

LESSON 6

Dance Commands: Creating Move Algorithms

30 minutes

The World of Logic

WHAT THIS LESSON DOES

In this lesson, you'll guide students through understanding algorithms via interactive activities. Begin by explaining algorithms using a slideshow, then transition into creating "dance algorithms". Students will suggest dance moves to form a class dance routine. Afterwards, they'll work in small groups to create their own dance routines. The lesson concludes with a reflection on the importance of algorithms in coding.

WHAT STUDENTS SHOULD BE ABLE TO DO

- Understand the concept of algorithms as a set of instructions followed in a specific order.
- Develop the ability to create and interpret simple algorithms using dance moves.
- Enhance teamwork and collaboration skills through creating group dance algorithms.
- Improve creativity by inventing unique dance move sequences.
- Apply understanding of algorithms to real-world activities, laying a foundation for future coding lessons.

BEFORE THE LESSON

- No devices needed: this is an unplugged, movement lesson. Clear floor space so pupils can spin, jump and step safely.
- Have the board ready to write numbered instruction lists. Decide your groups of three or four in advance to save time.
- Hold off on music at first. Have a track ready only for when the class can follow the sequence confidently.

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HOW THE LESSON RUNS

Introduction

Introducing Algorithms

Putting on Shoes

Washing your Hands

Eating Cereal

Algorithm Dance

Small group dance algorithms

Wrapping Up

TEACHING MOVES

- 2. Introducing Algorithms. When pupils give you steps for a task, follow them exactly as written, even when wrong. Skipping a step or doing it literally shows why order and precision matter better than any explanation.
- 6. Algorithm Dance. Take suggestions for simple moves and write them as a numbered list on the board. Lead the class through it slowly first, pointing to each numbered step as you go so they see the sequence being followed.
- 7. Small group dance algorithms. Ask each group for four to five moves written in numbered order. Circulate and check the sequence is written down clearly enough that another group could follow it without asking questions.
- 8. Wrapping Up. Name the dance directly as an algorithm: ordered instructions followed to complete a task. Link it forward to giving a computer exact steps, so the movement work connects to coding to come.

WHAT TO WATCH FOR

- Pupils give instructions that skip an obvious step, assuming you will fill the gap yourself. Follow their steps literally. When you cannot complete the task, ask what instruction is missing. This makes precision concrete.
- Pupils think the order of moves does not matter as long as all the moves are there. Perform a group's routine with two steps swapped and ask if it looks right. Show that a different order is a different algorithm.

DIFFERENTIATION

- Emerging: Give a pupil who is stuck a fixed choice of two moves to start their sequence, then build from there. Pair them with a partner to call out the numbered steps aloud while the other performs.
- Developing: Ask them to read their group's sequence back to you in order before performing, checking each numbered step matches a move.
- Proficient: Challenge them to mix and match moves from their own routine with the whole-class one to make a longer sequence. Ask them to spot and fix a deliberate ordering error in another group's list.