

PROMOTING CLIMATE CHANGE AWARENESS IN YOUNG CHILDREN

Apoorva Shastri and Rosy Zhang

The background features a serene landscape with rolling mountains under a warm, orange-hued sky, suggesting a sunset or sunrise. In the top-left corner, there are several light-colored, parallel diagonal bars. In the bottom-right corner, there are several darker blue, parallel diagonal bars. The text "WHAT IS CLIMATE CHANGE?" is centered in the middle of the image in a bold, white, sans-serif font.

WHAT IS CLIMATE CHANGE?



Climate Change

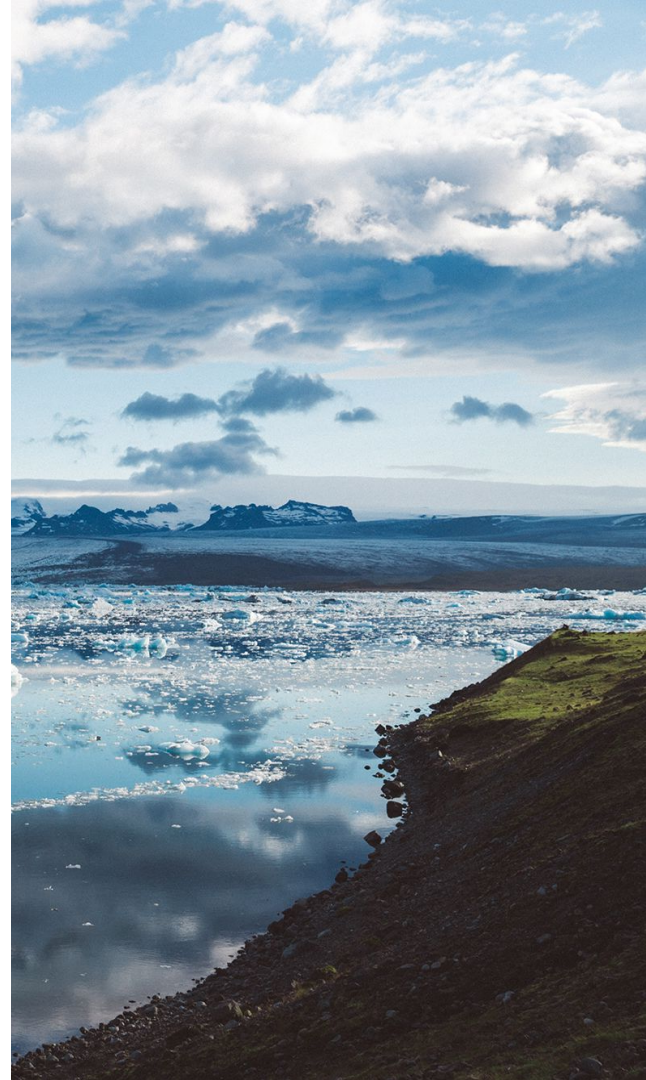
includes global warming, refers to
the rise in average surface
temperatures on Earth

(mostly due to the burning of fossil fuels)






Why is Climate Change a Current Issue?





We need to act now.

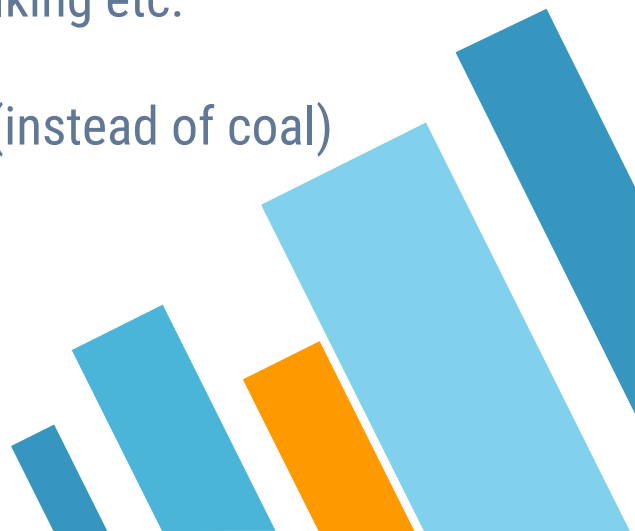
- » More severe natural disasters
 - » Freshwater shortages in already warm places
 - » Habitat destruction
 - » Leading to animal and plant extinctions
 - » Worsened smog in air polluted regions
- 



WHAT CAN WE DO TO **HELP**?



