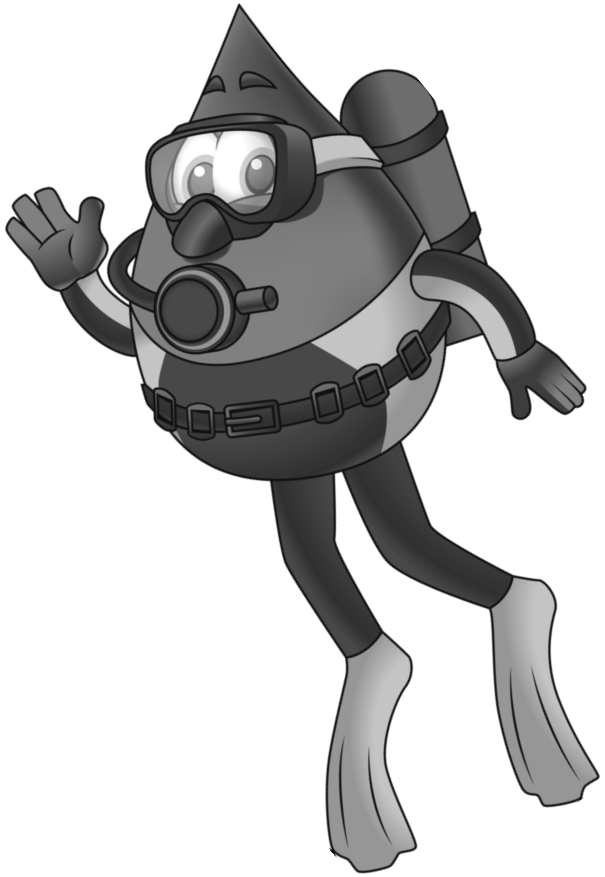
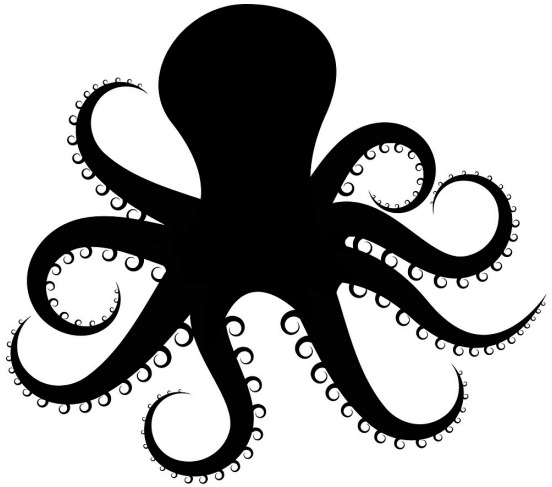
Keep Exploring!



To explore other curriculum and activities developed by Central Utah Water Conservancy District head to:
https://cuwcd.com/education.html

AI For Oceans



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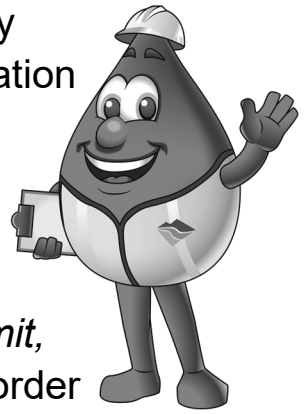
Who is Central Utah Water?



Central Utah Water Conservancy District is a government organization with the mission to move water across county boundaries.
We have 8 counties located within the District (*Duchesne, Juab, Salt Lake, Sanpete, Summit, Uintah, Utah, and Wasatch*). In order to meet our mission of moving water, Central Utah Water stores water in 9 reservoirs, maintains over 180 miles of large diameter pipelines, and runs 3 regional drinking water treatment plants.

In addition to our primary responsibility to move water, Central Utah Water is the second largest producer of hydropower in the State of Utah, works to protect endangered species, supports community based water conservation projects, and is a regional leader in water education.

