STEM DISCOVERY WEEK 2022 STEAM EVENT

Event Name : COASTAL EROSION WITH STEAM

Small rises in sea level threaten coastal homes, lands and habitats. Especially in big storms , the risk increases. Floods are inevitable . The sea level is rising more and more every day .

recent satellite measurements that Earth's mean sea level has increased by 10 to 20 centimeters over the past century. But over the past 20 years, annual sea level rise has increased to 3.2 millimeters per year. That's almost twice the average value of the last 80 years!

In the past century, large amounts of greenhouse gases have been released into the atmosphere due to the use of fossil fuels, human activities and various natural events. This oscillation caused the temperature of the Earth's surface to increase. Eighty percent of this excess heat is absorbed by the oceans.

As a result;

Small rises in sea level threaten coastal homes, lands and habitats. Especially in big storms , the risk increases. Floods are inevitable . The sea level is rising more and more every day . We decided to solve this problem with STEAM learning . We got to work .

Student age group: 7-11 years

Goals:

What is the Coastal Erosion ?

To know the causes of Coastal Erosion.

Knowing the consequences of coastal erosion

They become aware of concepts such as sea wall, breakwater , spurs (groins), beach feed, and planted sand dunes.

expressing their ideas clearly

Developing inquiry skills

Developing collaborative and creative thinking skills

Developing engineering skills

The Basic Problem of Daily Life



After examining the photos with the students, he asks the students the following questions:

- 1.) have a summer house on the beach ? Would you like to have a house on the beach very close to the sea? Why?
- 2.) What could be the reason for these images you see in the pictures?
- 3.) What is the reason for the damage to the buildings on the beach?

to analyze the change in the coastline in 2009-2014 and 2019, to reflect on the cause, and to brainstorm.

STEP 1:

The teacher attracts the attention of the students by hanging the pictures, posters and posters about coastal erosion that he prepared before the children come to the classroom. Attention was drawn to the issue of coastal erosion.

The teacher gives an experiment to the students about what is erosion.

https://youtu.be/GJB5of4Gw4Y

It increases awareness and importance of the subject.

The teacher watches a video and asks them to take notes on terms they have not heard before.

https://youtu.be/ eeKpz8oD7E

They took note of the terms in the video that caught their attention. The assignment was given to research the different methods people use to control coastal erosion.

These;

beach feeding,

sea wall
rock wall,
gabion baskets,
groynes
and break waters

<mark>STEP 2</mark>

presented a research paper given a lecture beforehand . We were looking for different methods that people use to control coastal erosion . With the research we have done, we have found the answers.

STEP 3

story of animals living on the beach

The Migratory Bird Sumy , the Tern bird , could not find the eggs you laid on the beach . However, he was sure that he had left it on the sand dune here. He saw the Sea Turtle Carety just ahead . He was very happy about it because he was the wise friend of the beach. He could answer his question. Carey's answer was Sumy. surprised. Ceraty was looking for her eggs as well. Let's ask the students; How can we help the heroes in the story ?

Why might eggs be missing?

discussed on the subject . Until the answer to coastal erosion comes.

explained that migratory birds such as Terns and Carettas and similar creatures prefer the sand dunes on the beach to lay their eggs. It is said that sand dunes are also a suitable solution to prevent coastal erosion.

STEP 4 MAKING DESIGNS AS A SOLUTION TO COASTAL EROSION

expect them to decide on our designs . their research topics and interests . divided into groups accordingly .

- 1st Group : Works on sea walls.
- 2nd Group: It works on the breakwaters .
- 3rd Group: It works on Spurs (Groins).
- 4th Group : Designs by working on the beach feed and vegetated sand dunes.

the students were given materials and designed Ingredients : Cardboard box Bags, waste materials Waste plastic cans and bottles Paper cups, tongue sticks, Pieces of fabric and burlap adhesive tape, silicone gun Rope, pebbles, sand, cardboard,backdrop cardboard,craft paper

STEP 4 - EVALUATION

Each group shares the product with other groups and their teacher. Students have the opportunity to examine products or drawings designed by other groups. The aim here is to enable students to evaluate their products by comparing them with other products. The spokesperson of the group briefly describes the product in class. If the school conditions are suitable, the prepared products are exhibited and shared with other students and teachers in the school.

1st group presentation: Çınar student

https://youtu.be/zCBWkYIlgi8

2nd group Presentation: Azra and Elif Students

https://youtu.be/1pBjLJnqOfs

presentation: Elif , Aybike , Ahmet, Nur students

https://youtu.be/pNxnwaif9Jw

3rd group presentation : Elif and Aysu Students

https://youtu.be/eJMHtbG-2p8

We had a student who found a different solution and found a different solution with forward thinking. At the same time, Dalgakıran , which produces electricity.

Zekeriya's Presentation

https://youtu.be/8mdngnb2irg

Source: <u>https://www.nationalgeographic.com/environment/global-warming/sea-level-rise/</u>





