Lesson 23

technology

Inputs, processes and outputs in a real system

Lesson at a glance

Open with a Leap card held to a Dublin Bus or Luas reader and ask what happened between the card and the beep. Name input, process and output on the board, then map Leap together on the flow-builder interactive as the worked example. Groups each take one printed card — self-checkout, weather app or library self-issue — list IPO on scrap paper, then draw the map in the Investigation Journal. Share argued placements, then weigh one everyday Irish advantage and one drawback.

Learning objectives

- Map a familiar digital system as inputs, processes and outputs
- Explain how IPO parts work together to make the system function
- Weigh one advantage and one drawback of the system in an Irish context

Before the bell — prep

Print one system card per group and spread the three types across the class (self-checkout, weather app, library self-issue). Leap is whole-class only — do not put it in the pack. Open the flow-builder interactive on the IWB. Have Investigation Journal pages and scrap paper ready.

Materials

Item	Qty	Per	Source	Low-cost substitute
system fact cards (supermarket self-checkout, weather app, library self-issue)	1	group	provided printable	write the three system names on scrap paper and read the card texts aloud from the teacher notes
Investigation Journal page	1	pupil	classroom	plain paper with three labelled boxes: Input, Process, Output
scrap paper for rough IPO lists	1	group	classroom	the back of a used worksheet
pencils	1	pupil	classroom	any writing tool

Safety watch-point

None beyond normal classroom care. No devices are required for the core task; the interactive runs on the class IWB.

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Teaching moves

- **Today's idea: inputs, processes and outputs:** Give the three labels once only — input goes in, process is the hidden work, output comes out. Do not demand a full spoken model yet. Name system only after the full Leap cycle is visible in the next step.
- **Map a Leap card reader together:** Drive the flow-builder in explore mode. Place the three Leap cards yourself first, saying each label aloud, then clear and rebuild from class suggestions at a brisk pace. Ask: if we removed the process card, would the output still make sense? Cold-call two quiet pupils.
- **Investigate a familiar Irish system:** Leave the board blank or on discussion prompts — do not leave the Leap map up or groups will copy it. Hand each group one card and scrap paper. Circulate for process language that sounds like checking, matching or deciding, not a button press. Have each group say the stem aloud once before moving on.
- **Record your Input → Process → Output map:** Pupils transfer the rough list into a neat left-to-right IPO map in the Investigation Journal. If a map only shows buttons the user presses, ask them to add the hidden process in the middle. Fast finishers add: These parts work together by...
- **Share your system's Input-Process-Output map:** Take only two full one-minute shares, then one sentence from every other group on which placement they argued about. Do not run a name-the-three-parts round. When process is named as the machine itself, ask what it is actually doing in that moment and let the group correct aloud.
- **Advantage and drawback:** One minute in the same groups, then three or four contributions across systems. Push past it's modern — ask who benefits and who might find it harder. Draw out concrete points: unexpected-item beeps, wrong-county weather warnings, blocked library cards needing a librarian.

What it should show

Maps should show a clear user action as input, hidden checking/calculating/matching as process, and a signal, screen change or receipt as output. Self-checkout: scan barcode → look up price/total → price on screen or receipt. Weather app: type place or allow location → fetch and match forecast → icons and temperature. Library: scan card/book → update loan record → due date or beep. Odd maps usually put the whole device or a button press in the process column.

Misconceptions & interventions

- **Pupils call the beep or the green light the process, or call the whole till/app the output.** — Point back to the board labels: input is what goes in, process is the hidden work we cannot see, output is what comes out. Ask them to move the card until the arrow runs input → process → output.
- **Pupils name process as a button the user presses rather than the checking, matching or calculating the machine does.** — Ask: what must the machine work out before it can answer? Steer them to look-up, weight check, fare calculation or loan-record update from the clue list on their card.
- **Pupils say the system is good because it is modern, with no real-life advantage or drawback.** — Reframe: is it faster or slower for you, and who might find it hard to use? Prompt one concrete extra — wrong beep, long queue, or needing a grown-up.

Differentiation

Emerging	Developing	Proficient
• Give the self-checkout card and let the group use the clue list almost word for word for one clear input, process and output.	• After one solid IPO map, add a second input or output on the same scrap paper and whisper-check another group's map.	• Add a second input and say what fails if that input is missing; under the journal map write how the three parts work together.

Cross-curricular hook

Link weather-app maps to Geography — Met Éireann forecasts and why coastal and inland readings can differ.