



# Mapping the Mediterranean: Lesson Plan

## An Archaeological Adventure in Athens

A Classroom Activity

**Subject Areas:** Social Studies and Mathematics

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**For Grade Levels:** 4, 5, and 6

**NCSS Standards:** II, III, VIII

**Time Required:** Prep Time: 30 minutes  
Activity Time: Two 40-50 minute periods

### Objectives:

1. Students will create an original archaeological site.
2. Students will duplicate an unknown archaeological site.
3. Students will locate cardinal and intermediate directions on a map.
4. Students will provide directions that can be duplicated.

### Materials:

For each group, you will need:

- Two laminated 11" x 17" copies of the map:  
*Archaeological Zone in Athens: 1936* from:  
[http://www.aiys.org/aodl/public/medmaps/MEDMAPS\\_site/Essay\\_pages/Athens.htm](http://www.aiys.org/aodl/public/medmaps/MEDMAPS_site/Essay_pages/Athens.htm)

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Mapping the Mediterranean, a map inventory and online exhibition, is located at  
[http://www.aiys.org/aodl/public/medmaps/MEDMAPS\\_site/MM\\_pages/index.htm](http://www.aiys.org/aodl/public/medmaps/MEDMAPS_site/MM_pages/index.htm).

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- One 12 1/2" x 15 1/2" Express mail box (free from post office)
- Clear protractor – can be printed on transparency film
- Metric ruler – can be printed on transparency film
- Six magnetic dots (\$1.95 per dozen – American Science and Surplus)
- Iron Filings (\$4.95 per 12 oz. – Steve Spangler Science)
- Empty 35mm film canister (free from any store that develops film)
- Glue Dots or 3M Scotch Double-sided tape
- Roll of clear package tape
- Picture of compass rose and protractor for overhead projector
- One Vis-A-Vis Wet-Erase Overhead Marker
- Worksheets: *Where Would You Dig?* and *Location of Magnets*

## Procedure:

### Prep Day

1. Laminate the maps. Using the clear package tape, attach one map on the top of each mail box. Make sure the bottom of the map lines up with the **bottom** edge of the box. Place the other map inside the box. Assign the box a number.
2. Measure one teaspoon of iron filings into an empty 35mm film container.
3. Xerox one compass rose and one protractor (for instructional purposes) on transparency film.
4. If needed, print enough metric rulers and protractors on transparency film so that each group has one ruler and one protractor.

### Day 1

1. Review what the students know about maps. Allow the students to create a list of all the things they know. Discuss the compass rose. Review all the cardinal and intermediate directions. Have a student stand in the middle of the room and represent north. One at a time, call on a different student to stand and relate his/her cardinal or intermediate location in relation to the "North" student.

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2. Review with the class how to measure angles using a protractor. Call on different students to bring a ruler to the board and draw a specified angle. Have the class agree or disagree if the drawn angle is correct. Have another student come and measure the angle on the board using a protractor.

## Day 2

1. Divide the class into small groups. (If you have enough supplies, have pairs of students work together.) Each group will need one mailing box with an attached map and extra map inside, one metric ruler, one clear protractor, six magnetic dots, one Vis-A-Vis marker, and one 35mm film canister with iron filings.
2. Explain to the class that they will be using a map of an archaeological site in Athens, Greece from 1936. Have the students tell what they observe about the map. Point out the grid lines. Brainstorm how the grid is used.
3. Instruct each group to use the Vis-A-Vis marker to assign a letter to each space across the top of the grid, starting on the left with A and ending with N. **Do not write on the map. Use the empty space on the surrounds the map.** Repeat the same pattern on the bottom of the grid. Along the left side of the map, starting at the top, assign numerical values from 1-10. Repeat the sequence on the right. Have the students mark the map inside the box exactly the same.
4. Each group will use the map inside the box to **secretly** place the **six** magnetic dots at various points on the map's grid. Instruct the students that they will need to use a variety of angles, acute, obtuse, right and straight angles, in the placement of the magnets. Use the glue dots or double-sided tape to hold the magnets in place. Have the groups mark a starting point on the map with a "+" to use as a reference point for the directional instructions. This point **must be** on intersecting lines. Mark this point on **both** maps.

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5. Have the students place their protractors on the starting point with 90 degrees on the vertical line and 0 degrees on the horizontal line. The groups will write instructions, using their protractors and rulers, on how to find the magnets. For example: Magnet #1, 35 degrees, Northeast, 12 centimeters. A worksheet is provided. When they have completed the worksheet, have the students place the map back inside the box so that its orientation **duplicates** the map on top.
6. The groups will exchange boxes and instructions. Using the map on the top of the box, the students will read the directions given and locate each of the six hidden magnets without looking inside the box. Students will mark the locations on the top map with their markers. They will fill out the chart on the worksheet titled: *Location of Magnets*. For example: Magnet # 1, G 5.

**Assessment:**

After duplicating the unknown map inside the box, the students will use the iron filings to check their work. Have them carefully sprinkle the filings over the map. At each spot where a magnet is located, the filings will produce a circular pattern. The groups can then check their hypotheses with the information recorded on the worksheet.

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Group's Members:

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### Where Would You Dig?

Magnet #	Degrees	Direction	Distance

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### Location of Magnets

Magnet #	Grid Letter/Number

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Name: \_\_\_\_\_

### An Archaeological Adventure in Athens Rubric

	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Use of Cardinal/Intermediate Directions</b>	Complete, accurate description of locations	Accurate description of most locations	Inaccurate or incomplete description of locations	No written description of locations
<b>Protractor Use</b>	Variety of acute, obtuse, right angles, along with straight angle	Two different angles were used along with straight angle	Only two different angles were used in design	Angles were all of the same type
<b>Locations</b>	Complete, accurate duplication of hidden map	Accurate duplication of four or more locations	Inaccurate duplication of three locations	Attempted duplication but locations were inaccurate four or more times
<b>Group Work</b>	Works very cooperatively; contributions are about equal	Works cooperatively; contributions are nearly equal	Works cooperatively at times, but contributions are unequal	Does not work cooperatively; some members do not contribute

**Score:** \_\_\_\_\_

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