



Drip Drop! Small Group Table

Student Sheet

DIRECTIONS ► Work in your small group to explore the lyrics and the science in each of the boxes below. Make sure to record your thoughts and questions and be ready to share with the whole class.

Lyrics:

*So hot in the atmosphere
Melting H₂O
I'm hot
He's hot
Too hot
Drip Drop (Drop)
Climbing out of control*

What's the science:

Climate is warming. The global average temperature of Earth's atmosphere warmed 1.1 degrees Fahrenheit in the 20th Century. The rise in temperature is a global average. That means that all the temperatures from locations worldwide and through all seasons are averaged together. Scientists project more than double that amount of warming during the 21st Century.

What questions do you have now?

Lyrics:

*I was like "Good gracious!
What's up with the glaciers?"
When I went away
On my summer vacay
See my Aunt Arctica
Same time each year
But I kind of freaked out
When some snow disappeared
Ice rivers flowing
Permafrost un-frozen
Glacial erosion
Miles are going
Dumping and sinking
Right into the sea
Calving off in huge chunks
The size of NYC
Ice-scrappers break off
And turn into bergs
Tons of freshwater run off
Only making it worse*

What's the science:

In general, glaciers are disappearing due to warming temperatures. Almost all mountain glaciers around the world are shrinking. In the northern hemisphere, the ice sheet on Greenland is melting. In the southern hemisphere, the West Antarctic ice sheet is melting too. On the other side of Antarctica, the East Antarctic Ice Sheet is increasing in size because of more snowfall.

There is variation throughout the year: glaciers and ice sheets grow in size during the winter when temperatures are cold and snow is common and then shrink in summer when temperatures are warmer.

What questions do you have now?



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Lyrics:

*Sea levels go up
 Salt water slows up
 High tides'll show up
 Coral don't hold up
 When the water's brackish
 It's bad for the fish
 The ocean's feverish
 I'm not cool with this
 The seven seas are rising twice as fast
 As ever been recorded in decades past
 Forecast soaked shores all along the coast
 Who knows what's in store when the
 waves encroach?*

What's the science:

There are two reasons that sea level is rising and both are because climate is warming. First, there is more water in the ocean as glacial melt water makes its way to the ocean. Second, warming ocean water takes up more space because the water molecules move further apart, which also makes sea level rise.

Rising sea level is a problem for coastal communities, especially when the sea level rises temporarily during storms (called storm surge) and during unusually high tide events (like king tides).

Warmer ocean water is harmful to corals and other marine life that require very specific environmental conditions.

During the 20th Century sea level rose 8 inches. The rate of sea level rise is speeding up and scientists predict sea level will rise between 1 and 7 feet during this century, depending on how much climate change occurs.

What questions do you have now?

Lyrics:

*And on another subject, Arctic ice
 Is Earth's home-grown natural cooling device
 It's melting too, which ain't good news
 When all that chillin' white's got the blues
 Sea ice is nice for reflectivity
 Bouncing back the sun's blazing energy
 The albedo is perfect
 A frozen flat surface
 Rocket ricochet
 Bye bye solar rays
 X ray, gamma ray
 Infrared, ultra violet
 Caliente CO2
 Traps and amplifies it
 This positive feedback
 Ain't so positive
 Melted ice turns dark
 No longer reflective
 It heats up hotter
 Melting even more
 Beware!
 There's a polar bear
 Knocking on your door*

What's the science:

The ice that covers much of the Arctic Ocean around the North Pole is called sea ice and is made of frozen seawater. Every winter the amount of ice increases as cold temperatures allow more seawater to freeze. Then, during summer, some of the sea ice melts. Over the past several decades, more ice has melted during the summer than has formed during the winter. This means that there is less ice in the Arctic Ocean than there used to be.

Because ice is white, it reflects most of the incoming solar energy out to space. The dark ocean surface that is exposed when the ice melts absorbs solar energy, which causes more warming in the Arctic, which melts more ice. This vicious cycle (called a "positive feedback") is responsible for speeding up warming.

Polar bears and other Arctic life are affected by the loss of sea ice. The bears use sea ice platforms when they are hunting for fish and seals in the ocean.

What questions do you have now?



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Lyrics:

*Evaporate Precipitate Circulate Vapor
 Can't escape the atmos
 Where does it go?
 Heads back into the hydro
 Stop, drop & roll
 The higher the temp
 The more the steam
 Buckets dump from the clouds
 Torrential stream
 Stormy weather
 It's like a bad dream
 Get it together
 Climate on caffeine
 When it rains it pours
 And floods the floors
 The deluge don't seep
 Or absorb too deep
 Cause the ground's dried out
 Subterranean drought
 Plants can't go without
 I wanna scream and shout*

What's the science:

The water cycle is speeding up due to climate change. With warmer temperatures, there is more evaporation of water into the air (turning from a liquid to a gas). More evaporation can cause dry areas to become drier. Long term drier-than-normal conditions are called drought, which is a problem for farmers, ecosystems, and anyone who relies on water.

More evaporation of water into the air can cause more clouds to form. Those clouds cause intense storms (precipitation), which can cause flooding.

Looking into the future, scientists project that some areas will have a higher chance of drought and other areas will be subject to extreme rainstorms.

What questions do you have now?

Lyrics:

*True, the climate's changed naturally throughout time
 But it's human fingerprints at the scene of this crime
 We're breaking records.
 We're getting hotter.
 Gotta act now.
 Gotta save our water.*

What's the science:

While saving water is a good idea and works with the rhyme in this song, the most important take away from the video is the importance of humans reducing CO₂ emissions.

What questions do you have now?