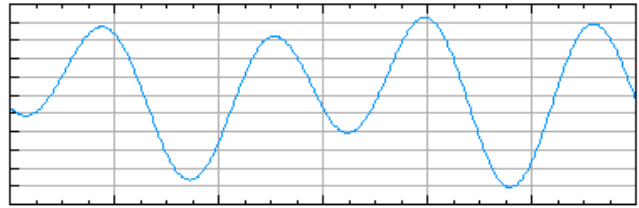


## Patterns of the Tides

Objective: Observe the patterns of tides by graphing daily high and low tide times of \_\_\_\_\_ (name of water body) for \_\_\_\_\_ (time period).



**Part 1:** Look at the example(s) of marigrams available.

With your group members, answer these questions about marigrams.

1. What is a marigram?
2. How is it titled?
3. How is the vertical axis labeled?
4. How is the horizontal axis labeled?
5. What is the tidal range?
6. Where is the zero for height? Why isn't it at the intersection of the two axes?
7. How are the times and dates arranged on the horizontal axis?
8. What time period is covered in the sample graph?

**Part 2:** Use the tide book or tide data provided by your teacher. In the tide book or table, find the tide data for the appropriate time period and location.

1. On your graph paper, determine how your marigram will be set up. Use the example if you need help. Title your graph.
2. Draw the vertical axis and label it tide height (remember to give the unit you are using for height.). Determine the height range needed and put numbers on the vertical axis accordingly.
3. Draw the horizontal axis and label it time and date. You will have 4 points to graph for each day. Label your horizontal axis accordingly.
4. Looking at the tide data, plot each point according to height, time and day.

**Part 3:** After constructing your graph, do the following:

1. Share your graph with another person/group.
2. In your science notebook, write an explanation of the pattern you see on your graph. Use data on your graph as evidence for your explanation.
3. Answer the following in your science notebook using evidence from your marigram: Calculate the average time between high tides. Can you explain why it is longer than 12 hours?
4. When you are finished, get the handout "Tides and the Moon" from your teacher, and answer the question in your science notebook. Add information to your marigram to show where the spring and neap tides occur.

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