

A MAZE-ing Race

Overview: Use your students' understanding of directions and speed to navigate through a simple (or complex) maze or obstacle course. Using this procedure many concepts can be reviewed to demonstrate student understanding of the sequence of events/changes found in nature.

Procedure:

- 1) Create a purpose for the journey through the maze. (Examples: help the dog find the bone, Phineas find Ferb, or the teacher find the pay-raise).
- 2) Create a maze. Build the maze on a large group table or use tape on the floor for a gross motor activity. The maze should have: a beginning and end, left and right turns, dead ends, and hazards that must be navigated by moving fast or slow such as ice or sleeping monsters.
- 3) Present students with the direction or "action" list. It should include: forward, backward, left, right, fast, and slow.
- 4) Have the students take turns providing directions for the teacher to navigate through the maze.

ASOLs Covered in this Activity:

SCIENCE

- 3S-LPS 1:** The student will investigate and understand that plants and animals undergo a series of orderly changes as they mature and grow. Key concepts include
- a) animal life cycles;
 - b) plant life cycles.
- 3S-ESS 4:** The student will investigate and understand basic patterns and cycles occurring in nature. Key concepts include
- b) animal life cycles;
 - c) plant life cycles.
- 5S-FME 1:** The student will investigate and understand characteristics and interactions of moving objects. Key concepts include
- a) motion is described by an object's direction and speed;
- 5S-LPS 1:** The student will investigate and understand basic plant anatomy and life processes. Key concepts include
- a) the structures of typical plants and the function of each structure;
 - b) processes and structures involved with plant reproduction;
 - c) photosynthesis;
- 5S-LPS 2:** The student will investigate and understand how plants and animals, including humans, in an ecosystem interact with one another and with the nonliving components in the ecosystem. Key concepts include
- c) flow of energy through food webs;
- 5S-LPS 3:** The student will investigate and understand important Virginia natural resources. Key concepts include
- b) animals and plants.
- 5S-ESS 2:** The student will investigate and understand the organization of the solar system. Key concepts include

- b) the order of the planets in the solar system;
- 5S-ESS 6:** The student will investigate and understand how Earth's surface is constantly changing. Key concepts include
 - b) the rock cycle and how transformations including between rocks occur;
- 8S-LS 1:** The student will investigate and understand that all living things are composed of cells. Key concepts include
 - d) cell division.
- 8S-LS 4:** The student will investigate and understand the basic physical and chemical processes of photosynthesis and its importance to plant and animal life. Key concepts include
 - a) energy transfer between sunlight and chlorophyll;
 - b) transformation of water and carbon dioxide into sugar and oxygen;
 - c) photosynthesis as the foundation of virtually all food webs.
- 8S-ECO 2:** The student will investigate and understand that organisms within an ecosystem are dependent on one another and on nonliving components of the environment. Key concepts include
 - a) the carbon, water, and nitrogen cycles;
 - b) interactions resulting in a flow of energy and matter throughout the system;
 - d) energy flow in food webs and energy pyramids.
- HSS-EMP 3:** The student will investigate and understand geologic processes including plate tectonics. Key concepts include
 - a) geologic processes and their resulting features;
 - b) tectonic processes.

Extension Idea:

Place images and information on the various stages of natural cycles or processes in the maze (plant/animal life cycles, photosynthesis, rock formation, energy flow, water cycles, etc.). Have the students collect them in order on their way to the finish.

READING & WRITING

- 3E-RW 2a:** The student will use newly acquired vocabulary drawn from reading and other content areas.
- 3E-CN 1g:** The student will sequence at least two steps in a procedure or ideas/incidents in an event.
- 4E-RW 1c:** The student will use newly acquired vocabulary drawn from reading and other content areas.
- 5E-RW 1f:** The student will demonstrate understanding of content-specific words.
- 5E-WP 1:** The student will
 - b) select an event or personal experience and use drawing, writing, or dictating to compose a message about it;
 - c) add more information to own drawing, dictating, or writing to strengthen the message.
- 5E-WP 2:** The student will
 - a) use technology (including assistive technologies) to produce and publish writing;
 - b) write information related to personal experiences and answer simple questions

about those experiences.

5E-WP 3: The student will

- c) select an event or personal experience and write one thing about it;
- d) revise own writing by adding more information.

5E-WP 4: The student will

- b) use spelling rules when writing by capitalizing the first letter of familiar names.

5E-WP 6: The student will

- a) use technology to produce and share writing;

5E-WP 7: The student will

- b) write to convey ideas and information by selecting a topic and listing words, facts, or details related to the topic;
- c) produce writing that expresses more than one idea with a logical organization;
- d) plan by brainstorming and revise own writing by adding more information;
- e) use technology, including the Internet, to produce writing.

7E-RW 1e: The student will demonstrate an understanding of word relationships by using synonyms and antonyms.

7E-CN 1e: The student will use content words and phrases from a nonfiction text.

8E-RW 1e: The student will acquire and use content words and phrases.

8E-WP 1a: The student will write to convey ideas and information including facts, details, and other information.

d: The student will use content specific vocabulary when writing about a topic.

8E-WP 3b: The student will write to convey ideas and information including facts, details, and other information as well as graphics and multimedia as needed.

8E-WP 5a: The student will write an argument to support a claim with one clear reason or piece of evidence.

HSE-WP 1b: The student will write to convey ideas and information using clear organization and including facts, details, and other information as well as graphics and multimedia as needed.

c: The student will write about an event or personal experience by introducing the event or experience, at least one character, and describing multiple events in sequence.

