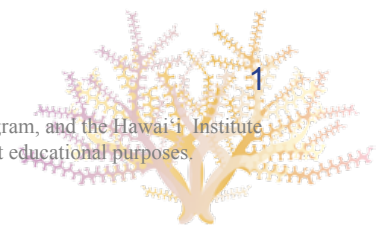
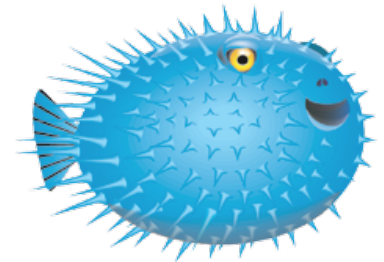


Build a Rain Gauge!

Name: _____ Date: _____

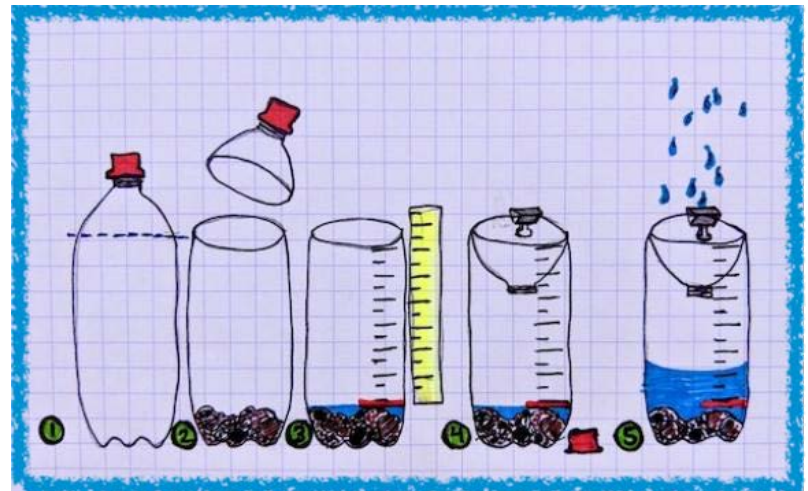
Instructions:

1. Gather your materials to build a rain gauge! (recycled 2L clear soda bottle, small rocks, ruler, permanent marker or paint pen (red and black), scissors or bread knife - adult supervision required! You can refer to the image on page 2 for guidance.
2. Before building your own rain gauge, think about and answer these pre-activity questions:
 - a. Where do you live?
 - b. When is it rainiest at your home?
 - c. What is the rain like on the other side of the island?
 - d. What month is it right now?
 - e. What season are you currently in?
 - f. Do you expect there to be a lot or a little rainfall at your given location this season? Explain.



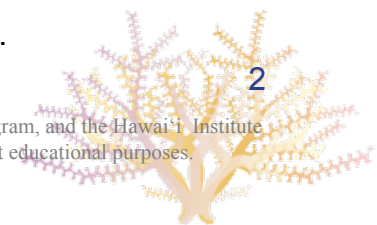
Follow these steps to make a simple and recycled rain gauge!

1. If using a plastic water bottle, cut the neck on the cylindrical part where it begins to curve.
*Note: **Get help from your teacher to make this cut!***
If the edge is sharp, use tape to cover it so it is smooth.
2. Fill the bottom of the bottle with about a cup of rocks/pebbles.
3. Choose a spot on the bottle just above the rock line to be your zero mark, or your **baseline**. Draw a line in red.
4. Line the ruler up to the side of the bottle with the "0" in line with your baseline and mark up the bottle every 5 millimeters. Label every other line (counting by 10).
5. Pour just enough water to cover the pebbles and so the water line is even with your zero mark.
6. Invert the top to make a funnel and use the binder clip to attach it to the bottle. This funnel will direct the rainfall and prevent evaporation of water.
7. Place your gauge in a level area that will catch the rain (avoid placing the gauge under a tree or other covered area!).
8. Check the gauge once a week and record the rainfall on your data sheet.
(Note: If the value is hard to determine (in between values), use your ruler to help!)
9. Empty and reset it each time you take a reading.
(Note: To reset the gauge, empty the water, replace the rocks in the bottom of the bottle, and refill enough to reach your base line. Place it back on your chosen site.)



