

## **INDIVIDUAL ASSIGNMENT:**

- Formulate own ideas
- 2-3 complete sentences minimum per question

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

CLASS PERIOD: \_\_\_\_\_

## **Data Analysis**

### **Qualitative and Quantitative**

### **Types of Data**

Scientists collect two different types of data: qualitative data and quantitative data.

**Qualitative Data:** Qualitative data are descriptions in words of what is being observed. They are based on some quality of an observation, such as color, odor, or texture.

**Quantitative Data:** Quantitative data are numeric measurements. The data are objective- they are the same no matter who measures them. They include measurements such as mass, volume, temperature, distance, concentration, time, or frequency.

### **Example**

Suppose a marine biologist observes the behavior and activities of dolphins. She identifies different dolphins within the group and observes them every day for a month. She records detailed observations about their behaviors. Some of her observations are qualitative data and some are quantitative data.

#### **Qualitative data examples**

- Dolphin colors range from gray to white.
- Dolphins in a pod engage in play behavior.
- Dolphins have smooth skin.

#### **Quantitative data examples**

- There are nine dolphins in this pod.
- Dolphins eat the equivalent of 4-5% of their body mass each day.
- The sonar frequency most often used by the dolphins is around 100kHz.

Notice the qualitative data are descriptions. The quantitative data are objective, numerical measurements.

# Qualitative vs. Quantitative



## Identify Data Types

Suppose that you are a biologist studying elephants in their natural habitat in Africa. You observe their behaviors and interaction, and take photographs of their interactions to study later. Examine the photograph of the elephants shown above.

1. **Analyze** Give two examples of qualitative data that could be obtained from the photograph of the elephants.
2. **Analyze** Give two examples of quantitative data that could be obtained from the photograph of the elephants.