Fact #1
The earth’s atmosphere that surrounds our planet is made up of gases called greenhouse gases. Greenhouse gases include carbon dioxide, methane, nitrous oxide and water vapor.

Fact #2
Greenhouse gases allow heat from the sun to enter the atmosphere. Some of this heat is absorbed and some of it is reflected back. Some of the heat is reflected into space, and some of it is held in by greenhouse gases.

Fact #3
The greenhouse effect is a natural process that makes the earth habitable.

Fact #4
The Greenhouse Gas carbon dioxide (CO₂) has increased from 280 parts per million before 1870 and the industrial revolution, to over 390 parts per million today. This information was determined by researchers by taking ice cores from Antarctica and measuring the amounts of carbon dioxide trapped in air bubbles at different heights on the core that correspond to periods of time. Since 1958, carbon dioxide measurements have been taken from on top of Mauna Loa, a volcano in Hawai‘i.
Fact #5
The burning of fossil fuels releases carbon dioxide into the atmosphere, as well as land use changes from deforestation and land-clearing. Fossil fuels are burned in the process of electricity production, industrial processes and the driving of vehicles. Fossil fuels include natural gas, oil and coal.

Fact #6
Throughout the history of the planet Earth, there have been increases and decreases in global average temperature. Although there have been periods of natural warming in the past, scientists are especially concerned about what is happening today because there is a change in temperature that has been rapid in the last 100 years, rather than over hundreds or thousands of years.

Fact #7
This increase in temperature has an effect on Minnesota's climate as a whole, and has enormous implications for Minnesota. The results have been and continue to be experienced across Minnesota’s biomes in all living communities of organisms, including humans.

Fact #8
There are climate change solutions and students can be part of the solution. Later in this unit students will have the opportunity to learn about and develop their own solutions.