LESSON PLAN

HOW COLD IS IT?

Objectives:

The students will understand:

- How to collect data and determine varying outcomes reliant upon the input of information
- That models can be representatives of something else
- Anyone can be a scientist and test hypothesis
- The significance of natural disasters and the damage they can cause
- Time can be measured as well as length and distance
- History of the Titanic

Standards Assessed:

- Scientific Method
- Collecting Data
- Scientific Inquiry
- Testing Hypothesis
- Models for Representation
- Cause and Effect
- Safety Procedures
- Measuring in non-standard units
- History of the Titanic
- Natural Disasters and their effects

Florida Benchmarks:

1st: SC.1.N.1.1-3, SC.1.E.6.3
2nd: SC.2.N.1, SC.2.N.1.2, SC.2.N.1.4, SC.2.N.1.5
3rd: SC.3.N.1.1, SC.3.N.1.2, SC.3.N.1.5, SC.3.N.1.6, SC.3.N.1.7, SC.3.N.3.3, SC.3.P.8.1
4th: SC.4.N.1.1, SC.4.N.1.2, SC.4.N.1.3, SC. 4.N.1.7, SC.4.N.1.8, SC.4.N.2.1, SC.4.P.8.2
5th: SC.5.N.1.1, SC.5.N.1.5, SC.5.N.1.6, SC.5.N.2.1
6th: SC.6.N.1.1, SC.6.N.1.3, SC.6.N.1.4

Materials:

- How Cold Is It?
- Data collection card

Procedures: The students will begin the timer and place their hands in the water, which is the equivalent temperature of the water when the Titanic sunk, and see how long they can keep their hand in the water. Once they have completed the exhibit, they will write down the length of time they were able to sustain their hand in the water. Once back in class, the data can be graphed to determine measures of central tendency of mean, median, and mode for the classroom. Measuring time is just

HOW COLD IS IT?

another way to measure something other than just distance and speed. The class also needs to discuss what safety procedures could have been followed to prevent the sinking of the Titanic, and was their actually something wrong with the structure of the ship? In addition, what makes us unable to keep our hand in the water for such a short amount of time and would individuals who live in colder temperatures have a higher tolerance for the water? How long would an individual be able to survive in water at this temperature? Is sticking your hand in freezing water the same as being stuck in the water during that time? Is this exhibit a good model for the actual event?

Independent Practice: The exhibit is independent.

Assessment:

- Observation of participation in exhibit
- Teacher observation of participation in classroom discussion
- The student will write their outcome in their post-teaching card

Modifications (Special Education Students): Special education students may need the timer started and stopped for them. In addition, they may need assistance writing the time on their data collection card.

Extensions (Gifted Students): Ask gifted students to research what is the longest time that an individual has spent in that temperature water and survived.

Generalization to other Subjects:

- Safety procedures are applicable in all subject areas. Central measures of tendency will generalize to math.
- **Force & Motion** can also be discussed while students climb the sample after impact decks of the Titanic. They can investigate how the change in the angle affects the amount of force needed to climb up the deck.