

Sand and Water

Grade Level: 5th Grade

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Length of Lesson: 6 Lessons

I. ABSTRACT

This unit will incorporate Gifted and Special Education in fifth and sixth grades. The unit will focus on World Geography emphasizing the great lakes and deserts of the world. Students will research, discuss, and analyze places stated in the Core Knowledge Sequence. Students will also brainstorm, use higher level thinking skills, compare/contrast, classify, organize, and work in cooperative groups. Because of the different levels of the students, all of the activities are hands-on-activities.

II. OVERVIEW

- A. Three concepts will guide and connect this unit on the great lakes and deserts of the world:
 - 1. Develop an awareness of a place.
 - 2. Understand significance of the relative location of a place.
 - 3. Understand human movement and the affects of migration.
- B. Fifth and sixth grade students will cover specific content from the Core Knowledge Sequence specifically from the World Geography section.
- C. Skills will be addressed in individual lesson plans.

III. BACKGROUND KNOWLEDGE

- A. The information for most of the background on the great lakes and deserts of the world is from the following three sources:
 - 1. What Your 5th Grader Needs to Know by E.D. Hirsch, Jr.
 - 2. What Your 6th Grader Needs to Know by E.D. Hirsch, Jr.
 - 3. Alternative to Worksheets by Creative Teaching Press
- B. Students study World Geography in first and second grade. See Core Knowledge Sequence first and second grade World Geography.
- C. Since this unit is for Gifted and Talented (G/T) and/or a Resource room, the amount of time spent on each lesson will be different. Gifted and Talented students will work one day a week for two and one-half hours in the Gifted and Talented classroom. Resource students will work daily in their Resource classroom.

IV. RESOURCES

- A. Students study World Geography in first and second grades. See Core Knowledge Sequence first and second grade: World Geography.
- B. What Your 5th Grader Needs To Know by E.D. Hirsch, Jr.
- C. What Your 6th Grader Need To Know by E.D. Hirsch, Jr.
- D. Geography Brain Teasers-Challenging by Teacher Created Materials, Inc.
- E. Alternatives to Worksheets by Creative Teaching Press
- F. Theme For A Day – Grades 5-6 by Teacher Created Material, Inc.
- G. The Children's Atlas of People & Places by Jenny Wood
- H. Sand and Water Notebook (See Appendix A)

V. LESSONS

A. Lesson One: Great Lakes and Deserts

1. Daily Objectives
 - a. Lesson Content
 - i. Great Lakes and Deserts of the World
 - b. Concept Objectives
 - i. Develop an awareness of a place
 - c. Skill Objectives
 - i. To identify, discuss, and define the types of lakes and deserts
2. Materials
 - a. World Map
 - b. Sand and Water Notebook (See Appendix A)
 - c. Construction paper (blue, brown) (See Appendix B)
 - d. One student copy of pages 88-94 from What Your 6th Grader Needs To Know
 - e. One student copy of pages 99-102 from What Your 5th Grader Needs To Know
 - f. Two hard-boiled eggs
 - g. Table salt
 - h. Two small, clear containers
 - i. Three clear two liter bottles
 - j. Six bean seeds
 - k. Potting soil
 - l. Two water pitchers
 - m. One paper cup per student
 - n. Chart paper
3. Key Vocabulary
 - a. Lake
 - b. Desert
 - c. Caspian Sea
 - d. Aral Sea
 - e. Lake Victoria
 - f. Lake Tanganyika
 - g. Lake Chad
 - h. Lake Superior
 - i. Lake Huron
 - j. Lake Michigan
 - k. Lake Maracaibo
 - l. Lake Titicaca
 - m. Sahara Desert
 - n. Kalahari Desert
 - o. Australia
 - p. Gobi Desert
 - q. Arabian Peninsula
 - r. Mojave Desert
 - s. Chihuahuan Desert
 - t. Sonoran Desert
 - u. Patagonia Desert
 - v. Equator
 - w. Longitude
 - x. Latitude
 - y. Tropic of Cancer
 - z. Tropic of Capricorn

