Title/Author: *Wild Weather* by Seymour Simon

Suggested Time: 6 Days (plus additional time for creating a class book on storms)

Common Core grade-level ELA/Literacy Standards: RI.1.1, RI.1.2, RI.1.3, RI.1.4, RI.1.7; W.1.2, W.1.7, W.1.8; SL.1.1, SL.1.2, SL.1.5, SL.1.6; L.1.1, L.1.2, L.1.4, L.1.5

Lesson Objective:

Students will actively listen to the informational picture book *Wild Weather* to learn about four kinds of extreme weather that people encounter – tornadoes, hurricanes, thunderstorms, and blizzards. They will learn how they form, and when and where they take place. Storms are Earth’s natural way of cleaning the atmosphere, bringing needed water to areas, cooling the air, and making the earth a livable place.

Teacher Instructions:

**Before the Lesson:**

1. Read the Key Understandings and the Synopsis below. ***Please do not read this to the students****.* This is a discussion to help you prepare to teach the book and be clear about what you want your children to take away from the work.

Key Understandings:

Although storms produce extreme weather that may destroy property and cause dangerous situations for people, they are Earth’s natural way of cleaning the atmosphere, bringing needed water to areas, cooling the air, and making the earth a livable place.

Synopsis:

*Wild Weather* describes extreme weather, such as tornadoes, hurricanes, thunderstorms, floods, and blizzards. Facts about each type of storm are given.

1. Go to the last page of the lesson and review “What Makes this Read-Aloud Complex.” This was created for you as part of the lesson and will give you guidance about what the lesson writers saw as the sources of complexity or key access points for this book. You will of course evaluate text complexity with your own students in mind, and make adjustments to the lesson pacing and even the suggested activities and questions.
2. Read the entire book, adding your own insights to the understandings identified. Also note the stopping points for the text-inspired questions and activities. *Note: you may want to copy the questions, vocabulary words, and activities over onto sticky notes so they can be stuck to the right pages for each day’s questions and vocabulary work.*

*Teacher Note:* A good web site that has excellent experiments for students can be found at <http://www.weatherwhizkids.com/weather-experiments.htm>. The experiments for Tornado in a Bottle (or in a jar), Make a Thunderstorm, Cloud in a Bottle, Make Thunder, and Make it Rain are incorporated into the lessons.

The Lesson – Questions, Activities, Vocabulary, and Tasks:

