

Sec.: _____ Name: _____

Experiment: Tidal Range
(E. Science 9-18-3b)

Purpose: To learn how the moon affects tidal range.

Materials: red pencil
blue pencil

Methods:

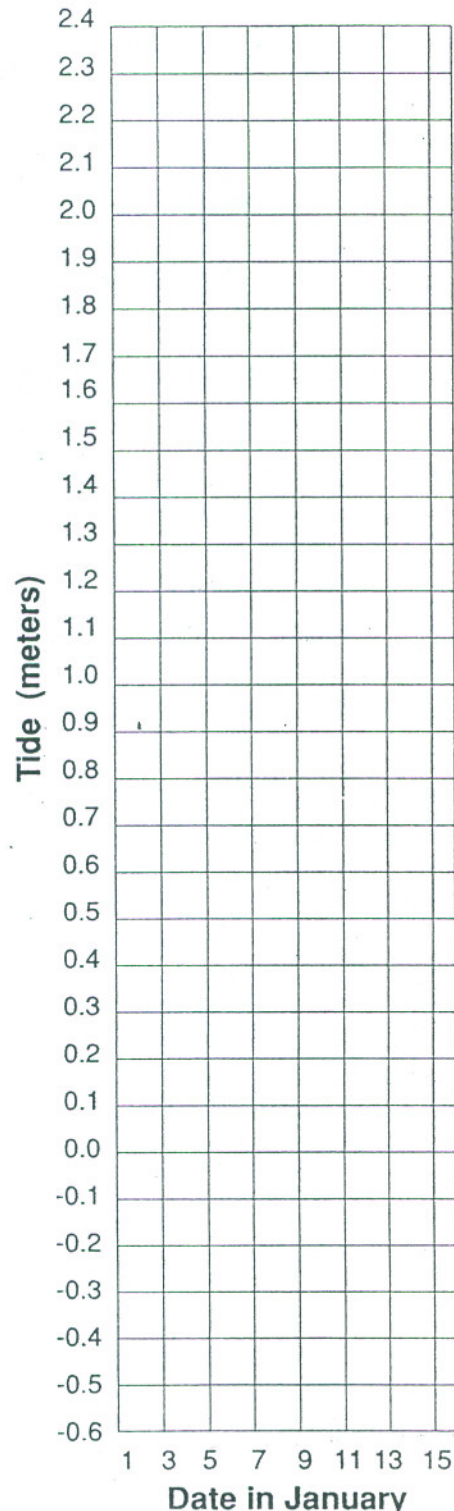
1. Plot each data point for a high tide. (Listed in results). Connect these data points with a red pencil.
2. Plot each data point for a low tide. (Listed in results). Connect these data points with a blue pencil.

Results:

Date in January	Height of high tide (meters)	Height of low tide (meters)
1	1.4	0.5
2	1.5	0.4
3	1.7	0.2
4	1.8	-0.1
5	2.1	-0.3
6	2.2	-0.5
7	2.3	-0.6
8	2.3	-0.6
9	2.3	-0.6
10	2.1	-0.5
11	1.9	-0.2
12	1.6	-0.1
13	1.6	0.2
14	1.6	0.4
15	1.6	0.4

Conclusions:

1. What day(s) had the lowest tidal range?
2. What day(s) had the greatest tidal range?
3. Did there seem to be any pattern to your graph? Describe the pattern observed.



Sec.: _____ Name: _____

3. How does an increase in fan speed affect the pattern of the shadows of waves on the typing paper?
4. What caused shadows to appear in the lid of the plastic storage box?
5. What was the effect when you turned off the fan?

Discussion:

1. What three wind factors caused the wave height to vary in the oceans?
a. _____ b. _____ c. _____
2. In part B of the experiment, did the cork move from its original location in the container?
3. Compare the movement of the cork with the movement of water particles in a wave.
4. Answer the "Applying Math" problem of page 522 of your textbook in the following space.
1. _____
2. _____
- 5a. Read Psalm 65: 6 - 13. Comment on what King David rejoices about in reference to the: roaring seas: _____ roaring waves: _____
turmoil of the nations: _____
- 5b. List the seasonal events that God has blessed?
6. Use the following word bank to label the parts of a wave in the diagram on the lower left. (Word bank: crest, height, trough, wavelength).
7. Salinity, or salt content of ocean water varies somewhat with location. An average ocean water sample of one kilogram in mass contains the following relative amounts of the ions listed in the table below. Plot the following data in the histogram (bar graph).
chloride 55.0 % sodium 30.6 % sulfate 7.7 % magnesium 3.7 %
calcium 1.2 % potassium 1.1 % all others 0.7 %

