

Studio: AI Pose Space Game

40 minutes

Project studios (optional extension sessions)

Built in Scratch

Outcome 2.8

Outcome 1.7

Outcome 2.9

WHAT THIS LESSON DOES

Students load their trained pose model into Scratch and build a space game steered by leaning left and right, then tune the confidence threshold so the controls feel reliable.

CURRICULUM OUTCOMES

Outcome	What the specification asks for
2.8	identify different AI models and how they can be applied in coding
1.7	discuss and implement core features of structured programming languages, including variables, operators, loops, decisions, assignment and modules
2.9	discuss the use of AI models when applied in coding, their potential advantages and limitations and any ethical and safety issues which may arise

WHAT STUDENTS SHOULD BE ABLE TO DO

- Steer a game with a machine-learning model you trained (LO 2.8, LO 1.7)
- Tune the confidence threshold for a body-controlled game (LO 2.9)

BEFORE THE BELL

- Students logged in to Scratch via <https://stretch3.github.io/> (Stretch3) with camera permission available
- Pose model URLs ready from the earlier training lesson, or the provided sample model URL on hand
- TMPose2Scratch extension available; clear space so students can tilt left and right on camera
- Open a demo project on the board with the extension already added if network is slow

WHAT YOU NEED

Item	Qty	Per	If you do not have it
tablet or laptop with Scratch	1	pair	run the lesson on the IWB with students taking turns

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HOW THE LESSON RUNS

4 min	introduction	Start: what we're building
3 min	content	The plan: five parts to build
3 min	content	Setup Scratch and TMPose2Scratch
2 min	content	Add the Rocketship Sprite
3 min	content	Load Teachable Machine Model
2 min	content	Display Pose Label
4 min	content	Set the Confidence Threshold
2 min	content	Move Left and Right
3 min	content	Label every x seconds
2 min	content	Add the Star sprite
4 min	content	Show and Make Stars Fall
2 min	content	Challenge
3 min	content	Make sense: what worked, what broke
2 min	content	Reflect
1 min	summary	What you covered

TEACHING MOVES

- Model adding TMPose2Scratch and allowing the camera once on the board before pairs work alone
- Keep the sample model URL visible so anyone without their own model can still finish the game
- When tuning confidence, have students try 0.4, 0.6 and 0.8 and say which feels fairest for tilt left and right
- Label-every interval controls how snappy steering feels; link that back to testing after each change

WHAT TO WATCH FOR

- Pose label names do not match the hat blocks (for example trained as Lean Left but code waits for Tilt Left). Align the exact label text with the model
- Camera blocked or wrong face to the lens so labels never fire. Check Allow and that the student is fully in frame
- Confidence set too high so movement rarely triggers, or label interval left out so steering feels sluggish. Lower threshold slightly or add the label-once-every block

DIFFERENTIATION

- Support: Use the sample model URL and focus on left and right tilt only before adding stars
- Support: Provide a printed checklist of extension, URL, threshold, then movement hats
- Extension: Score on star hits, dodge hazards, or add sound when a pose is recognised