

Waves In or On the Water: An Inquiry

PART 1A

Problem: How can you demonstrate waves?

As a group, design a demonstration of the motion of a wave using the materials on the tray. In your science notebook, write down the steps you will follow. Before you begin, write a prediction about what will happen, and then follow the steps. Observe the shape and motion of the wave, and write down your observations, draw a picture of your wave(s) and label the parts. Discuss what happened with your group. Write an explanation to describe the motion of the wave in your science notebook. (The shape of the wave was _____ because _____).



Use your observations as evidence for your explanation.

PART 1B

Problem: How can you demonstrate water waves?

As a group, design another demonstration of the motion of a wave using the materials at your table. In your science notebook, write down the steps you will follow. Before you begin, write a prediction about what will happen, and then follow the steps. Observe the shape and motion of the wave, and write down your observations. Draw a picture of your wave(s) and label the parts. Discuss what happened with your group. Write an explanation to describe the motion of the wave in your science notebook. (The shape of the wave was _____ because _____). Use your observations as evidence for your explanation. Compare the waves, and the method you used to make the waves from Part 1A and Part 1B with your group members. Make a graphic (hint: Venn diagram, table with similarities and differences, or ?) showing the comparison.

PART 2

Problem: How can you demonstrate the movement of an object in or on the water?

As a group, design a demonstration of the movement of an object in or on the water using the materials at your table. In your science notebook, write down the steps you will follow. Before you begin, write a prediction about what will happen, and then follow the steps. Observe the motion of the floating object, and write down your observations. Draw a picture of the motion of the object. Discuss what happened with your group. Write an explanation to describe the motion of the object in your science notebook. (The motion of the object was _____ because _____). Use your observations as evidence for your explanation.

Think about this question: How does wave motion determine the time it takes for an object to move from Point A to Point B on the ocean? Share your answers/explanations with your group, and be prepared to discuss this question with the class.