We need to protect our future generation.

- » More efficient transport systems
 - ◇ ex. Using public transport, carpooling, walking etc.
 - » Implement clean forms of energy
 - ◇ ex. Using solar power, wind turbines etc. (instead of coal)
 - » Sustainable Food System
 - ◇ Ex. Cut down on red and processed meat
 - » SPREAD AWARENESS!
- 



Letter to the Senator

To the Honorable Patrick Toomey,

My name is Rosy Zhang and I am currently a freshman at Schreyer Honors College at Pennsylvania State University. As a college student in a STEM major, I believe in the importance of science and discovery, especially in terms of protecting our planet Earth for now and the generations to come.

Recently, I had the pleasure of reuniting with my dad, a doctor and researcher, over winter break from college last semester. Unfortunately, what I came home to was my coughing, wheezing father after working in China. He wasn't sick though; he was coughing because of the pollution in the air in Zhengzhou, so dense that he would be coughing for the next three weeks.

When he went back, he needed to buy a mask specifically made to filter out pollutants in the air to be able to breathe. Imagine every citizen in the United States walking around like this. Now, get on a plane and go to Beijing or Zhengzhou and you won't have to imagine.

I am writing this letter in the wake of President Donald Trump's recent budget proposal that deducts incredible amounts of funding from the Environmental Protection Agency and major research funds in the scientific field, as well as his executive order to reverse Obama-era policies, essentially denouncing and disregarding the COP 21 2016 Paris Agreement to combat climate change. In the case of my dad and millions of others, climate change isn't something we have to worry about in the future. It's happening now.

I understand that as Pennsylvanians, coal is a part of our culture and our history. I know that you believe the coal industry and the Miners Protection Act are very important. But as Americans, adapting to adversity and ensuring the safety of the next generation is a part of our culture and history. Although I have no enthusiasm in taking away the jobs of anyone, the United States has a problem when it comes to climate change acknowledgement, let alone its policies, and we need to act to address it. I believe it is time for you to consider a change in your current stance on climate change. Specifically, I would like that you consider working to:

1. Oppose the Trump administration's 2018 budget proposal.

According to President Trump's partial outline of his 2018 budget, the Environmental Protection Agency, an initially already small part of discretionary spending, is due to shrink 31%, essentially eliminating more than 50 programs and 3,200 jobs. Not only is this cut a huge setback to physical efforts in combating climate change through the dismantling of regulations curbing carbon dioxide emissions and grants that help cities fight pollution, President Trump's budget also discontinues funding for simply doing climate change research. While you do admit that climate change is happening, it is not enough until you realize that humans are by no question causing it. Furthermore, it is absolutely horrendous that Scott Pruitt, the current administrator of the Environmental Protection Agency, denies all evidence. Even if you allow the cut future research for climate change funding, the current research does not disappear. According to the NOAA, 2016 was the hottest year on record, beating all records set by, guess what year? 2015. What is the point of taking apart the Environmental Protection Agency when the only outcome of doing so would be endangering the lives of the next generation through our mistakes?

President Trump's attitude of deniability towards climate change, while shown most directly in the Environmental Protection Agency's cuts, still affects other agencies crucial for gaining more information about climate change and our planet. While NASA is only getting a 1% cut, that \$102 million of funding is cut specifically from Earth Science, effectively ending missions aimed at understanding climate change. Moreover, President Trump also plans to cut spending for the National Institutes of Health by 18%. In order to plan for the certain uncertainty we face in combatting climate change, we need to prepare for the possible long-term physical effects on individuals, such as possible weather conditions that cause hunger through famine, or a noticeable increase in asthma due to air pollution. It is so pertinent now to know the effects of climate change on humans and human development, especially since it is already happening.

Though I have not mentioned plenty of other things wrong with President Trump's proposed budget, I hope these reasons are enough for you to consider what might happen if it is put in place. With these, I implore you to vote against President Trump's budget proposal when it arrives in the Senate.

