

LESSON PLAN by: Logan Smith

Lesson: Understanding tornadoes **Length:** 2-3 days

Age or Grade Intended: 3rd Grade

Academic Standard(s): (Science) 3.3.5: Give examples of how change, such as Weather Patterns, is a continual process occurring on Earth; (Science) 3.3.6: Describe ways human beings protect themselves from adverse weather conditions; (Language Arts) 3.4.3: Create single paragraphs with topic sentences and simple supporting facts and details.

Performance Objectives: Given a website and book over tornado facts, the third grade students will create their own tornado in a bottle and write a response paper on tornadoes with 100% participation and effort in both assignments.

Assessment: The students will be graded on their creativity through the design of their tornado bottles which will be based on participation and effort. Their response papers will be graded by a rubric assessing what they learned about tornadoes such as: how a tornado is formed, how to protect yourself when a tornado is near, and the different types of tornadoes that can accumulate in the sky.

Advanced Preparation by Teacher: The teacher must either provide every student in the class with two empty 2 Liter bottles or have each child bring them in from home. Then the teacher must provide enough metal washers to give every student as well as supplying enough duct tape. The teacher must also assign a time for his/her class to go to the library and look on the (weatherwizkids.com) website. Before doing this, the teacher needs to make sure that every one in the class is fully capable of using a computer.

Procedure:

Introduction/Motivation: To get the students excited about volcanoes, the teacher will show the class a youtube video or an instructional video on the formation and process of volcanoes. The video will entail different types of volcanoes such as when and where they occur and the type of damage they can cause. The video will then lead into the lesson of having the students create their own tornado similar to what they saw on the video.

Step-by-Step Plan:

- After watching the video on tornadoes, have the students visit the website (weatherwizkids.com) to learn more information on tornadoes. The students can read the page on the site and learn new things, but will be given a short 5 question multiple choice quiz over things such as: the definition of a tornado, how

- tornadoes form, the process of hail, tornado safety tips, and the formation of a funnel cloud.
- After taking the short quiz, the students will then create their own tornado in a bottle with instructions as follows: (two 2-Liter bottles, water, metal washers, and duct tape will be needed)
 - First each student will fill one of their bottles 2/3 full of water.
 - Then have them place a metal washer (tornado tube) over the opening of the already filled bottle.
 - Turn the second bottle upside down and place it on the washer (tornado tube).
 - Use the duct tape to fasten the two containers and the metal washer together. Make sure to tape tightly so that no water will leak out when you turn the bottle over.
 - Turn the tornado maker so that the bottle with the water is on top. Then swirl the bottle in a circular motion and by doing this a tornado will form in the top bottle as the water rushes into the bottom bottle.
 - If you want to get creative, you can also use food coloring to make the tornado have a glitter or color that represents debris.
 - The swirling motion you give the bottle forms a vortex and is an easy way to create your own tornado.
 - The teacher will then read the book, *Tornadoes*, to the class before they then read it through shared reading with the teacher. Every student will get a chance to read to the teacher so that the teacher can see which reading level each child is at.
 - The students will then write a response paper over what they've learned about tornadoes including the one they made on their own. In their response papers the students will be asked to write about where they would hide if a tornado was near their house. They will also write about how they think a tornado is formed as well as writing down two different types of tornadoes that they learned about. (Make sure they are understanding the significance of rain, thunderstorms, and clouds in forming tornadoes.) These short papers should be a minimum of 4-5 sentences and will go in their portfolios after the lesson over tornados has ended. The papers will be assessed by a simple rubric focusing on effort and participation.
 - This will tie in to the closure section, but come together as a class and ask the students comprehension questions concerning what they learned or remember from reading the book or looking at the website. Examples could include: What is a tornado and how is it made? (Knowledge) What should you do when you see a tornado? (Analysis) What's a funnel cloud? (Knowledge/Comprehension) and etc.

Closure: This will bring the science lesson over tornadoes to a close after they have completed their written responses. The class will then come together in a grand discussion format talking about the different aspects of tornadoes. The third graders will ask many questions so this is a good time for the teacher to reassure facts and information over tornadoes for the students so that they can leave the classroom having learned something. Allow their minds to wonder and be willing to answer questions.

Adaptations/Enrichments: For students with challenges or special needs, the following adaptations might be considered.

- Allow the student to work with a teacher assistant in creating his/her own tornado in a bottle.
- Have the student draw a picture of what they think a tornado would like rather than having them write a paper over tornadoes.

For students who need to be challenged further, the following enrichment activities might be considered.

- Have the student put food coloring in the water of their bottles to give the tornado more meaning.
- Have the student create two different illustrations for two of their sentences in the response paper.

Self-Reflection: Will be filled out upon teaching the given lesson.