Mystery Animals

Grade Level: 3-5 | Length of Lesson: 90 minutes

Performance Tasks and Other Evidence of Learning:

Students develop a written algorithm to guide a partner in drawing a mystery animal.

Lesson Plan

Overview

Understanding and creating algorithms are fundamental skills of computational thinking. In this activity, students develop a written algorithm to guide a partner in drawing a mystery animal.

Warm-up

1. Have students share examples of algorithms they use in their everyday lives. If needed, provide a few examples for students (morning routine at school, making a sandwich, etc.).

2. Discuss the importance of algorithms and what might happen if an algorithm is not implemented (for example, what might happen if you tried to make a peanut butter and jelly sandwich without an algorithm?).

Activity

To begin, have students select an animal of their choice or assign an animal to students based on concepts being studied in their science class. Instruct students to keep their animal name a secret.

Have students draw their animal, writing down the instructions as they draw. Direct students to use pencil and paper or a digital tool to complete their drawing. After students have written their first draft of instructions, have students practice drawing their animal by following only their algorithm. Students should make revisions as needed.

Pair students up and have them swap algorithms. Explain to students that they should follow the algorithm as written.

After students complete their drawings, students should work with their partner to discuss the results. Example discussion points include:

- Did your partner correctly guess the name of your animal?
- Which steps were unclear or confusing?
- How could your partner improve their algorithm?
- Highlight one step of your partner's algorithm that was particularly well-written and clear.
- Have students revise their algorithms based on their partner's feedback.

If time allows, students can swap algorithms with a new partner and repeat the process.

Prompts

Think of a mystery animal or choose an animal of your choice. You will create a written algorithm that teaches a classmate how to draw this animal. Use the instructions below to guide you.

Part 1

- Open a word processor. Your teacher will let you know if you should open a digital drawing tool or you will use pencil and paper for drawing.
- Draw your animal and as you draw, type the step-by-step instructions you want your classmate to follow to draw the animal exactly as you draw it.
- These instructions will become your algorithm.
- When you have completed your algorithm, practice drawing your animal just by following your algorithm.
- Make changes to your algorithm if needed.

Part 2

- Print or email your algorithm or switch computers so that your partner can view your algorithm.
- Follow your classmate's algorithm exactly as they have written it.

Part 3

- Discuss your algorithm with your partner.
- What changes can be made to improve your algorithm?
- Make changes to your algorithm based on your partner's feedback

Wrap Up

Ask students what they learned about creating and following an algorithm through their partner's evaluation of their algorithm. What did students change about their algorithm after working with their partner?

Discuss with students how they would know if an algorithm is effective.

Extension Activities

- Have students write about the habitat for the animal they created.
- Have students use only shapes to create their animal.
- Have students use grid paper and coordinates to create their animal.