2. Push forward to hold up the United States' end of the Paris Climate Agreement.

Even during his campaign before his presidency, President Trump has over and over again denounced and rejected climate change. This is not an attitude American citizens should be looking up to, let alone citizens being directly affected by climate change outside the United States, especially those looking up to us when looking through the lens of the Paris Climate Agreement. It has been shown that President Trump's recent executive order to roll back Obama-era policies would be ineffective in aiming to increase "energy independence" and give back jobs towards the coal industry, two goals Trump pushes. In fact, according to the report by the 2017 United States Department of Energy, the United States solar power industry employs more people than the traditional coal, gas, and oil industry do combined. In fact, studies show that the two key forces that caused coal mining jobs to drop are an increase in production of natural gas, which is a cheaper, cleaner-burning alternative to coal, and an increase in automation and robotics (not immigrants, I might add). Rolling back the Obama-era policies in regulating carbon dioxide would not affect these factors at all. However, if you are so insistent on keeping the coal mining industry thriving, perhaps consider implementing some common practices of coal pollution mitigation to reduce the effects of burning coal on the environment, like carbon capture and storage and other clean coal technologies. As one of Earth's largest superpowers, the United States needs to set a good example to other countries who have signed or are considering signing the Paris Climate Agreement as our duty as global citizens.


Additionally, the Trump administration's approval of constructing the Keystone XL pipeline further discourages other countries from believing that the United States is fully dedicated to the Paris Climate Agreement and making sure our Earth stays safe for all. By constructing a giant pipeline that carries crude oil, a huge contributor to greenhouse gases, the United States is turning its back from the rest of the world as a global leader in fighting climate change. If the United States losing credibility already on this front, it is only a matter of time before we lose it on all fronts. Even though climate change is already directly affecting the United States, like the flood of the 9/11 Memorial due to Hurricane Sandy (increased frequency and severity of storms are a result of Earth's warming and changing ocean currents), there are hundreds of people in countries who signed the Paris Agreement who have lost their homes due to floods or famine. What will the world think, when the time comes, that the United States will only help itself? As I said before, climate change isn't something we have to worry about in the future. It's happening now.

Further, President Trump's review and repeal of vehicle fuel efficiency rules makes United States all the more responsible for greenhouse gas emissions through carbon dioxide. These are only a few examples of how the Trump administration's and your stance towards climate change is a threat to citizens in and out of the United States alike. Taking these consequences into mind, please consider resisting the Trump administration and its ideals towards ceasing United States' role in the Paris Climate Agreement. Here are a few infographics from the World Health Organization to show briefly who is affected by climate change, and what we can do about it.

This month, on April 22nd, I am joining thousands of others in the March for Science and Earth Day Network Rally and March in Washington, D.C., to advocate the need for the widespread acknowledgement of climate change in the United States' government. I hope you now understand that as humans who caused this problem, it is the same humans that are obligated to fix this problem. Maybe I will see you there.

I know that this is a lot to ask of you, and that it is unlikely that you will change your heart on any of these issues about climate change. But after seeing my dad so in pain as a result our changing atmosphere, and knowing so many others do as well, I could not, in good faith, move forward without asking you this.

Thank you for your public service, and best wishes,
Rosy Zhang
Pennsylvanian, student, and advocate for science.





MARCH FOR SCIENCE

— EARTH DAY —

APRIL 22, 2017


#marchforscience

WHY
KIDS ?