4. Procedures/activities
 - a. Brainstorm what you know, what you want to know, and what you learned (KWL) on lakes and deserts.
 - b. Put copied information in Sand and Water Notebook (See Appendix A) for future reference.
 - c. List the great lakes (see vocabulary list c-l) on the board
 - d. Discuss and define the geographic term for lake
 - e. Define difference between salt and fresh water lakes
 - f. Locate the great lakes on the world map
 - g. To distinguish between salt and fresh water the students will taste salt and fresh water (See Appendix C)
 - h. To show buoyancy difference between salt and fresh water the student will place one hard-boiled egg in a clear container with salt water and one hard-boiled egg in a clear container with fresh water. Explain what happens to the eggs. (See Appendix D)
 - i. Brainstorm about vegetation and animals in salt and fresh water lakes. Complete a VENN diagram (See Appendix K)
 - j. List the great deserts (see vocabulary list m-u) on the board
 - k. Discuss and define the geographic term for desert
 - l. Define difference between hot and cold desert
 - m. To show growth in different types of deserts divide the class into three groups and have the students plant seeds in one of the different environments (See Appendix E)
 - n. Brainstorm about vegetation and animals in hot and cold deserts. Complete a VENN diagram.
 - o. Students will create the beginning of the lake and desert chain (See Appendix B)
5. Evaluation/assessment
 - a. Have the students write about the taste test and egg procedure and place in Sand and Water Notebook
 - b. Place VENN diagrams in notebook

B. Lesson Two: North America

1. Daily Objectives
 - a. Lesson Content
 - i. Great Lakes and Deserts of the World
 - b. Concept Objectives
 - i. Understand the significance of the relative location of a place
 - ii. Understand human movement and the affects of migration
 - c. Skill Objectives
 - i. To identify, locate, label, discuss, and create a riddle for the great lakes and deserts in North America.
2. Materials
 - a. World Map
 - b. Construction Paper (blue, brown, green) (See Appendix B)
 - c. Transparency of the map of North America
 - d. One copy per student of a map of North America
 - e. Construction paper for pop-up riddle (student choice of color) (See Appendix F)
 - f. Colored pencils or crayons
3. Key Vocabulary
 - a) Lake Huron
 - b) Lake Ontario

- c) Lake Michigan
 - d) Lake Erie
 - e) Lake Superior
 - f) Mojave Desert
 - g) Sonoran Desert
 - h) Chihuahuan Desert
 - i) North America
4. Procedures/activities
- a) Locate the great lakes of North America on the world map. Show how the lakes were formed. Decide if the lakes are salt or fresh water.
 - b) With a transparency map of North America locate and label the great lakes using different color markers for each different lake. Have students label their individual map with colored pencils or markers.
 - c) Locate the great deserts of North America on the world map. Decide if these deserts are hot or cold.
 - d) With a transparency map of North America locate and label the great deserts using different color markers for each desert. Have students label their individual map using colored pencils or crayons.
 - e) Describe the people and the surrounding environment of the North American great lakes and deserts.
 - f) Students will create a pop-up riddle on one great lake and one great desert of North America. (See Appendix F)
 - g) Special Education students will locate and identify provinces and capitals of Canada, states and capitals of the United States, and countries and capitals of Central America. Gifted and Talented students will be required to label all of the above on a map from memory.
5. Evaluation/assessment
- a. Placement of maps in Sand and Water Notebook
 - b. Pop-up riddles
 - c. G/T students will place their map test in Sand and Water Notebook

C. Lesson Three: South America

1. Daily Objectives
- a. Lesson Content
 - i. Great Lakes and Deserts of the World
 - b. Concept Objectives
 - i. Understand the significance of the relative location of a place
 - ii. Understand human movement and the affects of migration
 - c. Skill Objectives
 - i. To identify, locate, label, discuss, and create a cube to identify the great lakes and deserts in South America.
2. Materials
- a. World Map
 - b. Construction paper (blue, brown, yellow) (See Appendix B)
 - c. Transparency of a South American map
 - d. One copy per student of a map of South American
 - e. Colored pencils or crayons
 - f. Construction paper of student's choice for cube (See Appendix G)
3. Key Vocabulary
- a. Lake Maracaibo
 - b. Lake Titicaca
 - c. Patagonia

