

Breakout EDU Game

Large Vs. Small Scale Maps: Can you Breakout of the Map?

The order of the template has been changed to reflect a lesson plan. The template online will be arranged differently to help a teacher think through the steps.

<https://www.breakoutedu.com/game-template/>

Game Name:

Large vs Small Scale Maps: Can you Breakout of the Map?
Differences in Map Scale

Game Designer:

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Content Areas:

Geography and Math

Recommended Ages:

8th Grade and up

Ideal Group Size:

Whole class or small groups

Suggested Time:

1 class period

Materials:

- Soft Cloth Breakout Bags (one per group) If you choose to use the Breakout boxes you will need to modify the directions for a box with multiple locks.
- 3-Digit Locks - 3 Numbers
- 4-Digit Locks - 4 Numbers
- ABC Locks - 4-5 Letters for the ABC Multilock
- Directional Locks - 5 Directions for the Directional Multilock
- Clue sheets (folded and placed in bags)

SIOP Elements:		
Preparation Adapting content Linking to background Linking to past learning	Scaffolding Modeling Guided practice Independent practice Comprehensible input	Grouping Option Whole class Small groups Partners Independent
Integrating Processes Reading Writing Speaking Listening	Application Hands on Meaningful Linked to objectives Promotes engagement	Assessment Individual Group Written Oral

Story: (to be used in lesson instructions below)

Ask, "When is the last time you have used a map?" Wait for student responses, then give a personal experience using maps, an example is below.

"I have seen many different maps and have used different maps too. My friend from high school is a pilot and her maps look very different from other maps. The maps we use to hike look different from the maps in your book and on the walls. What parts of the maps do you pay attention to when you are using them?" Wait for student's responses, if you need to guide them a bit, explain what different parts of the maps do to help them remember names. (Date, Orientation, Grid, Symbols, Title, Cartographer, Index, Legend, Scale) **(Preparation: Linking to past learning, Linking to background, Grouping: Whole class)**

After they have gone over parts of a map, continue with: "I find the scale a very interesting tool on maps. Did you know there are large-scale and small-scale maps? Large-scale maps show a small area in greater detail. Small-scale maps show large areas and not much detail. Let's write down the definitions so you can remember them for the challenge you are about to take. **(Integrating Processes: Listening, Writing, Scaffolding, Comprehensible input)**

Here is the challenge. I locked the review for the geography/math test in the last box/bag, and your group must open it to get the review. Who thinks they can help crack the codes to unlock the box/bag? Are you up for the challenge? Could the answer key to the review be in the bag/box too? **(Application: Promotes Engagement)**

Lesson Instructions:

Note for game:	The locks will need to be opened in order. This lesson is set up for groups of four or the whole class to work together to open the bags. You can have the bags all separately opened, or they can nest from smallest
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	to largest. You can also have groups race to open the bags making time a fun factor.
<i>Prior to the Lesson</i>	<ul style="list-style-type: none"> • <i>Set up and check locks to ensure the correct code/answer is used. (See Answer Key below.)</i> • <i>Set up each bag with the correct items and make sure each group and bag have the needed materials. Make sure the large bag with the review sheets is opened last.</i> • <i>Lock the test review and an extra prize (answer key?) if desired into the last bag.</i> • <i>Divide students into groups of 4 or do the challenge as a whole class.</i> • <i>Display various kinds of maps on the classroom walls to use as examples of large-scale and small-scale maps.</i> •
Procedures	Ask the students, “What is the difference between map scales?” Have them explore the purpose of scales (large vs small, purposes of different maps) drawing on what they already know from previous lessons or using the maps posted on the classroom walls. (Preparation: Linking to background, Linking to past learning)
	Share your autobiographical experiences about maps and map scale or use the story given above and share the challenge.
	Explain details of where they will find materials/clues/resources in the room to complete the challenge and review behavior expectations for this kind of classroom experience. (Integrating Processes: Listening)
Clue One 4-digit number lock.	When students are ready to go, start the activity by telling them that the key to opening the first bag is a very important date. It is related to the review. Write the date on the board or announce the date of the test. Tell students to find the bag with the 4-digit number lock and open the lock of the first bag to get the second clue. (Example: January 10 th would be 0110.)
Clue Two ABC Lock	Clue Two will ask them to compare two maps labeled A and B. The clue will ask the group to discuss multiple questions about the map with a final question asking when compared to A, B is a large or small scaled map. Depending on your groups, you may change the answers to alternate around the room to help alleviate group to group “helping.” (Application: Promotes Engagement; Integrating Processes: Listening, Reading, Writing; Grouping Option: Small Group or Whole Class) You may need to remind students to look for the bag with the ABC lock in order to open the next bag.
Clue Three Directional	In the third bag are two maps and Clue Three. One of the maps is a large-