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| **Questions, Activities, Vocabulary, and Tasks** | **Expected Outcome or Response (for each)** |
| **FIRST READING:**Read aloud the entire book, taking time to show the pictures and interject comments about the large numbers, the damage shown in the pictures, and any facts the students might find interesting. The last page indicates that storms are beneficial to the earth. State that this is a surprising idea. Discuss why. | The goal here is for students to be exposed to the various storms, giving enough support to engage them during the first read.Students can be led into a discussion that we think of storms as being dangerous but neglect to acknowledge any benefits. |
| **SECOND READING:****This could be done over four days – each day focusing on one kind of storm (tornadoes, hurricanes, thunderstorms, and floods and blizzards).****Reread title *Wild Weather***Show students the cover of the book and say, “ The title is “Wild Weather.” Now that you have listened to the text, why do you think the author choose to use the word ‘wild’ to describe the weather in this book?” After students answer, explain the word extreme, and assure students that these types of weather do not happen all the time, but are types of weather that happen once and a while. **Reread page 3: “We live at the bottom of a swirling ocean of air called the atmosphere.”** Write the word “swirling” on the board. Explain what it means (to move in a twisting or spiraling pattern). Have the students stand and swirl.Then show them a picture of an ocean or point to an ocean on a map or globe. Guide them in understanding that the ocean is a very large, deep body of water, deeper than the classroom is tall. Explain a metaphor is a way of comparing or showing how two things are alike. “Do we really live at the bottom of an ocean? No. The author compares the air to the ocean. Why do you think that he uses the word ocean to describe the air? The author is using this comparison, a metaphor, to help us understand how large and deep the atmosphere is. Explain that we are on the ground, and above us is swirling air that we call the *atmosphere*. Write the word *atmosphere* on the board. Orally break the word into syllables (at-mos-phere) and ask the students to repeat the syllables and then the say the word. State “The atmosphere is the air that surrounds the earth. What is the atmosphere?”State “The air that surrounds the earth is called the \_\_\_\_\_\_\_\_.” “Tremendous currents of warm air and cold air, moist air and dry air, constantly push against one another.” (Teacher can model drawing the air currents on a document camera or chart.) Restate that the air currents, warm air and cold air, wet air and dry air, are constantly moving through the atmosphere pushing against one another. They are flowing like water or traffic on a highway. Give students a piece of paper, pretending it represents the atmosphere, and direct them to take crayons (blue for cold, pink for warm, brown for dry, and green for moist) to draw air currents moving across the page. “Rapidly moving air currents (air moving very fast) can produce tornadoes, hurricanes, thunderstorms, and blizzards.” Tell students to “turn and tell your partner” what storms the author is going to tell about. Start a class chart to record information about the storms.Prepare a class chart so information about storms can be added as the information is read.**Reread page 4** Ask the students to tell another name for a tornado; what happens when the air pushes up?Point to the funnel to show students where the “twister” is.Ask students where tornadoes happen.(The tornado in a bottle activity from the weatherwhizkids.com site can be used to help students understand this information.)Show a video clip of a tornado – (an example might be: <http://video.nationalgeographic.com/video/environment/environment-natural-disasters/tornadoes/tornadoes-101/>)Using a document camera or chart paper, model the following activity:Instruct students to turn their paper over and draw a big cloud at the top to represent a thundercloud and a line across the bottom to represent the ground. Using the pink and green crayons to represent warm and moist air, have them draw arrows from the ground to the base, or bottom, of the thundercloud. Using the blue crayon color over the pink and green arrows near the base of the thundercloud making swirling lines going back down toward the ground.To help the students understand the size of a tornado, have two students stand a “few feet” from one another and two other students standing in the front and back of the classroom. Explain that some tornadoes are a “few feet” across while others are bigger across than the distance between the two students standing in the front and back of the classroom. State that tornadoes can be very, very tall.Explain that the winds are faster than cars on an interstate highway (tornado winds can be up to 300 mph– a car goes 70 mph on the highway) and that makes the tornado very violent, or strong, and dangerous. They are strong enough to pick up a truck, or even a house.Show the map of the United States to the students (use a large map, or enlarge the picture in the book on a document camera) and guide them in finding the state where they live. Point out the key on the right and help them to understand the use of the colors on the map. Using that key ask them if their state has a lot of tornadoes. The darkest red shows where tornadoes are most common in the United States. That area is part of our country called the Midwest.(If the school has tornado drills, the drill can be reviewed here, with a discussion about why that drill helps students to be safe.)**Reread page 7**Reread the page and then restate “Weather scientists use the speed of the winds in tornadoes to label the strength of the tornado and help everyone to understand how dangerous it might be. They say the tornado is a F0 or F1 if it won’t cause much damage. The worst tornado is ranked, or labeled, F5. They can reduce to rubble, or tear up, a whole town or forest. Most tornadoes don’t cause much damage.” Ask the students to look at the picture on page 7 and decide if the tornado was a F1 or a F5. Turn and tell your partner whether you think the tornado was a F1 or F5 and why. As a class, record facts about tornadoes on chart paper. (See example)**Reread page 8**Show a brief clip of a hurricane. (EX: <http://video.nationalgeographic.com/video/kids/forces-of-nature-kids/hurricanes-101-kids/>) Discuss the facts in the video. Read the first paragraph on page 8 , stopping to ask questions:“What are hurricanes? Where are they formed? When are they common?Remind students that tornadoes start in a thunderstorm. They drew a thundercloud over the ground (land) to show how a tornado started. Show the students a map, or a globe, and point to the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico. Hurricanes begin as storms