Computer Games for Climate Justice

These games can be used to increase awareness, engagement and/or action to mitigate climate change. They are free, fun and easy to find online as of 2/13/2020. I recommend creating a "Leader Board" to boost motivation for students to compete against each other to master these games, and make a strict expectation that students need to pass the first game in order to get to play the next game… or at least do not allow them to play other games / listen to youtube while attempting these games. If they give them a chance, students enjoy these games, but not if they have options to play more violent or environmentally exploitative games. Email emenzies@sd61.bc.ca for more info and updates to this list.

I have my students search "ecosia" and offer them the option to add this as an extension to google, as it is a search engine that uses ad money to plant trees.

1. Bloom Defender: https://armorgames.com/play/12572/bloom-defender

Many platforms offer this free game and it is readily available through a search. However, I recommend accessing it through Armor Games as it does not currently work properly through Coolmathgames and Kizi has intrusive ads for cars, of all things.

The intro and premise of this game is a little silly, but it can easily be reframed to suggest a powerful role for trees to play in sequestering carbon dioxide and reducing climate chaos.

I have students watch Greta Thunberg and George Monbiot's video about the role of trees as a climate solution first: https://www.youtube.com/watch?v=TL2swGjau8w

I point out that in planting and watering the trees in Bloom Defender, a student is creating powerful allies that can help diffuse the power of wacky weather such as forest fires, ice storms, landslides from excessive rain, etc. I tell them to imagine that the brown furry "elements" represent carbon dioxide, while the bigger variety of these with skulls represent methane, just to point out that methane is 38 times more potent as a greenhouse gas than CO2. The goal is to plant trees in order to protect the "Mother Tree, which I encourage them to think of as old growth trees which are able to sequester much more CO2 each year than smaller trees. Old growth trees are more likely to survive forest fires, drought and flooding as well, so they are worth protecting.

The kids like the cute graphics, the different powers they can earn, and the way the game is easy to start and then gets harder but more rewarding. You can combine this game with reading Tim Flannery's Forward in Peter Wohlleben's The Hidden Life of Trees, to inspire outdoor projects to plant trees and/or remove invasive plants such as English Ivy, which are killing trees.

2. Smog City 2: http://www.smogcity2.org/index.html

This game is primarily designed to educate students about the factors which impact air quality for human health, but it can also serve as a visual illustration of the many human choices that are impacting climate change as well. The welcome page offers three game options: ozone, particle pollution, and create your own experience. I instruct my students to choose particle pollution, and without "playing god" and changing the weather, I challenge them to change the emissions settings in order to achieve a "green" health level (so that we can go outside and play Zombie Apocalypse!) Many of them are excited to show me they have achieved green without cutting emissions, by changing the "population" setting. I ask them if they really think the only way to achieve a healthy future for humans is by killing them. They then get to work trying to find a balance of changing the energy sources, transportation choices, consumption levels and industrial activity.

This is more of an online activity than a game, but if you introduce it as a challenge and offer recognition for the first student to create a healthy happy city, they find it interesting enough to engage with understanding the complexity and nuanced impacts of government energy policies. It introduces the idea of wind energy as an alternative to coal based energy.

3. Power Up Nasa Kids : https://climatekids.nasa.gov/power-up/

This is a pretty simple and quick game that doesn't completely reflect the reality of what is involved with generating power from solar and wind sources – most solar panels can't be moved and neither can wind turbines. However it does convey to kids that variability in weather impacts the effectiveness of these energy sources, as well as demonstrating graphically that they can be used to power homes.

