Shell Size Lab   Name:

                                                          Period:

Purpose
By counting up the number of shells within a certain size range, students will understand that different populations of organisms can be found in the same area.

Prediction
If I make a graph of shell sizes, then I will be able to get an idea of population distribution, because different populations will have different shell sizes.

Materials

- box of shells

- ruler

- plastic box with blue lid

Procedure

1. Remove the lid from the box of shells.

2. Carefully take out one shell at a time to measure.

3. Using the cm side of the ruler, measure the widest part of the shell.

4. Determine which size range from the data chart best fits the measurement.

5. Make a tally mark in that column of the data chart.

6. Place the measured shell in the plastic box with the blue lid.

7. Repeat the process with more shells.

tally marks:

1	I	6	JHT I
2	II	7	JHT II
3	III	8	JHT III
4	IIII	9	JHT IIII
5	JHT	10	JHT JHT

image from http://www.enchantedlearning.com/math/tally/

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Observations & Data

Record your data below for the size of each shell you measure.

### Table 1—number of shells with measurements within certain ranges

size range	tally	my total	table total
less than 1cm			
1cm - 2cm			
2cm - 3cm			
3cm - 4cm			
4cm - 5cm			
5cm - 6cm			
greater than 6cm			

Once you are done with your tallies find the column titled "my total". Count up the number of tally marks in that row, and write it as a number in the "my total" column. Next, add the totals of all the members of your group, and put this number in the "table total" column. This will tell you the number of shells in your table's box of a particular size range.
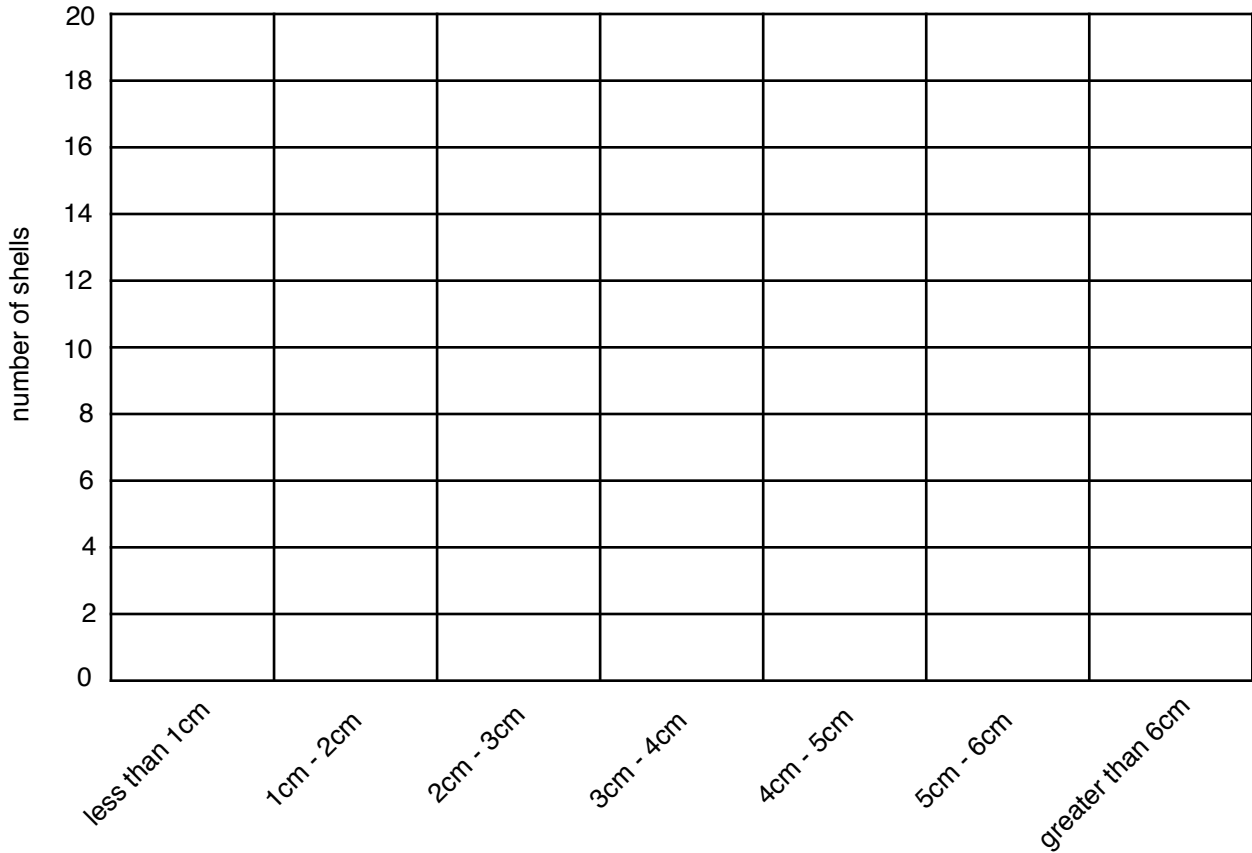
Analysis

1. To be able to analyze the data you've collected, you need to put it into a graph. For this experiment, it will be most useful if you create a bar graph in the grid above. Read all of the directions below before you start making your graph.

2. Look at the tally chart you filled in (Table 1) and the column titled "table total". You are going to transfer this number to the graph and make a bar graph. When you draw the bars, make sure that there is space on each side to make the graph easier to read. Your bars should NOT be touching the vertical lines that separate each of the size ranges on the graph.

3. Start to put your data on the graph by finding the same range at the bottom of the graph. Then, make a bar that reaches up from the bottom of the graph to the number of shells. If you do not have any data for a particular size range, leave that section of the graph blank.

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Conclusion

1) Based upon your measurements, which shell size range was the most common in your box?
   Hint: Looking at your graph, this will be the size range that has the tallest bar.

   The shell size of _____ was the most common.

2) Imagine that all of the shells in your box came from one beach. Why do you think that the animals that have this shell size range were the most common in that location? *Hint: Why did these particular animals survive well there?*

3) Based upon your measurements, which shell size range was the least common in your box?
   Hint: Looking at your graph, this will be the size range that has the shortest bar.

   The shell size of _____ was the least common.

4) Still imagine that all of the shells in your box came from one beach. Why do you think that the animals that have this shell size range were the least common in that location? *Hint: Why didn't these particular animals survive well there?*

5) Presuming that all of your shells came from the same beach, imagine that each different size range represents a different population of animals. How many populations were found in your sampling area?
   Hint: Looking at your graph, count up the number of different bars, one for each size range.

   The sampling area contained_____ different populations.

6) Look at the graph created by another lab group (with their permission, of course!). Is their graph the same as or different than yours? Why do you think this is?

   The graph from another lab group was (the same as / different than) ours.

   This is probably because....