

## Open Schools Journal for Open Science

Vol 4, No 3 (2021)

Open Schools for Open Societies Special Issue



### Children can help with the climate change

ΑΠΟΣΤΟΛΙΑ ΒΑΣΙΛΕΙΟΥ ΜΠΕΚΑ

doi: [10.12681/osj.27004](https://doi.org/10.12681/osj.27004)

Copyright © 2021, ΑΠΟΣΤΟΛΙΑ ΒΑΣΙΛΕΙΟΥ ΜΠΕΚΑ



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0](https://creativecommons.org/licenses/by-nc-sa/4.0/).

### To cite this article:

ΜΠΕΚΑ Α. Β. (2021). Children can help with the climate change. *Open Schools Journal for Open Science*, 4(3). <https://doi.org/10.12681/osj.27004>

# Children can help with the climate change

*A. Beka, 4<sup>th</sup> kindergarten of N.Ionia, Volos, Greece*

## Summary

Climate change issues are a big concern for all people now days. Climate is the average of the weather (temperature, rainfall, humidity, etc) prevailing in one place (Shepherd, Shindell, O'Carroll, 2005). Climate change is due to natural or anthropogenic causes. The project aimed at raising interest on climate issues, risks and impacts for students, so as their activities could contribute positively to the reduction of climate change and be aware of the fact that natural resources are being exhausted and therefore only by adopting an Eco-sustainable lifestyle could limit the damage. Students organized different activities such as brain storming, crafts, experiments, robotic and they also tried to raise parents and society awareness of climate change phenomena and the related impacts with events such as inviting experts and publishing results on websites and local press. The aims of the project were: strengthen children's knowledge of climate change and understand the relationship of drought and water scarcity to climate change.

## Climate change project

The project aimed at raising interest and stimulating debate on climate issues, risks and impacts for students, so as their activities could contribute positively to the reduction of climate change and adopt an Eco-sustainable

Students organized different activities such as brain storming, crafts, experiments, theater performances, dramatization, role play, participatory games, educational activities, workshops, science demonstrations, robotic and they also tried to raise parents and society awareness of climate change phenomena and the related impacts with events such as inviting experts and scientists and publishing actions and results on posters, websites and local press.

The aims of the project were:

- Strengthen children's knowledge of climate change at their country.

- Increase awareness of the risks and the impacts of climate change.
- Increase interest and learn to debate on climate issues, risks and impacts.
- Be able the students to explain the phenomenon of drought and water scarcity and understand their relationship to climate change.
- Understand the term extreme weather phenomena and their implications as a consequence of climate change.
- Learn to contribute positively to the reduction of climate change.
- Adopt an Eco-sustainable lifestyle that can limit the damage of climate change.
- Learn to compose and express their ideas with expressive completeness.

The procedure of the project was: Students worked individually and in small groups and they tried to interact. They developed different activities about all seasons and the climate change and its effect on the environment, the leaves, they made leaves book, they did activities about temperature, rain, humidity, crafts, experiments, role play, tree planting, activities with robots, they had discussions about lack of water and drought, wind, ice, recycling and recycling bins, cooperation with local experts as environmentalist etc, dissemination of our results etc. Our results disseminated to dialogue among teachers, students, parents, stakeholders and local community. In addition to participatory activities, educational science activities were held to investigate some scientific topics on climate change. First, we developed different activities to see how the environment is effected by the seasons and the climate change and second, we presented our findings to the other teachers, students, parents, stakeholders and local community.

The aim of the proposed accelerator was to reach the shared idea that each of us, especially young people, with their actions could contribute positively to the reduction of climate change and be aware of the fact that natural resources are being exhausted and therefore only by adopting an Eco-sustainable lifestyle could limit the damage (Seneviratne, Nicholls, Easterling, Goodess, Kanae, Kossin, Luo, Marengo, McInnes, Rahimi, Reichstein, Sorteberg, Vera & Zhang, 2012). This project contributed to increase public awareness on global and local aspects on climate change.

The proposal contributed to a campaign, through the school's community, for climate change from the "informative" to the "active" phase, through the exchange and dissemination of the

best practices, with specific actions aimed at encouraging the involvement of citizens in actions. Moreover, the involvement of society in climate change issues is fundamental for the development of effective adaptation and mitigation strategies, as well as in the implementation of actions to minimize the impacts of climate change.

We started by asking different questions to our students as for example:

1. Did you noticed that the weather is changed?
2. Why it is raining?
3. Where the rain comes from? How it is sound?
4. We should have more rain in autumn but we don't. Can you think of why?
5. What do you observe in our environment?
6. Have you heard that the ice in Antarctica is melting?
7. Why do you think this is happening?
8. What will happen to the animals that leave there? What about the water?
9. How do the change of seasons and the climate change will effect our environment?
10. How do we sense these changes?

The principal results obtained during our project were: Student's and the whole school community learned what extent climate change is caused by human activity and to what extent it is a natural phenomenon. We told the students to define Eco-sustainable actions in their school for a correct ethical - social behavior to actively counteract the reduction of climate change. As an example they found information about how to use water, energy or waste in an Eco-sustainable way and do not waste important resources.

With the actions proposed, the whole school community made a commitment to strengthen their efforts at the local level in a global action, by gathering their practices in science communication and public engagement in climate change issues. In this context, two main objectives were identified for the project:

The first one was to identify the problem that climate has changed in our country so we have a lot of heat and little rain and to develop activities of climate change to erase student's interest (Giannakopoulos, Kostopoulou, Varotsos & Plitharas, 2009). The second one was to organize a

campaign, through the exchange and dissemination of the best practices, with specific actions aimed at encouraging the involvement of school community in actions. Such objectives were achieved through a coordinated work plan of activities during the project.