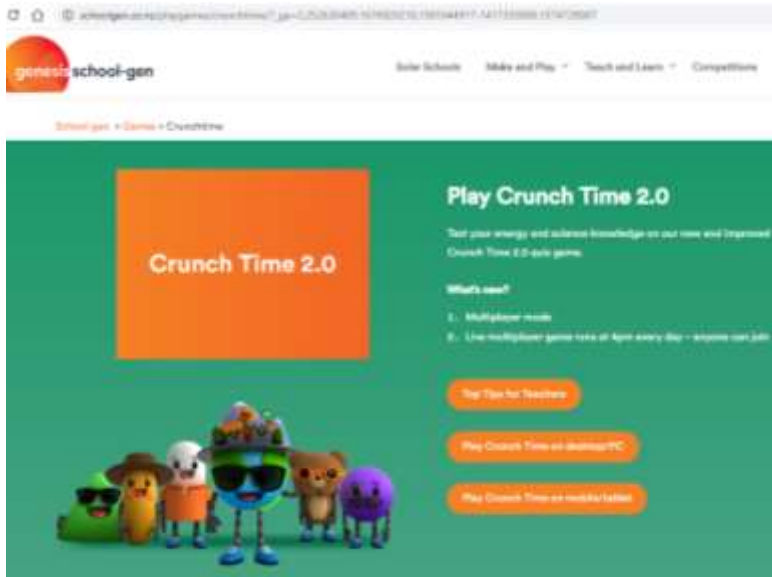4. Offset Nasa Kids: https://climatekids.nasa.gov/offset/
Offset, on the other hand, is more of a crowd pleaser and it does convey the idea that replacing coal-based energy sources with solar panels and gas powered cars with electric vehicles costs money and time, but ultimately is critical in staving off global warming.

Part of the game play is to keep the CO_2 molecules from entering the atmosphere by using a pong – type bar which does not accurately represent the action we need to take.
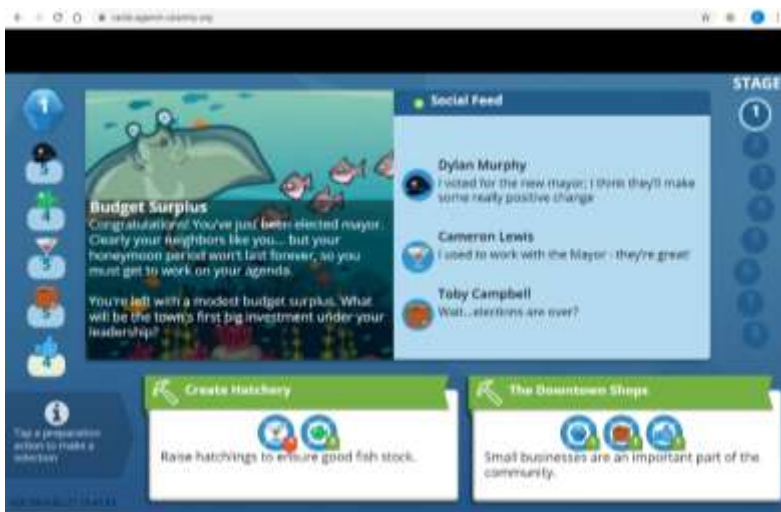
The game is also designed in such a way that it is pointless to replace the trees because the loggers cut them down way too fast, and they do not play any role in absorbing the CO_2, keeping the temperature down, or factor in to a higher score. The game therefor teaches that investing in forests is a waste of time and money. Students are also frustrated to learn that there is a top score built into the game – the game eventually ends whether you "win" or not. However, this experience can lead to an interesting discussion about both the role of forests as well as what our goal is for climate action – is it to survive or to make infinite money?

5. Crunch Time 2.0: https://www.schoolgen.co.nz/play-and-win-with-crunch-time-2-0/

Crunch Time is actually more of a quiz than a game, and it features a variety of environmental facts, not just ones about climate change. However it was a big hit with my grade 8 French immersion students, especially when it was played in the multiplayer mode, even though a fair bit of the content is related to where it was created, in New Zealand. It actually offers some pretty interesting context for a conversation about climate change facts given how much info is shared about Maori culture, which provides a different take on Indigenous ways of knowing and being.

6. Cards Against Calamity: https://cards-against-calamity.org/

This game is sustainability-oriented, with the player acting as a newly elected mayor. Global warming comes up as one of the threats facing the town, along with other environmental, social and economic challenges. I haven't noticed it to include much content about class or race-based challenges or inequities, but it does focus on including diverse economic sectors and socio-political narratives that may be new for students to contemplate and attempt to mediate between.

7. Student-made Games using Scratch
   a. Climate Calamity: https://scratch.mit.edu/projects/355016016
      In this running game, avoid rocks, recycle bottles and avoid the fire boss to survive climate change…
   b. Waste Busters: https://scratch.mit.edu/projects/354696167/
      Clean up the fuel spills your boat makes while you try to clean up and recycle plastic pollution in the water. With enough money made from returnables, players can level up to an electric boat run with solar panels.