10 · Project sheet · Ayo's Ramp and Route

Term build · Robot / Maker Lab practical · Nursery 1 · Term 3 · Week 11

1. At a glance

Time	40 minutes (or 2 × 25 minutes: build, then route and show)
Group size	Teams of 4 (planner, builder, card-layer, checker)
Learning goal	I can plan our build in 3 steps and guide Ayo with 3 cards, fixing a wrong card.
Coding idea	Plan, build, test, fix, and program Ayo: the whole year in one build.
Week link	https://rhinoxscientifica.com/q/n1-t3-w11

2. Materials needed

Item	Per	Low-cost swap
Teacher-made ramp board or tower base	team	A book on a box
Big blocks	team	Shoeboxes
Large toy car (wheels checked) + paper bread	team	Plastic bottle
Plan cards + route cards	team	Hand-drawn cards
Taped 3×3 grid + cut-out Ayo	team	Chalk squares; a toy
Build card, picture checklist, photo frame	team	Teacher reads aloud

3. Safety and care

- Big blocks only; adults do any cutting.
- No climbing on builds; towers no taller than a knee.
- Check the car's wheels.
- Walk with an adult to show another class.

4. Before the lesson

1. Make one base per group; tape a grid row to each.
2. Print build cards, checklists, plan cards and photo frames.
3. Set up Station 1 and print its record sheet (Guide 05).

5. Step-by-step guide

Step	Teacher says	Children do
1	"What is Ayo's problem?"	"The bread car must get down the ramp!"
2	"Planner: lay the plan cards."	Blocks → ramp → test
3	"Builder: add 2–3 big blocks. Test it!"	Roll the car; add a block if it falls

Step	Teacher says	Children do
4	"Card-layer: forward, forward, stop."	Push Ayo to the ramp
5	(Partner swaps two) "Fix it!"	Checker finds the swap; fix and run
6	"Present: Ayo's problem was…"	"…we solved it by…!"

6. Explore it

Question	Can we solve Ayo's problem with a plan, a build and a program?
Predict	"Will the car stay on our ramp?"
Try	Test the ramp; run Ayo's 3 cards.
Observe	"What worked? What did we change?"
Explain	We planned, tested and fixed until it worked.

7. Talk about it

1a. What was Ayo's problem?

1b. What were your 3 plan cards?

1c. What did you change after the test?

2a. What were Ayo's 3 route cards?

2b. Which cards were swapped?

2c. What was your job in the team?

8. Support and stretch

Support	Base nearly finished; add one block; teacher lays the first route card.
Stretch (optional)	An extra step or a second target. Never assessed.

9. How we check

Observation only, not marked. Picture build checklist and a team photo.

Look for	Secure	With prompts	Not yet
Plans the build in 3 steps	☐	☐	☐
Builds and tests (adds a block if it falls)	☐	☐	☐
Lays a 3-card route to the ramp	☐	☐	☐
Fixes a wrong card	☐	☐	☐

10. Take-home and parent note

Dear parent or carer

Today your child's team **built a ramp** for Ayo's bread car and guided Ayo to it with 3 cards.
At home: make a book ramp, test it, and fix it if the car falls off.

11. Show and share

- Each team runs its route and tests its ramp for the class (or another class).
- Take a team photo for the Week 13 showcase.
- Every child who helped plan, build and test gets a **Step Star sticker**.



The Step Star is a weekly sticker, not a badge. The term badge "Step Thinker · Term 3" is awarded in Week 13.