above an ocean or gulf, called tropical storms. Tell them that if the winds get strong enough, the storm becomes a hurricane. Model the following activity on a document camera or on a chart:Give the students a piece of paper and ask them to draw an ocean at the bottom of the page with land touching one side. Direct them to use their pink crayons to draw warm air rising above the water. Then ask them to draw lines to show air moving in a spinning motion.Read the next paragraph, restating “In a ten-year period, or during 10 years, about twenty hurricanes strike, or hit, the United States coastline, the land near the ocean or gulf, but only six or seven of these cause widespread damage, or damage over a large area.Ask the students how old they are (will be less than 10 years old). Ask how many hurricanes might have hit the coastline in their lifetime and caused widespread damage.Read the next paragraph. Remind the students that tornadoes were listed with F0 to F5 to describe how bad they were. Category 1 – 5 describes how bad a hurricane is.**Reread page 11**“When hurricanes move onshore, or come on the land, they bring a storm surge of ocean water along the coastline, or the land by the ocean, as well as damaging winds and torrential rains, or very hard rains, and flooding.” Explain to the students that sometimes authors give definitions within the text so that the reader can understand the information. The author tells us that “A storm surge is a large **dome** of water, often 50 – 100 miles wide . Show students the picture of a dome. With you decide on a definition. Tell them the sentence uses the word dome as a metaphor. There is not really a dome in the water, but turn and talk to your partner about what a dome of water might look like. After they respond, draw the ocean touching land and show a dome of water coming onto the land. Direct the students to draw a dome of water coming onto the land on their paper. (Tell the students again that “dome of water” is a metaphor used to help people understand what the water looks like coming on the land.) That represents a storm surge.Read the rest of page 11 and read the fun fact to the students. Tell them that an atomic bomb is a big bomb.Add information about hurricanes to the storm chart.**Reread page 12**After reading page 12 show the students where Homestead, Florida is on a map of the United States. Point out that Homestead is near the Atlantic Ocean. A lot of people (dozens) were killed, businesses and homes were destroyed. The city of Homestead was “leveled to the ground” or almost completely destroyed by the wind and the water. (If the school is in an area that experiences hurricanes, the evacuation procedure can be reviewed here.)**Reread pages 14 -19**(Thunder and lightning experiments from the weatherwhizkids.com site can be used to help students understand the information.)Show a video clip of a thunderstorm. (<http://www.youtube.com/watch?v=LNYdZqLLLyQ>) Most children will be familiar with a thunderstorm.Read “Thunderstorms are powerful electrical storms, strong storms that are full of electricity, that produce, or make, lightning and thunder. Every minute of the day, all day long, thousands of thunderstorms are forming, or beginning, around the world.” Ask the students to turn and tell their partner two characteristics of a thunderstorm.Demonstrate how thunder is made by giving the students a small paper bag. Have them blow up the bag and twist the opening shut. They should hold the closed end in one hand and hit the bag with the other hand. Hitting the bag causes the air inside the bag to compress so quickly that the pressure breaks the bag. The air rushes out and pushes the air outside away from the bag. The air continues to move forward in a wave. When the moving air reaches your ear, you hear a sound. Thunder is produced in a similar way. Using a document camera or chart to model the following activity:Give the students a piece of paper and have them draw green/pink lines upward from the ground, becoming blue as they draw thunderclouds. They can add lightning bolts using red crayons to represent the intense heat. Explain that tall buildings often have a metal rod, called a lightning rod, which attracts the electricity in the lightning and protects the building by sending the electricity down to the ground. **Reread pages 16-19**After reading the information on lightning – ask the students to turn and tell their partner two interesting facts about lightning. Add information about thunderstorms to the class chart – it may be helpful to discuss safety in a thunderstorm at this point – going inside a building – staying away from trees, telephone poles, and wire fences – becoming a “basketball with legs.” The children can demonstrate being a “basketball with legs.”**Reread page 20**As you reread this page, it may be helpful to point to a map of the United States showing the western states where we have desert areas and the eastern states where thunderstorms and hurricanes may cause flash flooding. Ask students to turn and tell their partners whether more people are killed by floods or by hurricanes or tornadoes.Ask students how flash floods get their name.Explain that “speed of a freight train” means going very fast like a train in train tracks.Using the information from [www.weatherwhizkids.com](http://www.weatherwhizkids.com), perform the weather experiment “Make It Rain.”Add floods to the class chart and solicit information from the students to fill in the blanks.**Reread page 23**Show the picture on page 22 as you read page 23. Student background knowledge of snow storms will determine how much explanation will be necessary on this page (frostbite, snowplow, etc.)Ask students to tell their partners two problems that are caused by blizzards.Add blizzards to the class chart.Ask students to choose whether they will draw a picture of a flood or a picture of a blizzard. Provide the paper for them to draw a picture of their choice. Direct them to tell their partner how the storm is affecting the people in their picture. | Students respond with the kinds of weather described in the book – tornadoes, hurricanes, thunderstorms, floods, blizzards – and these kinds of weather are very wild. They are not the only kinds of weather that we have – they are not the ordinary kinds of weather we have. Wild means uncontrollable, and these storms are unrestrained, unruly, and not controllable.Students stand and make a swirling motion with their bodies to indicate the air swirling in the atmosphere. Students repeat the syllables and the word atmosphere.Students respond that the atmosphere is the air that surrounds the earth.Students respond “atmosphere.”Students draw lines representing air currents across the page. The lines can be straight, curved, or swirling as they represent different air currents bumping into one another.Students tell their partner the author will tell us about tornadoes, hurricanes, thunderstorms, and blizzards.

