

## Backgrounds in Motion: Scene Transitions

40 minutes

Creative Coding Challenges

### WHAT THIS LESSON DOES

In this lesson, you'll learn to make your Scratch projects more engaging by animating backgrounds and creating smooth scene transitions. Follow the steps to bring a city bus journey to life with dynamic visuals and effects.

### WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand how to animate a moving background in Scratch projects.
- Learn to create smooth scene transitions between different backdrops.
- Develop skills in coding for sprite movement and positioning.
- Gain knowledge on how to use control blocks for repeating actions.
- Acquire the ability to test and adjust animation settings for optimal visual effect.

### BEFORE THE LESSON

- Devices charged and ready: each pupil or pair needs Scratch open in the browser for a new project.
- Confirm [scratch.mit.edu](https://scratch.mit.edu) is not blocked. If your class uses Scratch accounts, have pupils signed in so they can save after each step.

## Backgrounds in Motion: Scene Transitions

### HOW THE LESSON RUNS

Introduction

Create a new project

Add the Scratch Bus

Set the Starting Background

Placing the Bus

Animate the Bus Driving

Add a Background Transition

Repeat the Backdrop Changes

Moving Scenery (Optional)

Test Your Animation

Wrap Up

### TEACHING MOVES

1. Introduction. Frame the goal out loud: a bus that crosses the stage, then a new scene appears. Pupils will code both the drive and the backdrop change.
2. Create a new project. Get everyone to File, New, and a recognisable name such as Bus Through the City. If signed in, save before any blocks go in.
3. Add the Scratch Bus. Model deleting Scratch the Cat with the bin, then adding City Bus from the sprite library so every project starts the same way.
4. Set the Starting Background. Guide pupils to Choose a Backdrop and select Colorful City as the first scene of the journey.
5. Placing the Bus. On City Bus, snap when green flag clicked then go to x:-240 y:-100 so the bus starts at the left edge on the road.
6. Animate the Bus Driving. Add glide 5 secs to x:240 y:-100 under the go to block. Run once so they see a single smooth crossing.
7. Add a Background Transition. Add a second backdrop. Place switch backdrop to Colorful City under the flag and next backdrop after the glide. Have every pupil delete backdrop1 so next backdrop never hits a blank white screen.
8. Repeat the Backdrop Changes. Wrap go to, glide and next backdrop in a repeat block set to the number of backdrops so the bus tours each scene in turn.
9. Moving Scenery (Optional). For the challenge, add the Trees sprite with go to back layer and a forever leftward glide so scenery passes behind the bus.
10. Test Your Animation. Click the green flag together. Watch crossings and scene changes. If the bus feels wrong, change only the glide seconds and test again.
11. Wrap Up. Invite a few pupils to say when the backdrop changes relative to the bus reaching the edge. Encourage trying other backdrops next.

### WHAT TO WATCH FOR

- Leaving the default white backdrop1 in the project so next backdrop eventually shows a blank screen. Stop at the Backdrops tab before the loop: click backdrop1, delete it with the bin, and confirm only the chosen scenes remain.
- Setting the repeat count higher or lower than the number of backdrops, so scenes skip or the bus lands on the wrong one. Count the backdrops together and match that number in the repeat block before testing.
- Changing only x in the glide but drifting y, so the bus leaves the road between scenes. Keep y at -100 in both go to and glide. Compare the two blocks side by side before running.

### DIFFERENTIATION

- Emerging: Pair them with a partner and complete one green-flag, go-to and glide crossing before any backdrop blocks. Stay with them to delete the cat, add City Bus and pick Colorful City so the stage is ready to code.
- Developing: Prompt them to place switch backdrop under the flag and next backdrop after the glide, then check the order aloud. Help them count backdrops and type that number into repeat before they press the green flag.
- Proficient: Offer the Trees challenge: back layer and a forever glide the other way so scenery streams past the bus. Ask them to add more backdrops and retune glide seconds until each scene change feels smooth.