To learn more about Central Utah Water and our work in the community go to **CUWCD.com**

CENTRAL UTAH WATER
CONSERVANCY DISTRICT

Further Discovery

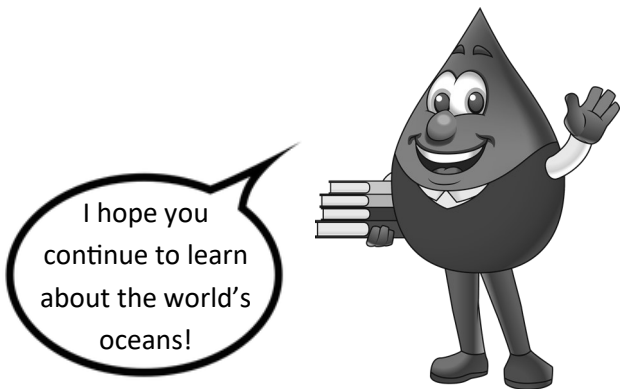
Just because this club is done, doesn't mean you have to end the fun! H_2Joe has done his research and found you a bunch of other Oceanography and Coding related activities and games that you can do at home.

Hour of Code - Activities
https://hourofcode.com/us/learn

National Ocean Service - For Kids
https://oceanservice.noaa.gov/kids/

National Geographic - Oceans Portal
https://kids.nationalgeographic.com/explore/ocean-portal/

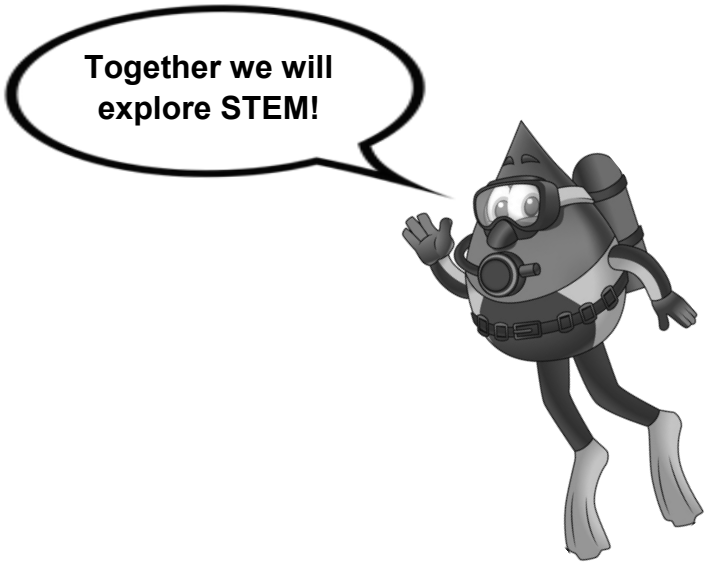
Massachusetts Institute of Technology - Scratch
https://scratch.mit.edu/



Welcome to the AI for Oceans STEM Club! Together we will be tackling 2 unique activities, each one exploring a different aspect of our planet's oceans. So pull out your computer and let's dive in!

Activity 1 - Kids for Oceans

Activity 2 - AI for Oceans



Kids For Oceans

Oceans are a really important part of our planet. Cover 72% of the Earth's surface, contains 97% of the globes water, creates half oxygen we breath, and is the engine that drives our planets weather. Even in the middle of continents, oceans effect our lives every single day. Let's learn how we can do our part to keep our Oceans safe and clean.

For The Kids For Oceans Activities I Need...

Ocean Ecosystem Cards

Trash Bag and Gloves (optional)

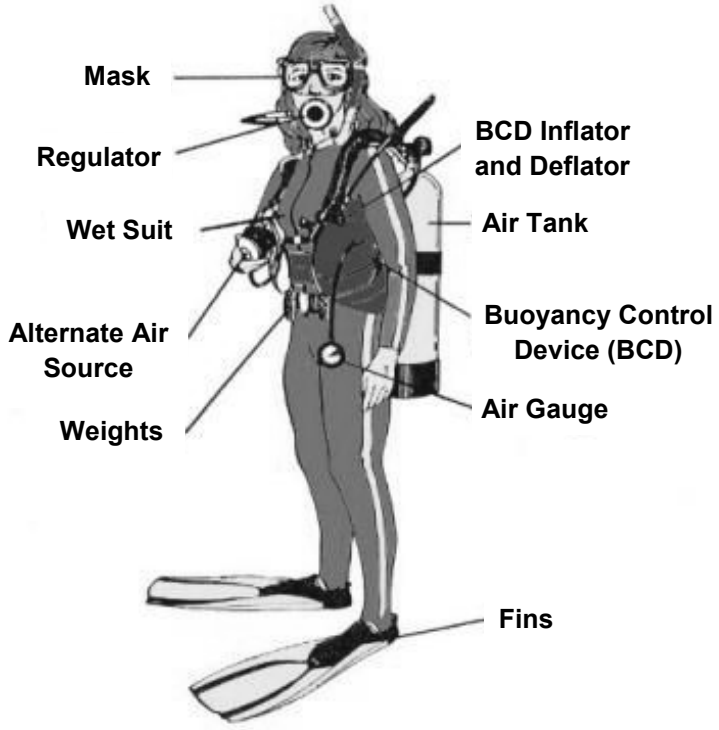
Fun Fact

While all the water in the oceans is connected, geographers divided it up into 5 different bodies of water:

