We are in a climate crisis, a real crisis, with consequences for inaction.

What can we do? What can you do?

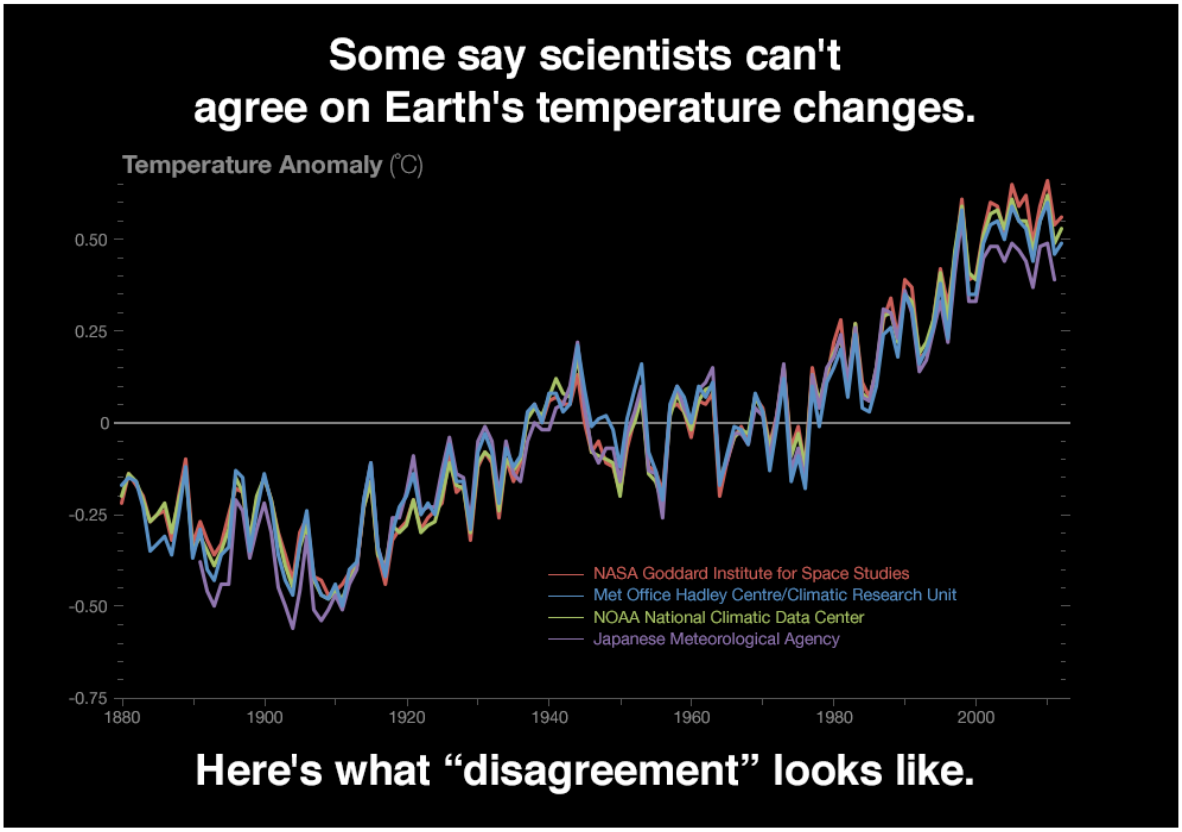
1. Educate yourself, don't be passive, learn, examine, stay current, even if its scary.

Learn to recognize misinformation or opinions with heavy bias.

Bias - a tendency toward a particular perspective or point of view that prevents objective assessment of a topic

The Argument Video (scientist vs politician)

Climate Argument


Some say scientists can't
agree on Earth's temperature changes.
Temperature Anomaly (°C)
0.50
0.25
0
-0.25
-0.50
-0.75
1880
1900
1920
1940
1960
1980
2000
NASA Goddard Institute for Space Studies
Met Office Hadley Centre/Climatic Research Unit
NOAA National Climatic Data Center
Japanese Meteorological Agency
Here's what "disagreement" looks like.
CLIMATE 365
climate365.tumblr.com | go.nasa.gov/climate365

2. Do something! Anything! You have no idea how your little change, your small idea, might blossom into something larger and more powerful than you could have imagined.

Meet Greta...

Greta Thunberg - Intro

Small Group Discussion - 15 minutes

In your small groups, come up with 5 things you, as students could do to lower your carbon footprint.

One person will record the 5 ideas, and a different person will share the ideas when we return to the large group.

You should have three ideas each from your homework question.

Add your final Five choices to the Collaborative Space for this discussion in OneNote.

Brainstorming Ideas from Students

(see OneNote)

Greta and George

While you were discussing your ideas, were there any negative ideas, or conversations on why something wouldn't work or would be impossible?

Cognitive Bias - Why we don't act

Cognitive link

"Cognitive biases that ensured our initial survival make it difficult to address complex, long-term challenges that now threaten our existence, like climate change".

"We have evolved to pay attention to immediate threats. We overestimate threats that are less likely but easier to remember, like terrorism, and underestimate more complex threats, like climate change."

