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Date: 4/15/02

Content Area: ELA, Science

Unit Topic: Tornados

Today's Lesson: Create Your Own Tornado

Grade Level: 3<sup>rd</sup>

Duration: 9:00am- 9:45am

## **LESSON RATIONALE**

### **New York State Learning Standards**

#### English Language Arts Standards 1, 3

##### Standard 1: Language for Information and Understanding

Students will listen, speak, read, and write for information and understanding. As listeners and readers, students will collect data, facts, and ideas; discover relationships, concepts, and generalizations.

Key Ideas- Listening and reading to acquire information and understanding involves collecting data, facts, and ideas; discovering relationships, concepts, and generalizations; and using knowledge from oral, written, and electronic sources.

##### Standard 3: Language for critical analysis and evaluation.

Students will listen, speak, read, and write for critical analysis and evaluation. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to present, from a variety of perspectives, their opinions and judgments on experiences, ideas, information and issues.

Key Ideas- Speaking and writing for critical analysis and evaluation requires presenting opinions and judgments on experiences, ideas, information, and issues clearly, logically, and persuasively with reference to specific criteria on which the opinion or judgment is based.

#### Math and Science Learning Standards 1

Standard 1: The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process. Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.

Key Ideas- The central purpose of scientific inquiry is to develop explanations of natural phenomena in a continuing, creative process.

- Objectives:
1. Students will identify key concepts and definitions about tornados. (Bloom Level 2, Comprehension).
  2. Students will create "mini-tornados" by working in small groups of 3-4. (Bloom Level 3, Application).

Adaptations: Students with vision impairments- The teacher will be prepared with copies of any handouts or texts in larger print.

- Materials:
- 5 tornado tubes
  - 10 empty 2-liter soda bottles
  - Instructions for creating the tornado
  - Baking soda, vinegar, dishwashing soap, food dye

- *Tornado Alert* by Franklyn M. Branley
- Handout with concluding questions for students
- A pre-made tornado for demonstration purposes

## **LESSON OPENING**

### Anticipatory Set

“Good morning, boys and girls. We started discussing tornados yesterday by filling out K-W-L charts and going over our questions and answers as a class. Now it’s time to learn about tornados. We are going to try and answer all of the questions you have about what causes tornados, how fast they travel, and what causes them to stop. And...we are going to *create our own tornados!!!* But before we create our own tornados, let’s learn a little about them. I’m going to read aloud *Tornado Alert* by Franklyn M. Branley. After we learn about them, it’s time to create our own tornados!”

## **LESSON BODY**

1. Before reading aloud *Tornado Alert* by Franklyn M. Branley, talk about the cover of the book, asking questions about what we might learn from a book like this.
2. Explain to the students that they should take notes during the reading of the book. Tell them to listen for important facts and definitions, and when they hear them, to write them down. During the reading, give students pointers and hints as to what information is vital, so that they are not confused or lost.
3. Begin reading *Tornado Alert*. Pause after pages that contain important information and facts, such as page 8, which talks about where tornados tend to strike. Ask questions about the material, repeating the important definitions and concepts. Discuss answers with the students when they are presented in the book. Continue until the entire book is finished.
4. Pass out a sheet of questions from the book, highlighting the key concepts and definitions from the story. Have a handout with larger print prepared for students with vision impairments. Allow students to check the notes they took during the story for answers to the questions. Go over the sheet as a class. (Modeling).
5. Next, it’s time to construct the tornados. Have a pre-made tornado ready to demonstrate to students what they will look like. Explain to them that this is what they have if they follow directions carefully. (Modeling).
6. Explain to students that the teacher will build one with the class, so that they can see how everything goes together. Explain that one student will be taking notes

about how to construct the tornado, and that the other three students in the group will take turns being the builders. (Guided Practice).

7. Assist the groups as necessary.
8. Students will first need to fill one bottle about halfway with water. Allow one student per group to go into the hallway, supervised, to fill the bottles. Once the bottles are filled, allow students to measure out the ingredient at their station and place it into the bottle filled with water. Screw the empty bottle on top of the filled bottle. Turn upside down, and the students have their own tornados! (Guided Practice).
9. Have the students go back to the W and L sections of their K-W-L charts. As a class, talk about whether or not all of the questions from the, “W- What do I want to know?” section were answered. Ask the children to fill out the L section, “What did I learn?” “A K-W-L chart provides a structure for personalizing the summarization of what was learned. A completed K-W-L chart can help students reflect upon and evaluate their learning experience, and also serves as a useful assessment tool for teachers.” (Stephens and Brown, 47).

Closure:

“Well kids, we did all kinds of things today. Who can tell me what causes tornados? How about where they tend to form? What are they made out of? If we look back at our K-W-L charts, we can answer some of the questions we asked. Did you learn answers to all of the questions you had on your K-W-L chart? We also made our own tornados. Why do you think we got different reactions when we put special ingredients into our tornados? What did we discover about our mini-tornados that we also read about in our book? (This is considered Checking for Understanding). Just think, now when anyone asks, you can say you’ve seen a tornado up close!”

## **LESSON FOLLOW-UP**

Evaluation:

What did you want students to learn?

This lesson plan teaches students how tornados are formed, where they form, what they are made of, how fast they can travel, and the destruction they can cause.

How will you know that they learned it?

The instructor will know that students learned the material presented because students will be able to answer worksheet questions accurately after they have

listened to the book *Tornado Alert*. They will also be able to discuss the questions after the activity, drawing conclusions from the reading and the experiment.

### **LESSON RESOURCES**

Branley, F.M. (1988). *Tornado alert*. (First edition). New York: Thomas Y. Crowell.

Stephens, E.C. and Brown, J.E. (2000). *A handbook of content literacy strategies: 75 practical reading and writing ideas*. (1<sup>st</sup> ed.). Norwood, MA: Christopher-Gordon Publishers, Inc.

Tornado Tube Activity. *University Corporation for Atmospheric Research/National Center for Atmospheric Research/National Science Foundation*, retrieved April 17, 2002, from [http://www.field-trips.org/tours/sci/tornado/\\_tourlaunch1.htm](http://www.field-trips.org/tours/sci/tornado/_tourlaunch1.htm)