1) Arctic Ocean, 2) Atlantic Ocean, 3) Indian Ocean, 4) Pacific Ocean, and 5) Antarctic Ocean

Exploring The Oceans

Humans can't breath under water like a fish can, so we need to use technology to help us explore the oceans. One of the most common types of technology is a SCUBA suit. SCUBA is an acronym that means Self-Contained Underwater Breathing Apparatus. See the parts of a SCUBA suit below:

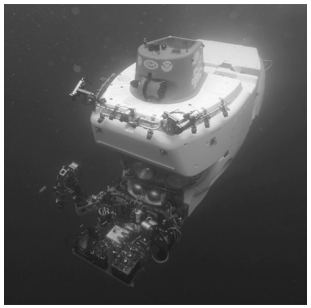


Exploring The Oceans

There are many different types of scientists that explore the ocean for their job. Let's learn about a few of them.

Oceanographer

Maps and classifies differences across the oceans and time.



Underwater Robot Technician

Builds robots to help other types of scientists study the deep ocean.

Environmental Scientist

Studies how pollution effects and spreads in the oceans.

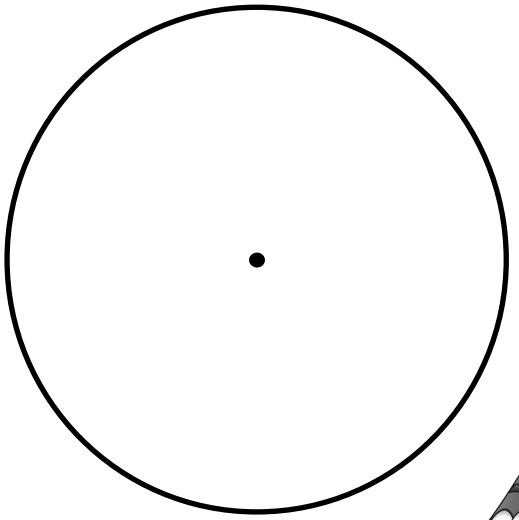
Geologist

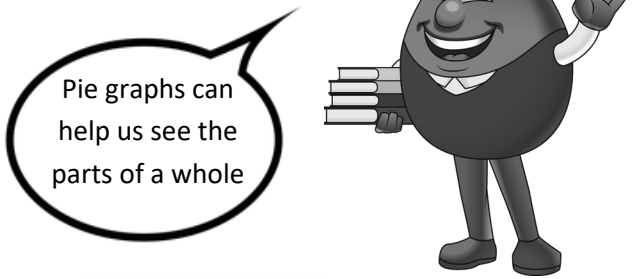
Studies how the oceans formed and the erosion they cause.

Kids For Oceans

The oceans hold a lot of water, so much that it can be hard to wrap our head around them. Using circle below are going to create a pie graph to represent how much of earth's water is found in the oceans.

