**Grain Size Distribution from Pebble Counts**

1. Collect all 100 measurements – because there are 100 measurements, each data point represents 1%
2. Order them from smallest to largest
3. Find the minimum, maximum, median, and mean
4. Count the number of measurements in each size category (see categories below)– the number of measurements will also be the percentage of measurements in that category
5. Plot the number of measurements for each size category on the first graph (Distribution)
6. The second graph is called a % finer graph – it's a cumulative distribution that shows the % of the grains smaller than a certain size
7. To make this graph, count the number of samples (percentage) that are smaller than each grain size category
   a. This total will keep adding up as each grain size increases
8. Plot the percentages for each size category on the second graph
9. On the % finer graph, it's easy to find the median – it's at the 50% mark
   a. The D_{50} (median grain size) is an important value that geomorphologists use to talk about streams
10. You can also easily find the D_{84} and D_{16} (values at 16% and 84%) on this graph – these are values that geomorphologists commonly use to represent the large and small sizes when discussing streams and comparing within streams and between streams

Students should find 10 rocks between the minimum and maximum to paint, and be able to find their size in the distribution.

Size Categories:
- Less than 0.2 cm
- Between 0.2 cm and 0.4 cm
- Between 0.4 cm and 0.8 cm
- Between 0.8 cm and 1.6 cm
- Between 1.6 cm and 3.2 cm
- Between 3.2 cm and 6.4 cm
- Between 6.4 cm and 12.8 cm
- Between 12.8 cm and 25.6 cm
- Greater than 25.6 cm
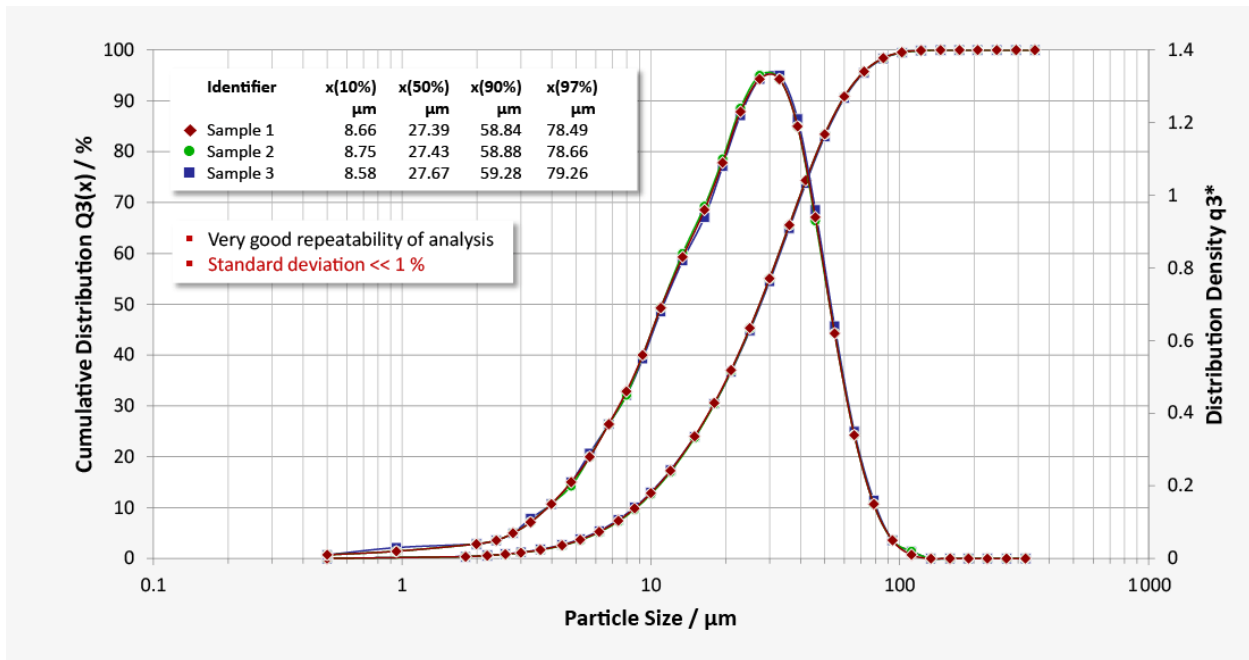
This is an example of what they should be making, although they will do it on separate graphs – the distribution is the curve that looks close to a normal distribution, and the cumulative distribution is the more S-shaped curve.

Note that the x-axis is logarithmic – the graphs I'm giving you are also in a logarithmic scale, but I added the numbers that represent the usual size classes used for grain size. This is because when they first developed this method, the typical distribution was best formatted in a logarithmic scale.