

Teaching with Primary Sources – MHU**Lesson Plan: Mapping with Ozobots**

Recommended Grades: 1st/2nd grade

Subjects: SS, ELA, Information and Technology

Time Required: 4-6, 40 minute class sessions

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**Overview**

Through the exploration of picture books, students will be introduced to the idea of change. How can the environment in which we live change? What factors impact that change? After exploring this topic with picture books, students will analyze maps to see how changes are reflected on the maps, while also learning key map terms (directional words, compass rose, etc.). The student lesson will culminate in a group activity in which students create a map of their community and then code the Ozobot to travel through the community in a specific fashion.

Curriculum StandardsSocial Studies

1.G.1.2 Give examples showing the location of places (homes, classrooms, monuments, roads, bodies of water, etc).

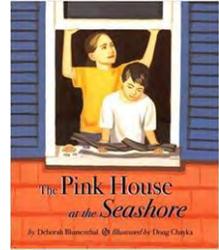
1.G.1.3 Understand the basic elements of geographic representations using maps (cardinal directions and a map key)

Information and Technology

1.TT.1.3 Use technology tools to present data and information.

Science

EX.1.L.2 Understand characteristics of various environments.

Resources	
	<ul style="list-style-type: none"> • Title: The Pink House at the Seashore • Author: Deborah Blumenthal • Published: 2005
	<ul style="list-style-type: none"> • Title: New England Hurricane. Chicken House Near Worcester, Massachusetts • Contributor: Dick, Sheldon, photographer • Created/Published: 1938 August • Reference Link: https://www.loc.gov/resource/fsa.8c02248/
	<ul style="list-style-type: none"> • Title: Riding Out to Bring the Cattle. First Stages of Snow Blizzard. Lyman County South Dakota • Contributor: Vachon, John, photographer • Created/Published: 1940 November • Reference Link: https://www.loc.gov/item/2017811173/
	<ul style="list-style-type: none"> • Title: Lightning, Lightning Over Trees. • Contributor: Horydczak, Theodor, photographer • Created/Published: 1950 • Reference Link: https://www.loc.gov/item/thc1995004145/PP/
	<ul style="list-style-type: none"> • Title: Torndao • Contributor: Harris & Ewing, photographer • Created/Published: between 1913 and 1917 • Reference Link: https://www.loc.gov/item/2016853119/



- Title: [Flood]
- Created/Published: 1924
- Gifted by Herbert A. French, 1947
- Reference Link: <https://www.loc.gov/item/2016837486/>



- Title: Drought Corn, Central Georgia
- Contributor: Lange, Dorothea, photographer
- Created/Published: 1936 July
- Reference Link: <https://www.loc.gov/item/2017762972/>



- Title: S.S. Hurricane Camille After Hurricane Katrina, Gulfport, Mississippi
- Contributor: Highsmith, Carol M., photographer
- Created/Published: 2006 April 12
- Reference Link: <https://www.loc.gov/item/2010630163/>



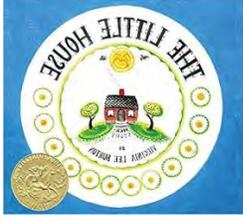
- Title: Automobiles in Snow Drifts, Chillicothe, Ohio
- Contributor: Rothstein, Arthur, photographer
- Created/Published: 1940 Feb
- Reference Link: <https://www.loc.gov/item/2017726694/>



- Title: Inside Dorothy's House, Post Tornado, At the Land of Oz, An Unusual Theme Park at Beech Mountain, North Carolina
- Contributor: Highsmith, Carol M., photographer
- Created/Published: 2017 June 2
- Reference Link: <https://www.loc.gov/item/2017880296/>



- Title: Wagon Tracks down the dry bed of the Colorado River at Colorado, Texas, Rivers and Streams of the Southwest are often dry during periods of drought
- Contributor: Lee, Russell, photographer
- Created/Published: 1939 May
- Reference Link: <https://www.loc.gov/item/2017783230/>



- Title: The Little House
- Author: Virginia Lee Burton
- Published: 2009



- Title: Looking Down Patton Avenue from the Courthouse
- Contributor: Taylor and Jones
- Created: 1882
- Reference Link: http://toto.lib.unca.edu/web_exhibits/WNC_pack/default_pack.htm