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| Storms |
|  | Description  | when | where |
| Tornadoes |  |  |  |
| Hurricanes |  |  |  |
| Thunderstorms |  |  |  |
| Blizzard |  |  |  |

Students respond – twisterStudents respond – all over the worldAfter watching the video clip of a tornado, the students draw a thundercloud at the top of a piece of paper and a line for the ground at the bottom. They use the pink and green crayons to show warm, moist air rising from the ground and bumping into the base of the thundercloud. They then use a blue crayon to represent the air becoming cold and swirling in a funnel down to the ground.Students model “few feet” and “bigger distance.”Students look at the map of the United States and the key explaining the use of the colors to show the incidence of tornadoes in various states. With assistance they find the state in which they live and determine whether tornadoes are common in their area.Students tell their partners the tornado is F5 because there is a lot of damage and the truck was thrown on top of another truck.

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| Storms  |
|  | Description | when | where |
| Tornadoes | Swirling funnel Begins in a thunderstorm | April/May | On land |
| Hurricanes |  |  |  |
| Thunderstorms |  |  |  |
| Blizzards |  |  |  |

Review the facts often; repetition will make the facts available to all students.Students respond that hurricanes form over tropical waters, or oceans.Hurricanes are huge whirling storms that develop over tropical waters. They are formed over the water. They are common in late summer and early Fall.Students respond that hurricanes are common in late summer and early fall.Students draw the ocean at the bottom of the page, with land touching on one side, and use a pink crayon to show warm air rising, then use the crayon to show the air moving in a spinning motion.The students are 7 or 8 years old. During their lifetime only six or seven would have caused widespread damage. Students draw a dome of water leaving the ocean and coming onto the land.

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| Storms |
|  | Description | when | where |
| Tornadoes | Swirling funnel Begins in a Thunderstorm | April/May | On land |
| Hurricanes | Swirling air – Begins over the ocean | Late summer/early fall | Water onto land |
| Thunderstorms |  |  |  |
| Blizzards |  |  |  |

Students tell their partners the thunderstorm will have thunder and lightning, may have hail, heavy rains, winds.Use *Make Thunder* lesson from the website - http://www.weatherwhizkids.com/weather-experiments.htmThe students blow up a small brown bag and create thunder by holding the closed end in one hand and hit the bottom of the bag with the other hand.The students draw lines to represent moist warm air rising from the ground and forming cold air in the clouds.They add red lightning bolts.Students tell their partners that a lightning flash is brighter than 10 million light bulbs, the temperature is hotter than the surface of the sun, lightning flashes immediately but thunder takes about 5 seconds to travel a mile, lightning can strike the same place twice.Students demonstrate the safe position if they must be outside in a thunderstorm – “basketball with legs”

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| Storms |
|  | description | when | where |
| Tornadoes | Swirling funnel begins in a thunderstorm | April/May | On land |
| Hurricanes | Swirling air – Begins over the ocean | Late summer/early fall | Water onto land |
| Thunderstorms | Thundercloud with lightning/thunder rain and hail | anytime | Any place |
| Floods |  |  |  |
| Blizzards |  |  |  |

Students tell their partners that more people are killed by floods than by hurricanes or tornadoes.Students respond that water rises quickly (in a flash) after a heavy rainfall.Use the experiment “Make It Rain” from the website weatherwhizkids.com.

