

Salt Water and Fresh Water Science Experiments

Materials:

- 3 clear cups
- Water
- Salt
- Food Coloring
- Ice
- Other Variables (toothpicks, grapes, soap, etc)

What to do:

1. Put about 1 cup of water in each cup.
2. Dissolve 1-2 tablespoons of salt in two of the cups. This is comparable to very salty ocean water. (See note below.)
3. Squeeze some food coloring into the "fresh" water. Watch how it spreads through the water easily and soon fills the entire cup.



4. Squeeze some food coloring into one of the salt cups. Talk about how the differences you see in the salt and fresh water.



5. What do you think would happen if you had fresh water on top of the salt water? The best way to see this is to place an ice cube on top of the other salt water cup. Give it about five minutes to melt. Do not bump the cup! While you wait, read a crocodile story like the one below!

When the ice is significantly melted, you will have a little puddle of fresh water on top of the salt water. Squeeze some food coloring on top of the fresh/salt water cup!



Talk about how the food coloring stayed in the fresh water longer and took some time to spread throughout the entire cup.

6. What other things could you test with your salt and fresh water cups? Test grapes! With enough salt, a grape will float! (When you add salt, you increase the density of the solution. An item will float if it is less dense than the water it is in.)



7. Crocodile Discussion: Salt Water Crocodiles can travel hundreds of miles through the ocean, where they only have salt water to drink. Salt water treats food coloring differently than normal water does, and it can cause problems if a crocodile (or any other animal) gets too much inside their body. How do you think crocodiles handle the salt? They actually have salt glands on their tongues that excrete the extra salt in their bodies!

Note: Ocean water averages 3.5% salinity. This is just under 1 tablespoon of salt per cup. However, since 3.5% is an "average," and there are definitely portions of the water that are saltier, and the results are more visual, recommend using closer to 2 tablespoons of salt in your cup.