Name: _____ Date: _____

Why Fog Pools in Valleys at Dawn

Circle group

On a calm, clear morning, people in the hills may see a strange sight. The valley is full of thick white fog, like milk in a bowl. The hilltops above it shine in the sun. This is not an accident. It comes from how air acts at night.

When the sky is clear at night, the ground loses its heat and gets cold. The air touching the ground gets cold, too. Cold air is heavier than warm air. On a slope, it slides downhill, much like water would, and collects in the lowest places. So valleys get pools of the coldest air.

Air always holds some water vapor. But cold air can hold less. When the valley air gets cold enough, the vapor can not stay hidden. It turns into countless tiny drops near the ground. That cloud at ground level is fog.

Fog like this lasts until the morning sun warms the ground. The air heats up, the drops turn back into vapor, and the fog fades away. Drivers must slow down in fog, because they can not see far.

Questions

1. What does the valley fog look like from the hilltops?

_____

_____

2. Why does cold air slide downhill?

_____

_____

3. What happens to water vapor when valley air gets cold enough?

_____

_____

4. Why is a valley foggier than a hilltop?

_____

_____

5. What makes the fog fade away in the morning?

_____

_____

6. Why must drivers slow down in fog?

_____

_____

Words to know

fog: a cloud of tiny water drops near the ground
valley: low land between hills or mountains
slope: the slanted side of a hill
vapor: water in the form of a gas in the air

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Fog Pools in Valleys at Dawn

Triangle group

On a calm, clear morning, people who live in hills often see a strange sight. The valley floor is filled with a thick white fog, like milk in a bowl, while the hilltops above it shine in the sun. The fog is no accident. It follows from how air behaves after dark.

When the sky is clear at night, the ground loses its heat and cools off. The air touching the ground cools too. Cold air is heavier than warm air, so on a slope it slowly slides downhill, much like water would, and collects in the lowest places. Valleys end up as pools of the coldest air.

Air always holds some water vapor, but cold air can hold less of it. When the air in the valley gets cold enough, the vapor can no longer stay invisible. It turns into countless tiny drops floating close to the ground. That cloud at ground level is fog.

Fog like this lasts only until the morning sun warms the ground. As the air heats up, the drops change back into vapor, and the fog thins and vanishes. Drivers are told to slow down in fog, because they cannot see far ahead.

Questions

1. What does the valley fog look like from the hilltops?

_____

_____

2. Why does cold air slide downhill into valleys?

_____

_____

3. What happens to water vapor when the valley air gets cold enough?

_____

_____

4. Why are valley floors foggier than hilltops?

_____

_____

5. What makes the fog thin and vanish in the morning?

_____

_____

6. Why are drivers told to slow down in fog?

_____

_____

Words to know

fog: a cloud of tiny water drops near the ground
valley: low land between hills or mountains
slope: the slanted side of a hill
vapor: water in the form of a gas in the air
vanishes: disappears completely

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Fog Pools in Valleys at Dawn

Square group

On a still, cloudless morning, residents of hilly country are frequently treated to a remarkable spectacle. The floor of the valley is brimming with dense white fog, resembling milk in a bowl, while the summits above it glow in the sunshine. This scene is no coincidence. It follows directly from the way air behaves after nightfall.

When the sky is clear overnight, the ground radiates its heat away and grows cold, and the air in contact with the ground cools as well. Cold air is heavier than warm air, so on a slope it gradually flows downhill, much as water would, and gathers in the lowest places. Valleys therefore become reservoirs of the coldest air.

Air always contains some water vapor, but cold air is capable of holding less. When the air in the valley becomes sufficiently cold, the vapor can no longer remain invisible. It condenses into countless minuscule droplets suspended near the ground. This cloud at ground level is fog.

Fog of this kind persists only until the morning sun warms the ground. As the air heats up, the droplets revert to vapor, and the fog thins and disappears. Drivers are advised to slow down in fog, because they are unable to see far ahead.

Questions

1. What does the valley fog resemble when seen from the summits?

_____

_____

2. Why does cold air flow downhill into valleys?

_____

_____

3. What happens to water vapor when the valley air becomes sufficiently cold?

_____

_____

4. Why are valley floors foggier than hilltops?

_____

_____

5. What causes the fog to thin and disappear in the morning?

_____

_____

6. Why are drivers advised to slow down in fog?

_____

_____

Words to know

fog: a cloud of tiny water drops near the ground
valley: low land between hills or mountains
slope: the slanted side of a hill
vapor: water in the form of a gas in the air

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Why Fog Pools in Valleys at Dawn

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Why Fog Pools in Valleys at Dawn

Easier · 181 words · Flesch-Kincaid grade 2.5

1. Like milk in a bowl, with the hilltops in the sun above it.
2. Cold air is heavier than warm air.
3. It turns into tiny drops near the ground.
4. The coldest air collects in the lowest places.
5. The sun warms the air, and the drops turn back into vapor.
6. They can not see far ahead.

Triangle: Why Fog Pools in Valleys at Dawn

This passage · 199 words · Flesch-Kincaid grade 4.4

1. Like milk in a bowl, with the hilltops shining above it.
2. Cold air is heavier than warm air.
3. It turns into tiny drops floating near the ground.
4. The coldest air collects in the lowest places.
5. The sun warms the ground and air, and the drops turn back into vapor.
6. They cannot see far ahead.

Square: Why Fog Pools in Valleys at Dawn

Harder · 207 words · Flesch-Kincaid grade 7.5

1. Milk in a bowl, with the summits glowing above it.
2. Cold air is heavier than warm air.
3. It condenses into minuscule droplets near the ground.
4. The coldest air gathers in the lowest places.
5. The sun warms the ground and air, and the droplets revert to vapor.
6. They are unable to see far ahead.