

Steps in order: first algorithms

Lesson at a glance

Open by miming a silly wrong-order sandwich with empty hands and ask what went wrong. Introduce the word algorithm as steps in the right order, then model laying four sandwich picture cards (bread, butter, filling, together). Groups order the same cards on the floor and say the steps aloud, then play robot: one child says one step at a time while another mimes only that step. Close on the carpet linking chefs and builders to right-order steps, and chant the algorithm sentence once more.

Learning objectives

- Put picture steps for a familiar routine into the right order
- Follow a short sequence of steps said by a friend, one at a time
- Say that an algorithm is a set of steps in the right order

Before the bell – prep

Print and cut one illustrated sandwich picture-card set (four cards: Bread, Butter, Filling, Together) per group of three or four before the lesson. Keep decks complete and face-down until Step 3. Optional: one PE getting-ready card set for early finishers. Clear a floor strip so groups can lay cards.

Materials

Item	Qty	Per	Source	Low-cost substitute
illustrated sandwich step cards (bread, butter, filling, put together)	1	group	provided printable	four large IWB pictures of the same steps ordered as a class without paper cards
illustrated PE step cards (take off school shoes, put on runners, put on PE top, line up)	2	class	provided printable	skip the PE set and keep sandwich only for every group
clear floor space for play-robot	1	class	classroom	stand-and-mime in a circle on the carpet without walking routes



Safety watch-point

Mime and pretend only — no real food or props. Gentle moves; each group stays in its own floor space while cards are laid and robot play runs.



Teaching moves

- **Getting Started:** Mime a quick funny wrong-order sandwich with empty hands only — filling with no bread, bread last. Ask What went wrong? What should I have done first? Take two or three ideas in the children's own words; leave the word algorithm for the next step.
- **Today's word: algorithm:** Say algorithm slowly (AL-guh-rith-um) and give the friendly meaning: a set of steps in the right order. Chant once together: An algorithm is steps in the right order. Keep chef and builder examples for the closing talk.
- **Watch the steps:** Hold the four sandwich picture cards so the class can see. Think aloud through wonder-think-try-notice while laying bread, butter, filling, together. Deliberately swap two cards, ask what would go wrong, then fix them. Class choruses the four steps, then chants the algorithm sentence while you point at the ordered cards.
- **Order the cards:** Push chairs back, form groups of three or four, hand every group the same sandwich set. Groups lay the four pictures on the floor and say the steps aloud. Visit and ask why does this one come first? If stuck, hold up two cards and ask which happens sooner. Every group must finish laying and saying before you move on.
- **Play robot:** Name jobs first: talker says one step at a time from the ordered cards; robot mimes only that step then waits. No real food or props. Swap so every child is robot once and talker once. When one pair acts, ask watchers did the robot follow exactly? Keep sandwich cards going for most groups; only early finishers get the PE getting-ready set to mime.
- **What did we notice?:** On the carpet, invite one or two groups to say their four sandwich steps. Ask what went wrong when cards swapped and revoice: that was your algorithm. Add a quick oral picture of a chef following a recipe and a builder following a plan; ask who needs the right order and accept both.



What it should show

Most groups will lay bread first, then butter, filling, together, and can say those four steps aloud. A jumbled order (filling before bread, butter on the outside) should be noticed as silly. In robot play, the robot should freeze between steps and do only what was said. If a group puts butter or filling first, hold two cards and ask which must be on the plate before the other can go on.



Misconceptions & interventions

- **Any list of actions is fine in any order — order does not matter.** — Point back at the silly sandwich mime or swap two of their cards: butter on the outside, bread last. Ask does that make a real sandwich? Revoice that an algorithm needs the right order.
- **The robot can add extra moves, skip a step, or do two steps at once.** — Freeze the play and restate the job: the robot only does the one step just said, then waits. Have the talker repeat a single card and watch the robot do only that mime.

Differentiation

Emerging	Developing	Proficient
• Offer only three cards (drop Together) so the sequence is shorter; hold two cards and ask which happens sooner if the group is stuck.	• After the order is agreed, ask why does this one come first? and have the group say the four steps aloud once more before robot play.	• Groups who finish early shuffle their sandwich cards into a muddle, spot what is wrong, and fix the order; or mime the PE getting-ready card set in a sensible class order.

Cross-curricular hook

Link to PE getting-ready routines — shoes off, runners on, PE top on, line up — as another everyday algorithm the class already uses.