Graph your data!

10. After you have recorded data for each week in the month, add up each number to find the total amount of rainfall for that month.
11. Label the x-axis with the months you recorded (or will be recording) rainfall data.
12. Label the y-axis with rainfall in millimeters (mm). Be sure your scale is large enough that your rainiest months can fit on the graph!
(Note: some areas of the islands, such as the windward side, may get 500 mm of rain in a month! The leeward side may only get up to 100 mm.)
13. As you collect data each month, fill in your bar graph by drawing bars (that correspond to the month on the x-axis) up to the appropriate rainfall total on the y-axis.
14. Observe the pattern in rainfall over time and answer the questions on page 5.

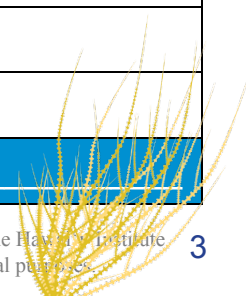


Rain Gauge Data Sheet

Name: _____

Location: _____

Date	Observations	Rainfall Measured (units: mm)
Month: _____		Total Rainfall: _____
Month: _____		Total Rainfall: _____
Month: _____		Total Rainfall: _____
Month: _____		Total Rainfall: _____



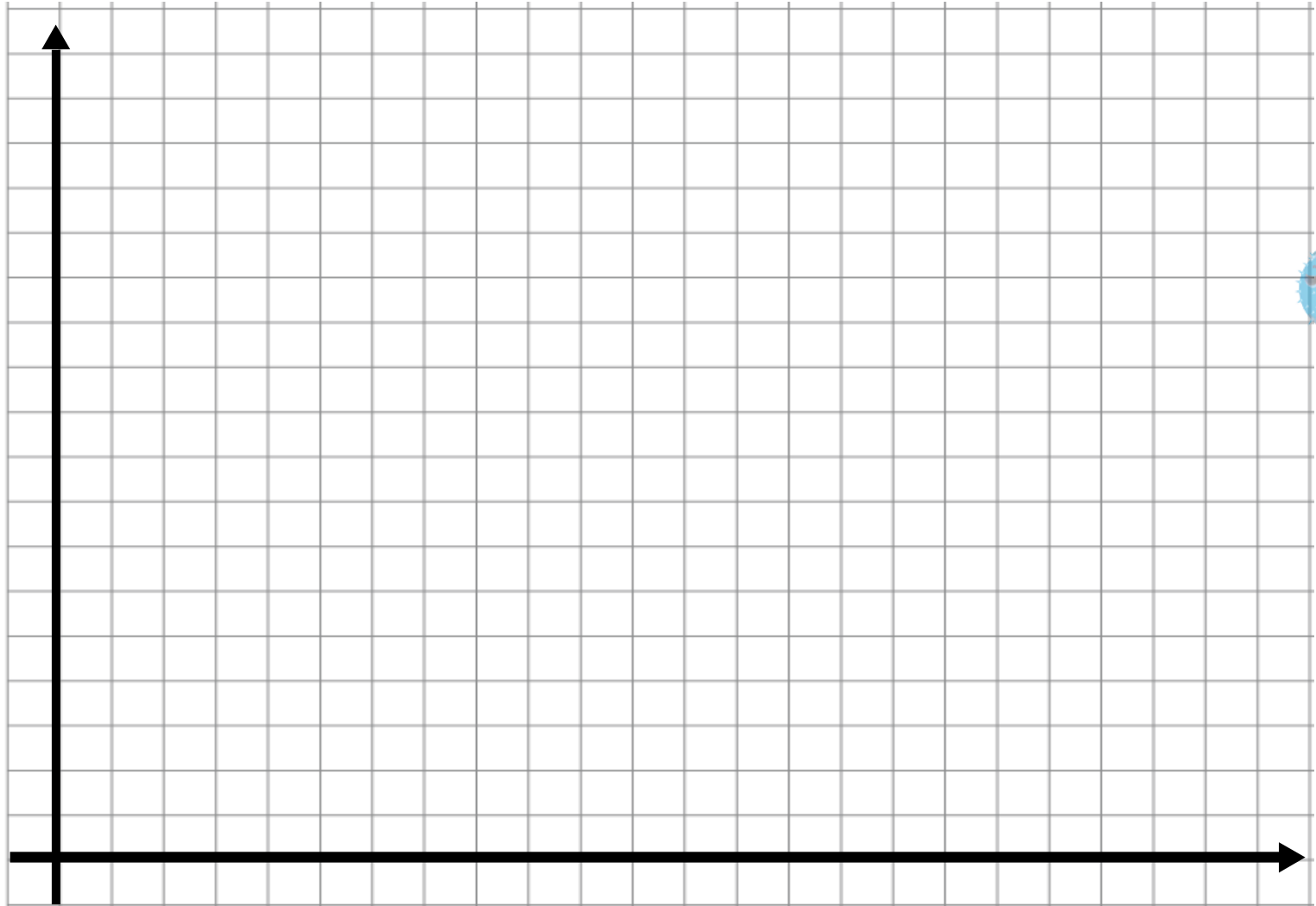
Instructions: Plot the total rainfall measured from your rain gauge over time. Plot rainfall on the y-axis in the same units you used on your rain gauge. Plot time, in months or days, on the x-axis.

