The Hunt – Week 4

Objectives:

- Recognize the layers of the atmosphere and characteristics of each in order to understand some restrictions of the balloon's equipment.
- Understand why and how the oceans play an important role in the atmosphere and why releasing the weather balloon is important.
- Identify the components of air that cause changes in the oceans. What are some changes and how do they affect us and ocean life?

Schedule:

- Students will answer the question, "How does releasing the weather balloon relate to the oceans? (5 mins)
    - Then briefly discuss how atmosphere relates to oceans (5 mins)
- Why be a marine biologist? (5 mins)
    - Show slide and talk about each picture and what you can do with a degree in marine biology
- Discuss layers of the atmosphere and characteristics of each (15 mins)
    - Temperature, wind speeds, and altitude of each layer
    - Have students fill in front side of worksheet
- Review of what climate change is (5 mins)
- How does climate change happen?
    - Global conveyer belt – it keeps climates mild and the oceans healthy by bringing nutrients (10 mins)
    - GCB activity with the tank and food coloring – cold water is more dense than warm (10 mins)
        - Chunks of ice are placed at either end of the tank; the lamp is focused on the center. Put a few drops of food coloring near each ice chunk (the North and South Poles) and watch a current form.
        - Explain how global warming can have an effect on this
    - What's in air? Pay close attention to the CO2 (5 mins)
        - It occurs in small amounts, so when you change it a little it affects us a lot
    - What does CO2 do to our oceans/ocean acidification (10 mins)
        - Makes ocean more acidic which can dissolve shells, kill fish, and bleach coral
    - Why do we care? How do our oceans help us? (5 mins)
- Discussion on what our weather balloon can tell us about the ocean? (10 mins)

Materials:

- Food dye
- 25 Gallon Tank
- Chunks of ice/lamp