"CLEAN ENVIRONMENT – CLEEN SCHOOL CLIMATE WITH CREATIVE ENVIRONMENTAL PRACTICES IN SCHOOL EDUCATION"

2023-1-NO01-KA 220-000159229

Lesson Summary: Introduction to Natural science and sustainability

Grade Level: High School (Grade 13)

Lesson Title: Which parts of the Norwegian curriculum in natural science is relevant for our Erasmus project? And how do we teach the students about sustainability?

Objective

How do we introduce the students to the concepts of sustainability in natural science. Emphasize the importance of knowledge about sustainable living, sustainable life choices and how the local companies and farms work with sustainability.

Key Topics

1. **Definition of Sustainability**
   - Understand sustainability as meeting current needs without compromising future generations.
   - Explore its environmental, economic, and social dimensions.

2. **Radioactivity in food from Valdres**
   - We explore and describe electromagnetic and ionising radiation and assess information about radiation and the effect on health of various types of radiation
   - Levels of the radioactive isotop cesium-137 was tested at Valdres Lab.

3. **Learn how the local companies and farms work with sustainability.**
   - Understand how different local companies incorporate sustainability in their daily work and routines.

Activities:

1. **Excursion to the summer pastures in the mountains**
   - "Explain how climate changes affect evolution, the prevalence of species and biological diversity"
   - For centuries, summer pastures in the mountains were a vital part of Norwegian agriculture. At its peak, you could find more than 100,000 mountain farms around the country. Now it's just about 700 left.
   - On this excursion the students learned about the life up in the mountains and why it's important to keep the tradition and culture of mountain farming in relation to biological diversity
2. **Visit to Valdres municipal renovation**
   - "Explain how some environmental toxins can accumulate in food chains and assess measures to protect health and the environment"
   - "Carry out risk assessment of one's own experiments and manage the resulting waste in a suitable manner"
   - Learn how the waste recycling work in Valdres. What is recycled here in Valdres, what type of garbage needs transport to other parts of Norway and even Europe?
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3. **Excursion to Jotunheimen national park**
   - "Explain how climate changes affect evolution, the prevalence of species and biological diversity" and explain the functions of some nutrients and discuss why a varied diet is important in a health and sustainability perspective
   - We got to visit the annually selection, tagging and slaughtering of domesticated reindeers.
   - We learned about how climate change effects the life of reindeers and how reindeers have adapted to live in a harsh environment
4. **Visit a hydropower plant**
   - Use the terms alternating current technology, direct current technology, energy storage and efficiency to describe and discuss methods for sustainable energy production.
   - How does a hydropower plant work?
   - Pros and cons about hydropower plants

Assessment

1. **Class Participation**
   - Assess engagement during discussions and activities.
2. **Research Projects**

- Evaluate students' ability to analyze the results from the laboratory involving radiation levels in food

3. **Participation and involvement in excursions.**

   The students should participate in all the different trips and get involved in different activities.

Conclusion

This lessons, activities and excursions introduces foundational concepts in natural science and sustainability. The students learn about sustainability through exploring how it is included in companies, and how they work towards becoming even more sustainable. The students learned how the municipality and even our own school is making choices for operations from a sustainability perspective

By connecting the local community and classroom learning the student get to see the relevance of knowledge about sustainability and they also feel a responsibility to do sustainable actions in their own life.