**Expert Pack: Wild Weather**

Lexile Range: 730-1080

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| **Topic/Subject:** Wild Weather |
| **Texts/Resources**  Book   1. *Explorer’s Guide to World Weather* by Celeste Fraser 2. *Severe Weather* by Bruce Cooper(excerpt, pages 14-23) 3. *Hurricanes* by Shaun Taylor   Articles   1. “Ten Freaky Forces of Nature”   Other Media   1. “Bill Nye the Science Guy: Storms” |
| **Rationale and Suggested Sequence for Reading**  The first video, “Bill Nye the Science Guy: Storms,” introduces students to wild weather in a fun way that is intended to hook student attention on the topic of wild weather. The next set of resources are leveled informational books from Reading A-Z. These books will expand students’ knowledge of weather and storms introduced in the opening video. First, students read *Explorer’s Guide to World Weather*, learning about what weather is, how scientists measure it, and what it is like around the world. Then, students will read an excerpt from *Severe Weather*, which teaches students about different kinds of storms, as well as deepening their understanding of previously learned information about storms. Then, students zoom in to learn about a specific type of storm: hurricanes. They read *Hurricanes*, which teaches students what a hurricane is and how to prepare for one. Finally, students will share with the teacher a read-aloud text, “Ten Freaky Forces of Nature,” an article from National Geographic Kids. This article is very engaging with information and pictures about strange, extreme weather and natural phenomenon. It is intended to spur student curiosity of weather and nature. |
| **The Common Core Shifts for ELA/Literacy**   1. Regular practice with complex text and its academic language 2. Reading, writing and speaking grounded in evidence from text, both literary and informational 3. *Building knowledge through content-rich nonfiction* |
| **College and Career Readiness Anchor Standards for Reading Literary and/or Informational Texts**   1. *Read closely to determine what the text says explicitly and to make logical inferences from it*; cite specific textual evidence when writing or speaking to support conclusions drawn from the text. 2. *Determine central ideas or themes of a text* and analyze their development; summarize the key supporting details and ideas. 3. *Read and comprehend complex literary and informational texts independently and proficiently.* |
| **Annotated Bibliography**  **N/A “Bill Nye the Science Guy: Storms”**  Genre: Informational video  Length: 23:10  Synopsis: Science personality, Bill Nye, teaches about storms in this engaging, informational video.  Citation: “Bill Nye the Science Guy: Storms” [Video file] Retrieved December 29, 2016 from  <https://vimeo.com/124214502>  Recommended Student Activities: Wonderings  **730L *Explorer’s Guide to World Weather***  Author: Celeste Fraser  Genre: Informational  Length: 16 pages  Synopsis: Basic information about weather and how geography affects climate.  Citation: *Explorer’s Guide to World Weather.* Reading A-Z. Retrieved from <https://www.raz-plus.com/books/leveled-books/book/?id=1386&lang=English>  Recommended Student Activities: A Picture of Knowledge  **770L *Severe Weather*** (excerpt, pages 14 – 23)  Author: Bruce Cooper  Genre: Informational  Length: 10 pages  Synopsis: Sections on thunderstorms, tornadoes (water spouts and dust devils), hurricanes (typhoons and tropical cyclones), and blizzards (avalanches) are included in pages 14 -23.  Citation: Cooper, B. *Severe Weather****.*** Reading A-Z. Retrieved from <https://www.raz-plus.com/books/leveled-books/book/?id=131&lang=English>  Recommended Student Activities: Wonderings  **860L *Hurricanes***  Author: Shaun Taylor  Genre: Informational  Length: 24 pages  Synopsis: In-depth information about what hurricanes are, how they are formed, and how to prepare for one.  Citation: *Hurricanes*. Reading A-Z. Retrieved from <https://www.raz-plus.com/books/leveled-books/book/?id=801&lang=English>  Recommended Student Activities: A Picture of Knowledge  **1080L “Ten Freaky Forces of Nature”**  Author: N/A  Genre: Informational  Length: 10 pages with pictures  Synopsis: Highly engaging article with complimentary pictures from National Geographic Kids about natural phenomenon, including freaky storms.  Citation: Richards, D.E. “Ten Freaky Forces of Nature”. Retrieved December 29, 2016 from  <http://kids.nationalgeographic.com/explore/science/ten-freaky-forces-of-nature/#freaky-snowrollers.jpg>  Recommended Student Activities: Wonderings |

**Supports for Struggling Students**

By design, the **gradation of complexity** within each Expert Pack is a technique that provides struggling readers the opportunity to read more complex texts. Listed below are other measures of support that can be used when necessary.

