

The Moon's Effect On the Water

Grade Level(s): 5 and 7

Objective: To demonstrate the pull of the moon on the waters of the earth, as to correspond with S.C. Science Curriculum Standards.

Teacher

Preparation: Choose students to represent the earth, the moon, and about 7-10 to represent the world ocean.

Procedure:

1. Place a student "earth" in the middle of the circle of the hand-holding students representing the world ocean.
2. Student "moon" is to move slowly about the outside of the circle. As he moves, the circular ring of students should become elliptical with "earth" and one side moving to him, leaving opposite children away from "earth". The teacher may try to point out that the students at the part of the ring away from the moon have been separated from the earth, as the earth is also being pulled by the moon and its centrifugal force is spring water away from its surface. Thus high tides at opposite sides and low tides at opposite sides.
3. Have the students not involved in the action explain where low and high tide would be.

Discussion:

1. Discuss the ways that the moon affects the waters. Could the pull of the moon affect animals or plants? (yes, egg laying of the turtles and grunions relate to spring tides of full moons.)
2. Discuss how the amount of pull would change if the moon were further from the earth. (Much less pull, therefore tidal range would be less.)



Reference:

Frankenberg, D., Mauldin, L. (1978). North Carolina Marine Education Manual. Raleigh, North Carolina: UNC Sea Grant Publication.

The Moons Effect on the Earth

South Carolina Science Curriculum Standards (Grades 5,7)

Area I: Inquiry

National Science Education Standards* Grade 5	S.C. Components*
Identify process skills that can be used in scientific investigations	
Observe	1
Classify	2
Infer	5
Predict	6
Design and conduct a scientific investigation	B
Develop descriptions, explanations, predictions, and models using evidence.	B
Think critically and logically to make relationships between evidence and explanations	A
Communicate scientific procedures and explanations	C

National Science Education Standards* Grade 7	S.C. Components*
Identify process skills that can be used in scientific investigations	
Observe	1
Classify	2
Infer	1
Predict	6
Design and conduct a scientific investigation	A,B,H
Develop descriptions, explanations, predictions, and models using evidence.	B
Think critically and logically to make relationships between evidence and explanations	A
Communicate scientific procedures and explanations	C

Grade	Area	Unit of Study	National Science Education Standards *		S.C. Componenets
5	III. Earth Science	Changes in the Earth's Surface: landforms and oceans	A. Structure of the Earth System	1. Land forms are the results of a combinatoin of constructive and destructive forces.	J
7	III. Earth Science	The Abiotic Environment	A. Structure of the Earth System	1. Landforms are the result of a combination of constructive forces (e.g., deposition of sediments) and destructive forces (e.g., weathering and erosion).	C

*Refer to South Carolina Science Curriculum Standards, adopted by the S.C. Board of Education January 12, 2000, for complete national standards and S.C. components.