The Negative

Hyperbolic discounting. This is our perception that the present is more important than the future. Throughout most of our evolution it was more advantageous to focus on what might kill us or eat us now, not later. This bias now impedes our ability to take action to address more distant-feeling, slower and complex challenges.

Our lack of concern for future generations. Evolutionary theory suggests that we care most about just a few generations of family members: our great-grandparents to great-grandchildren. While we may understand what needs to be done to address climate change, it's hard for us to see how the sacrifices required for generations existing beyond this short time span are worth it.

The bystander effect. We tend to believe that someone else will deal with a crisis. This developed for good reason: if a threatening wild animal is lurking at the edge of our hunter-gatherer group, it's a waste of effort for every single member to spring into action — not to mention could needlessly put more people into danger. In smaller groups, it was usually pretty clearly delineated who would step up for which threats, so this worked. Today, however, this leads us to assume (often wrongly) that our leaders must be doing something about the crisis of climate change. ***And the larger the group, the stronger this bias becomes.***

The sunk-cost fallacy. We are biased towards staying the course even in the face of negative outcomes. The more we've invested time, energy or resources into that course, the more likely we are to stick with it – even if it no longer seems optimal. This helps explain, for example, our continued reliance on fossil fuels as a primary source of energy in the face of decades of evidence that we both can and should transition to clean energy and a carbon neutral future

The Positive

Mental Time Travel

Take our capacity for mental "time travel". Compared to other animals, we are arguably unique in the degree to which we can recall past events and anticipate future scenarios.

We can imagine and predict multiple, complex outcomes and identify actions needed in the present to achieve desired outcomes in the future. And **individually** we often prove able to act on these plans. We invest in retirement accounts and buy insurance, for example, as ways to counter our short-term interests over the long-term.

Unfortunately, this capacity to plan to ensure a future outcome breaks down when large-scale collective action is needed – as is the case with climate change. As individuals, we know what we can do about climate change. But addressing the issue also requires collective action on a scale that exceeds our evolutionary capacities. The larger the group, the more challenging it gets. Remember the bystander effect?

But in small groups, it's a different story.

First, when small groups are involved in coming up with solutions themselves, they experience the **endowment effect**: when we own something (even an idea), we tend to value it more. Second, **social comparison**: we tend to evaluate ourselves by looking at others. If we're surrounded by other people in a group who are taking action on climate change, we're more likely to do the same. This is also the impetus behind programs like comparing energy consumption from household to household in a community. Research shows that when people compare their energy use with their neighbours' via statements on their energy bills they are more likely to reduce energy consumption.

Framing Effect

Of all our cognitive biases, however, the **framing effect** is one of the strongest affecting our decision-making processes. Humans are more likely to change behaviour when challenges are framed positively, instead of negatively. In other words, how we communicate about climate change influences how we respond. People are more likely to act in relation to a positive frame ("a clean energy future will save X number of lives") versus a negative statement ("we're going to go extinct due to climate change").

Incentives

Similarly, behaviour change must be incentivized at the local level. One nation leading the way has been Costa Rica, which put in place an innovative carbon tax on fuel back in 1997. To emphasize the connection for taxpayers between fuel use and benefits to their own communities, part of the revenue goes to pay farmers and indigenous communities to protect and regrow Costa Rica's tropical forests. Costa Rica's system "now generates $33 million annually for these groups and has helped the country reverse their forest loss while growing and transforming their economy,"

The key has been having a large-scale, organized effort – but one supported and understood by hundreds of smaller groups and communities.

Innovate

Above all, the most helpful trait we have evolved to have is our ability to **innovate**. In the past, we used this skill to discover fire, invent the wheel or plant the first fields. Today, it may look more like solar panels, wind farms, electric vehicles, and carbon pricing. Along with innovation, we have evolved to have the communication and technology to pass these innovations on, allowing a single idea or invention to spread far beyond our own family or town.

From mental time travel to cooperative social behavior to our abilities to innovate, teach and learn, all of these evolutionary consequences always have helped us secure our own survival, and they will continue to do so – albeit in the face of a very different threat than we had in our hunter-gatherer days.

We have evolved to be able to stop human-induced climate change. Now we must act.

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How might Thunder Bay be affected by Climate Change?

- changes in temperature of our lakes, algae blooms, acidity, ecosystem disruption

- increased forest fire threat

- invasive species ie. more ticks (lyme disease), more tree destroying bugs (Emerald Ash borer, pine beetle)

- people movement into the city from areas that are under fire or flood threat

- Food Security

Recap, what can you do?

- consume less fossil fuels

- eat a diet that is more sustainable

- walk/bike more

- buy less, of everything

- fly less (back to fossil fuels)

- fix things, reuse things, repurpose things, trade things, give things away, recycle if you can, only then, dispose of things

- get informed

- talk to people, share your ideas and concerns

- learn how to garden, grow your own food, make your own food

What is Climate change? Does it affect me?

(Edsby follow up)

Kiss the Earth

Purchasing Handout pdf