

technology

Inputs, processes and outputs in a real system

Lesson at a glance

Open with a Leap card on a Dublin Bus or Luas reader and ask what happens between the tap and the beep. Name input, process and output on the IWB flow-builder, then place the three Leap cards as a whole-class model. Groups map one printed system card (self-checkout, weather app or library self-issue) on scrap paper, transfer it to a DrawingRecord map in the Investigation Journal, share, then weigh one everyday Irish advantage and 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 enough system cards so each group gets exactly one type — self-checkout, weather app or library self-issue — and spread the three types across the class. Leap is whole-class only, not a group card. Open the flow-builder interactive on the IWB; have DrawingRecord pages 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.

**Teaching moves**

- **Today's idea: inputs, processes and outputs:** Give the three short labels only — input goes in, process is the hidden work, output comes out — still using Leap as the hook. Do not force a full spoken model yet; full naming lands when the cards hit the board in the next step. Name system only after one complete cycle is visible.
- **Map a Leap card reader together:** Drive the flow-builder in explore mode. First place the three cards yourself: hold Leap card to the reader; check card and work out the fare; beep, green light and journey recorded. Say each label as it lands, then name the whole map a system. Clear the columns and rebuild briskly from class suggestions; cold-call two quiet pupils.
- **Investigate a familiar Irish system:** Leave the board off the Leap builder. Hand each group one printed card and scrap paper only. Circulate for right buckets: process must sound like checking, matching or calculating, not a button press. Before moving on, every group says the stem once out loud: The input starts..., the process works out..., so the output can...
- **Record your Input → Process → Output map:** Pupils transfer the rough list onto the DrawingRecord page as a neat left-to-right map with the system name on top. If a map only shows buttons the user presses, ask them to add the hidden process in the middle. Fast finishers add one sentence: These parts work together by...
- **Share your system's Input-Process-Output map:** Take two full one-minute shares, then a lightning name-the-three-parts round for the rest — do not give every group a full minute. After a full share, ask one listener whether the process sounded like hidden work or another button, and revoice strong IPO language.
- **Advantage and drawback:** Talk in the same groups for about one minute. Push past 'it's modern': ask who benefits and who might find it harder. Draw out concrete Irish points — unexpected-item beeps, coat-or-not for the walk to school or GAA, failed library scans still needing a librarian — then hear three or four contributions across systems.

What it should show

Groups should name a clear input (scan, tap, type a place), a hidden process (look up price, fetch forecast, match book to card) and a noticeable output (beep, screen total, rain icon, due date). A common miss is listing only user actions as the process; prompt What must the machine work out that you cannot see?

Misconceptions & interventions

- **Pupils call the whole device the output, or call the beep the process.** — Point back to the three board columns: input is what goes in, process is the hidden work, output is what comes out. Hold up their card and ask which column the beep really sits in.
- **Pupils list only buttons the user presses and never name the hidden checking or calculating.** — Ask: What does the person do first? What must the machine work out? How do you know it worked? Push them to the clue list's process ideas on their system card.

Differentiation

Emerging	Developing	Proficient
• Keep the self-checkout card and let the group lift one clear input, process and output almost word for word from the clue list. • Sit with the group and run the three stem prompts: What does the person do first? What must the machine work out? How do you know it worked?	• Add a second input or output on the same scrap paper, or whisper-check another group's map before recording.	• Add a second input and say what fails if that input is missing; under the journal map write one sentence: These parts work together by...

Cross-curricular hook

Link to English oral language — groups rehearse and deliver the stem explaining how the three parts work together.