

Lesson 2

37 Minutes (plus optional sections)

Outcomes | Alberta Grade 6 Science Curriculum

- Earth's systems interact with the Sun and each other to impact climate in various ways, including greenhouse gases trapping heat from the Sun.
- Humans rely on the Sun and Earth's systems for a habitable climate.
- The release of greenhouse gases into the atmosphere contributes to the warming of Earth.
- Climate change can affect weather and extreme weather events.
- Climate change can be identified through long-term observation and measurement of weather conditions.

Pre-Flight Checklist



- Device and projector set up to Climate Game Changers:
<https://climategamechangers.ca/student/climate-change-101/>
- You will need to be logged into your free account at <https://ourclimateourfuture.org/videos/>
- Sticky note and pencil for each student.
- Organize students into elbow partners; partners they can quickly turn to and share a brief conversation.

Time	Learning Opportunity
1 min	Turn to your elbow partner and ask them how coal, oil, and gas were once alive. We use these things to power our vehicles, but what else do we use them for?
19 min	<p>Continue "What causes it?": https://climategamechangers.ca/student/climate-change-101/. (Login to https://ourclimateourfuture.org/videos/ and "watch Full video"):</p> <p>In a couple of minutes, you will tell your partner something else we use fossil fuels for. (start at 6:37)</p> <ul style="list-style-type: none"> • (continue, stop at 8:41 "where our search to understand climate change takes us next"). Elbow partners: What is something else we use fossil fuels for? What is the problem with continuing the way we have been going? (CO2 emissions). Next question (answer on own or with elbow partners): Why is Venus so much hotter than Earth? (as they watch the next two minutes, write the words "CO2", "reflect", and "atmosphere" on the board. • (continue, stop at 10:28 "97% of its atmosphere is made of CO2"). Using the words

Lesson 2 | Continued

Time	Learning Opportunity
(cont.)	<p>“CO2”, “reflect”, and “atmosphere”, work with your elbow partner to explain why Venus is so much hotter than Earth. Share.</p> <ul style="list-style-type: none"> • (continue, stop at 10:54: “go up together and go down together”) – Elbow partners: why would global temperatures and CO2 levels go up and down together? (more CO2 traps more heat in the atmosphere) • (continue, stop at 12:17: “What does this all mean for the US”) Elbow partners: predict some problems that will arise for the US and Canada? (write answers on board and during next 30 seconds of video, add missing items: permafrost melts, floods, heat waves cause wildfires and drought, extreme storms, diseases, and allergies) • (continue, stop at 12:52) <p>MOVEMENT BREAK What do you think will be the most serious of these issues. Choose in your mind and then move accordingly (designate areas of class according to your categories on the board). Alternative: stand up when I say out loud the one or two that you chose.</p> <p>Find your elbow partner and as you walk back to your seat, ask them what areas of the world other than North America are threatened by changing climate and why. (Some countries may not be able to afford the needed solution, low/coastal countries impacted by flooding, African and other arid countries become too hot and dry, etc.)</p> <ul style="list-style-type: none"> • (continue, stop at 13:57: “the longer you’re going to be facing it” – it gets a bit scary with real young people talking about how they have already been affected)
Optional 5 min	<p>DIGGING DEEPER (21:23–24:35 answers the questions “Is climate change normal? A big deal? Not real?” The last bit talks about disinformation)</p>
Optional 2 min	<p>REVIEW (24:36–26:21 is a fun overview of what we have learned in this video from the perspective of two aliens, and it segues into the “Solutions” section)</p>

Lesson 2 | Continued

Time	Learning Opportunity
5 min	<p>Turn to your elbow partner and ask them to name at least one possible solution to the problems we have talked about. (renewable energy, using less energy, mass transit, AI generated solutions, etc. List their ideas on the board)</p> <ul style="list-style-type: none"> • (continue at 26:22, stop at 29:13) What other solutions can we add to our list on the board?
Optional 3 min	<p>DIGGING DEEPER (29:13–30:30 asks/answers “how can we afford this?” Discuss if you wish)</p>
6 min	<ul style="list-style-type: none"> • (continue at 30:08, stop at 30:26) Ask your elbow partner, “Do you think we will choose to do it?” • (continue at 30:27, stop at 33:20 “Brighter future that we can all create together”)
Optional 1 min	<p>EXAMPLES (show them a few cool solutions 34:11 – 34:34)</p>
5 min	<p>Navigate back to https://climategamechangers.ca/student/climate-change-101/. Now we are going to move on to the “Who What Why?” section (click). Looking out the window on the screen, we see the words “weather vs. climate”. Tell your elbow partner the difference. If you don’t know, take a guess. In a couple of minutes we will play a game to see if you really know the difference, so let’s clarify: weather vs climate (click, play video).</p> <p>Was that video factual or opinion? (F) For the game we will use two more ASL (American Sign Language) signs: make a W with your hand and hold it up : this will represent weather. Now make a C : this will represent climate.</p>

Lesson 2 | Continued

Time	Learning Opportunity
(cont.)	<p>Now for the game: I will make a statement and you hold up a W or C with your hand.</p> <ul style="list-style-type: none"> ·We are supposed to get frost next week. (W) (discuss if too many are wrong) ·During the last ice age much of present-day Canada was much colder than it is now. (C) ·Oceans are warming and scientists tell us that this trend is likely to continue for the next 100 years. (C) ·Europe was extremely hot last month. (W) ·There was more rain than usual all over the world in the fall. (W) ·Let's look at the graph for the trend in our area over the past 67 years. (C) ·It is much cooler this week compared with last week. (W)
1 min	Next time we will look at more of the Climate 101 website, and eventually you will decide on your own potential action.

