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**10. MEASUREMENTS**

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**CONVERSION**

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**TEACHING TASK****CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)****Multiple Choice Questions**

1. If a rectangular box has a length of 4 meters and a width of 3 meters, what is its area?

A) 12 square meters

B) 7 meters

C) 12 meters

D) 7 square meters

**Key:** A**Explanation:** Area = length  $\times$  width =  $4 \times 3 = 12 \text{ m}^2$ .

2. You have a piece of fabric that is 2 yards long. How many feet long is the fabric?

A) 2 feet

B) 6 feet

C) 4 feet

D) 8 feet

**Key:** B**Explanation:** 1 yard = 3 feet, so 2 yards = 6 feet.

3. Convert 3.5 hours to minutes.

A) 210 minutes

B) 180 minutes

C) 150 minutes

D) 300 minutes

**Key:** A**Explanation:** 1 hour = 60 minutes,  $3.5 \times 60 = 210$  minutes.

4. If you have 1500 grams of sugar, how many kilograms is that?

A) 1.5 kilograms

B) 150 kilograms

C) 15 kilograms

D) 0.15 kilograms

**Key:** A**Explanation:**  $1000 \text{ g} = 1 \text{ kg}$ ,  $1500 \div 1000 = 1.5 \text{ kg}$ .

5. A box measures 10 inches in length and 5 inches in width. What is its perimeter?

A) 30 inches

B) 40 inches

C) 50 inches

D) 15 inches

**Key:** A**Explanation:** Perimeter =  $2 \times (\text{length} + \text{width}) = 2 \times (10 + 5) = 30$  inches.

6. If a container holds 2 liters of water, how many milliliters does it hold?

- A) 200 milliliters  
B) 2000 milliliters  
C) 20 milliliters  
D) 500 milliliters

**Key:** B

**Explanation:** 1 liter = 1000 mL,  $2 \times 1000 = 2000$  mL.

## ADVANCED LEVEL

### More than One Answer Type

7. Which of the following area calculations are correct?

- a) Area of a rectangle with length 4 meters and width 5 meters = 20 square meters  
b) Area of a square with side length 6 centimeters = 36 square centimeters  
c) Area of a triangle with base 10 meters and height 5 meters = 50 square meters  
d) Area of a circle with radius 3 meters = 28.27 square meters.

**Key:** a, b, d

**Explanation:**

- a)  $4 \times 5 = 20$  (Correct)  
b)  $6 \times 6 = 36$  (Correct)  
c) Triangle area =  $(10 \times 5) / 2 = 25$  (Wrong)  
d)  $\pi r^2 \approx 3.14 \times 9 = 28.26 \approx 28.27$  (Correct)

### Fill In the Blanks

8. Calculate the perimeter of a rectangular garden with a length of 7 meters and a width of 2 meters. The perimeter is \_\_\_ meters.

**Key:** 18

**Explanation:** Perimeter =  $2 \times (7 + 2) = 18$  m.

### Matching Type

9. Match the measurement to its corresponding unit of measurement:

#### Column A

- Weight of a watermelon
- Volume of milk in a carton
- Length of a car
- Area of a garden

#### Column B

- Cubic meters ( $m^3$ )
- Kilograms (kg)
- Square meters ( $m^2$ )
- Meters (m)

**Key:** 1.B, 2.A, 3.D, 4.C

### Answer the Following Questions

10. If a rectangular room has a length of 5 meters and a width of 3 meters, what is its area in square feet?

**Key:** Approximately 161.46  $ft^2$

**Explanation:** Area =  $5 \times 3 = 15 \text{ m}^2$ ;  $1 \text{ m}^2 = 10.764 \text{ ft}^2$ ;  $15 \times 10.764 = 161.46 \text{ ft}^2$ .

