

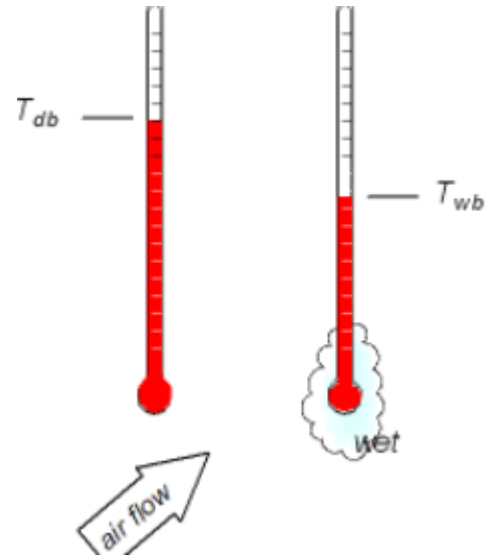
Earth Science Grade 6 Lab Practical

Teacher's Answer Key

This is your chance to see how well your students have picked up on important key concepts, and if there are any holes. Your students also will be working on their homework assignment as you do this test individually with the students.

Materials:

- Different colors of paper (red, yellow, black, white...)
- Water bottle filled with really warm water
- Water bottle filled with really cold water
- Ice Cubes
- Index cards
- Scissors
- Tape
- Dime
- Brass fastener or tack
- Paper towel
- Food dye (only have one color out)
- 2 identical thermometers
- Flashlight



Lab Practical: Ask the student *Note: Answers given in italics!*

You will demonstrate two of the following:

1. Design an experiment that will figure out which color gets the hottest. *Student will put the different papers outside in the sun or under a strong light source, come back after a period of time and measure the temperature reading of the papers. Student will mention energy being transferred from the sun to the paper in the form of radiation (light).*
2. Design an experiment that demonstrates convection currents and describe what is going on during this experiment. *Insert a color drop of food dye into the hot water bottle. Using an index card, invert the cold bottle over the warm so you can view the warm water rising into the cold. Leave the cold bottle clear so you can view the warm water easier.*
3. Design an experiment that will measure the humidity in the air. *There are two ways to do this:*
 - a. *Student can tape two thermometers to a paper and leave the ends exposed to the air, and wrap a piece of wet paper towel around the end of one of them and blow across both ends to see a temperature difference. Use the table on the next page to give you the humidity based on the wet and dry thermometers. (See image above.)*
 - b. *Build a hair hygrometer as we did during an experiment where the hair is gently stretched out and we can measure if the hair changes length after a period of time using a lever arm indicator.*

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Student Exam

This is your chance to see how well your students have picked up on important key concepts, and if there are any holes. Your students also will be working on their homework assignment as you do this test individually with the students.

Materials:

- Different colors of paper (red, yellow, black, white...)
- Water bottle filled with really warm water
- Water bottle filled with really cold water
- Ice Cubes
- Index cards
- Scissors
- Tape
- Dime
- Brass fastener or tack
- Paper towel
- Food dye (only have one color out)
- 2 identical thermometers
- Flashlight

Lab Practical: Ask the student to complete two of the following:

1. Design an experiment that will figure out which color gets the hottest and describe what is happening.
2. Design an experiment that demonstrates convection currents and describe what is going on during this experiment.
3. Design an experiment that will measure the humidity in the air (refer to table on next page).

Relative Humidity (%)

| Dry-Bulb Temperature (°C) | Difference Between Wet-Bulb and Dry-Bulb Temperatures (C°) | | | | | | | | | | | | | | | |
|---------------------------|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| -20 | 100 | 28 | | | | | | | | | | | | | | |
| -18 | 100 | 40 | | | | | | | | | | | | | | |
| -16 | 100 | 48 | | | | | | | | | | | | | | |
| -14 | 100 | 55 | 11 | | | | | | | | | | | | | |
| -12 | 100 | 61 | 23 | | | | | | | | | | | | | |
| -10 | 100 | 66 | 33 | | | | | | | | | | | | | |
| -8 | 100 | 71 | 41 | 13 | | | | | | | | | | | | |
| -6 | 100 | 73 | 48 | 20 | | | | | | | | | | | | |
| -4 | 100 | 77 | 54 | 32 | 11 | | | | | | | | | | | |
| -2 | 100 | 79 | 58 | 37 | 20 | 1 | | | | | | | | | | |
| 0 | 100 | 81 | 63 | 45 | 28 | 11 | | | | | | | | | | |
| 2 | 100 | 83 | 67 | 51 | 36 | 20 | 6 | | | | | | | | | |
| 4 | 100 | 85 | 70 | 56 | 42 | 27 | 14 | | | | | | | | | |
| 6 | 100 | 86 | 72 | 59 | 46 | 35 | 22 | 10 | | | | | | | | |
| 8 | 100 | 87 | 74 | 62 | 51 | 39 | 28 | 17 | 6 | | | | | | | |
| 10 | 100 | 88 | 76 | 65 | 54 | 43 | 33 | 24 | 13 | 4 | | | | | | |
| 12 | 100 | 88 | 78 | 67 | 57 | 48 | 38 | 28 | 19 | 10 | 2 | | | | | |
| 14 | 100 | 89 | 79 | 69 | 60 | 50 | 41 | 33 | 25 | 16 | 8 | 1 | | | | |
| 16 | 100 | 90 | 80 | 71 | 62 | 54 | 45 | 37 | 29 | 21 | 14 | 7 | 1 | | | |
| 18 | 100 | 91 | 81 | 72 | 64 | 56 | 48 | 40 | 33 | 26 | 19 | 12 | 6 | | | |
| 20 | 100 | 91 | 82 | 74 | 66 | 58 | 51 | 44 | 36 | 30 | 23 | 17 | 11 | 5 | | |
| 22 | 100 | 92 | 83 | 75 | 68 | 60 | 53 | 46 | 40 | 33 | 27 | 21 | 15 | 10 | 4 | |
| 24 | 100 | 92 | 84 | 76 | 69 | 62 | 55 | 49 | 42 | 36 | 30 | 25 | 20 | 14 | 9 | 4 |
| 26 | 100 | 92 | 85 | 77 | 70 | 64 | 57 | 51 | 45 | 39 | 34 | 28 | 23 | 18 | 13 | 9 |
| 28 | 100 | 93 | 86 | 78 | 71 | 65 | 59 | 53 | 47 | 42 | 36 | 31 | 26 | 21 | 17 | 12 |
| 30 | 100 | 93 | 86 | 79 | 72 | 66 | 61 | 55 | 49 | 44 | 39 | 34 | 29 | 25 | 20 | 16 |