

Lesson Title: 3D Map of South America

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Description: Using everyday materials, the students will create a three dimensional map of South America's physical features to help them develop their mental maps of the region. This hands-on activity can be easily adapted for other regions.

Grade Level: 7th grade

Essential Question: What are the physical features of South America?

Geography Standard: 1 - Maps

End of Cluster Expectations (Benchmarks): Students will demonstrate mental maps of the world and its sub-regions that include the relative location and characteristics of major physical features, political divisions, and human settlements.

Stem Statement: Students will demonstrate a mental map of the world and its sub-regions (South America) that include the relative location and characteristics of its major physical features.

Assessments: (DSTP type) 1 constructed response and 1 multiple choice attached

This assessment should give evidence of the student's ability to identify the physical features of South America on a blank map.

Prior Knowledge and Skills: Students need to know the key elements of a map. The students should also have previewed a physical map of South America and discussed its physical features (names and characteristics).

Time to Complete: This lesson should take two or three 45 minute class periods.

Materials Needed: (You may substitute some of these), gather materials prior to the lesson; divide the sand, beans, rice, peas, etc., for each group of students into the small paper cups or plastic bags. Note the amount listed is the total quantity for that item.

12x18 colored paper (for base map) one sheet per student

9x12 sheets of colored paper (variety of colors)

small paper cups (for the beans, peas, rice, sand, etc)

glue

scissors

atlases

sand (~ 2 cups)

Pinto beans (or other brown beans) ~ 2 cups

rice (white or brown) ~ 1 cup

dried green peas ~ 1 cup

blue yarn ~1 skein

cotton balls 1 per student

poster or transparency of map elements (TODALSIGS)

Materials continued-

Plain paper for labels for the physical features (or 2-3 address labels per student which they can cut into small strips)

Handout 1 – copies, one per student

Visual 1 transparency copy of Handout 1 for teacher

Visual 2 transparency of Map Elements

Constructed Response Assessment – copies, one per student

Multiple Choice Assessment – copies, one per student

Link to Additional Standards: (if any (e.g. other social studies, math, science, reading/ language arts))

Procedure Steps:

1. Prior to the lesson, the teacher should prepare a box of materials (see materials list) for each small group of students.
2. Explain to the students they will create a 3-dimensional map of the physical features of South America using a variety of materials to represent the major landforms.
3. Distribute **Handout 1**; display the transparency copy on the overhead. Explain to the students that this what they are expected to do and that they should complete the items in the order listed. Challenge them to think why this is important. (*The source of the rivers is in the higher elevations and they flow to the lower elevations.*)
4. Distribute to each student a 12 "X 18" sheet of colored paper. The students should draw an outline shape of South America, freehand, not traced.
5. Now students can work in small groups to share the materials to create the landforms.
6. As you monitor the activity make sure the students create their mountains and higher elevations first so that the rivers flow from a higher to a lower elevation (from the source to the mouth). Discuss the importance of this concept as they are working.
7. Encourage the students to overlap as many of their materials as possible so they get a sense of the relationships between physical features. (For example the rivers should have their source in a higher elevation such as the Amazon River flowing from the Andes Mountains.)
8. Students should make labels to identify the physical features.
9. Now they should make a key/legend and place on the map (lower right corner)
10. As the students complete their maps make sure they include the key elements of a map such as a title, author, legend, date, grid, orientation (compass rose)
11. Have the students pass their map to someone in another group. Have that students critique the map. Can they use the legend to decode the various physical features? Return the maps to the creator with any questions about clarity with the legend, etc.
12. Discuss with the class what they have learned by doing this project. Do they think they are more likely to remember where the major physical features are in South America? Ask how they could use this technique with other regions? Ask why they think a tactile activity strengthens their mental map of South America?
13. Administer the assessments.

Optional:

After a lapse of time (a week, a month) have the students draw their mental maps of South America using no references except what they remember from doing this project. Have them comment on what they remember and why.

Tips for the Teacher (Further tips may be emailed to the author – Cbaker@IRSD.k12.de.us.):
Suggestion: Using a box (e.g. copy paper box lid) as a base for the map will make it easier to store the maps in the classroom and easier for the students to transport home when the project is completed.

Citations for Graphics, Information, Adapted Lesson, etc.

Anderson, Jeremy. 1986. TEACHING MAP SKILLS: AN INDUCTIVE APPROACH,
Illinois: National Council for Geographic Education, p. 9.

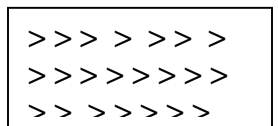
Name _____ Grade _____ Date _____

3D Map of South America Student Instructions

Use the following materials to create your three dimensional map of South America. Place a check by each item when you have added it your map.

