

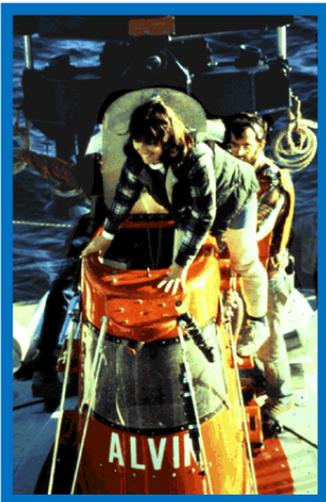
What is Earth Science

Chapter 1

Earth Science is especially important in the 21st century because the quality of our life on this planet depends on our understanding of the processes and interactions that can affect life here on Earth.

Four basic areas of Earth science

The four major areas of Earth science are geology, meteorology, oceanography, and astronomy. Seismology, biology, chemistry, and physics are other areas of science that have increased our understanding of the Earth.



The Alvin, a mini submarine, is used to study the ocean floors.
USGS

Nonrenewable and renewable energy

Today we use an enormous amount of energy to sustain our way of life. We derive most of our energy from nonrenewable energy that was created over a very long period. Coal and oil resources are being depleted.

New sources of energy are being developed to replace the dwindling supplies of fossil fuels and coal. Solar energy,

hydropower, geothermal energy, and wind power are examples of renewable energy. The procurement and use of these types of renewable energy will increase in the future due to research by Earth scientists.

The oceans

Most of the water on Earth is in the oceans. People use the oceans as a place to obtain food, dump waste and travel from one place to another.

Oceanographers are working to understand and maintain the great natural resources found in the oceans.

The great fisheries on our planet have seen significant declines in the number and variety of fish available for food due to over fishing.

Through scientific research and planning, some fisheries have recovered allowing commercial fishermen to catch enough fish to meet people's needs.

Exploring the oceans

Oceanographers studying black and white smokers located on the ocean floor are finding exotic new sea life.

They have also located areas where significant amounts of valuable minerals are located.

Other researchers study coral reefs because the reefs provide important habitat for fish and other marine organisms.

Finding and maintaining our water resources

Enough clean water for people to drink is becoming more difficult to maintain as the world population increases.

Farmers also need water to irrigate their crops, so people will have enough food to eat. Manufacturers and other businesses require large amounts of water to produce the goods we use in our everyday life.

The job of many hydrologists is to find and maintain water resources for each of these vital areas of our life. They are constantly monitoring water resources and studying groundwater, so we will have a sustainable amount of water in the future.

Egyptian Sundial

Activity 1

Introduction

Sundials have been used since ancient times to measure time. The time was measured by shadows cast on a flat surface. The Egyptians used the world's oldest known sundial to measure work hours. Flat surface sundials were called shadow clocks. You will be creating a shadow clock made of dough.



Creating a dough sundial

Materials

- White or wheat flour
- Mixing bowl, measuring cup
- Salt, water
- Pencil, ruler
- Parchment paper or tin foil

Directions

1. Measure 2 cups of flour into a mixing bowl. If you use wheat flour it will give your shadow clock a tan color like sandstone
2. Add 1 cup of salt mixing the two ingredients until they are blended together.

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