- Title: Asheville, NC
- Contributor: Jackson, William Henry, photographer
- Created: 1900
- Reference Link: <https://www.loc.gov/item/2016809084/>



- Title: Grove Park Inn, Asheville, NC
- Contributor: Herbert W. Pelton
- Created: 1913
- Reference Link: <https://www.loc.gov/resource/cph.3b19189/>



- Title: Skyline from the Grove Park Inn, Asheville, NC
- Contributor: Masa, George
- Created: 1926
- Reference Link: http://wcdigitalcollection.contentdm.oclc.org/cdm/singleitem/collection/p16232coll3/id/105#_ga=2.17197758.682491676.1539186911-1254770982.15381530



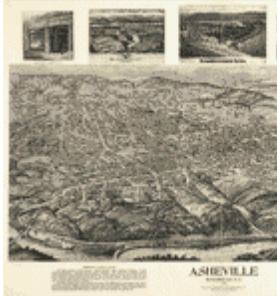
- Title: Patton Avenue View from top of BB&T Building, looking west along Patton Avenue
- Contributor: unknown
- Created: 1960
- Reference Link: <http://cdm15733.contentdm.oclc.org/cdm/ref/collection/Photographs/id/3238>



- Title: Asheville, North Carolina
- Contributor: Bibikow, Walter
- Created: 2000
- Reference Link: <https://www.rollingstone.com/culture/culture-news/freak-power-2000-231083/>



- Title: Rosie's Walk
- Author: Lee Hutchines
- Published: 2015



- Title: 1891 bird's-eye view of the city Asheville, NC
- Contributor: Fowler, T.M. , Charles Hart Litho.
- Created/ Published: 1912
- Reference Link: <https://www.loc.gov/item/75694896/>

Day 1: The introduction to this lesson will activate background knowledge around the idea of change in the environment and reasons for that change through the exploration of the picture book The Pink House at the Seashore by Deborah Blumenthal.	
Step 1	Students will listen to the story being read while viewing the pictures. Each time students notice a change in the book, they should raise their hand and share. Teacher will keep a class list of all the changes occurring in the book.
Step 2	Before reaching the end of the book, teacher will lead a class discussion about each change, asking students why that change occurred according to the book.
Formative Assessment	Each child will make a prediction about the ending of the book using a sentence frame: "I think _____ will happen at the end, because _____ already happened in the story."

Day 2: Students will connect the events in the picture book with natural disasters that happen in real life through primary source images.	
Step 1	Teacher will share a few of the predictions from students in yesterday's lesson. Then teacher will read the ending of story to student and class will compare predictions with the actual ending.
Step 2	Students will perform a gallery walk exploring various severe weather images. While analyzing each image, they will complete the chart provided in Appendix A (what type of weather, why do I think that). Teacher will model the thinking process students will use in chart with group before gallery walk begins. *Modification: teacher could also just project one picture at a time, or pass hard copies of images to individual students, to minimize movement in classroom if needed.*
Step 3	After the Gallery Walk, teacher will share each image with group using overhead projector and group will discuss their inferences.
Formative Assessment	Chart completed during gallery walk will allow teacher to see if students are making evidence-based inferences.

Day 3: Students will continue to explore the theme of change with the picture book The Little House by Virginia Lee Burton	
Step 1:	Before reading take students through a picture walk of the book. Students need to observe what they see happening in the pictures, and how they know change is occurring.
Step 2	Teacher will then read the book aloud to students. After each major change, teacher will pause and allow students to draw a picture of the most important change they feel has occurred to the little house. Under the picture they will write a sentence explaining the change in their own words. *Modifications: Provide sentence frames if needed for students. Examples: This is an important change because _____, _____ changed

	from _____ to _____. _____ changed because _____.*
Step 3	Group Discussion – Reflect on the changes that students recorded. Students can share out and teacher record on board where everyone can see. Then teacher will draw a two column chart (left side “People who benefited” / right side “People who did not benefit”). Teacher will ask partners to reflect on this question, and then share out and discuss as a group.
Formative Assessment	Student drawings and sentence descriptions during the read aloud will help teacher to understand if the student is understanding the concept of change and why/how it occurs.