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| Storms |
|  | description | when | where |
| Tornadoes | Swirling funnel – Begins in a thunderstorm | April/May | On land |
| Hurricanes | Swirling air – Begins over the ocean | Late summer/early fall | Water onto land |
| Thunderstorms | Thundercloud with lightning/thunder rain and hail | anytime | Any place |
| Floods | Lots of water | After snow melts, hurricanes, or thunderstorms | Any place where lots of water has come very quickly |
| Blizzards |  |  |  |

Students tell their partners that snow from blizzards cover the streets so the snow plow has to clear them, the snow and high winds can knock down power lines so there is no heat or lights for a long time, people get so cold their fingers, toes, noses, or ears get frostbite.

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| Storms |
|  | description | when | where |
| Tornadoes | Swirling funnelBegins in a thunderstorm | April/May | On land |
| Hurricanes | Swirling air Begins over the ocean | Late summer/early fall | Water onto land |
| Thunderstorms | Thundercloud with lightning/thunder rain and hail | anytime | Any place |
| Floods | Lots of water | After snow melts, hurricanes, or thunderstorms | Any place where lots of water has come very quickly |
| Blizzards | Lots of snow | winter | In places that have lots of snow |

Students draw a picture of a flood or a blizzard, explaining to their partner how the storm is affecting the people in their picture.  |
| **THIRD READING:**Display the class chart with the information about storms and reread the story, referring to the information on the chart as each type of storm is mentioned. Before reading page 24, ask the students to listen carefully to see if they can remember from the discussion held on the first reading why these storms might be good, as well as bad.Show the air flow from the tropics to the poles on a globe, exchanging warm air from the tropics for cool air from the poles. Create an imaginary globe on the floor, with the north pole and south pole, and the equator half way between. Divide the class into “warm air” and “cool air” students. The “warm air students” line up on the equator, with half of the “cool air students” at each pole. Direct the students to exchange places (warm air moving to the poles and cool air moving to the equator). They can move back and forth several times to demonstrate the exchange of air.Reread “After a rainstorm, a rainbow sometimes appears. Rainbows are reminders that, without storms, our world would be a much drier and far less livable place.” Ask the students to turn and tell their partners how storms can be helpful. | Students demonstrate the exchange of warm air from the tropics and cool air from the poles – creating a natural air conditioner.Students may need to be guided here – storms bring water to dry areas and clear pollution from the atmosphere, bring warm air to cooler places and cool air to warmer places. |

Final Day with the Book – Culminating Task:

Review the class chart with information about storms. Divide the students into 4 or 5 groups (depending on whether thunderstorms and floods are grouped together) to write a class book about storms. Using pictures and complete sentences to tell about the storm, each group will write a section (or chapter) of the book. If safety during storms has been discussed, that information should be included in the appropriate section.

Vocabulary:

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| **These words merit less time and attention** (They are concrete and easy to explain, or describe events/processes/ideas/concepts/experiences that are familiar to your students) | **These words merit more time and attention**(They are abstract, have multiple meanings, and/or are a part of a large family of words with related meanings. These words are likely to describe events, ideas, processes or experiences that most of your student will be unfamiliar with) |
| Page 3 – “swirling ocean of air” – show picture of air and use body language to show swirlingPage 3 – atmosphere – the ocean of air above the earthPage 3 – currents – streams of air like water flowing Page 4 – violent – strong , rough, dangerousPage 7 – F0 – F 5 – a way to tell how bad a tornado isPage 7 – reduce to rubble – tear upPage 8 – tropical storm – a storm that develops over the ocean or gulfPage 8 – expands – air spreads out because it gets warmerPage 8 – surrounding air – air around the place where heated air is rising up from the oceanPage 8 – intensify – gets worsePage 8 – strike – hitPage 8 – coastline – the part of the land that touches the ocean or gulfPage 8 – widespread – over a large areaPage 8 – degree – amountPage 11 – storm surge – large amounts of ocean water the hurricane brings onto landPage 12 – “leveled to the ground” – almost completely destroyedPage 14 – droplets – very small dropsPage 14 – pellets – small piecesPage 16 – lightning bolt – lines of lightning going between clouds and the groundPage 23 – “leave a city paralyzed” – people in the city can’t get out of their houses because of extremely bad weatherPage 24 – exchanging – moving something from one place into another place, replacing what was there originally