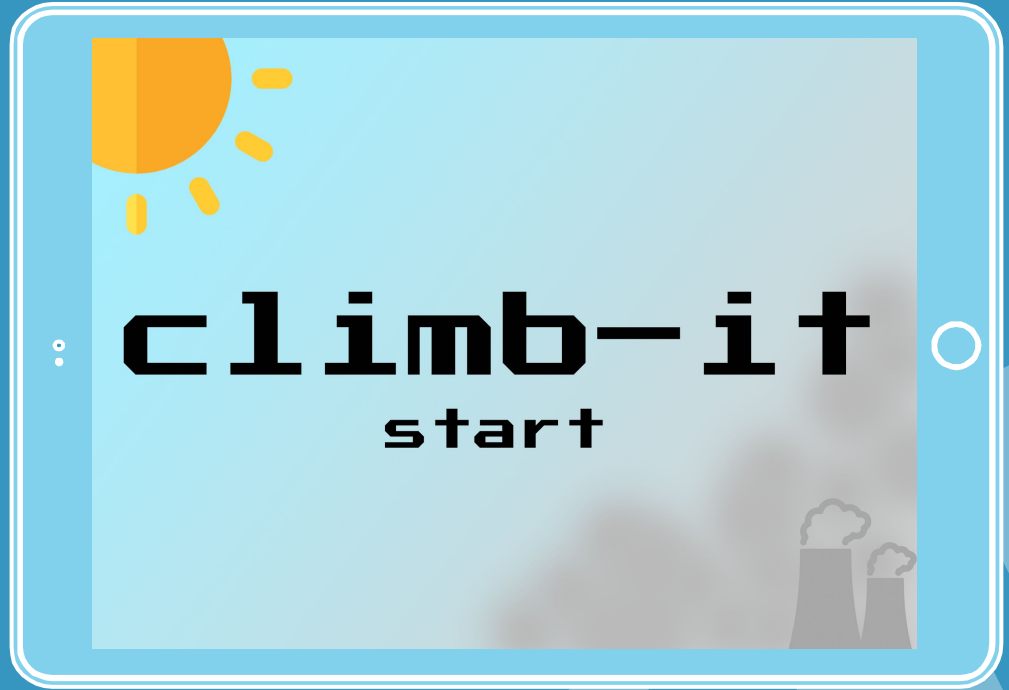


The perfect target audience.

- » Build good habits from a young age
 - » Few preconceived beliefs
 - » They will lead the next generation
- 

HOW?

an iPad Game





Climb-it!

