Weather misconceptions & introductions activity

Facilitation instructions:

Many adults hold misconceptions about weather, if it’s challenging for adults it’s highly likely that students might struggle as well. Take this opportunity to reflect on some of the more challenging weather concepts and your experiences teaching weather. What concepts to students struggle with? What concepts do you find challenging to explain or that you would like more support around?

1. One card per person. Each card makes a commonly held misconception (ie NOT TRUE) about the atmosphere.
2. Think about why the claim is false and what would you change to make it true.
3. Form Round Robin groups of four:
   1. Take turns introducing yourself and reading your claim card aloud.
   2. Discuss why the claim is false and what you would change to make the claim true.
   3. Discuss which claims/concepts your students struggle the most with.
   4. Discuss which concepts are most challenging to teach, and why.
4. After everyone has had a turn to share and discuss, form a new group of four and repeat the round robin process.

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| The air around the Earth is mainly warmed by energy transferred directly from sunlight. | Air that is higher in the sky is warmer because it is closer to the Sun. |
| Peak air temperature happens when the Sun is highest in the sky. | Clouds are made of water vapor. |
| The humidity must be 100% for it to rain. | Temperatures are warmer near the equator than at the poles because the equator is closer to the Sun |
| The temperature of the air is not affected by the surface of the earth beneath it. | Water evaporates into the air only when the air is very warm. |
| The air around the earth is mainly warmed by heat from deep inside the Earth. | Rain falls from a cloud when the pool of water in the cloud becomes too large, so the cloud can no longer hold the water inside. |
| The intensity of sunlight a place receives does not depend on how far north or south a place is. | The equator is closer to the sun than the north pole is. |
| Air currents form only because of the rotation of the earth, not because of the rising and sinking of warm and cold air. | Cold air sinks only if it is a lot colder than the air around it. |
| The maximum height the sun reaches in the sky on any given day is the same everywhere on earth. | The humidity of air is the same everywhere on earth. |