



THE GANG OF FOURTEEN: A GAME FOR LEARNING ABOUT WORLD CLIMATES

DESCRIPTION:

This game helps students learn about world climate types, climatic data, climographs, and climatic classification in an interesting and engaging manner. Students will try to "round up" a gang of spies located in 14 cities around the world. Fourteen sets of clues, one for each city, will help the student find the location. This spy ring, known as "The Gang of Fourteen," has placed a large bomb in a fifteenth city. None of the 14 spies knows the location of the bomb, but each has a partial clue to its whereabouts. Each time the students find one of the Gang of Fourteen, they receive that spy's information about the city where the bomb is located. Teams of students work to solve this problem of international espionage, and the first group to correctly locate the bomb is the winning team.

GRADE LEVEL:

High school

LEARNING OUTCOMES:

When my students finish this activity they will be able to:

1. Demonstrate knowledge of the Koppen system of climate classification, and the controls of climate, by using this information to determine place locations.
 - TEKS Alignment - 112.20.b.10.B - identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts;
2. Locate places through analyzing climatic data shown on a climograph.
 - TEKS Alignment -113.18.b.4 - understands the factors that influence the locations and characteristics of locations of various contemporary societies on maps and globes and uses latitude and longitude to determine absolute locations;
3. Read and interpret a climograph.
 - TEKS alignment - 113.43.c.4.A-C - understands the patterns and characteristics of major landforms, climates, and ecosystems of Earth and the interrelated processes that produce them;
4. Locate places through the longitude and latitude coordinate system.

*Excerpted from:

Texas Alliance for Geographic Education. *Young Geographers Alliance: Program Guide*. (San Marcos, Texas: Southwest Texas State University, 1991), 104-13.

FUNDAMENTAL THEMES:

Location
Place

RELATED LEARNING OPPORTUNITIES:

Math
History
Current Events
Earth Science

CLASSROOM PROCEDURES:

Successful student participation requires previous knowledge and mastery of several basic geographical skills. To play, students must be able to locate a place by longitude and latitude, and to interpret climatic station data displayed on a climograph, a graph of annual temperature curves and monthly precipitation totals. Students use Goode's World Atlas, pages 8 and 9, for a description of world climatic types, and to assist in place location. It is not necessary for students to memorize Koppen's system, as a description of world climatic types and climatic controls will be sufficient for students to compete in this activity. The teacher should group students as necessity dictates. Groups of three students work well.

Read the following set of instructions to the students:

1. "Your group is trying to locate a bomb placed in an unknown city by the Gang of Fourteen, a notorious spy ring."
2. "No spy knows the precise location of the bomb, but each spy in the Gang of Fourteen has a partial clue to its location."
3. "I will now give you a set of climographs which will help you locate members of the spy ring." Note: Teacher now hands out the climographs.
4. "Each set of clues I will read refers to one of the cities featured on these climographs." Note to teacher: Write all sets of clues, numbered 1 - 14 on the chalkboard before class begins. Cover them with maps or paper and reveal the clues one at a time. An overhead transparency of the clues will also work well.
5. "A set of clues will be revealed every 3 minutes. Your group may work on any set of clues in any order."
6. "As soon as your group can correctly match a set of clues to one of the cities listed on the sheet of climographs, write the name of the city along with the clue set number on a sheet of paper, and present it to me."
7. "If you have correctly identified the city, then you have captured the member of the Gang of Fourteen hiding in that location and that the spy has revealed his/her information about the location of the bomb to you."
8. "I will write the spy's information on your paper sheet and return it to you. Be sure that no other group gets access to this secret information."

9. "If you think that your group can correctly identify the city in which the bomb is located, write the name of the city on a sheet of paper and bring it to me at any time during the game. There is no penalty for an incorrect guess. The first team to correctly identify the city in which the bomb is located wins the game."

Reminder to teacher: the bomb is not in any of the cities listed on the climographs.

10. "Each group should now make sure that they have a Goode's World Atlas and scratch paper available."
11. "I will now reveal clue number one and will reveal a new set of clues at three minute intervals."

Note to the teacher: No attempt has been made to equalize levels of difficulty among the clue sets. Some of the clues may prove to be challenging. It is intended that once each set of clues has been revealed, they will be available to groups until the activity ends. The clues have been provided on separate pages to allow teachers to make copies and cut out each set to distribute, instead of revealing clues on the board. If students identify the city represented by the clue set, they have "captured" the Gang of Fourteen member hiding in that city. As a reward, you will give them the spy information associated with the appropriate clue set.

Answer: The spy information will lead the winning team to find the **hidden bomb in Casablanca, Morocco.**

MATERIALS:

1. Goode's World Atlas
2. Page of prepared climographs
3. Student notes describing how to interpret climographs.
4. Optional: duplicated sets of clues which the students use as instructed.

EVALUATION:

Students can be evaluated on their success or failure in determining correct locations. In cases where a set of data does not sufficiently discriminate between two locations, students can be evaluated as successful if they can justify their response.