Arrow Lock	scale map, and one is a small-scale map. Also in the box is a card asking them the direction (north=arrow up, south=arrow down, east=arrow right, and west=arrow left) when taking a trip from _____ to _____ to, _____ to, _____ to, _____ to. These arrows will open the lock to the next clue. (Integrating Processes: Listening, Reading, Writing; Grouping Option: Small Group or Whole Class)
Clue Four 3-digit number lock	To open the last/largest bag, the clue shows 5 different maps, with scales ranging from small to large. The clue tells the students to place the maps in order from smallest scale to the largest scale, and then solve the math problem on the clue card to get the lock number. (Integrating processes: Listening, Reading, Writing; Grouping Option: Small Group or Whole Class)
	When all of the bags are opened and the review is revealed, hold a follow up discussion. Which scaled maps are easiest to use and why? After the discussion, direct students to answer the reflection questions in writing. (Assessment: Written, Individual; Application: Meaningful)

Reflection Questions:	
1	Was it easy to tell the differences between the scales? What were the clues you used to determine the scale of the map?
2	Why is it important to select the correct scale for the map you need?
3	Why are cartographers not able to use the same scale for every map?
4	<i>What is one question you would like answered about the map scale activity?</i>

Does your game align to any standards?	
National Geography Standards	GEOGRAPHY STANDARDS Element One: The World in Spatial Terms 1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
Arizona Geography Standards	The use of geographic representations and tools help individuals understand their world. 8.G1.1 Use geographic tools and representations to analyze historical and modern political and economic issues and events. Key tools and representations such as maps, globes, aerial and other photos, remotely sensed images, tables, graphs, and geospatial technology HS.G1.1 Use geographic data to explain and analyze relationships between locations of place and regions. Key tools and representations such as maps, remotely sensed and other images, tables, and graphs
Other Arizona	ELA

Standards	<p>Writing:</p> <p>8.W.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with well-chosen, relevant facts, definitions, concrete details, quotations, or other information and examples. c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts. d. Use precise language and domain-specific vocabulary to inform about or explain the topic. e. Establish and maintain a formal style. f. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p> <p>9-10.W.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic. e. Establish and maintain a formal style and an appropriate tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>Mathematics Algebra - A Seeing Structure in Expressions (A-SSE) Interpret the structure of expressions A1.A-SSE.A.1 Interpret expressions that represent a quantity in terms of its context.</p>
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Lock Combinations: Answer Key	
3-Digit Lock - 3 Numbers	1-5-0
4-Digit Lock - 4 Numbers	Date of test Format MMDD
ABC Lock - 4-5 Letters for the ABC Multilock	SMALL
Directional Lock - 5 Directions for the Directional Multilock	Directions are: E=R, N=Up, N=Up, E=R, S=Down

LOCK TYPE	LOCK	HOW WILL THEY KNOW THE	WHERE WILL
	COMBINATION	COMBO?	IT LEAD?
 <p>4-Digit Lock</p>	0-1-1-0	Teacher will announce or post the first clue, which relates to the date of the test. Inside this bag will be the second clue.	To unlocking the ABC Multilock and getting the second clue.
 <p>3-Digit Lock</p>	1-5-0	Using 5 maps, they will place them in order depending on scale and then solve the math problem on the clue card.	To the large bag to obtain the study guide to the test and another prize (answer key?)
 <p>Directional Multilock</p>	R, Up, Up, R, Down	By navigating directions using the correct scale map in the clue set, students will put in the directions using the arrows.	To another bag and the fourth clue to unlocking the last bag.
 <p>ABC Multilock</p>	L-A-R- G-E S-M-A- L-L	<p>After comparing the two sample maps, and determining if B is a larger or smaller scaled map, students will write the correct answer with the locks.</p> <p>You can use either large or small as an answer depending on your choice of maps.</p>	To another bag and the third clue to continue to unlock the bags.