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  | Tornado – a storm that has a funnel that can be strong enough to pick up cars, trucks, and houses – also called twistersTropical storm – a storm that develops over the ocean or gulfHurricane – a storm with strong winds that starts as a tropical storm and gets strongerPage 14 – electrical storm – storm that has electricity in it (relate words – electric, electrical, electrical)Page 14 – powerful – full of powerPage 14 – floods - show relationship of floods/flooded/floodingPage 20 – flash flood – water in rivers and streams rises very quickly – can be from a snow melt, a thunderstorm, or a heavy rainPage 23 – blizzard – very heavy snowstorm |

Fun extension activities for *Wild Weather* and other useful resources:

1. The website [www.weatherwhizkids.com](http://www.weatherwhizkids.com) contains information about all kinds of weather, complete with activities and visuals that will help students understand the weather terms.
2. Invite a local weatherman or meteorologist to visit the class to talk about local storms.
3. If *Cloudy With a Chance of Meatballs* has been read, the class can compare the devastation of the food storms to pictures of real storms. The newspaper article in *Cloudy With a Chance of Meatballs* can be compared to news of real storms.
4. Simon Seymour has written other books about various storms. These, and books by other authors, can be used to supplement this reading.

Note to Teacher: This book was written for children ages 5-8, but it contains very technical information that will be difficult for many first grade students to grasp. With appropriate scaffolding, a foundation can be laid for learning more about air currents and the causes of storms.

 **What Makes This Read-Aloud Complex?**

1. **Quantitative Measure**

Go to <http://www.lexile.com/> and enter the title of your read-aloud in the Quick Book Search in the upper right of home page. Most texts will have a Lexile measure in this database.

Most of the texts that we read aloud in K-2 should be in the 2-3 or 4-5 band, more complex than the students can read themselves.

2-3 band 420-820L

4-5 band 740-1010L

970L

1. **Qualitative Features**

Consider the four dimensions of text complexity below.

This book provides information about storms.

Book contains technical information about various storms. It contains pictures of storm damage, a map of tornado activity, and fun facts about storms to help students understand the information. The book is also divided by the types of storms: tornadoes; Hurricanes. Thunderstorms/Floods; Blizzards.

Vocabulary is very academic and domain specific.

Many sentences are lengthy. Vocabulary related to storms, such as Category 5 (hurricanes) and F-Scale (tornadoes), are used to describe the storms.

There are lots of big numbers that 1st graders are not likely to know (the speed of the winds that cause damage, the numbers of people that are killed, the numbers of lightning bolts that strike). The concept that storms are dangerous but that “without storms, our world would be a much drier and far less livable place” may be difficult for children.

**Meaning/Purpose**

**Structure**

**Language**

**Knowledge Demands**

1. **Reader and Task Considerations**

*What will challenge my students most in this text? What supports can I provide?*

* The vocabulary will be a challenge which can be handled through restating in student-friendly terms, making charts, using maps, and doing weather experiments.
* The information is technical, and the text is dense. The information should be presented in segments based on the type of weather being described.
* Consistently repeating the vocabulary throughout the lessons will help students understand. Having students create Frayer Model vocabulary charts and posting them will also help students remember the words.

*How will this text help my students build knowledge about the world?*

It teaches them about storms they may encounter in a way that helps them understand the benefits of these storms.

1. **Grade level:**

This book is suitable for teaching about storms in first grade. It can be paired with *Cloudy With a Chance of Meatballs.*