Day 4: Students will analyze primary source photographs in order to see how a real city has changed over time.	
Step 1:	Teacher will lead students through the ORQ process as a group with a photograph of their local city Asheville, NC.
Step 2:	Students will work in partners or small groups to circle observations on individual images of Asheville, NC. (images can be substituted with historical photos of your own local city)
Step 3:	Class will sit in a large circle. One by one each group will share what they observed as being important in their photo. Teacher will guide students to put pictures in chronological order based on observations, and emphasize the changes that have occurred in Asheville, NC
Formative Assessment	Groupwork – What did groups observe? How well did they share their observations with the whole group? These questions will help teacher understand if students are able to make connections between what they see and how they think about these observations.

Day 5: Students will be introduced to maps and directional terms using the picture book Rosie’s Walk by Pat Hutchins. (Lesson Plan adapted from National Geographic - https://www.nationalgeographic.org/activity/mapping-storybooks/)	
Step 1:	Each student will receive a map for Rosie’s Walk. Ask students “What do you see?” Talk about places they know that are like the places they see on the map.
Step 2:	Read the title of the story and ask partners to predict what they think will happen in the story. Share out and then have students return to partners and discuss “How do you think the map will be a part of the story?” Share out the partner answers.
Step 3:	While reading the story aloud, have students use a cut out of the characters and follow along by moving the character along the map. For more detail on this step, see the lesson plan from National Geographic linked above.
Formative Assessment	Have students retell the story in their own words using their character cut-outs and maps. This will help teacher gauge comprehension of the story events, and student understanding of directions on the map.

Day 6: Students apply what they have learned about maps by analyzing a historical map of Asheville. (could also use a contemporary map of local city)	
Step 1:	Give each student the 1891 bird's-eye view map. Have them zoom in using the "window method" or "crop-it tool" and circle any specific places or objects they can recognize.
Step 2:	Lead group through a discussion of the following questions: 1) How do these maps help the person looking at them? 2) Who would these maps be important to and why?
Formative Assessment	Individually ask students to highlight something that shows direction and one symbol they recognize. This will evaluate their directional map skills, and key teacher into how ready they are to begin building their own maps.

Day 7: Student groups draw a 2d map of their community.	
Step 1:	Each group makes a list of places and objects they need to include on their map.
Step 2:	Each group then draws a symbol that will represent each place and object.
Step 3:	Each group draws a 2d map on large poster paper using the symbols they have planned and correct directional spacing between places.
Step 4:	Individually each student writes (or speaks depending on ability) 3 sentences describing their map: What did their group create a map of? Explain what one of the symbols represent. Describe the directional relationship between at least two places on the map.
Summative Assessment	Teacher should evaluate if the individual student writing accurately describes the visual representation of map.

Days 8/9: Student groups revise map to become a 3d model of the community.	
Step 1:	Each group assigns one place from map to each student in the group.
Step 2:	Using objects provided by teacher (any assortment of items will work – construction paper, pipe cleaners, popsicle sticks, bottle lids, glue, pompom balls, legos, blocks, magna tiles etc), students work to construct 3d models of places to construct new map.
Summative Assessment	Teacher should evaluate student creativity and problem-solving skills while creating model.

Day 10: Students will be introduced to coding using Ozobots.	
Step 1:	Teacher introduces the basic coding process used with Ozobots, and allows students to practice with a simple straight line. View this student made video for an overview of the basics: https://www.youtube.com/watch?v=Lf62VTbzEeQ
Step 2:	Students can explore and become familiar with Ozobots using their own creative drawings of various shapes and mazes.
Summative Assessment	Were students able to get Ozobot to follow their lines correctly? If so, then they are ready to take Ozobot through their community map.

Day 11: Student groups will work together to take Ozobot on a journey through their community map, practicing both coding skills and directional map skills.	
Step 1:	Groups should plan their journey with a pencil through their map.
Step 2:	Next, groups should write/ sketch their coding plan for Ozobot on scrap paper and preview this plan with the teacher.
Step 3:	Groups should add the correct colored roads to their map in order to code Ozobot to travel through the community.
Summative Assessment	Did Ozobot travel through the community successfully? Were all required elements of 3d map included in group's final product?

Extension Activities

- 1) Students can write a story to accompany Ozobot as it travels through the community map. Students can read their story and video Ozobot's journey through the community, posting this video on a learning tool such as Flipgrid or a private Youtube Channel.

Appendix A

Word Bank:			
Drought	Tornado	Hurricane	Blizzard
Thunder Storm	Flood		
Image	Type of Weather	Why I think this?	
			
			
			
			



