

# Greenhouse Gas Capture by Education Chapman University, Grand Challenge Initiative

## Abstract

Our group was tasked with finding a novel method to capture greenhouse gases. Greenhouse gas production has proliferated alongside industrial development in most countries which has induced detrimental processes concerning our environment, which to this day, is in danger due to the presence of greenhouse gases lingering in the Earth's atmosphere. Our group now strives to shorten the possible knowledge gaps surrounding greenhouse gases. Our team devised a plan to educate the younger generation on a topic that even adults find difficult to grasp.

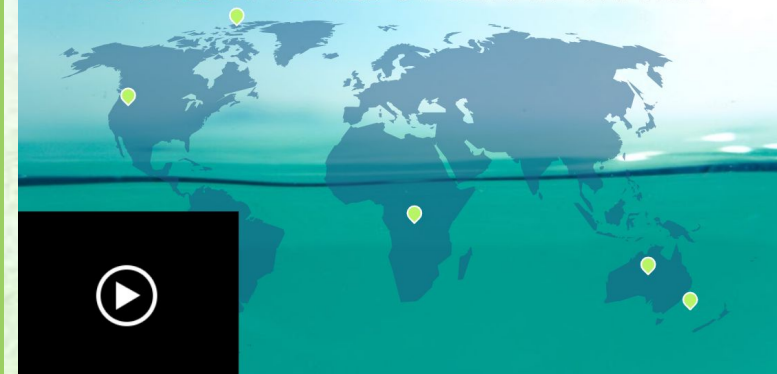
## Results

### GAS REVIEW

- Gasses are a state of matter
- Gasses expand to fit the container they are in
- Gasses mix very easily
  - Ex. when you blow up a balloon, the air fills up the entire balloon
- Examples of gases:
  - The air we breathe
  - The helium in a balloon
  - Steam from a boiling pot



### BIOMES AFFECTED BY CLIMATE CHANGE



## Introduction

The greenhouse effect has proven to become a strong adversary for the earth. Over time ice masses will thaw, desertification of fertile areas, etc. Given the time constraints, the greenhouse team resorted to a more effective and reasonable project. Thus, the approach taken was education for elementary school children. Because the greenhouse effect is directly caused by humans, and if the issue must be resolved. The need to look towards the origin must be done. A curriculum that included lessons of the major components of greenhouse gases was designed. The curriculum utilized interactive activities which are purposely used to engrave the lessons into the memories of the children.

## Methods

We have taken many turns during our journey to solve our climate crisis. Initially, we heavily research ways in which we could capture greenhouse gasses in our atmosphere. Afterward, we concluded that we did not have the funding nor the means to remove any significant amount of greenhouse gas from the atmosphere. Since we could not stop climate change directly, we decided that it would be more impactful to act indirectly. Our new goal was to educate the younger generations about climate change early in their development, in order to produce a generation of humans that nourish the Earth. We then researched elementary school education and climate change. We created a teaching outline, made a slideshow, recorded teaching videos, created a survey, and added them all to a website that we made so that they were all in one convenient spot.

Figures 1 and 2: Sample teaching slide from slideshow. Material from slides is presented via recordings which are found in each slide.

## Conclusion

To conclude, our developed curriculum and materials were deemed helpful in teaching efforts for our intended audience by 87.5%. The other 12.5% that responded otherwise indicated that the curriculum may be too complicated for the intended 2nd grade audience, which we would take into account if planning to move forward with this project. Our average score, as drawn from the survey data, was a 3.75/5, which is lower than we may had hoped but up to our standards. Greenhouse gases continue to be a pressing issue in not only our country but universe, and educating our emerging generations can be transformative in terms of global emissions of greenhouse gases.

## References

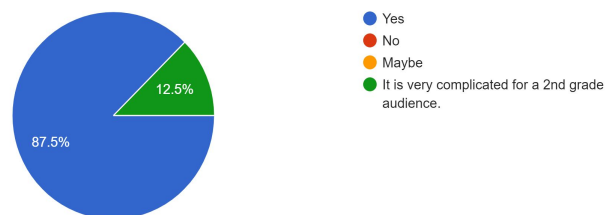
Amzat J, Aminu K, Kolo VI, Akinyele AA, Ogundairo JA, Danjibo MC. 2020. Coronavirus outbreak in Nigeria: Burden and socio-medical response during the first 100 days. *Int J Infect Cutter-Mackenzie A, Rousell D.* 2019. Education for what? Shaping the field of climate change education with children and young people as co-researchers. *Child Geogr.* D Fesenko SY. 2018. Features of the education of the actor-puppeteer. *Probl Interact Between Arts, Pedagog Theory Pract Educ.*

## Acknowledgments

We'd like to thank both elementary school teachers--Ms. Pletcher and Ms. Lewis--for sharing their expert advice with our group. Additionally, we'd like to thank Dr. Welles and Dr. Gray from Chapman University.

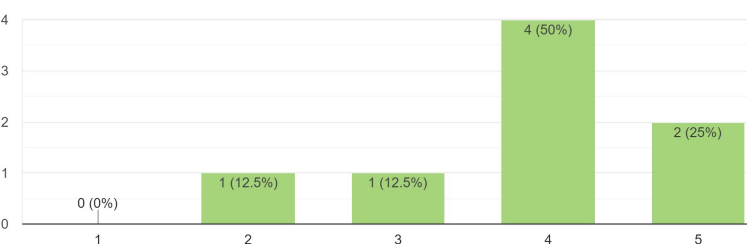
Do you think this curriculum would be helpful in teaching second grade students about greenhouse gases?

8 responses



On a scale of 1-5, how well do you think this curriculum was outlined?

8 responses



Figures 3 and 4: Visual graphics created using data from Google Form Survey depicting the general feedback of the group work.

Our results can be found on our webpage linked at the top of our poster. On our webpage, we have links to our teaching slides, teaching outline, and a short survey to get feedback on our work. As seen by some of our survey results shown above, we believe that we have made a sufficiently helpful teaching tool.