When the Tide Comes In: Tides WebQuest

Introduction:
Have you ever visited the ocean? Have you ever built a sand castle and then watched the waves get closer and closer until they start washing away the outer wall of your sand castle. Bit by bit your castle starts to crumble into the sea. Slowly the waves come higher and higher up the beach until your entire sand castle is washed away. The tide has come in.

But why does that happen? What is the tide?

Instructions:
This webquest is about the Ocean Tides. It will lead you to some web pages about the tides. Click on each Internet link (posted on the teacher’s website) and read carefully before answering each question. You may not always need to read the whole web page to find the answer. Answer each question in a complete sentence on the answer sheet.

Have fun surfing!

I. Read and answer the question:
URL: http://co-ops.nos.noaa.gov/restles1.html

1. What does the word tide mean?

II. Watch the video, answer below:

2. Define high tide:

3. Define low tide:

4. Why does the moon have a stronger effect on tides?

5. Why are there 2 bulges when there is a high tide?
6. How many neap tides and spring tides are there every month?

III. Read and answer the next few questions:
   URL: http://www.astronomyknowhow.com/moon-tides.htm

7. What is a spring tide?

8. What is a neap tide?

IV. Read and answer the question:
   URL: http://oceanservice.noaa.gov/education/kits/tides/tides08_othereffects.html

9. What effects tides in addition to the Sun and the Moon?

10. What is an example of a location that has extreme tides?

V. Watch this animation and then draw a diagram of a spring tide and a neap tide in the space below.
   URL: http://www.islc.net/~fripplog/springt.htm

Spring Tide

Neap Tide
Spring Tides vs. Neap Tides

<table>
<thead>
<tr>
<th>Spring Tides</th>
<th>Neap Tides</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the diagram below, estimate and draw the height of the water level at high tide and low tide during <strong>spring tides</strong>.</td>
<td>On the diagram below, estimate and draw the height of the water level at high tide and low tide during <strong>neap tides</strong>.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High Tide</th>
<th>Low Tide</th>
</tr>
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<tbody>
<tr>
<td>[Diagram of high tide]</td>
<td>[Diagram of low tide]</td>
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</tbody>
</table>

Average sea level

On the diagram below, draw the two positions of the Moon on the Moon’s orbit that will cause **spring tides**. Label the moon phases. Draw a dotted line to show the relationship of the Sun, Earth and moon.

<table>
<thead>
<tr>
<th>Moon’s orbit</th>
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On the diagram below, draw the two positions of the Moon on the Moon’s orbit that will cause **neap tides**. Label the moon phases. Draw a dotted line to show the relationship of the Sun, Earth and moon.

<table>
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(Not drawn to scale)