Super scribbles

Scratch lesson plan – Code Playground

Lesson overview

In this lesson, students will use Scratch to create dynamic, animated patterns using variables and the pen extension. By debugging and adjusting pre-set code, students will learn how variables control sprite actions and explore creative possibilities with geometry. This lesson leverages the super scribbles workbook and instructional video to guide students through understanding and enhancing the project.

Time	Key learning outcomes	Resources
45 mins	• Understand how variables are used to control patterns and movement in Scratch • Debug and modify pre-set Scratch scripts to create desired outcomes • Explore creative possibilities by experimenting with values for variables.	• Laptops or desktop computers • Access to Scratch website - https://scratch.mit.edu

Content

Introduction

Introduce the concept of the project:

"Today, we'll create beautiful patterns using Scratch. This project is called Super Scribbles, and it will teach us how to use variables to control our designs."

Highlight the importance of debugging and experimenting in coding:

"In coding, small adjustments can completely change how a program works. Today, we'll see how adjusting variables lets us create unique patterns."

"Tools like design software and animation programs use similar principles to create patterns and effects. Learning these skills opens the door to creative coding"

Tie this project to both maths and art by not only exploring repeated patterns but also the effects of changing angles within the project.

Scratch practical

Ask the children to log into Scratch and find the starter project. The link is provided in the workbook. Show the super scribbles video as a guided lesson pausing regularly when the pupils need to catch up.

- Children should be able to follow along with the workbook or the guided lesson video
- By the end of the lesson children should be able to create a working program showcasing the super scribbles project.

Activity – Super scribbles

The Super scribbles project uses variables to create dynamic repeated patterns. The pen extension is used to follow the coded instructions to draw out the patterns on screen. The precoded parts of the project are designed to be fixed or debugged as a way of introducing children to the idea of code not working as intended and needing to be checked. Through the project children will alter the angles and number of steps taken by their sprite when drawing their shapes.

Ask your class:

"What combinations of angle and steps create the most interesting patterns?"

Encourage the pupils to customise their own backdrops and sprites to make their project unique.

Scratch practical

Using the video and workbooks support the children to follow the instructions and complete the coding project. Have them think of other ways to enhance the project if they have extra time.

Activity wrap up

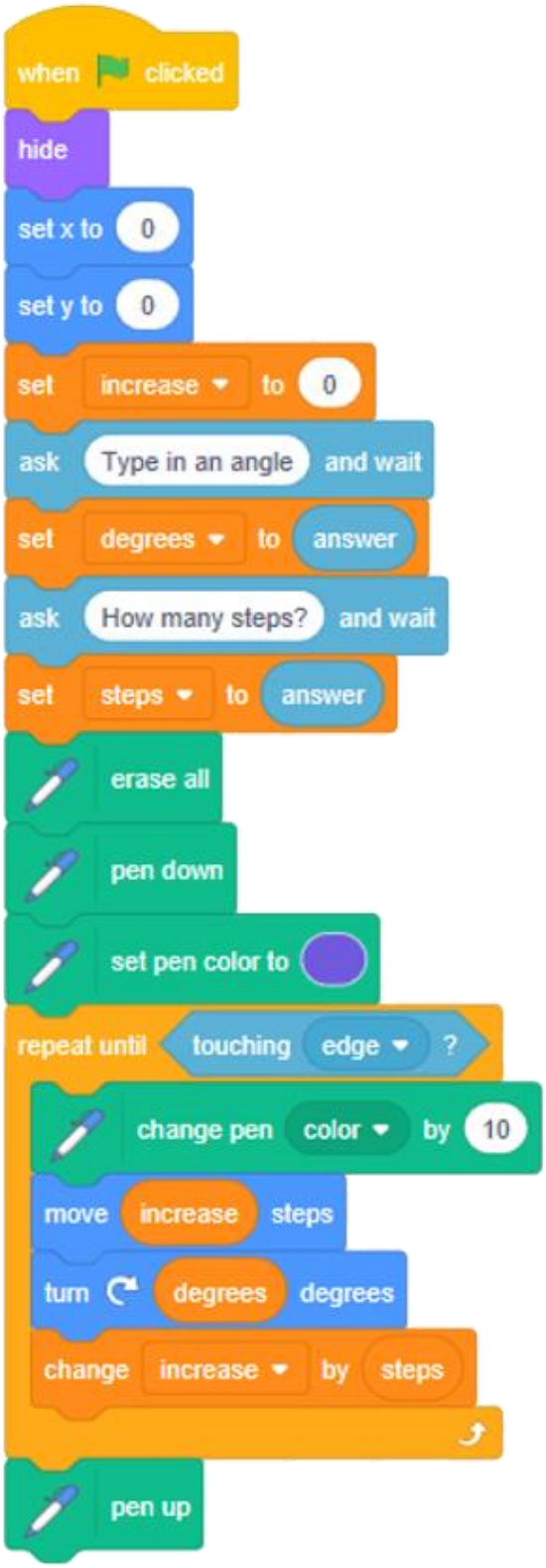
Prepare to share your project with the class

What do you think happens if the pattern grows too large for the screen?

Encourage customisation:

- Animate the patterns with colour changes or sprite movements
- Add a scoring system that rewards students for creating specific shapes
- Create a "pattern library" where students can save and share their favourite designs.

Code snippet



Summary

The following information is an example of what a child at an expected level would be able to demonstrate when completing these activities with additional examples to demonstrate how this would vary for a child with emerging or exceeding achievements.

Assessment guidance

Differentiation – Lower ability/ASN

- Focus on testing small adjustments to pre-set variable values
- Provide visual guides for replacing blocks and creating variables
- Pair students for peer support during debugging.

Differentiation – Higher ability/extension

- Challenge students to add additional variables for effects like speed or rotation
- Encourage experimentation with Scratch's Pen extension to create unique patterns
- Explore how to optimise the code using loops or functions.

Plenary

- What did you learn about variables in Scratch today?
- How did changing the angle and steps affect the pattern?
- What other designs could you create using these tools?

Assessment questions

- What are variables, and how do they control patterns in this project?
- How does changing the angle affect the shapes created?
- What feature would you add to make the project more interactive?
- How could you use these techniques to create a custom animation or screensaver?