Title: _____

Name: _____



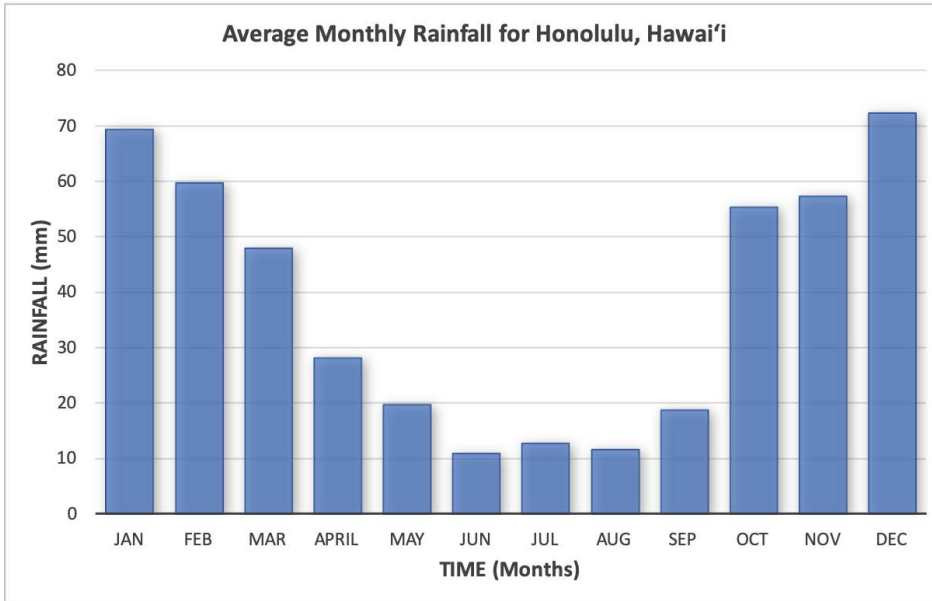
**Rainfall
(mm)**



Time (months)



Activity Questions



This graph shows the average rainfall for Honolulu, Hawai'i each year over a thirty year period. Use the information to answer the following two questions:

1. When are the wettest and driest times of year?
2. Does your answer above make sense with your experience living in Hawai'i?

3. What will you learn from recording one day of rain?

4. What will you learn from recording one year of rain?

5. What might be different in a rain gauge in your yard versus one in your classmates?

6. How can you improve your design of the rain gauge?

7. Why is it important to collect data on rainfall in different parts of the island?

