

# Oysters and Ocean Acidification (Egg and Vinegar Activity)



## Materials

A clear glass

Vinegar

Egg

Notebook

Pen/Pencil



## Directions

- Make an initial journal entry in your notebook of the egg shape, texture, and color.
    - With adult supervision, fill the glass  $\frac{2}{3}$  of the way with vinegar.
    - Gently drop the egg in the vinegar. (you should see a reaction immediately)
  - Write down your initial observations in your notebook of the egg once it's in the glass of vinegar. (there will be a slight reaction)
    - Leave the egg in the glass over vinegar overnight.
  - The next morning, carefully remove the egg from the glass of vinegar and rinse under cool water. (it will be fragile)
    - Record your observations of the egg after it is removed.
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## First Notebook Entry

Describe the egg. What does it look and feel like? (You can make predictions about what will happen to the egg)

## Second Notebook Entry

What did you do to set up the experiment? What do you see happening?

## Third Notebook Entry

What is different about the egg? How does the egg look and feel now? How could this relate to oysters in the Chesapeake Bay?

## Conclusions

This activity demonstrates why the animals that build their shells from calcium carbonate are vulnerable to climate change. Ocean acidification is an effect of global warming. When carbon dioxide from the atmosphere enters the ocean, it bonds with water to create carbonic acid. This makes the ocean more acidic, upsetting the natural pH balance of the water. This can be damaging to different organisms in different ways. It can be harmful to oysters because their shells are made of carbonate.

This activity is meant to demonstrate how oysters (the egg) have their shell breakdown when exposed to high levels of acid (vinegar) for prolonged periods of time. With oysters facing threats from ocean acidifications, it forces oysters to work harder to maintain their shell integrity. The more energy they need to use to keep their shells strong, the less energy they have for growing, moving (in the younger life stages), feeding, and reproducing.