

Check your understanding



- 1 My city experienced an extremely cold winter in 2015. Does that mean climate change is a myth?
- 2 Carbon dioxide is the most important greenhouse gas emitted by humans but several other gases contribute to climate change too. Can you name any other greenhouse gases and their sources?
- 3 Scientists use models and simulations to understand, represent, and predict real world events. What are some examples of simulations and models used in this study?
- 4 If you were the head of a forest fire agency, what would you do to lower wildfire suppression costs?

1 Weather and climate are different concepts. Weather is short term conditions. Many factors contribute to weather conditions. Scientists say severe winter weather like we had in 2015 is still to be expected from time to time. That kind of weather happens even while greenhouse gases cause a long-term warming trend for the planet.

2 Methane: Livestock, manure, landfills, mining coal, natural gas. Traps over 20 times more heat than CO₂.
Nitrous oxide: Fertilizing activities, burning fossil fuels. Traps 298 times more heat than CO₂.
Fluorinated gases: Leaking coolants. Depending on the gas, traps hundreds to 28,000 times more heat than CO₂.

3 General Circulation Models (climate models) are used to predict the climate moisture index for changing greenhouse gas concentrations in the atmosphere. The developed linear regression models are used to describe the relationship between the climate moisture index and area burned, and to predict the area burned for future climate index values derived from general circulation models.

4 May vary. Example: Prevent wildfires by cleaning debris, dead trees and brush near railway lines, etc., restrict human development close to the forest, educate others about preventing wildfires, use drones to detect fires early.