

# Make a Hygrometer and Measure Humidity

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Student worksheet

## Word Bank

*(when appropriate, use these words in your short answers)*

- Evaporation
- Humid
- Humidity
- Hygrometer

### DIRECTIONS: Answer the questions below.

1. A plate of water was left out in the class untouched for a week. There is [ more / less / no ] (circle the correct answer) water on the plate now.
2. Draw or write down what you think happened to the water.
3. In the table below, list at least three humid weather conditions and one dry weather condition.

| Humid | Dry |
|-------|-----|
|       |     |

# Make a Hygrometer—Page 2

Name: \_\_\_\_\_

**DIRECTIONS:** Follow the teacher's directions to build a hygrometer.

**DIRECTIONS:** Circle correct answers. Discuss reasons why this happens with your partner.

**Fact:** Hair strands expand (become longer) in humid air and contract (become shorter) in dry air.

4. When the hair expands, the pointer of the hygrometer [ moves up / doesn't move / moves down ]. Discuss why.
5. When the hair contracts, the pointer of the hygrometer [ moves up / doesn't move / moves down ]. Discuss why.

**DIRECTIONS:** Draw your expectations.

6. Draw how you expect your hygrometer to look in dry and humid conditions.

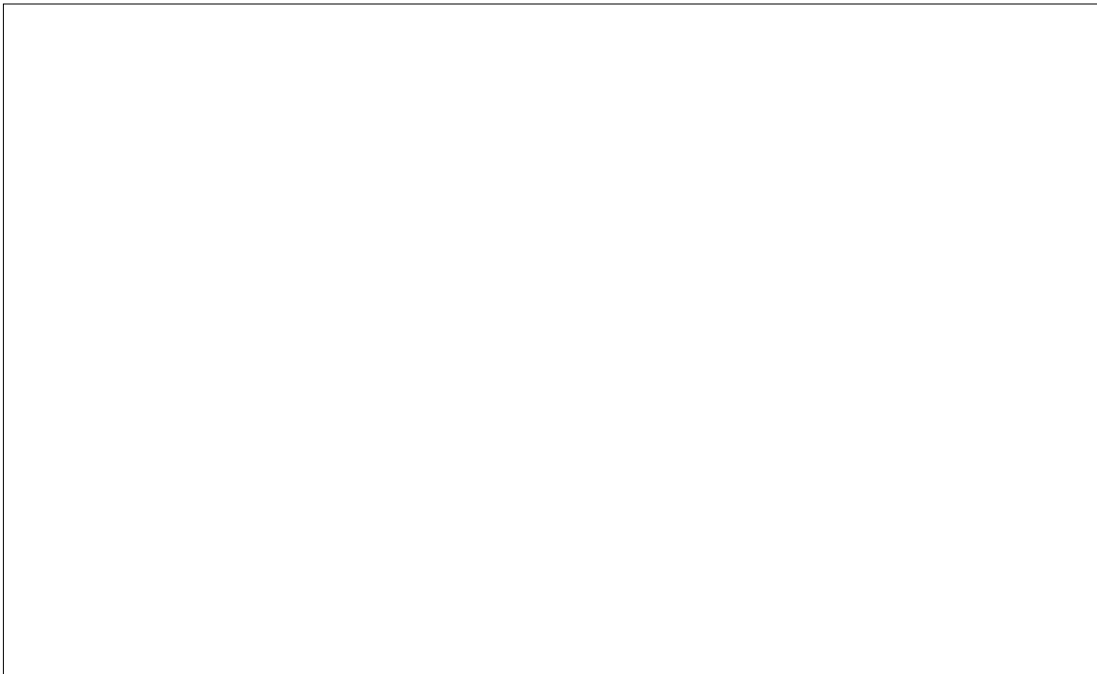
| Prediction     |                  |
|----------------|------------------|
| Dry Conditions | Humid Conditions |
|                |                  |

# Make a Hygrometer—Page 3

Name: \_\_\_\_\_

**DIRECTIONS: Circle the words that match your experiment and observations.**

7. I measured [ humid / dry ] conditions first. I used a bag with a [ wet sponge or towel / hairdryer ] to create these conditions.
- The pointer rotates [ up / down ]. This happens because the air around the hair [ dries / becomes moist ], so the hair [ expands / contracts ] and pulls [ more / less ] at the pointer.
  - Make a drawing of how the hygrometer looks in these conditions.

