

LESSON 12

Crabby Cursor Chaser

40 minutes

Exploring Coding

WHAT THIS LESSON DOES

This lesson guides students through creating a game called 'Crabby Cursor Chaser' using Scratch. They'll learn how to add and animate a sprite, make it follow the mouse cursor, and add a backdrop to set the scene for their game.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Students will learn how to create a new project in Scratch and add a new sprite to it.
- Students will develop the ability to animate a sprite and make it follow the mouse cursor.
- Students will understand how to use the 'forever' block to continuously execute a set of instructions.
- Students will gain knowledge on how to use the 'point towards' and 'move' blocks to control the movement of a sprite.
- Students will learn how to switch between different costumes of a sprite to create an animation effect.
- Students will learn how to add a backdrop to their Scratch project to enhance the visual appeal of their game.

BEFORE THE LESSON

- Open scratch.mit.edu on a teacher device and confirm the school filter allows it; test creating a new project.
- One device per pupil or pair, charged and logged in so Scratch loads before the lesson.
- Sound optional; a projector helps if you model the first blocks together.

Crabby Cursor Chaser

HOW THE LESSON RUNS

Introduction

Create a new project

Add the crab sprite

Point the crab towards the mouse

Make the Crab Walk

Look at the crab's costumes

Animate the crab

Add a backdrop

Wrap Up

TEACHING MOVES

- 1. Introduction. Frame the goal in one line: a crab that chases the mouse. Tell them they will add a sprite, make it follow the pointer, then animate its claws.
- 2. Create a new project. Get everyone to scratch.mit.edu, new project, then delete the cat together so the stage is empty before they hunt for the crab.
- 3. Add the crab sprite. Guide them to the sprite library and the Crab. Check every project shows only the crab before any code is added.
- 4. Point the crab towards the mouse. Model when green flag, forever, point towards mouse-pointer. Have them run it and move the mouse so they see the crab turn only.
- 5. Make the Crab Walk. Add move 10 steps inside the same forever, under point towards. Stress that forever keeps both blocks repeating until the stop sign.
- 6. Look at the crab's costumes. Send them to the Costumes tab only to notice claws open and claws closed. No edits; just name the two costumes aloud.
- 7. Animate the crab. Back on Code, add next costume inside the forever. Run it, then ask why the claws flicker so fast and whether that is enough for now.
- 8. Add a backdrop. Open the backdrop library. Suggest underwater but let them pick any scene that fits their chaser game.
- 9. Wrap Up. Name what they built: new sprite, forever chase, costume swap, backdrop. Invite one idea they could try next without requiring extra tools.

WHAT TO WATCH FOR

- Students may think: Pupils put point towards or move outside the forever block, so the crab turns or steps once then stops. What to do: Ask them to click the green flag and freeze the mouse. If the crab stops, hunt for blocks sitting above or below forever and snap them inside.
- Students may think: Pupils think point towards also moves the crab, so they skip the move block. What to do: Run the point-only version first. Have them say what changed (direction only), then add move so walking is a separate idea.
- Students may think: Next costume inside forever with no pause makes claws flash too fast, and pupils think costumes are broken. What to do: Reassure them both costumes are switching. The flicker means the loop is working; they can refine timing in a later experiment.

DIFFERENTIATION

- Emerging: Pair them with a partner who clicks blocks while they decide the order: green flag, forever, point towards, move. Stay on point towards alone until the crab reliably faces the mouse, then add move.
- Developing: If the crab chases but costumes are missing, send them back to the Costumes tab to confirm two costumes before adding next costume. Have them explain the forever stack aloud: turn, walk, swap costume, repeat.
- Proficient: Challenge them to try a different sprite that also has two costumes and reuse the same forever pattern. Invite a second sprite that uses the same chase blocks so two characters follow the mouse.