REFERENCES:

Espenshade, Edward B., Jr., Ed., 1987, Goode's World Atlas. Rand McNally, New York.

CLUES TO FINDING THE GANG OF FOURTEEN

Set # 1

1. The city is located between 40° N and 50° N. elevation is over 1000 ft.
2. Rainfall (precipitation) is less than 30 inches per year.
3. Temperature range is from about 20° F (low) to almost 80° (high).
4. Climate is Humid Continental with a warm summer.

Set # 2

1. Site is located in the western hemisphere, below 1100 feet elevation.
2. Rainfall in June averages almost 4 inches.
3. Temperature averages 50° F in October.
4. Climate is Mid-latitude Steppe.

Set # 3

1. Located between 25°N and 35° N, less than 50 feet above sea level.
2. Moderate rainfall can be expected year-round, a bit more in the summer.
3. Temperature averages include: December, 50°F and May, 72°F.
4. Climate is Humid Subtropical.

Set # 4

1. This city is located in the eastern hemisphere, elevation near sea level.
2. Rainfall rates are lowest in the summer months.
3. Temperature range (warmest month minus coldest) exceeds 30° F.
4. Climate type is Mediterranean.

Set # 5

1. Located between 30° S and 40° S, below 1000ft. elevation.
2. December is warmer than July, and winters are wetter than summer.
3. Temperature range (warmest month minus coldest) is less than 25°F.
4. Climate type is Mediterranean.

Set # 6

1. Located in the southern hemisphere, at or below 1000 ft. elevation.
2. Precipitation is 10 inches or less for the year.
3. No month averages above 32 degrees F.
4. Climate type is Ice Cap.

Set # 7

1. Elevation is between sea level and 200 feet.
2. Average annual temperature does not exceed 30 degrees.
3. Precipitation averages less than 2 inches in every month.
4. Climate has at least four months that average above freezing.

Set # 8

1. Elevation is not over 1000 feet.
2. This location has an extremely large annual range of temperature.
3. Precipitation amounts are less than 2 inches for each month.
4. The climate is classified as Subarctic.

Set # 9

1. Elevation is not higher than 500 feet, latitude is 56° N.
2. Temperature variation over the year is small.
3. Rainfall occurs throughout the year, constantly moist.
4. The climate type is Marine West Coast.

Set # 10

1. This site is in the northern hemisphere.
2. Elevation is 1000 feet.
3. Average annual temperature is 71 degrees F.
4. September is the wettest month of the year.

Set # 11

1. This site is in North America.
2. Average annual rainfall is less than 10 inches.
3. This place is in a warm desert, and no month averages below 40°F.
4. July through September are the wettest months.

Set # 12

1. The longitude indicates that this place is in the eastern hemisphere.
2. Elevation is less than 500 feet.
3. The difference between the warmest and coldest months exceeds 40°F.
4. Four months have no measurable rainfall.

Set # 13

1. This place is located within the tropics.
2. The annual fluctuation of temperature is low.
3. Although four months are dry, average annual rainfall is over 30 inches.
4. Summer is the rainy season.

Set # 14

1. Site lies within 10 degrees of the equator.
2. This place has very even temperatures, warm all year.
3. Every month averages at least 4 inches of precipitation.
4. The wettest month exceeds 20 inches.

SPY INFORMATION

Set # 1: This place is: Omaha, Nebraska.

Spy information is: Bomb is west of the Prime Meridian.

Set # 2: This place is: Pierre, South Dakota.

Spy information is: Many people in the city speak French.

Set # 3: This place is: Charleston, South Carolina.

Spy information is: Sorry, this spy was silenced before revealing anything.

Set # 4: This place is: Corinth, Greece.

Spy information is: Bomb is in a coastal city.

Set # 5: This place is: Adelaide, Australia.

Spy information is: Spy lies about the bomb being in South America.

Set # 6: This place is: Little America, Antarctica.

Spy information is: Spy is too cold to talk, try again when she thaws out.

Set # 7: This place is: Vaygach, U.S.S.R.

Spy information is: Bomb is ten degrees north of the Tropic of Cancer.

Set # 8: This place is: Verkhoyansk, U.S.S.R.

Spy information is: This spy is a tough guy, and refuses to talk.

Set # 9: This place is: Fort William, Scotland.

Spy information is: Oops, this spy escaped.

Set # 10: This place is: Monterrey, Mexico.

Spy information is: Bomb is in a city on the Atlantic Ocean.

Set #11: This place is: El Paso, Texas.

Spy information is: Bomb is in a city with a Spanish name.

Set #12: This place is: Baghdad, Iraq.

Spy information is: I know nothing, I saw nothing.

Set #13: This place is: Ouagadougou (Wagaduga), Burkina Faso.

Spy information is: Bomb is on the same continent as Ouagadougou.

Set #14: This place is: Amboina, Indonesia.

Spy information is: City is located 7 1/2 degrees from the Prime Meridian.

Climographs for the Gang of Fourteen



