Celebrate Variation!

The Challenge

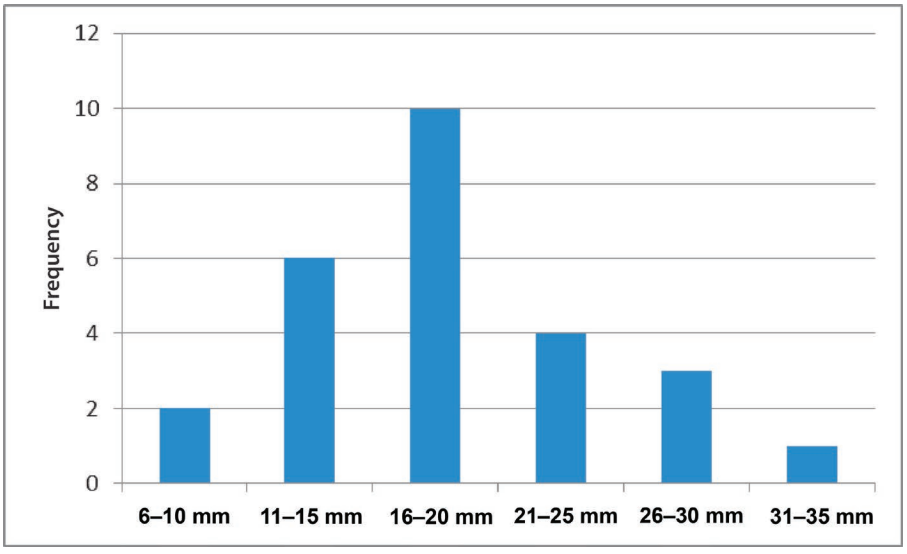
You're well aware of the diversity among human beings, but the variations among other organisms aren't always as obvious. In this investigation, you'll study size variations among individual members of a sample population.

Procedure

1. Work with a partner to identify about 15 or 20 individual plants of the same species and a trait you would like to measure. For example, you could measure any of the following:
    a. The length of the longest stem on 10 rosemary plants
    b. The length of the biggest leaf on 15 rose stems
    c. The height of the flower on 20 dandelions–
    d. The length of 20 different pea pods
2. Measure this trait for every individual in your sample population. Then record the data on the table on page 2 (Plant Species Measurements).
3. Determine the range in your sample by finding the difference between the largest and smallest measurements.
4. Divide the resulting range into four-to-six-measurement intervals.
5. Count the number of measurements that fall into each interval and record this data on the frequency distribution table on page 2. For example, in the frequency distribution table below, two measurements fell between 6 and 10 mm, and six fell between 11 and 15.
6. Using the grid on the following page, create a histogram (bar graph) that illustrates the results (see the sample histogram below).

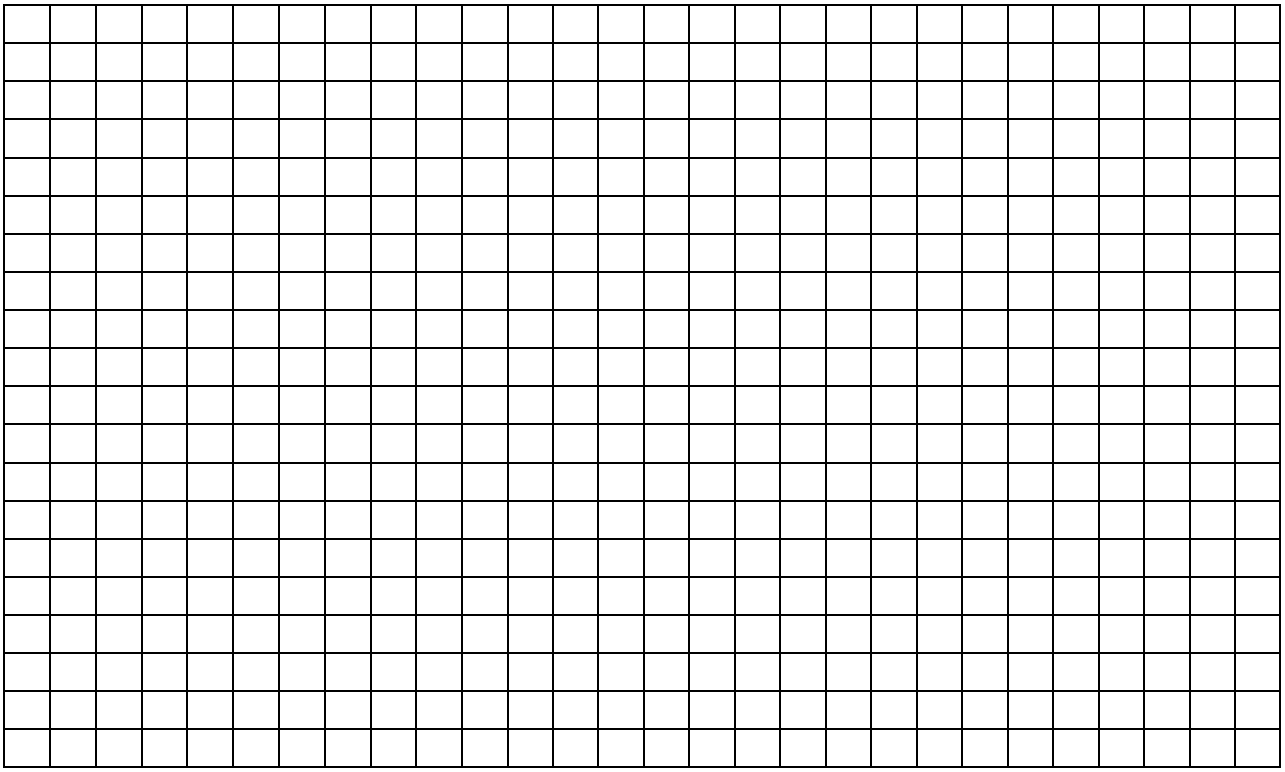
Sample Frequency Distribution Table and Histogram

Length Range	Number of Individuals in That Range
6–10 mm	2
11–15 mm	6
16–20 mm	10
21–25 mm	4
26–30 mm	3
31–35 mm	1



Plant Species Measurements	
Plant Number	**Length (in mm)**
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

Frequency Distribution Table	
Length Range	**Number of Individuals in That Range**



Questions

1. Does your data provide evidence that individuals vary for the trait you measured? Based on the results from this simple series of observations, make a **claim** and then include **evidence** to support your claim.

2. What do you think causes some of the differences among individuals?

3. Of the causes you listed, which ones would the next generation inherit? Which ones would the next generation not inherit?