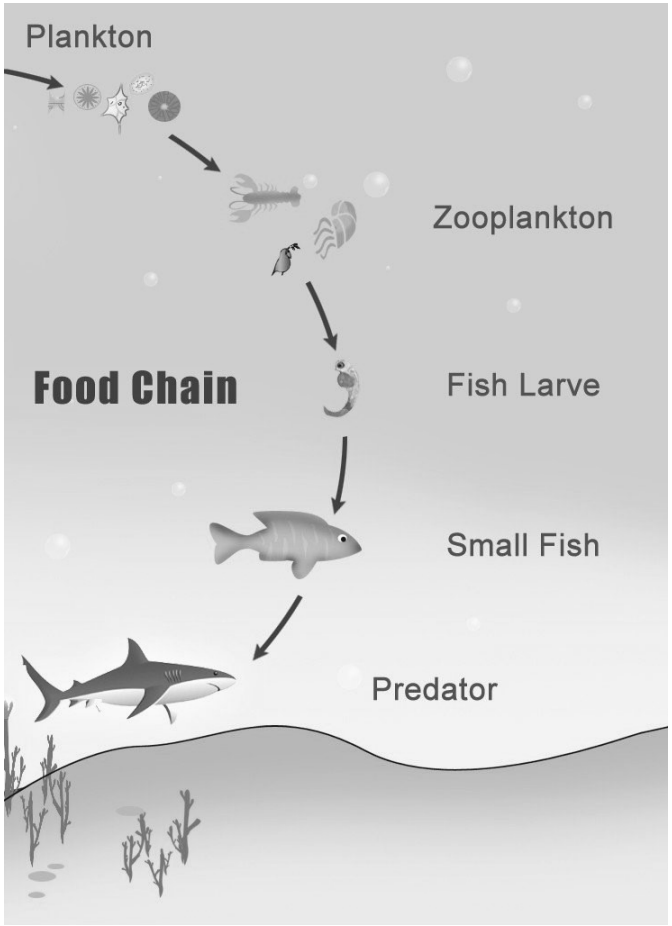
Water In The Oceans Pie Graph





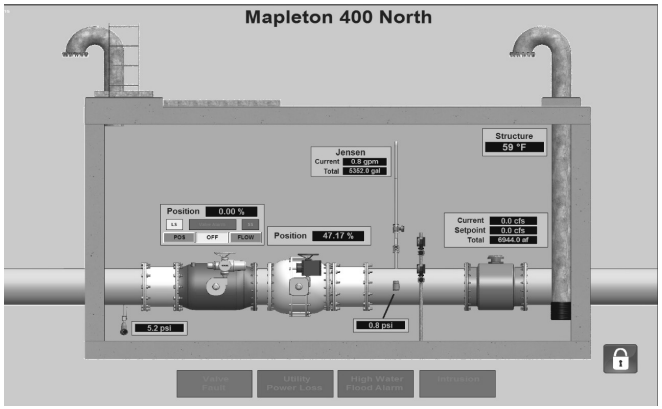
Kids For Oceans

One of the reasons oceans are so amazing are the all the animals that live in them. We can understand how these animals fit in their habitat by looking where they fit in a food chain.

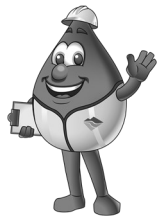


AI For Oceans

The partnership between computers and people is not limited to the oceans. Water managers use this technology every single day to monitor the health of river, produce hydropower, and deliver clean drinking water to your home. The computer systems water managers use is called SCADA which stands for **S**upervisory **C**ontrol **A**nd **D**ata **A**cquisition.



Building and managing SCADA systems takes a special skill set. At Central Utah Water this job is done OT (Operation Technology) managers/technicians and SCADA engineers.



AI For Oceans

Scientists and engineers use data from many different sources to help train their AIs about the oceans. Here are a few examples:

Satellites

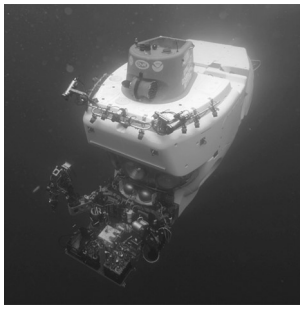
Data from satellites help us track ocean storms and temperatures from space.

Buoys

Data from bouys help us measure and better understand waves and

Research Vessels

Data from research vessels helps us track changes in habitats and water chemistry.



Submarines

Data from submarines helps us understand what the deep ocean is like and who lives there.

Kids For Oceans

Because all water on Earth flows downhill with gravity, the water in our rivers and streams can carry trash and pollutants into our oceans. These harmful items can cause animals to get sick or even die. It is important to do our part to keep our local water ways clean to keep animals safe.

AI For Oceans

The oceans are so important that sometimes humans need some help keep them safe. In this activity you will help teach a robot to identify trash that has made it into the ocean so that the trash can be removed.

For The AI For Oceans Activities I Need...

Computer or Tablet

Internet Access

Fun Fact

Sometimes humans and computers need one extra partner to answer questions about the oceans. When this happens they turn to animals. Animals such as whales, seals, birds, and sharks can carry scientific sensors and trackers that help us better understand their habitats.

AI For Oceans

Even when you are teaching a computer, it is important to think like a scientist! And scientists always track their data.

	Is it a Fish?	Does it belong in the water?
How many things did you cataloged?		
What are some examples of animals you cataloged?		
What are some examples of trash you cataloged		
Do you have any other notes?		