

ACTIVITY 3

ACTIVITY OVERVIEW

Maryland Map Study

Cooperative Problem Solving Using Maps

Activity Description

Students will use a Maryland map to orient themselves to the geography of the Chesapeake Bay region and to practice problem solving skills in a cooperative group setting.

Materials

- Envelopes with clues to problems on slips of paper
- Maryland Road Map (one per group)
- 2 rulers or 2 pieces of paper

Teacher Background

Cooperative Problem Solving can be modified for use in any content area and in almost any unit. Students practice skills previously taught by solving problems in a cooperative group setting.

Extension Ideas for Teachers

Use a local, county, or state map to create more specific problems focusing on places where watermen live and work and sell their catch. After using the Maryland Road Map to solve problems, assign each cooperative group one location. Their final problem would be to write clues similar to those used in previous problems. These clues should enable another group of students working cooperatively to find the correct location.

Getting Copies of the Maryland Road Map

Copies of the Maryland Road Map to use with this activity can be obtained from the Maryland Department of Transportation.

Maryland Department of Transportation
State Highway Administration
Baltimore, Maryland 21202
410-865-1142
www.marylandroads.com



PROBLEM SOLVING – TEACHER INSTRUCTIONS

Maryland Map Study

Cooperative Problem Solving Using Maps

Procedure

1. Divide the class into groups with 4 to 6 students in each group.
2. Explain to the students that they will be given a problem to solve that will have certain restrictions. Each member of the group will be given a slip of paper containing information needed to solve the problem, but only he/she can see the paper. The student may read it to the group, but may not show it to them.
3. Give each member of the group one of the slips of paper containing a clue. If there are more clues than students, give some students a second clue.
4. Circulate among the groups making sure that the guidelines are being observed and give them advice to help them get started.
5. When one group arrives at the proper solution, they raise their hands and quietly share the solution with you. They are then given another problem to solve. You continue circulating among the groups checking answers and assigning additional problems.
6. Students who are capable can create cooperative problems individually or in groups for other students to solve.

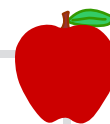
Map Study Adaptation

Students will use cooperative problem solving procedures to locate different places on maps of Maryland.

- Give each group of students a laminated Maryland Road Map and an envelope containing clues to a problem.
- Review the Cooperative Problem Solving Rules with the students before they open their envelopes.
- Students can solve as many problems as possible during the allotted time.
- Closure should include a discussion of the process, the geographic knowledge acquired, and the map skills they used. This could be followed by a journal-writing experience.
- Instead of journal-writing, encourage the students who are capable to create their own map problems. The process for doing this will need to be reviewed with them.

Note on Clues

Clues for each problem all have the same number. This is to eliminate the possibility of mixing up clues during the cooperative problem solving activity. All clues with the same number are placed in an envelope with that number on the outside. The answers are on the “Teacher Answer Key” (page 17) for the teacher to use when checking answers.



PROBLEM SOLVING – TEACHER ANSWER KEY

Maryland Map Study

Problem Solving Answers

- 1 – Anne Arundel County
- 2 – Green Ridge State Forest
- 3 – Interstate Highway 95
- 4 – 116 miles
- 5 – The West River
- 6 – Havre de Grace
- 7 – Almost unlimited number of rivers and bays in Maryland –
Check map for accuracy.
- 8 – Anne Arundel, Calvert, and St. Mary's
- 9 – Deale, Mayo, Galesville, Churchton, and Beverly Beach

Name _____ Date _____

STUDENT WORKSHEET

Maryland Map Study

Cooperative Problem Solving Rules

1. Read your clue silently.
2. Share your information orally with the rest of your group.
3. The person with the problem statement or question should go first.
4. Each person in the group should share his information one at a time.
5. Use all the clues to help you find a solution.

When you all agree on a solution, write your solution below. Then raise your hands, and the teacher will come and check your answer. GOOD LUCK!

Our Group's Problem # is _____ .

Our Solution is _____

COOPERATIVE PROBLEM SOLVING CLUES

Maryland Map Study

(Questions to be cut apart.)

Problem # 1

1 Maryland has 23 counties. YOUR PROBLEM is to name the county.

1 This county is west of the Chesapeake Bay.

1 This county is in the middle part of the state and borders the Chesapeake Bay.

1 The capital of the State of Maryland is in this county.

1 The name of this county has four syllables.

Problem # 2

Maryland contains many forests and wildlife management areas,
2 most of which are a part of the Chesapeake Bay Watershed.
YOUR PROBLEM is to name a state forest area in the watershed.

2 Forest areas are colored green on the map.

2 This forest is in the western part of the state.

2 The forest is east of the town of Cumberland.

2 Interstate Highway 68 runs through this forest.

2 Part of this forest borders the Potomac River.

2 The name of this forest contains a color word.

Problem # 3

3 YOUR PROBLEM is to name the Interstate Highway. We are traveling south.

3 Check the Legend for the Interstate Highway Symbol.

3 Find Interstate Highway 70. It runs between Baltimore City and the town of Frederick. This is not the one we are guessing.

3 This Interstate Highway runs all the way through our state.

3 We are traveling south, and we will pass through Baltimore City and Washington, D.C. before we enter the State of Virginia.

Problem # 4

4 Read me first. You would like to travel from the Annapolis Maritime Museum to Cambridge to take a ride on the skipjack, the *Nathan of Dorchester*. YOUR PROBLEM is to find the distance between the city of Annapolis and the town of Cambridge by using the “Mileage Chart.”

4 Read me second. Find the “Mileage Chart” on the map. You will need 2 pieces of paper with straight edges or 2 rulers.

4 Read me third. Look at the cities and towns listed. How are they arranged?

4 Read me fourth. Find Annapolis at the top of the chart. Place your ruler or paper under the number 26 next to Annapolis. Your ruler should be placed horizontally under the number 26.

4 Read me fifth. Find Cambridge on the chart. Place the other ruler or piece of paper vertically next to the numbers in the column starting with 35.

4 Read me sixth. Follow the column down until it intersects with the Annapolis row. The number in the box where the column and row intersect is the mileage or distance between Annapolis and Cambridge.

Problem # 5

5 YOUR PROBLEM is to name the body of water.

5 The body of water is a river used by watermen to catch crabs.

5 This river empties into the Chesapeake Bay.

5 This river is south of the Chesapeake Bay Bridge.

5 This river is north of the Patuxent River.

5 This river is the closest one to Captain Salem Avery's home.

Problem # 6

6 Maryland has many towns and a few cities. YOUR PROBLEM is to find a town that is located near a body of water that is important to the health of the Chesapeake Bay.

6 The town is in Harford County.

6 The town is located at the mouth of a long river that enters the Chesapeake Bay from Pennsylvania.

6 This town is north of Aberdeen Proving Ground.

6 Interstate route 95 runs west of this town.

6 The name of this town has 3 parts, and it is a French name.

Problem # 7

7 YOUR PROBLEM is to name as many bodies of water as you can in Maryland (rivers, bays, etc.).

Problem # 8

8 YOUR PROBLEM is to name 3 counties south of Baltimore where watermen might live and work.

Problem # 9

The Captain Salem Avery House is located in Shady Side.

9 YOUR PROBLEM is to locate Shady Side on the map and name three towns near Shady Side where watermen might live and work.

9 Shady Side is located on a peninsula.

9 Route 468 (also known as Muddy Creek Road) leads to Shady Side from Route 214.

9 Shady Side is south of Annapolis.

9 The West River is west and north of Shady Side, and the Chesapeake Bay is east.
