

Weather or Not HW

1. Snow is a solid form of water. Explain why you think snow and ice are so different if they are both forms of solid water.
2. When you take a shower, the mirror in the bathroom becomes “fogged up.” Explain what is happening.
3. Do other planets have weather? Explain why or why not.
4. If water evaporates into the air from the ocean, why doesn't it rain over the ocean all the time? Why does it rain over land sometimes?

Selected Answers:

1. Snow is less dense than ice because it is made of individual snowflakes that “pile up” with lots of air in between. Ice is not made of individual flakes. Instead, it is made of water molecules that have become “locked in place” next to each other with little or no trapped air.

2. When you take a hot shower, water enters the air as a vapor when it evaporates from your skin, the liquid in the tub, and the shower head. The vapor spreads throughout the bathroom and eventually comes into contact with a mirror that has a surface temperature cool enough to allow the water vapor to condense on its surface.

3. If a planet has an atmosphere and a source of heat, it will have some sort of weather. The weather may range from nothing but winds to storms and precipitation.

4. The water vapor needed for precipitation over land has several sources. As the water evaporates from the ocean, it rises into the atmosphere until it reaches an altitude cool enough to allow the formation of clouds. Winds then carry the clouds over the land and, under the right conditions, they release their water as rain. A second possibility is that water vapor from the ocean is carried over the land before it rises high enough to form clouds. Once over land, and under the right conditions, it will eventually rise, form clouds, and be dropped to Earth as precipitation. Finally, water vapor can enter the atmosphere over land when it evaporates from lakes, seas, rivers, soil, vegetation, etc. It will then rise, form clouds, and return to Earth as rain.