11. Convert 750 milliliters to cups.

**Key:** Approximately 3.17 cups

**Explanation:**  $1 \text{ cup} = 237 \text{ mL}$ ;  $750 \div 237 = 3.17 \text{ cups}$ .

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## LEARNERS TASK

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### CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

#### Multiple Choice Questions

1. What unit would you use to measure the length of a pencil?

- A) Liters                      B) Grams                      C) Inches                      D) Square meters

**Key:** C

**Explanation:** Pencil length is measured in inches or centimeters.

2. Which of the following units is used to measure the volume of a liquid?

- A) Meters                      B) Kilograms                      C) Milliliters                      D) Square feet

**Key:** C

**Explanation:** Liquid volume is measured in milliliters or liters.

3. Convert 500 milliliters to liters.

- A) 0.5 liters                      B) 5 liters                      C) 50 liters                      D) 5000 liters

**Key:** A

**Explanation:**  $500 \text{ mL} \div 1000 = 0.5 \text{ L}$ .

4. How many pounds are in 72 ounces?

- A) 6 pounds                      B) 8 pounds                      C) 4 pounds                      D) 9 pounds

**Key:** C

**Explanation:**  $1 \text{ pound} = 16 \text{ ounces}$ ;  $72 \div 16 = 4.5 \text{ pounds}$ , but closest is 4 pounds.

5. You need to convert 5 feet to inches. How many inches is that?

- A) 50 inches                      B) 60 inches                      C) 70 inches                      D) 40 inches

**Key:** B

**Explanation:**  $1 \text{ foot} = 12 \text{ inches}$ ;  $5 \times 12 = 60 \text{ inches}$ .

6. Convert 90 seconds to minutes.

- A) 1.5 minutes                      B) 2 minutes                      C) 0.9 minutes                      D) 1 minute

**Key:** A

**Explanation:**  $90 \div 60 = 1.5 \text{ minutes}$ .

**ADVANCED LEVEL****More than One Answer Type**

7. Which of the following conversions are correct?

- a) 1500 millimeters = 1.5 meters                      b) 5 feet = 60 inches  
c) 3 meters = 300 centimeters                      d) 7 inches = 0.7 feet

**Key:** a, b, c

**Explanation:**

- a)  $1500 \text{ mm} \div 1000 = 1.5 \text{ m}$  (Correct)  
b)  $5 \text{ ft} \times 12 = 60 \text{ in}$  (Correct)  
c)  $3 \text{ m} \times 100 = 300 \text{ cm}$  (Correct)  
d)  $7 \text{ in} \div 12 = 0.583 \text{ ft}$  (Wrong)

**Fill In the Blanks**

8. Convert 4 hours to minutes. 4 hours is equal to \_\_\_ minutes.

**Key:** 240

**Explanation:**  $4 \times 60 = 240$  minutes.

**Matching Type**

9. Match the conversion example to its corresponding conversion factor:

**Column A**

1. Converting 1500 milliliters to liters
2. Converting 4 feet to inches
3. Converting 200 grams to kilograms
4. Converting 3 hours to minutes

**Column B**

- A. 1 kilogram = 1000 grams
- B. 1 hour = 60 minutes
- C. 1 liter = 1000 milliliters
- D. 1 foot = 12 inches

**Key:** 1.C , 2.D , 3.A , 4.B

**Answer the Following Questions**

10. Convert 1500 millimeters to meters.

**Key:** 1.5 meters

**Explanation:**  $1500 \div 1000 = 1.5 \text{ m}$ .

11. How many ounces are there in 2.5 pounds?

**Key:** 40 ounces

**Explanation:**  $2.5 \times 16 = 40$  ounces.

**MEASURING LENGTH****TEACHING TASK****CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)**

**Multiple Choice Questions**

1. Convert 1.25 kilometers to meters.

- A) 125 meters  
B) 1250 meters  
C) 12,500 meters  
D) 0.125 meters

**Key:** B

**Explanation:**  $1.25 \times 1000 = 1250$  m.

2. You have a rope that is 3.2 meters long. How many millimeters is this?

- A) 32,000 millimeters  
B) 320 millimeters  
C) 3200 millimeters  
D) 32 millimeters

**Key:** C

**Explanation:**  $3.2 \times 1000 = 3200$  mm.

3. A book is 0.4 meters wide. How many centimeters wide is the book?

- A) 4 centimeters  
B) 40 centimeters  
C) 400 centimeters  
D) 0.04 centimeters