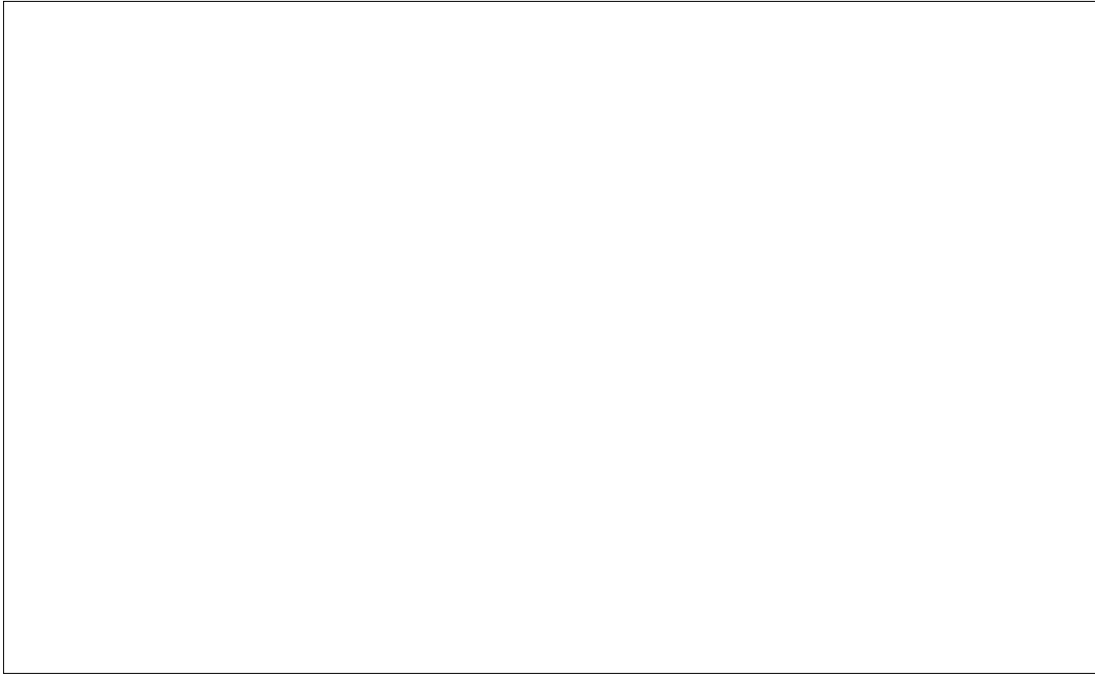


- Is this what you expected (see question 3 and 4)? If it is not, why do you think it is different?

# Make a Hygrometer—Page 4

Name: \_\_\_\_\_

8. I measured [ humid / dry ] conditions second. I used a bag with [ wet sponge or towel / hairdryer ] to create these conditions.
- The pointer rotates [ up / down ]. This happens because the air around the hair [ dries / becomes moist ], so the hair [ expands / contracts ] and pulls [ more / less ] at the pointer.
  - Make a drawing of how the hygrometer looks in these conditions.



- Is this what you expected (see question 3 and 4)? If it is not, why do you think it is different?

# Make a Hygrometer—Page 5

Name: \_\_\_\_\_

## DIRECTIONS: Record your observations.

9. Determine the humidity at different locations.

Use words (e.g., "Dry" or "Somewhat dry") to describe the humidity level.

Record your observations in Table 1.

Remember to fill in the date.

| Table 1. Humidity observations |                | Date: _____               |
|--------------------------------|----------------|---------------------------|
| Location                       | Humidity level | Drawing of the hygrometer |
|                                |                |                           |
|                                |                |                           |

# Make a Hygrometer—Page 6

Name: \_\_\_\_\_

**DIRECTIONS:** Use your observations to answer the following question.

10. The air in the classroom is [ more / about the same / less ] humid (circle the correct answer) than the air outside.

**DIRECTIONS:** Use what you have learned to answer the following questions.

11. A plate of water was left out in the class untouched for a week. There is [ more / less / no ] (circle the correct answer) water in the plate now.

12. Draw what happened with the water? Use words from the word bank to label your drawing.



# Make a Hygrometer—Page 7

Name: \_\_\_\_\_

13. Draw evaporating water on the picture provided. Draw it everywhere it happens.

