

## See how AI learns: train a pose model

40 minutes

Publishing Online

Built in Teachable Machine

Outcome 4.6

### WHAT THIS LESSON DOES

Students train and test a pose-recognition model from their own body positions, then examine how the quality and balance of training examples shape what the model does-and what that means for the AI behind everyday media.

### CURRICULUM OUTCOMES

| Outcome | What the specification asks for                                                         |
|---------|-----------------------------------------------------------------------------------------|
| 4.6     | Debate the advantages and disadvantages of new and emerging technologies, including AI. |

### WHAT STUDENTS SHOULD BE ABLE TO DO

- reuse: platform Teachable Machine Part 2 of 2 (codesite 9139)
- Train, test and improve a pose-recognition model from your own body positions (LO 4.6)
- Explain how the quality and balance of training data shapes what any AI model does, including unfair outcomes

#### BEFORE THE BELL

- Devices with a working webcam and a modern browser; Teachable Machine runs in the browser with no accounts or sign-ins required.
- Check webcam permissions and seating so students can tilt clearly in frame (pairs sharing one device is fine).
- Interactive whiteboard or shared screen ready if you want to model the first class whole-class before pairs work independently.
- Agree how students will save the exported model link the class way (e.g. shared note, folder, or email to self).

### WHAT YOU NEED

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

## See how AI learns: train a pose model

### HOW THE LESSON RUNS

|       |              |                                       |
|-------|--------------|---------------------------------------|
| 4 min | introduction | Start: what we're exploring           |
| 2 min | content      | Introduction                          |
| 2 min | content      | Open Teachable Machine                |
| 3 min | content      | Create a Pose Project                 |
| 2 min | content      | Create the Classes                    |
| 6 min | content      | Add Images to the Tilt Left Class     |
| 2 min | content      | Add Images to the Tilt Right Class    |
| 2 min | content      | Add Images to the No Tilt Class       |
| 3 min | content      | Train the Model                       |
| 2 min | content      | Test the Model                        |
| 4 min | content      | Export your Model                     |
| 2 min | content      | Conclusion                            |
| 3 min | content      | Make sense: what did the model learn? |
| 2 min | content      | Reflect                               |
| 1 min | summary      | What you covered                      |

### TEACHING MOVES

- Model one clear class on the board first (e.g. Tilt Left): same pose, varied faces in frame, then remove blurry or off-pose shots so students see that sample quality matters.
- Keep class names consistent (Tilt Left, Tilt Right, No Tilt) so later reuse of the model stays straightforward.
- When testing, ask pairs to try edge cases (half-tilt, standing vs sitting, different students) and notice confidence bars, not only "right/wrong".
- If time allows, deliberately unbalance one class (far fewer or messier samples) and retrain once so the fairness point is seen, not only told.

### WHAT TO WATCH FOR

- Blurry, partial, or mixed-pose samples in a class, pause and delete weak images before training; remind them the model learns exactly what it is shown.
- Very uneven sample counts across classes, aim for roughly similar numbers; if one pose always wins, add samples to the weaker classes and retrain.
- Testing only the person who trained, swap who is in front of the webcam; if accuracy drops, discuss representation in the training set.

#### **DIFFERENTIATION**

- Support: Pair students; provide a simple sample checklist (clear tilt, full upper body, steady hold) and allow one student to pose while the other records.
- Extension: Challenge pairs to bias the set on purpose (e.g. only one body type or only slight tilts), retrain, and report who the model now fails for.
- Extension: Link confidence failures to a real media example (recommendation, filter, or moderation) in the make-sense or reflect discussion.