- d. Incas
 - e. Mayas
 - f. South America
4. Procedures/activities
- a. Locate great lakes of South America on the world map. Explain and discuss how the lakes formed. Distinguish if the lakes are salt or fresh water.
 - b. With a transparency map of South America locate and label the great lakes using different color markers for each different lake. Have students label their individual map using colored pencils or crayons.
 - c. Locate great desert of South America on the world map. Make inferences to determine if the desert is hot or cold.
 - d. With a transparency map of South America locate and label the great desert. Have students label their individual map using colored pencils or crayons.
 - e. Describe the people and the surrounding environment of South American great lakes and desert.
 - f. Students will create a cube with information gathered on the great lakes and desert of South America. (See Appendix G)
 - g. Special Education students will locate and identify countries and capitals of South America. Gifted and Talented students will be required to reconstruct a map labeling countries and capitals from an outline of South America from memory.
5. Evaluation/assessment
- a. Placement of maps in Sand and Water Notebook
 - b. Creation of the South American cube
 - c. G/T students will place their map test in Sand and Water Notebook

D. Lesson Four: Australia

1. Daily Objectives
- a. Lesson Content
 - i. Great lakes and deserts of the world
 - b. Content Objectives
 - i. Understanding the significance of the relative location of a place.
 - ii. Understanding human movement and the affects of migration.
 - c. Skill Objective
 - i. To identify, locate, label, discuss, research, and construct a textured map of Australia
2. Materials
- a. World Map
 - b. Construction paper (blue, brown, purple) (See Appendix B)
 - c. Transparency of Australia
 - d. One copy per student of a map of Australia
 - e. Seven different textures (See Appendix H)
 - f. One-fourth piece of blue poster board
 - g. One large piece of sand paper
 - h. One copy per student of “Australia Direction Connection” (See Geography Brain Teasers, page 65.
 - i. Colored pencils or crayons
3. Key Vocabulary
- a. Victoria Desert
 - b. Aborigines
 - c. Walk-about

- d. Opal
- e. Texture
- 4. Procedures/activities
 - a. Locate the desert of Australia on the world map. Determine if this desert is hot or cold and why Australia is mostly desert.
 - b. With a transparency map of Australia locate the desert. Have students locate the desert on their individual map using colored pencils or crayons.
 - c. Research the people and the environment of Australia.
 - d. Students will complete the worksheet “Australia Direction Connection”
 - e. Students will create a textured map of Australia. (See Appendix H)
 - f. Special Education students will locate and identify the provinces and capitals of Australia. G/T students will be required to label a map with the provinces and capitals from memory.
- 5. Evaluation/assessment
 - a. Placement of maps in Sand and Water Notebook
 - b. Placement of “Australian Direction Connection” worksheet in Sand and Water Notebook
 - c. Textured map of Australia
 - d. G/T students will place test in Sand and Water Notebook

E. Lesson Five: Africa

- 1. Daily Objectives
 - a. Lesson Content
 - i. Great lakes and deserts of the world
 - b. Concept Objectives
 - i. Understand the significance of the relative location of a place.
 - ii. Understand human movement and the affects of migration.
 - c. Skill Objectives
 - j. To identify, locate, label, discuss, and create a quilt of the great lakes and deserts in Africa
- 2. Materials
 - a. World Map
 - b. Construction paper (blue, brown, orange) (See Appendix B)
 - d. Transparency map of Africa
 - e. One copy per student of a map of Africa
 - f. Four pieces of felt for quilt (student choice of color) (See Appendix I)
 - g. “Swinging Safari”, a National Geographic video
 - h. Colored pencils or crayons
 - i. Butcher paper
- 3. Key Vocabulary
 - a. Lake Victoria
 - b. Lake Tanganyika
 - c. Lake Chad
 - d. Sahara Desert
 - e. Kalahari Desert
 - f. Africa
 - g. South Africa
 - h. Ivory Coast
 - i. Nile River
 - j. Victoria Falls
 - k. Salt mines
 - l. Diamond mines

- m. Safari
- 4. Procedures/activities
 - a. Locate the great lakes of Africa on the world map. Discover how the lakes were formed. Classify if the lakes are salt or fresh water.
 - b. With a transparency map of Africa locate and label the great lakes using different color markers for each different lake. Have students label the lakes on their individual map using colored pencils or crayons.
 - d. Locate the great deserts of Africa on the world map. Discuss if the Deserts are hot or cold.
 - e. With a transparency map of Africa locate and label the great deserts of Africa. Have students label the deserts on their individual map using colored pencils or crayons.
 - f. Investigate the people and the surrounding environment of Africa's lakes And deserts.
 - g. Students will create an African Quilt (See Appendix I)
 - h. Students will locate and identify countries and capital of Africa.
- 5. Evaluation/assessment
 - a. Placement of maps in Sand and Water Notebook
 - b. African quilt

