

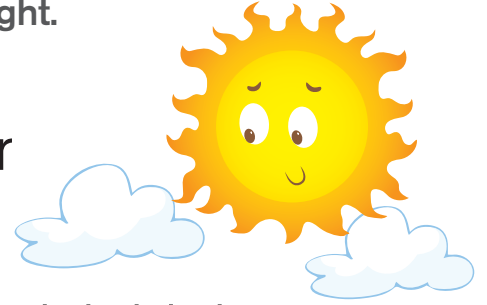
Section 4

Understanding Earth and Space Systems

EXPLORATION 2

Humidity in the Air

Investigate the changes in humidity from day to night.



Humidity is the amount of water vapour in the air. When the amount of water vapour in the air is high, the humidity is high. We cannot see humidity, but we can feel it. When the humidity is high, our skin becomes clammy to touch and we will feel much hotter. This is because the water droplets in the air stick to our skin, so we feel like we are sweating. However, do you think that the level of humidity changes throughout the day? If so, what makes it change?

We sweat a lot because it is so humid today.



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In this experiment, you will see how the level of humidity changes throughout the day and affects our lives.

Level of Difficulty:

moderate

Time Needed:

1 day

Hypothesis:

Circle the word to show your hypothesis.

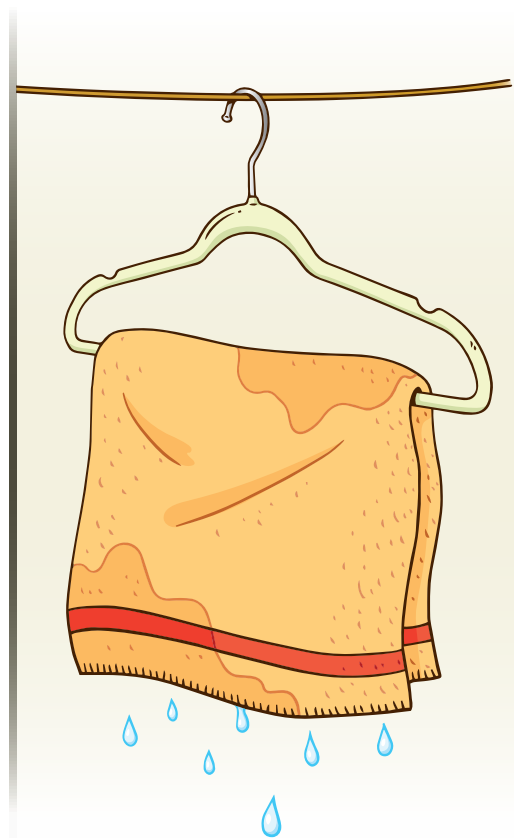
We **cannot / can** see the changes in the level of humidity throughout the day.

Materials:

- a bath towel
- a hanger
- a scale
- 2 L of water

Steps:

1. Weigh the dry towel and record it in the chart on the next page.
2. Soak the towel in 1 L of water.
3. Hang the towel in a sunny spot from 9 a.m. to 6 p.m. (nine hours in total).
4. Feel the towel, weigh it, and record its weight.



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- Repeat Steps 1 to 3 with the same towel from 10 p.m. to 7 a.m. (nine hours in total).
- Feel the towel, weigh it, and record its weight.

Can you describe how the towel felt in the two situations?



My Record

Weight of Towel

From 9 a.m. to 6 p.m.

When dry: _____ At 6 p.m.: _____

Difference in weight: _____

From 10 p.m. to 7 a.m.

When dry: _____ At 7 a.m.: _____

Difference in weight: _____

Conclusion:

Read the conclusion. Then circle the correct word.

You should have noticed that the towel hung in the sun was lighter than when it was hung outside overnight. This is because it had less water in it. The changes in temperature affected the level of humidity. As a result, the amounts of water in the towel in these situations were not the same.

My hypothesis was **correct / incorrect** .

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Explanation:

If you carried out the experiment outside on a hot, sunny day, you would have seen that the towel at 6 p.m. was lighter than it was at 7 a.m. This is because the humidity in the air was lower during the day as the water evaporated due to the sun's heat. On the other hand, at night, as there was less heat, resulting in higher humidity, the towel retained more water. So, it weighed more in the morning.