A large range of activities concerning climate change (crafts, experiments, exhibitions, school labs, science demonstrations, games) organized by the students, in order to raise schools community knowledge and to engage people in positive actions.

The first step was to found information about the climate change and develop various activities aimed at raising student's awareness of climate change phenomena and the related impacts. A wide range of communication tools were considered, such as brain storming, crafts, experiments, demonstrations, theater performances, dramatization, role play, participatory games, educational activities. The second step was to inform the whole school community about our results with different events such as posters, performances, theater etc. The main audience of school was divided into two clusters: families of the students and other teachers, stakeholders.

Finally, all activities were uploaded at the school website, as well as in specific ones, such as press releases, printed announcements and posters. The project provided the public with different levels of information, allowing various degrees of depth according to the needs and backgrounds of the public.

Activities (all photos can be reached at <https://photos.app.goo.gl/91eRDWerDm6tEsYs5>) :

1. The school website with all activities <https://blogs.sch.gr/4nipnioniasmag/>
2. Local press Taxydromos <https://www.taxydromos.gr/Topika/347691-sxoleio-anoixto-sthn-koinwnia-to-4o-nhpiagwgeio-n-iwnias.html>
3. We informed parents about our project and what we were about to do and for what reason.
4. Experiment with plants. 3 plants one in a closet with no water and sun, one in a dark place with water and no sun and one in the sun and with water. They saw how important were the sun and the water for the plants.
5. Experiment for the Circle of the Water with gas and water. We put a metal disc above the boiled water to see the water drops.

6. We observed plant leaves with the magnifying glass and with the microscope and we made our book with leaves.

7. We made the logo of our project.

8. We cleaned our school yard from trash and recyclable trash and we planted trees with the help of a parent (Image 1).



**Image 1:** We planted trees with the help of a parent

9. Experiment with white flowers and coloured water with paint so as the students discovered how the plants absorb the water.

10. Students played with the software of WWF "Climate is in your hand". Activities about water, waste and energy. They played games for energy so as to save energy (Image 2).



**Image 2:** Students played with the software of WWF "Climate is in your hand"

11. We planted lentils like farmers to watch the development of a plant with the sun and the water.

12. We drew what we wear during the seasons depending on the temperature.

13. We made thermometers with drawings.

14. We made a track with temperatures and we played with our Bee bot (Image 3).



**Image 3:** We made a track with temperatures and we played with our Bee bot

15. We did the experiment with the ice that melts.

16. We made dolls for the 12 months of the year from used materials, so as to discuss with the students about the weather and the temperature of each month.

17. We invited a Fire Department spokesman to talk to the students about fires, the forests and the impacts of climate change.

18. We invited an environmentalist and we did activities about the climate change and what can we do to help with the problem.

19. We played with the Kids First Coding & Robotics trying to find the source of the water.

The methodologies and activities that were carried out in this project were presented in communication events for the school community dedicated to climate change. Children worked in small and larger projects, individually or in group collaborative processes and with thematic approach.

## Conclusion

The main results that achieved were: Students learned a lot about climate change in their country and about the clarification on the effects of climate change and they learned how much part of the climate change is caused by human activities and how much is a natural phenomenon, also all participants believed that the more they know about climate change, the more they are likely to act.

Final results from the project: Students planted new plants in our school yard with the help of a parent and they promised to take a good care of them so as to grow and they made a new track for the robot Bee bot with different temperatures.

## Keywords

Climate change, temperature, Eco-sustainable

## Author biographies

Apostolia Beka is a director and a full-time pre-school teacher in a kindergarten in Volos. Apostolia holds a Master's degree from the Department of Preschool Education, the University of Thessaly and a Master's degree for the program of educational administration and leadership from the Department of Primary Education of the University of Thessaly. Apostolia serves also as a Professional Development Instructor running seminars for teachers in the use of instructional technology in the classroom. She undertakes a lot of projects in her school such as eTwinning and Erasmus+ KA2.

## References

- B. Giannakopoulos, E. Kostopoulou, K. Varotsos & A. Plitharas, 2009. *Climate change impacts in Greece in the near future*. [online] Διαδικτυακή πρόσβαση: <[https://www.bankofgreece.gr/RelatedDocuments/WWF\\_Climate\\_change\\_impacts\\_in\\_Greece\\_in\\_the\\_near\\_future.pdf](https://www.bankofgreece.gr/RelatedDocuments/WWF_Climate_change_impacts_in_Greece_in_the_near_future.pdf)>. [Ημερομηνία ανάκτησης 25 Νοεμβρίου 2020].
- Seneviratne, S.I., N. Nicholls, D. Easterling, C.M. Goodess, S. Kanae, J. Kossin, Y. Luo, J. Marengo, K. McInnes, M. Rahimi, M. Reichstein, A. Sorteberg, C. Vera, and X. Zhang, 2012. *Changes in climate extremes and their impacts on the natural physical environment*. [online] Διαδικτυακή πρόσβαση: <[https://www.ipcc.ch/site/assets/uploads/2018/03/SREX-Chap3\\_FINAL-1.pdf](https://www.ipcc.ch/site/assets/uploads/2018/03/SREX-Chap3_FINAL-1.pdf)>. [Ημερομηνία ανάκτησης 25 Νοεμβρίου 2020].





Shepherd, Shindell, O'Carroll, 2005. "*What's the Difference Between Weather and Climate?*". NASA. [online] Διαδικτυακή πρόσβαση: <[https://www.nasa.gov/mission\\_pages/noaa-n/climate/climate\\_weather.html](https://www.nasa.gov/mission_pages/noaa-n/climate/climate_weather.html)>. [Ημερομηνία ανάκτησης 25 Νοεμβρίου 2020].