F. Lesson Six: Asia

- 1. Daily Objectives
 - a. Lesson Content
 - i. Great lakes and deserts of the world
 - b. Content Objectives
 - i. Understanding the significance of the relative location of a place.
 - ii. Understanding human movement and the affects of migration.
 - c. Skill Objective
 - i. To identify, locate, label, discuss, and illustrate a story cloth of Asia
- 2. Materials
 - a. World Map
 - b. Construction paper (blue, brown, white) (See Appendix B)
 - c. Transparency map of Asia
 - d. One copy per student of a map of Asia
 - e. One-half sheet of poster board (student choice of color)
 - f. Construction paper to make continent, lakes, and deserts of Asia
 - g. Materials to portray information about Asia (See Appendix I)
- 3. Key Vocabulary
 - a. Caspian Sea
 - b. Aral Sea
 - c. Gobi Desert
 - d. Arabian Peninsula
 - e. Asia
 - f. Mongolians
 - g. Genghis Khan
 - h. Ural Mountains
 - i. Great Wall of China
 - j. Yellow River
 - k. Muslims
 - l. Islam

4. Procedures/activities
 - a. Locate the great lakes of Asia. Summarize how the lakes were formed. Recognize if the lakes are salt or fresh water.
 - b. With a transparency map of Asia locate and label the great lakes using a different colored markers for each different lake. Have students label their individual map using colored pencils or crayons.
 - c. Locate great deserts of Asia. Determine if the desert is hot or cold.
 - d. With a transparency map of Asia locate and label the great deserts of Asia using different colored markers for each different desert. Have students label their individual map using colored pencils or crayons.
 - f. Discuss people and the surrounding environment of the Asian great lake and deserts.
 - g. Students will create a story cloth about Asia (See Appendix J)
 - h. Special Education students will locate and identify countries and capitals of Asia. G/T students will be required to place countries and capital on an outline of a map from memory.
5. Evaluation/assessment
 - a. Placement of maps in Sand and Water Notebook
 - b. Story Cloth of Asia
 - c. G/T students will place test in Sand and Water Notebook

VI. CULMINATING ACTIVITY (See Appendix K)

VII. BIBLIOGRAPHY

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Appendix A

Sand and Water Notebook

Each student will provide a 1", 3 ring binder to be used to create a Sand and Water Notebook. In this notebook, students will create sections for the different lessons including maps, writings, and any other information provided by the teacher or students. An optional activity will be to decorate the notebook.

Appendix B
Sand and Water Continent Chain

This is an activity that will be continuous throughout this unit. Students will need 1” strips of blue and brown construction paper. In lesson 1 the geographic term of lake will be put on blue and the term for desert will be put on brown to begin this chain. In the following lessons even though it is not listed as an activity students should continue the chain by adding each continent to the chain.

Example: North American continent

To begin the North American continent students will have 2 1” strips of green construction paper. Place the words North American on the strips to show beginning and end of North America. The students will need 1” strips of blue and brown construction paper for the number of lakes and deserts in the continent. Students need to write the name and a fact about the lakes on the blue and about the deserts on the brown. Then connect to your beginning definition of lake and desert. Continue same format for the remaining continents.

For further information see [Alternative to Worksheets](#) page 22-23

Appendix C

Salt and Fresh Water Taste Test

To distinguish between salt and fresh water the teacher will need to have 2 pitchers for water. The teacher will fill 1 pitcher with plain fresh water and the other pitcher will be filled with water and salt to taste. (You must stir the salt into the water) Provide each student will a paper cup. First, pour salt water into the cup and have student take a sip. Next, pour fresh water into the cup and have the students drink it. Students will then write a paragraph about the experience.

Appendix D

Sand and Water Egg Float

To show buoyancy difference between salt and fresh water the teacher will need 2 hard-boiled eggs, 2 small, clear containers, water, and salt. Teacher will fill containers with water. In 1 container salt will be added. Discuss with students what they think will happen to the eggs. Teacher will place 1 egg in each container. Observe the eggs. Students will then write a paragraph about what they observed.

