

A-MAZE-ing SeasonsGrade 1: Daily and Seasonal Changes

<h2 style="margin: 0;">Lesson Plan</h2>	Coding Tool	Algorithm design
	Cross-curricular	Math: Patterning
<p>Big Ideas</p> <p>Changes occur in daily and seasonal cycles.</p> <p>Changes in daily and seasonal cycles affect living things.</p> <p>Overall Expectations</p> <p>1. assess the impact of daily and seasonal changes on living things, including humans.</p> <p>3. demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things.</p>	<p>Specific Expectations</p> <p>1.1 assess the impact of daily and seasonal changes on human outdoor activities and identify innovations that allow for some of these activities to take place indoors out of season</p> <p>1.2 assess ways in which daily and seasonal changes have an impact on society and the environment</p> <p>3.3 describe changes in the amount of heat and light from the sun that occur throughout the day and the seasons</p> <p>3.4 describe and compare the four seasons</p> <p>3.5 describe changes in the appearance or behaviour of living things that are adaptations to seasonal changes</p> <p>3.6 describe how humans prepare for and/or respond to daily and seasonal changes</p>	
<p>Description</p> <p>In this lesson, students will work together to find the correct path through the maze. They will become the programmable object, while uncovering exactly what their directions are. It will provide them with a new perspective of coding.</p>		
<p>Materials</p> <p>-tape (masking, electrical or duct)</p> <p>-paper or cardstock</p> <p>-chart paper</p> <p>-sound effects (app, bell, Taboo Buzzer etc.) (optional)</p>	<p>Computational Thinking Skills</p> <p>Algorithm Design</p> <p>Decomposition</p> <p>Collaboration</p>	

Introduction

Discuss how robots or computers follow the directions that they are given. If the directions are wrong or incomplete, the device will not do what you want it to do.

Task: *Be the Bot* - Ask a student volunteer to be a robot. Decide on somewhere around the room as the destination for the robot to go to. Give the robot directions to get to the destination, one at a time. When the robot is close to the destination, give an incorrect command or a command in the wrong direction. Have the robot end up somewhere other than the original destination.

Discuss what went wrong and how the directions could be changed so the robot can be successful. If there is time, have the robot return to the position before the incorrect command and let another student direct it to the destination.

Action

Setup: Create a grid on the ground using masking tape. In each square of the grid, place a piece of paper with a different seasonal characteristic or activity on it. Place these face down so they can't be read until they are turned over. Choose one season and create a path through the grid by placing that season's characteristic cards down. Record the path that you create for reference. The path can be as simple or complicated as you determine for your group. Fill in the other squares with characteristic cards from other seasons.

Task: Students will work as a team, trying to find the right path through the maze. The class will be given the chosen season and will need to discover the right path by finding the correct characteristic cards. Only one student in the maze at a time and they can only move one square per turn. They will enter the grid at a predetermined area. When the student enters the square, they flip over the paper and read the word(s). With their team, they need to determine if it is a characteristic of the chosen season they were assigned or not. If it does belong to their season, they know that it is the correct path to take through the maze and the card can remain face-up. After each correct move, a student will record the direction on a piece of chart paper or on the board. This will act as the code to help others make it through the maze as well.

If it does not belong to their season, they know it is not the right way through the maze and the card should be placed face down. After a student chooses a square and uncovers it, they will exit the maze and let a new student enter. This will help to encourage the collaboration between the group.

Optional: Create a story to accompany the activity. It will help students get excited for the activity and engage further.

Consolidation/Extension

Ask students to respond to the following questions in a science journal or on any piece of paper or discuss as a class:

- How did it feel to be the robot, instead of the programmer?
- What role(s) did you take on during this activity? How did this help the group be successful?
- Did the group work together to accomplish this task? Why or why not?
- What did you learn about coding or programming from this activity?

After providing the students time to think about and respond to these questions, discuss some of their answering. Identify different or conflicting responses and acknowledge the validity of both. Incorporate discussion about collaboration and decomposition. The group worked together and took the large problem of getting through the maze and solved it in smaller steps with one square at a time.

As your final question ask the students:

- What could we do differently next time to be more successful?

Assessment

As students move through the maze and pick up the characteristic cards, they will discuss which season it belongs to. This will provide an excellent opportunity to assess understanding of the terms as well as each season's characteristics.

Use journal entries or discussion responses to assess understanding and feelings towards coding and the different components of it.

Additional Resources

Sample maze layout and characteristic ideas are attached.
