Lesson Printables

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Lesson Information Sheet: 2

All Zones
Activity: 3
Answers: 4

Let's explore measurements

Why learn this?

Measurement has so many real life math applications. Knowing how to identify and work between a variety of different measurements helps students gain essential life skills that can be applied in a variety of scenarios.

What types of measurement should my student identify?

Length/distance
- In the metric system, the standard units of length and distance are millimeters, centimeters, meters and kilometers.

Mass
- In the metric system, the standard units of mass are grams, kilograms and metric tons. *Please note, we do not explicitly discuss metric tons in this lesson.*

Volume/Liquid Volume/Capacity
- Volume refers to the total 3D space an object occupies. Volume can be measured in cubic units such as cm^3, m^3, etc. *Please note, we do not explicitly discuss volume in this lesson. This will be covered in future lessons.*
- Liquid volume refers to the space a liquid occupies. In the metric system, this is measured in milliliters and liters.
- Capacity refers to the maximum amount a container can hold. You can measure the capacity of a cup and you can also measure the liquid volume within a cup.
  - ➔ The capacity of a cup refers to the storage potential of the cup while the liquid volume refers to the actual amount of liquid that is in the cup.
  - ➔ The capacity of a stadium refers to the amount of people who can safely fill the whole stadium.
  - ➔ The capacity of a car refers to how many people can fit (safely) in the car.

Time
- Time has many different units of measurement. These include: seconds, minutes, hours, days, weeks, months, years, etc.

Temperature
- Temperature has different units of measurement. In the metric system, temperature is measured in degrees Celsius.

Let's warm up!

Starter Activity - Partial Planets
Students are shown three planet arrays that are partially covered by astronauts. How many planets is each astronaut covering? What are some other ways each group of planets could be arranged? (This really means, 'What are the factors of each planet total?'.)

To support, students could:
- Be asked guiding questions:
  - ➔ How many planets are in each row? Each column?
  - ➔ What number sentences could match your thinking?

To challenge, students could:
- Identify the planet total and then some of the factors of their answer.

Let's do this!

Main Activity - Students are shown 2 pictures. What measurements can students connect to each picture? These could be obvious measurements or students can think more abstractly as modelled in the lesson. Encourage students to include what unit of measurement would be used to measure each of their ideas.

To support, students could:
- Be asked guiding questions.
  - ➔ Let's focus on length. What could you measure using a tape measure or ruler in this picture?
  - ➔ Let's focus on mass. What could you weigh in this picture?
  - ➔ Let's focus on liquid volume. What could you measure that connects to liquids in this picture?
  - ➔ Let's focus on time. What units of time could connect to this picture?

To challenge, students could:
- Find at least 6 measurements that connect to each picture.
- Be encouraged to include an estimation for each of their ideas.

All Zones

1. What measurements could connect to either picture?
   ➔ Include what unit of measurement you would use.

Answers

Encourage students to come up with as many ideas as possible.
Below are some examples.

Cat and Fish
Mass of the cat: kilograms Mass of the fish: grams Length of the cat: centimeters Liquid volume in fish bowl: milliliters/liters Time it takes to clean the fish bowl: minutes/hours Distance a cat travels in a day: meters/kilometers Temperature in the water: celsius Height of the fish bowl: centimeters Age of the cat: years Time the cat stares at the fish: seconds/minutes

Stadium
Time of game: minutes/hours Length of the field: meters Height of the goal: meters Height of the tallest player: centimeters Height of the grass: millimeters/centimeters Capacity of the stadium: amount of people Mass of the ball: grams Mass of the goal: kilograms Mass of one of the players: kilograms Liquid used to water the field: liters Temperature on the field: Celsius