowers the cost per item because…

a) Products can be customised for each individual buyer, b) Each item uses higher-quality materials, c) Set-up costs are spread over many products, d) Fewer machines are needed than in batch

Answer: c) Set-up costs are spread over many products. Economies of scale spread fixed costs.

5. Which is a drawback of mass production?

a) A high cost per item, b) Output is slow and inconsistent, c) Every item is made to order for a client, d) High set-up cost and little flexibility

Answer: d) High set-up cost and little flexibility. Changing the line for a new product is costly.

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.