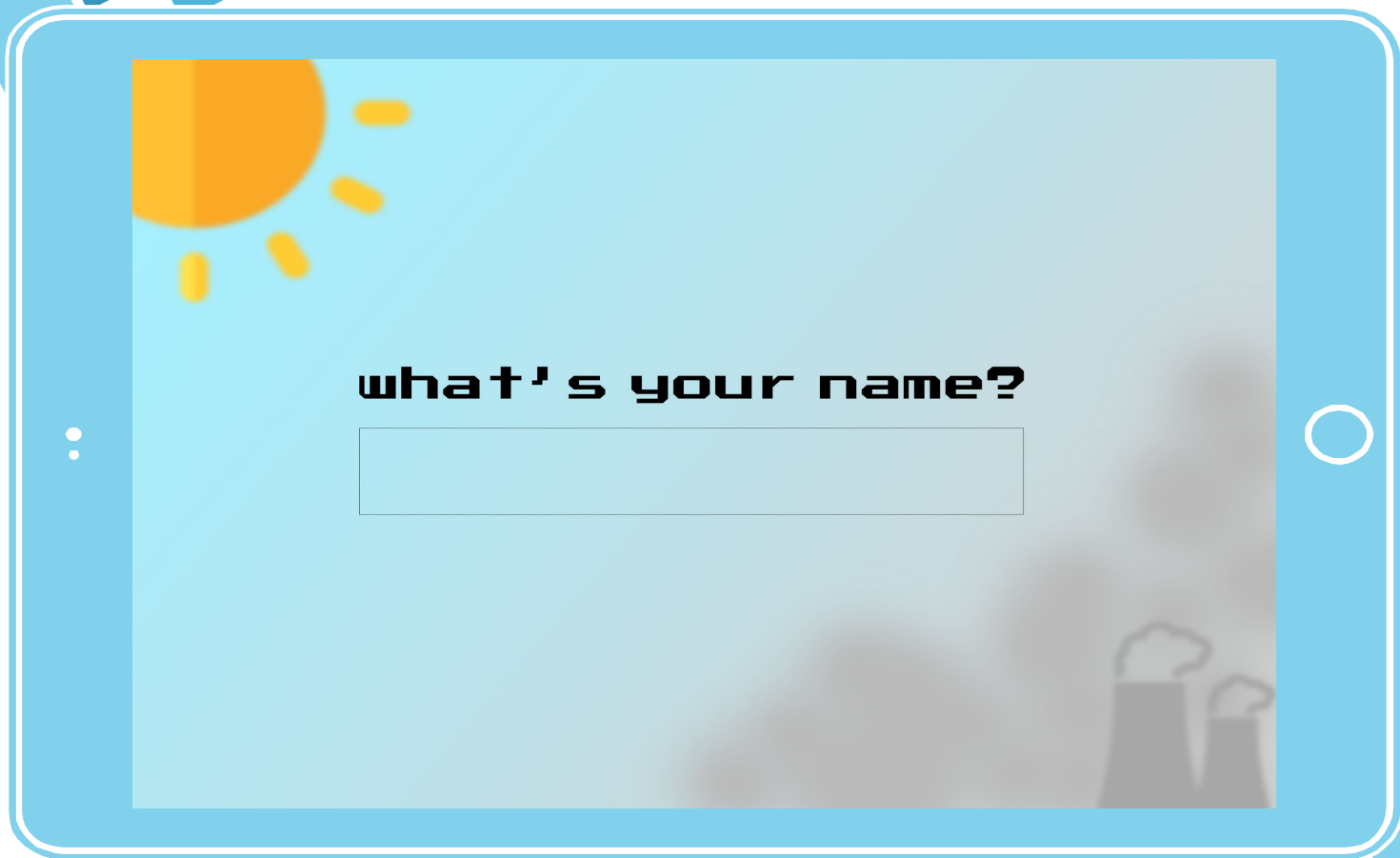
a game for 4 to 9 year olds



:

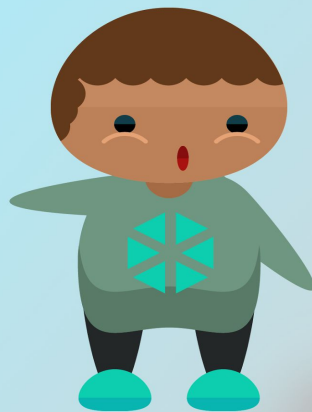
climb-it
start





what's your name?

**choose your
character**



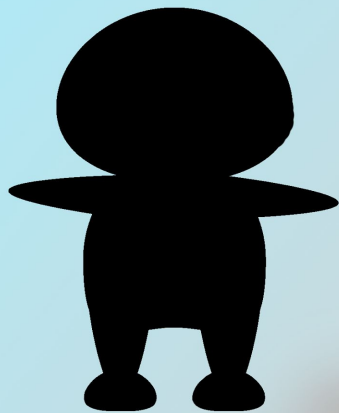
select

**choose your
character**



select

**choose your
character**



locked



okay let's play!