Appendix E

Plant Growth in Different Environments

To show the growth of seeds in different types of environments the teacher will need 3 clear 2 liter bottles, 6 bean seeds, potting soil, heat lamp, and a method for creating a cold environment ie: Blue Ice. Before planting seeds the teacher will need to sprout the seeds in water. Divide the class into 3 groups: 1 group will plant seeds for a hot desert, 1 group will plant seeds for a cold desert, and 1 group will plant seeds for a typical classroom environment. To plant the seeds the teacher will need to remove the top one-third of each bottle. Save the top one-third of each bottle. Put about 1” of potting soil in the bottom of the bottle. The students will place 2 bean seeds into the soil of each bottle. Water. Invert the top one-third of each bottle back into the bottle with the cap on. Students will place 1 bottle under a heat lamp, 1 bottle with a method for cold desert, and 1 bottle is used for the typical classroom environment. Each day students will note the progress of each environment. The only maintenance needed is to keep cold environment cold. Have students note progress in Sand and Water Notebook.

Appendix F
North American Pop-up Riddle

To create the pop-up riddle for North America the teacher will need construction paper, pencils, scissors, glue, and crayons/colored pencils. Fold a sheet of construction paper in half. Make a tab by cutting 2 slits on the fold 1" apart. Push the tab through to the inside. Draw, color, and cut out a figure that will not extend beyond the book page. Glue the picture to the tab.

Write clues on the front of the pop-up page. The answer should pop up when the book is opened. Student should make a pop-up riddle for 1 lake and 1 desert of their choice from North America.

See Alternatives to Worksheets, page 62.

Appendix G
South American Cube

To create the cube for South America the teacher will need square boxes, milk cartons, or a pattern to make a cube. Solid colored butcher paper, wrapping paper, or construction paper, tape or glue, crayons/colored pencils, and pencils.

Construct cube from a square box of any size or trim 2 paper milk cartons to the same height and insert the open end of one carton into the open of the other. Cover the cube. You can use a cube pattern or a die-cut pattern.

The student will need to put the name of the continent, lakes, desert, and 2 important facts that the student has learned about South America. Leave the bottom of the cube blank.

For further information see [Alternative to Worksheets](#)

Appendix H

Australian Textured Map

The following materials will be needed for each student to make a textured map: ¼ sheet of blue poster board, 1 large sheet of sand paper, glue, and 7 different textures. The 7 textures can be of the individual students choice such as beads, macaroni, rocks, corn, etc. The student will draw a map in the shape of Australia on sand paper and cut it out. Glue and center the map of Australia onto the poster board. Then using the 7 textures the student will emphasis important details about Australia such lakes, deserts, mountains, reefs, etc.

For further information see Maps and Mazes page 29.

Appendix I
Quilt of Africa

The students will need the following items for the African quilt: 3 6"x6" squares of different colored felt, butcher paper for backing, crayon/markers appropriate for writing on felt, and glue. Glue 1 square diagonally on the butcher paper. Cut the remaining 2 squares into triangles. Glue the 4 triangles to the sides to the diagonal square aligning them to make a large square on the butcher paper. On the diagonal square draw a map of Africa and note where deserts and lakes are located. On the 4 triangular squares draw animals, people, plants, and birds of Africa. Display quilts.

For further information see Alternatives to Worksheets page 70

Appendix J
Story Cloth of Asia

The students will create a story cloth for Asia. The students will need ½ sheet of colored poster board (students choice of color), construction paper to make continent, lakes, and deserts and students choice of materials to relate information on Asia that they have learned ie magazine pictures, flags, etc.

Students will make the shape of the Asian continent with construction paper and glue to poster board. Then using other construction paper make the shape of the lakes and deserts of Asia. Glue these shapes in the appropriate places. All shapes should be drawn to scale. With other materials students will create scenes depicting Asian cultural. Place the scenes around the continent on the poster board.

For further information see [Theme for a Day Grades 5-6](#)

Appendix K
VENN Diagram

Appendix L

Sand and Water Culminating Activity

To end the unit on Sand and Water the students will display all activities in the Dragon's Den. These activities could also be displayed in the school library and/or other appropriate place in the school or community. Gifted and Talented students will develop an activity to report their findings to the Middle School incorporating resource students in their activity at Mountainburg Middle School Morning Show. Activity could be a song, dance, or skit, etc.