

# Reading Lab Equipment



## **Teachers Information:**

Students may be testing the spacecraft's water supply to make sure that it is safe for use. Testing the water requires using several pieces of basic lab equipment.

In this activity, students will practice reading basic laboratory equipment that will be used during their mission at the Challenger Learning Center. Students will also practice recording data on a data log similar to one used at the Challenger Learning Center.

## **Materials:**

- . 6 graduated cylinders
- . rulers
- . 3 classroom thermometers
- . 6 general items to be massed
- . 6 beakers
- . electronic balance
- . 3 plastic cups
- . pencil, paper clip, scissors, etc.

## **Procedure:**

Prior to the students' arrival, set up stations according to the list below:

| <b>Station</b> | <b>Items</b>        |
|----------------|---------------------|
| 1              | graduated cylinders |
| 2              | electronic balance  |
| 3              | beakers             |
| 4              | rulers              |
| 5              | thermometer         |

1. Fill graduated cylinders and beakers with varying levels of water and label them A-F. (You can use food coloring to color the water to make it easier to see.)
2. Fill the 3 plastic cups with cold, lukewarm and hot water and place a thermometer in each. Label them A, B and C.
3. Place 5 items at Station 2 and label them A-E.
4. Create an answer key. (Keep in mind that thermometer readings will vary throughout the day.)
5. Divide students into pairs or have them work individually.
6. Students should rotate through the stations recording their findings and data.



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## Station 1:

1. Draw a picture of a graduated cylinder.

2. Read the volume of the following graduated cylinders. Label your answers with a (ml) for milliliters.

A.

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B.

---

C.

---

D.

---

E.

---

F.

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## Station 2:

1. Draw a picture of an electronic balance.

2. Find the mass of the items. Label answers with a (g) for grams.

A.

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B.

---

C.

---

D.

---

E.

---

F.

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## Station 3:

1. Draw a picture of a beaker.

2. Read the volume of the following beakers. Label answers with a (ml) for milliliters.

|    |       |    |       |
|----|-------|----|-------|
| A. | _____ | D. | _____ |
| B. | _____ | E. | _____ |
| C. | _____ | F. | _____ |

## Station 4:

1. Draw a picture of a ruler.

2. Measure the following items in both inches and centimeters. Label answers (") inches and (cm) centimeters.

|              |  |  |
|--------------|--|--|
| floor tile   |  |  |
| brick        |  |  |
| notebook     |  |  |
| file cabinet |  |  |

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## Station 5:

1. Draw a picture of a thermometer.
2. Find the temperature of each of the cups. Label answers ( $^{\circ}\text{F}$ ) degrees Fahrenheit.

A. \_\_\_\_\_  
B. \_\_\_\_\_  
C. \_\_\_\_\_

3. Convert the following Celsius temperatures to Fahrenheit. To find the answers follow these steps:
  - Multiply the Celsius temperature by  $9/5$ .
  - Add 32.

|                       |  |
|-----------------------|--|
| 24 $^{\circ}\text{C}$ |  |
| 54 $^{\circ}\text{C}$ |  |
| 20 $^{\circ}\text{C}$ |  |

4. Convert the following Fahrenheit temperatures to Celsius. To find the answers follow these steps:
  - Subtract 32
  - Multiply of  $5/9$

|                       |  |
|-----------------------|--|
| 78 $^{\circ}\text{F}$ |  |
| 18 $^{\circ}\text{F}$ |  |
| 42 $^{\circ}\text{F}$ |  |