_____ **Mountains:** Cut long narrow strips of brown paper. Fold them like a paper fan. Unfold them and place where the Andes Mountains are on a physical map. You can place a cotton ball at the top of Mt. Aconagua because it is the highest point in South America.

_____ **Rainforest:** Use green paper, cut in rectangles, to represent the rainforest regions. Fold the paper like a paper fan. Along the folded edges make slash cuts. Unfold the paper and lift up the slash cuts so they are standing up to represent Trees. You can also use branches of small bushes for a more realistic effect.



_____ **Rivers:** Cut blue yarn and place at the source of major rivers and have them end at the mouth of the rivers. (Ex. With the Amazon, include some of smaller tributaries, Orinoco, Parana, and other rivers you feel are important.)

_____ **Desert:** Spread glue on the desert areas and sprinkle with sand. (Atacama Desert)

_____ **Highlands:** Use brown beans to represent higher elevations but not as high as mountains.

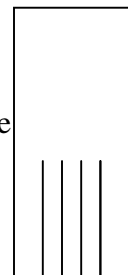
_____ **Pampas:** Cut green paper into circles or ovals and draw crisscrosses on it to represent the grasslands of the pampas. Using real grass offers a more realistic representation.



_____ **Llanos:** Use sand and little scraps of green paper to represent the wet and dry seasons of the llanos. You can also use green peas with the sand to make it more 3D.

_____ **Patagonia:** Use sand and scraps of brown paper to represent the windswept Patagonia. You can also use brown leaves and grass for realism.

_____ **Angel Falls:** Cut small a rectangle of blue paper to represent Angel Falls. On the narrow end of the paper make small cuts about a third of the way up. Wrap the paper tightly around a pencil. When you unwrap the paper, it is curled and it looks like a waterfall. Glue onto the map.



_____ **Gran Chaco:** Use white or brown rice to represent a dry, barren area.

_____ **Lake Titicaca:** Cut a circle of blue paper and glue it in the Andes to represent this lake.

_____ **Map elements:** add the following items to your map: title, orientation, date, author, legend, and source.

Map Elements

(TODALSIGS)

Title

Orientation

Date

Author

Legend

Scale

Index

Grid

Source: Anderson, Jeremy. 1986. **TEACHING MAP SKILLS: AN INDUCTIVE APPROACH**, Illinois: National Council for Geographic Education, p 9.


Name _____ Date _____

Constructed Response Assessment

Stem Statement:

Students will demonstrate a mental map of South America and its sub-regions that include the relative location and characteristics of its major physical features.

Data



A new automobile manufacturing plant is being planned for South America. The site needs to be where highways can be built for distribution of the automobiles. Use this map to help you answer the following question.

Prompt:
Where might be the best region to build a new factory? (Put a star on that region and explain your answer.)

Name _____ Date _____

Multiple Choice Assessment**Stem Statement:**

Students will demonstrate a mental map of South America and its sub-regions that include the relative location and characteristics of its major physical features.

Data

Chocolate is an important food produced from cacao grown in places like the tropical rainforests of South America. Use this map to help you answer the question.

Which region on the map would have the greatest production of cacao?

- A.
- B.
- C.
- D.

The correct response is _____

Desired Responses

Constructed Assessment



- 2 region would be practical because the land is a plains region (the pampas), since it is free of mountains it would be easy to build flat roads.
- 1 is a plains region.

Other responses could be:

The area marked with a ☆ is practical because it is a plains region with flat land for a highway and close to a coast for shipping.

Region ___ is flat land for a highway that is close a larger coastal cities for distribution.

Regions ☆ or B or C, are practical because they are coastal cities where factories might be located, thus highway and/or water transportation would be easily accessible.

Multiple Choice Assessment

Which region on the map would have the greatest production of cacao?

The correct response is **B** because that is the rainforest region where cacao trees grow.

Rubric

- 2 – The response gives valid *evidence* with an accurate and relevant *explanation*.
- 1 – This response gives valid *evidence* with an *inaccurate, irrelevant, or no explanation*.
- 0 - Inaccurate response.

Assessments Key

Desired Responses

Constructed Assessment



A

2 region would be practical because the land is a plains region (the pampas), since it is free of mountains it would be easy to build flat roads.

1 A is a plains region.

Other responses could be:

Letter A is practical because it is a plains region with flat land for a highway and close to a coast for shipping.

Letter B is flat land for a highway that is close a larger coastal cities for distribution.

Letters A, B, or C are practical because they are coastal cities where factories might be located, thus highway and/or water transportation would be easily accessible.

Multiple Choice Assessment

Which region on the map would have the greatest production of cacao?

The correct response is B because that is the rainforest region.

Rubric

2 – The response gives valid *evidence* with an accurate and relevant *explanation*.

1 – This response gives valid *evidence* with an *inaccurate, irrelevant, or no explanation*.

0 - Inaccurate response.