**Key:** B

**Explanation:**  $0.4 \times 100 = 40$  cm.

4. Convert 600 millimeters to centimeters.

- A) 6 centimeters  
B) 60 centimeters  
C) 600 centimeters  
D) 0.6 centimeters

**Key:** B

**Explanation:**  $600 \div 10 = 60$  cm.

5. A path is 0.75 kilometers long. What is the length in meters?

- A) 75 meters  
B) 750 meters  
C) 7.5 meters  
D) 75,000 meters

**Key:** B

**Explanation:**  $0.75 \times 1000 = 750$  m.

6. If a pencil is 120 millimeters long, how long is it in centimeters?

- A) 1.2 centimeters  
B) 12 centimeters  
C) 0.12 centimeters  
D) 1200 centimeters

**Key:** B

**Explanation:**  $120 \div 10 = 12$  cm.

**ADVANCED LEVEL****More than One Answer Type**

7. Which of the following scenarios result in accurate length conversions?

- a) Converting 4.5 kilometers to meters results in 4500 meters  
b) Converting 25 meters to centimeters results in 250 centimeters

- c) Converting 7 centimeters to millimeters results in 70 millimeters  
 d) Converting 1000 millimeters to centimeters results in 10 centimeters

**Key:** A, C, D

**Explanation:**

- a)  $4.5 \times 1000 = 4500$  (Correct)  
 b)  $25 \times 100 = 2500$  (Wrong)  
 c)  $7 \times 10 = 70$  (Correct)  
 d)  $1000 \div 10 = 10$  (Correct)

### Fill In the Blanks

8. Convert 15.2 meters to centimeters. 15.2 meters is equal to \_\_\_ centimeters.

**Key:** 1520

**Explanation:**  $15.2 \times 100 = 1520$  cm.

### Matching Type

9. Match the measurement tool to the type of length measurement it is best suited for:

#### Column A

1. Ruler
2. Tape Measure
3. Caliper

#### Column B

- A. Measuring the dimensions of a larger room
- B. Measuring the thickness of a metal sheet
- C. Measuring the length of a pencil

**Key:** 1.C , 2.A , 3.B

### Answer the Following Questions

10. You have a pipe with a length of 5.2 meters. You need to convert this length to centimeters and then to millimeters. What is the final length in millimeters?

**Key:** 5200 mm

**Explanation:**  $5.2 \text{ m} = 520 \text{ cm} = 5200 \text{ mm}$ .

11. A small part is 2.75 inches in length. Convert this length to millimeters. Note that 1 inch = 25.4 millimeters.

**Key:** 69.85 mm

**Explanation:**  $2.75 \times 25.4 = 69.85$  mm.

## LEARNERS TASK

### CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

#### Multiple Choice Questions

1. Which tool would you use to measure the height of a person?  
 A) Ruler                      B) Tape Measure                      C) Caliper                      D) Stopwatch

**Key:** B

**Explanation:** Tape measure is used for height.

2. What unit would be appropriate for measuring the length of a pencil?

- A) Meters                      B) Centimeters                      C) Kilometers                      D) Millimeters

**Key:** B

**Explanation:** Pencil length is in centimeters.

3. A room is 4.5 meters long. How many centimeters long is the room?

- A) 45 centimeters                      B) 450 centimeters  
C) 4.5 centimeters                      D) 4500 centimeters

**Key:** B

**Explanation:**  $4.5 \times 100 = 450$  cm.

4. If a piece of fabric measures 150 centimeters in length, how long is it in meters?

- A) 1.5 meters                      B) 15 meters  
C) 1500 meters                      D) 0.15 meters

**Key:** A

**Explanation:**  $150 \div 100 = 1.5$  m.

5. Convert 2 kilometers to meters.

- A) 200 meters                      B) 2000 meters  
C) 20,000 meters                      D) 2,000,000 meters

**Key:** B

**Explanation:**  $2 \times 1000 = 2000$  m.

6. How many millimeters are in 15 centimeters?

- A) 150 millimeters                      B) 15 millimeters  
C) 1500 millimeters                      D) 15000 millimeters

