DATA

DEFINITION

Data is information or facts that we collect to learn about something. We use data to help us understand and make decisions.

CHARACTERISTICS

- Data can be numeric (quantitative) or descriptive (qualitative).
- It can be organized, analyzed, and interpreted to reveal trends, patterns, or relationships.
- Data can be represented in various forms, such as charts, tables, graphs, diagrams, or narratives.

EXAMPLE(S)

Quantitative Data (Numeric):

- The heights of plants in a garden
- The number of students in our classroom
- The temperatures recorded every day

Qualitative Data (Descriptive):

- Observations of animal behavior
- Descriptions of weather conditions

NON-EXAMPLE(S)

- Personal opinions or beliefs
- Predictions about the future
- Information about fictional characters or creatures (ex: the heights of unicorns or Harry Potter characters are not considered data)

MEASUREMENT

DEFINITION

Measurement is the process of comparing an object or event to a standard unit to determine its size, length, weight, volume, or other attributes.

CHARACTERISTICS

- We use tools such as rulers, scales, thermometers, and measuring cups to determine measurements.
- Measurement involves a standard unit of measurement, such as inches, centimeters, grams, liters, or degrees Fahrenheit.
- We must be able to measure correctly with precision and reliability to determine true measurement.

EXAMPLE(S)

- Using a ruler to measure fossils in inches.
- Pouring milk into a measuring cup to cook using the units of cups or ounces.
- Weighing items to determine their weight in pounds or grams.
- Using a thermometer to determine the temperature outside in degrees Fahrenheit or Celsius.

NON-EXAMPLE(S)

- Guesses or estimates about the weight or length of an object without using a measuring tool.
- Qualitative descriptions of items such as big or small, without measuring first.
- Descriptive terms that cannot be measured, such as pretty or purple.

QUARTER INCH

DEFINITION

A unit of measurement equal to one-fourth of an inch. Written as 1/4" or 0.25 inches.

CHARACTERISTICS

- A quarter inch is smaller than a half inch but larger than an eighth of an inch.
- It is often used in woodworking, construction, sewing, and other crafts to make precise measurements.
- Quarter-inch increments are commonly found on rulers, tape measures, and other measuring tools.

EXAMPLE(S)

- Four quarter inches equal 1 inch, the same way four quarters equal 1 dollar.

Reasons Professionals Measure by Quarter Inches:

- Cutting a piece of paper to be 2 and 3/4 inches wide for a craft project.
- Marking a line on a board to be drilled 1 and 1/4 inches from the edge.
- Sewing a seam with a seam allowance of 1/4 inch.

NON-EXAMPLE(S)

- Any measurement smaller than or larger than a quarter inch.
- Measurements that do not deal with length such as weight or volume.
- Measurements from the metric system (we cannot determine these measurements to be the same without conversion).

LINE PLOT

DEFINITION

A line plot is like a picture made of dots or Xs on a line. Each dot or X represents how many times something happens or how many of something there are. It helps us see and understand information in a visual way.

CHARACTERISTICS

- Line plots are simple and easy to interpret (understand).
- They are useful for organizing and visualizing small sets of data.
- Each data point on the line plot represents one occurrence or measurement from the data set.

EXAMPLE(S)

Reasons to Make a Line Plot:

- Showing the number of books each student read in a month or a year.
- Determining the size range of discovered fossils.
- Analyzing the math scores achieved by all students.
- Displaying the heights of a stuffed animal collection.

NON-EXAMPLE(S)

Different types of graphs such as:

- Pie charts
- Bar graphs
- Scatterplots
- Histograms
- Stem and Leaf plots

FOSSIL

DEFINITION

The preserved remains or traces of ancient organisms (living things) that lived long ago.

CHARACTERISTICS

- Fossils can include bones, teeth, shells, footprints, imprints, and other evidence of past life forms.
- They are typically found in sedimentary rock layers and provide valuable information about Earth's history and the evolution of life.
- Fossils can provide clues about the appearance, behavior, habitat, and relationships of ancient organisms.

EXAMPLE(S)

- Dinosaur bones found in rock layers dating back millions of years.
- Imprints of ancient plants or leaves preserved in sedimentary rock.
- Preserved organisms found in tar pits, like the La Brea Tar Pits in California.
- The bones, teeth, and other fossils found at Hands On! Discovery Center in Gray.

NON-EXAMPLE(S)

- Modern shells or animal bones found on the ground that have not undergone the process of fossilization.
- Artificial or 3D-printed replicas of fossils.
- Fossil fuels such as oil, natural gas, and coal. (These are not fossils of specific organisms)