HSE-RW 2c: The student will acquire and use content words and phrases.

Extension Idea:

After completing the activity, have the students write about their experience and what they learned. Particular attention may be given to content words and sequence of events. Encourage students to include illustrations, tables, graphs, and digital photographs. Texts might take the form of a PowerPoint presentation, book, journal entry, newsletter, or blog. These texts might make great additions to self-selected reading libraries.

MATH

3M-NSCE 2: The student will a) solve addition and subtraction problems when result is unknown with number 0-30.

3M-PSPFA 2: The student will a) identify arithmetic patterns.

4M-NSCE 1: The student will

- a) compare numbers to each other based on place value groups by composing and decomposing to 50;

- b) compare whole numbers ($<$, $>$, $=$);
- 4M-NSCE 4:** The student will
- a) solve single-step word problems using addition or subtraction;
 - b) add and subtract double-digit whole numbers.
- 4M-NSCE 5:** The student will
- a) show one way to arrive at product;
- 4M-PSPFA 1:** The student will
- a) use repeating patterns to make predictions.
- 5M-NSCE 4:** The student will
- a) differentiate between halves, fourths, and eighths;
 - b) solve two-step word problems using addition and subtraction of whole numbers.
- 5M-PSPFA 2:** The student will
- a) identify and extend numerical patterns.
- 6M-NSCE 4:** The student will
- a) solve two factor multiplication problems with products up to 50 using concrete objects and/or calculators.
- 6M-PSPFA 3:** The student will
- a) demonstrate understanding of equivalent expressions.
- 7M-NSCE 1:** The student will
- a) add fractions with like denominators (halves, thirds, fourths, and tenths) with sums less than or equal to one.
- 7M-NSCE 2:** The student will
- a) solve multiplication problems with products to 100;
 - b) solve division problems with divisors up to five and also with a divisor of 10 without remainders;
- 8M-NSCE 2** The student will
- a) subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.
- 8M-PSPFA 2:** The student will
- a) solve algebraic equations using simple addition and subtraction.
- HSM-EO 2:** The student will
- a) solve division problems with remainders using concrete objects;
 - b) solve simple one-step equations (multiplication and division) with a variable.

Extension Idea:

Use content of your current math lesson to mark the correct path through the maze. Some examples are: prime numbers; multiples of 100; numbers divisible by 3; math problems that result in even numbers; fractions that can be reduced to $\frac{1}{3}$.

History

- HS-H 1:** The student will recognize that history describes events and people of other times and places by
- a) identifying examples of past events in legends, stories, and historical accounts of Powhatan, Pocahontas, George Washington, Betsy Ross, and Abraham Lincoln;

b) identifying the people and events honored by the holidays of Thanksgiving Day; Martin Luther King, Jr., Day; Presidents' Day; and Independence Day (Fourth of July).

HS-H 2: The student will interpret information presented in picture timelines to show sequence of events and will distinguish among past, present, and future.

HS-H 3: The student will describe the stories of American leaders and their contributions to our country, with emphasis on George Washington, Benjamin Franklin, Abraham Lincoln, George Washington Carver, and Eleanor Roosevelt.

HS-H 4: The student will discuss the lives of people associated with Presidents' Day, Columbus Day, and the events of Independence Day (Fourth of July).

HS-H 5: The student will explain how the contributions of ancient China and Egypt have influenced the present world in terms of architecture, inventions, the calendar, and written language.

HS-H 6: The student will compare the lives and contributions of three American Indian cultures of the past and present, with emphasis on the Powhatan of the Eastern Woodlands, the Lakota of the Plains, and the Pueblo peoples of the Southwest.

HS-H 10: The student will study the exploration of the Americas by
a) describing the accomplishments of Christopher Columbus, Juan Ponce de León, Jacques Cartier, and Christopher Newport;
b) identifying the reasons for exploring, the information gained, the results of the travels, and the impact of the travels on American Indians.

****Not all of the standards that could apply to this activity are listed in order to save space****

Extension Idea:

Use content of your current history lesson to mark the correct path through the maze such as timelines of historical events or attributes of historical figures to mark the correct path through the maze. For example: the events leading to WWII; the individuals who signed the constitution; important dates in the life of George Washington.

Materials Needed:

- a Maze (draw or use tape on the floor or large table, create one using blocks, or use whatever materials you have available)
- Directions list (this may take many forms depending on your students)
- objects or people to move through the maze
- various "hazards" to navigate over or surfaces to create different degrees of friction

Instructional Setting:

This activity can be done on the classroom floor, a table, in the gym, or outside.

Community Connections and/or Peer Interaction:

Students can work together in small groups.

Functional Activity/Routine:

This activity encourages functional skills such as turn-taking, teamwork, following instructions, dictating instructions, developing and testing hypothesis.

Strategies to Collect Evidence:

For collection of evidence, be sure that each student records a hypothesis, data, and conclusion individually. The students' ability to navigate the maze successfully will show an understanding of concepts.

Specific Options for Differentiating this Activity:

- Use preferred objects or individuals to act as game pieces to be moved such as a favorite cartoon character, sports star, or individual in the community
- Prepare, as necessary, for each student to make choices and communicate with their preferred method. This may include using augmentative communication.
- Build the maze based on your students' ability to fully access the activity.
- There is a wealth of educational games online that students with limited mobility can play that simulate the activity.