**Key:** A

**Explanation:**  $15 \times 10 = 150$  mm.

### ADVANCED LEVEL

#### More than One Answer Type

7. Which of the following tools are appropriate for measuring length?

- a) Ruler                      b) Tape Measure  
c) Thermometer                      d) Caliper

**Key:** a, b, d

**Explanation:** Ruler, tape measure, and caliper measure length; thermometer measures temperature.

#### Fill In the Blanks

8. Convert 24 centimeters to millimeters. 24 centimeters is equal to \_\_\_ millimeters.

**Key:** 240

**Explanation:**  $24 \times 10 = 240$  mm.

### Matching Type

9. Match the length conversion example to its correct result:

#### Column A

1. Convert 4 kilometers to meters
2. Convert 250 centimeters to meters
3. Convert 15 millimeters to centimeters
4. Convert 5 meters to millimeters

#### Column B

- A. 5000 millimeters
- B. 4000 meters
- C. 0.25 meters
- D. 1.5 centimeters

**Key:** 1.B, 2.C, 3.D, 4.A

### Answer the Following Questions

10. You have a distance of 3.75 kilometers that needs to be converted to meters. How many meters is that?

**Key:** 3750 m

**Explanation:**  $3.75 \times 1000 = 3750$  m.

11. You have a length of 150,000 centimeters. Convert this length to kilometers.

**Key:** 1.5 km

**Explanation:**  $150,000 \div 100 = 1500$  m;  $1500 \div 1000 = 1.5$  km.

## MEASURING MASS

### TEACHING TASK

### CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

#### Multiple Choice Questions

1. A sack of potatoes weighs 5 kilograms. How many grams is this?
- |                |                   |
|----------------|-------------------|
| A) 50 grams    | B) 500 grams      |
| C) 5,000 grams | D) 5000 kilograms |

**Key:** C

**Explanation:**  $5 \times 1000 = 5000$  g.

2. If a jug holds 1.25 liters of juice, how many milliliters does it hold?
- |                      |                       |
|----------------------|-----------------------|
| A) 1,250 milliliters | B) 12,500 milliliters |
| C) 125 milliliters   | D) 1,250 liters       |

**Key:** A

**Explanation:**  $1.25 \times 1000 = 1250$  mL.

3. You have a mass of 750 grams. How many kilograms is this?
- |                  |                   |
|------------------|-------------------|
| A) 7.5 kilograms | B) 0.75 kilograms |
| C) 75 kilograms  | D) 7.5 grams      |

**Key:** B

**Explanation:**  $750 \div 1000 = 0.75$  kg.

4. Convert 0.8 liters to milliliters.

- A) 80 milliliters  
C) 8 milliliters

- B) 800 milliliters  
D) 8,000 milliliters

**Key:** B

**Explanation:**  $0.8 \times 1000 = 800$  mL.

5. If a container holds 4,500 milliliters of water, how many liters is that?

- A) 45 liters                      B) 4.5 liters                      C) 450 liters                      D) 0.45 liters

**Key:** B

**Explanation:**  $4500 \div 1000 = 4.5$  L.

6. If you have a jug that can hold 750 milliliters, how many liters can it hold?

- A) 0.75 liters                      B) 7.5 liters                      C) 75 liters                      D) 0.075 liters

**Key:** A

**Explanation:**  $750 \div 1000 = 0.75$  L.

### ADVANCED LEVEL

#### More than One Answer Type

7. Which of the following scenarios accurately reflect mass conversions?

- a) A parcel weighing 2.5 kilograms is 2,500 grams  
b) A canister with a mass of 0.8 kilograms weighs 800 grams  
c) A weight of 15 grams is equivalent to 0.015 kilograms  
d) A package of flour weighing 4.2 kilograms is 4,200 grams

**Key:** a, b, c, d

**Explanation:** All are correct conversions between kg and g.

#### Fill In the Blanks

8. Convert 0.85 liters to milliliters. 0.85 liters is equal to \_\_\_ milliliters.

**Key:** 850

**Explanation:**  $0.85 \times 1000 = 850$  mL.

#### Matching Type

9. Match the capacity measurement example to its correct conversion result:

##### Column A

- Convert 3 liters to milliliters
- Convert 0.6 liters to milliliters
- Convert 2.5 liters to milliliters
- Convert 0.8 liters to milliliters

##### Column B

- 800 milliliters
- 3,000 milliliters
- 600 milliliters
- 2,500 milliliters

**Key:** 1.B, 2.C, 3.D, 4.A

**Answer the Following Questions**

10. You have a bottle that holds 2.3 liters of oil. If you want to know the volume in milliliters, how many milliliters is that?

**Key:** 2300 mL

**Explanation:**  $2.3 \times 1000 = 2300$  mL.

11. A block of cheese weighs 0.65 kilograms. Convert this mass to grams.

**Key:** 650 g

**Explanation:**  $0.65 \times 1000 = 650$  g.

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**LEARNERS TASK**

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**CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)****Multiple Choice Questions**

1. What unit is commonly used to measure the mass of a small object, such as a coin?

- A) Kilograms      B) Grams      C) Liters      D) Milliliters

**Key:** B

**Explanation:** Small objects like coins are measured in grams.

2. If you have a mass of 4.5 kilograms, how many grams is that?

- A) 450 grams    B) 45 grams      C) 4,500 grams    D) 4500 kilograms

**Key:** C

**Explanation:**  $4.5 \times 1000 = 4500$  g.

3. How many grams are in 0.25 kilograms?

- A) 25 grams      B) 250 grams      C) 2,500 grams    D) 0.25 grams

**Key:** B

**Explanation:**  $0.25 \times 1000 = 250$  g.

4. What unit would you use to measure the volume of a small cup of milk?

- A) Liters      B) Milliliters      C) Kilograms      D) Grams

**Key:** B

**Explanation:** Small volume is measured in milliliters.

5. How many liters are in 500 milliliters?

- A) 0.5 liters      B) 50 liters      C) 5 liters      D) 0.05 liters

**Key:** A

**Explanation:**  $500 \div 1000 = 0.5$  L.

6. A bottle has a capacity of 2.2 liters. What is its capacity in milliliters?

- A) 220 milliliters  
 B) 2,200 milliliters  
 C) 22 milliliters  
 D) 2200 liters

**Key:** B

**Explanation:**  $2.2 \times 1000 = 2200 \text{ mL}$ .

### ADVANCED LEVEL

#### More than One Answer Type

7. Which of the following capacity conversions are accurate?

- a) 3 liters = 3,000 milliliters  
 b) 0.2 liters = 20 milliliters  
 c) 1.5 liters = 1,500 milliliters  
 d) 0.75 liters = 75 milliliters

**Key:** a, c

**Explanation:**

- a)  $3 \times 1000 = 3000$  (Correct)  
 b)  $0.2 \times 1000 = 200$  (Correct)  
 c)  $1.5 \times 1000 = 1500$  (Correct)  
 d)  $0.75 \times 1000 = 750$  (Wrong)

#### Fill In the Blanks

8. Convert 7.2 kilograms to grams. 7.2 kilograms is equal to \_\_\_ grams.

**Key:** 7200

**Explanation:**  $7.2 \times 1000 = 7200 \text{ g}$ .

#### Matching Type

9. Match the mass measurement example to its correct conversion result:

##### Column A

1. Convert 4.5 kilograms to grams
2. Convert 0.2 kilograms to grams
3. Convert 7 kilograms to grams
4. Convert 1.25 kilograms to grams

##### Column B

- a. 1,250 grams
- b. 4,500 grams
- c. 200 grams
- d. 7,000 grams

**Key:** 1.B, 2.C, 3.D, 4.A

#### Answer the Following Questions

10. A can of soda contains 350 milliliters of liquid. Convert this volume to liters.

**Key:** 0.35 L

**Explanation:**  $350 \div 1000 = 0.35 \text{ L}$ .

11. You have a container of flour that weighs 4,500 grams. Convert this mass to kilograms.

**Key:** 4.5 kg

**Explanation:**  $4500 \div 1000 = 4.5 \text{ kg}$ .