press
to jump

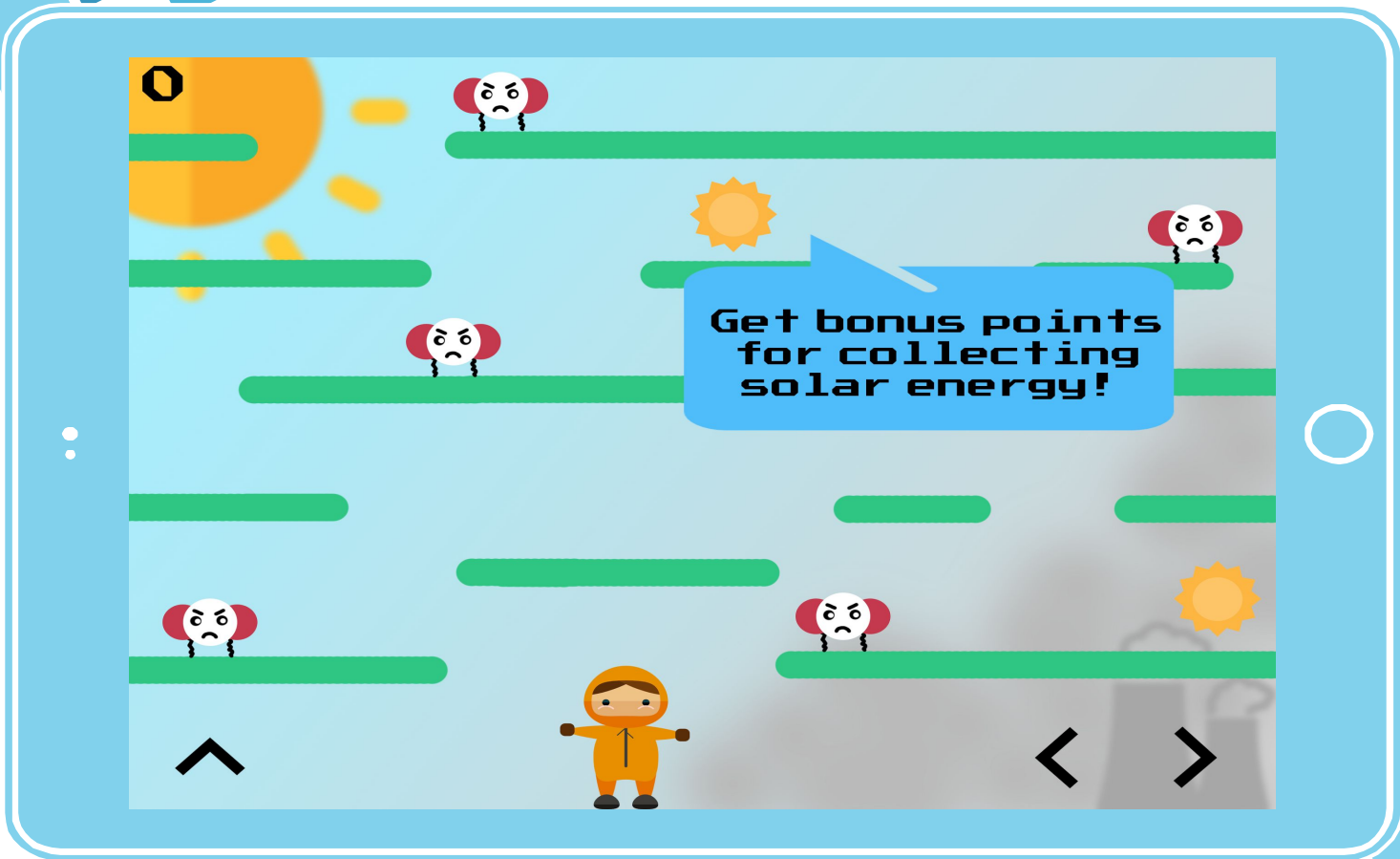
move left
and right

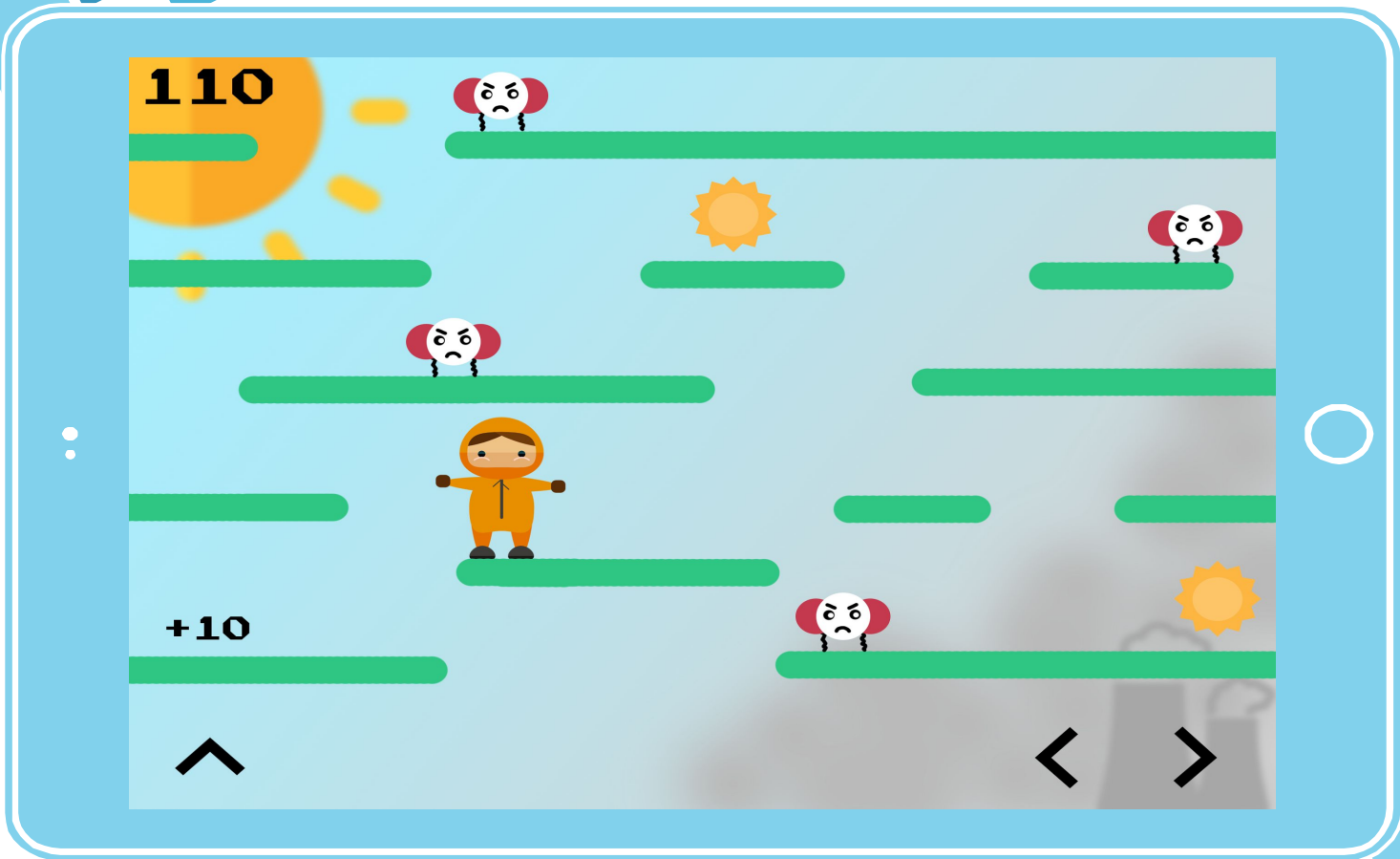


**use the arrow keys
and try to
climb to the top!**

continue





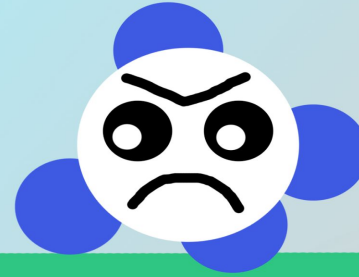


14365

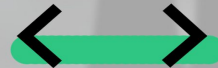
you made it to the top!
now you must beat the
methane in order to get
to the wind turbine!



5



+25








**Why will this
game be effective?**





An educational but fun game.

- » Educational
 - » ...Without forcing it.
 - » Nice interface and design
 - » Can compare scores with friends
- 




**How will we
get it out there?**





Publicize and advertise.

- » Tell parents and school board to download it
 - » Advertise on the Apple App Store
 - » Collaborate with 350.org (non-profit organization aimed to reduce climate change) and gain more funds to create more awareness
- 



AWARENESS SPREAD



SOURCES

Images

- Icons from app made by freepik.com
- <https://www.garrisoninstitute.org/wp-content/uploads/2015/10/climate-cold-glacier-iceberg.jpg>
- <http://www.who.int/globalchange/mediacentre/events/climate-health-conference/climatechange-infographic3.jpg>

Research

- <http://www.takepart.com/flashcards/what-is-climate-change/>
- <http://timeforchange.org/are-cows-cause-of-global-warming-meat-methane-CO2>
- <https://www.usatoday.com/story/weather/2017/01/04/floods-natural-disasters-2016/96120150/>
- <http://news.nationalgeographic.com/news/2014/03/140331-global-warming-climate-change-ipcc-animals-science-environment/>



CREDITS

Special thanks to all the people who made and released these awesome resources for free:

- » Presentation template by [SlidesCarnival](#)
 - » Photographs by [Unsplash](#)
- 



SlidesCarnival icons are editable shapes.

This means that you can:

- Resize them without losing quality.
- Change fill color and opacity.
- Change line color, width and style.

Isn't that nice? :)

Examples:

