Barclays big band

Scratch lesson plan – Code Playground

Lesson overview

In this lesson, students will explore Scratch to create an interactive project called Barclays big band, focusing on music programming. They will use pre-coded instruments, add animations, and learn to play simple tunes while exploring Scratch's music extension. The project encourages creativity, problem-solving, and experimentation with music coding concepts.

Time	Key learning outcomes	Resources
45 mins	• Explore and use Scratch's music extension to code musical instruments • Programmatically create and animate musical instruments • Experiment with coding efficiency and creativity.	• Laptops or desktop computers • Access to Scratch website - https://scratch.mit.edu.

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Introduction

Barclays big band is a follow up project to making melodies. This project comes with instruments and sounds already set up. You'll build on this to create animations and add your own coding ideas. The project uses multiple instruments which can be added to expand the project.

"Understanding how to program music is a key skill for creating games, apps, and even digital instruments."

The activity of this project is to get further understanding of how to create music and animated instruments through code. The importance of the correct costume change at the right time and also how to use multiple instruments.

Hold a class discussion on how music is built from individual notes, then explore the topic of how a computer might be able to replicate the same sounds as a musical instrument but electronically.

Scratch practical

Ask the children to log into Scratch and set up their workspace as described in the workbook. Show the Barclays big band 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 Barclays big band activity.

Activity – Barclays big band

"Today, we'll explore how music is created programmatically. You'll use Scratch to code and animate a virtual band called Barclays big band."

Class question:

"What do you notice about how the instruments and sounds are set up in this project?"

"What happens if we don't match the sound to the correct drum? Why is this important?"

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.

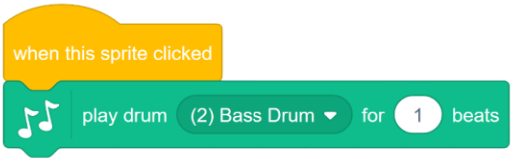
How do you make multiple instruments work together to create nicer sounding music?

Encourage customisation

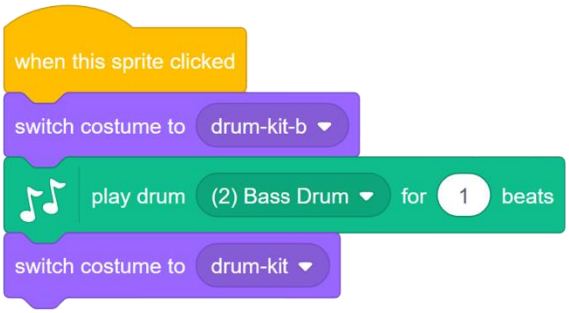
- Add more advanced animations, like creating a conductor sprite
- Experiment with Scratch's pen extension to visualise music as patterns
- Program additional instruments or combine tunes to form a complete song.

Code snippets

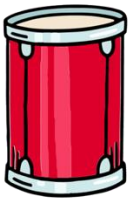
Sound code

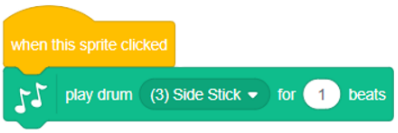


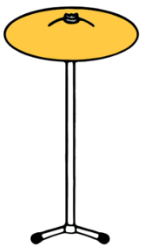
Animation code

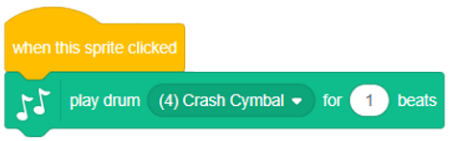


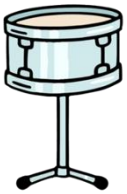
Instruments

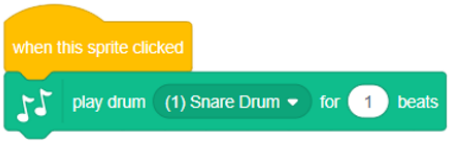


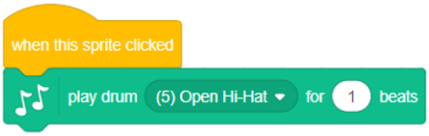


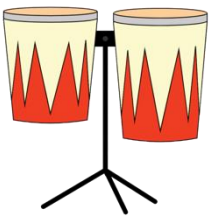


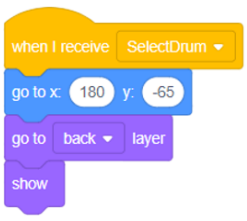


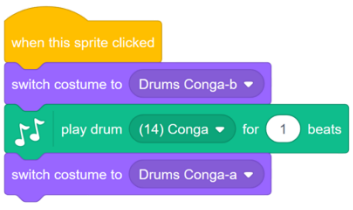


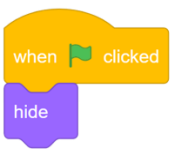












Summary

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 animating one drum sprite and coding a single piano key
- Provide visual guides for adding music blocks
- Pair students for collaborative coding.

Differentiation – Higher ability/extension

- Challenge students to program a new instrument from scratch
- Explore how you can simplify changing instruments
- Encourage experimentation with timing and beat structure for more complex music.

Plenary

- What did you learn about using coding to create music?"
- "How does adding animations improve the project's interactivity?"
- "What was the most challenging part of coding the instruments?"

Assessment questions

- How did you code the drum sprites to play the correct sounds?
- What blocks did you use to animate the piano keys?
- How could you make your code more efficient?
- If you had more time, what new features would you add to your project?