* Provide a brief **student-friendly glossary** of some of the academic vocabulary (tier 2) and domain vocabulary (tier 3) essential to understanding the text
* Download the Wordsmyth widget to classroom computers/tablets for students to access student-friendly definitions for unknown words. <http://www.wordsmyth.net/?mode=widget>
* Provide brief **student friendly explanations** of necessary background knowledge
* Include **pictures or videos** related to the topic within and in addition to the set of resources in the pack
* Select a small number of texts to **read aloud** with some discussion about vocabulary work and background knowledge
* Provide **audio recordings** of the texts being read by a strong reader (teacher, parent, etc.)
* **Chunk the text** and provide brief questions for each chunk of text to be answered *before* students go on to the next chunk of text
* Pre-reading activities that focus on the **structure and graphic elements** of the text
* Provide **volunteer helpers** from the school community during independent reading time.
* Use Expert Packs as the **resources for Guided Reading** with a small group of students

Why Text Sets Support English Language Learners

Those acquiring English as a second language have to learn many words in English to catch up with their English-only peers. Vocabulary builds at a much quicker pace when reading a set of connected texts. Text sets are an adaptable resource perfect for building knowledge and vocabulary. Student use of text sets can vary in terms of independence or teacher supports based on the individual needs of the students in the room. Activities found within the text set resources reflect several best practices for English Language Learner instruction including:

* Providing brief, engaging texts that provide a high volume of reading on a topic.
* Providing web-based resources and/or videos that are tied to the content of the texts students are reading.
* Providing opportunities for students to learn new vocabulary through the use of student-friendly definitions in resource-specific glossaries.
* Allowing for options to reinforce newly learned vocabulary and/or content through graphic organizers.
* Providing opportunities for students to reinforce new vocabulary through multi-modal activities including written work, group discussion, viewing visual content, and reading texts that feature the vocabulary.

Teachers of ELLs may use the protocols on the following pages to provide additional support to students who are struggling to access the content within text sets because they are new to English.

ELL Text Set Protocol Grades 3-12

The goal of text sets is to help students build knowledge through a volume of independent reading, and it is important that educators provide scaffolds to allow English Language Learners to be successful in engaging meaningfully with the texts, even as students are still developing English language skills. The protocol below can be used for teaching with text set resources as a full class. Students can also be trained on the protocol so that they can utilize text sets in small groups or partnerships as a resource for independent or reciprocal reading and study.

Please note that this protocol includes options for teachers. Individual decisions should be made considering the needs of the students and the demands of the content, keeping in mind that the goal of each scaffold is to allow students to meaningfully access the text and move toward independent, knowledge-building reading.

**Step one: Build knowledge and vocabulary.**

Introduce students to the overall topic/content of the text set, including knowledge demands needed to engage in the content, and domain-specific vocabulary necessary for comprehension. This should be done prior to engaging with the texts themselves; time allotted to this activity should reflect student needs (anywhere from 5 minutes prior to reading, to a full day’s lesson is appropriate).

*Options for this step include:*

* Engage students in reading and discussing auxiliary texts (of lesser complexity) and resources (illustrations, photographs, video clips) on the topic of the text set.
* Pre-teach a few key content-specific terms prior to students engaging with a text set. (Ideas for text-focused vocabulary instruction can be found [here](https://achievethecore.org/content/upload/Selecting%20and%20Using%20Academic%20Vocabulary%20in%20Instruction.pdf).)
* Provide the student-friendly glossary included in the text set prior to reading each text.
* When possible, allow students to read texts in their home language about the topic under study.

**Step two: Read text orally.**

Focusing on one resource at a time, allow students to listen to a fluent read of the resource, while following along with their own copy of the text.

*Options for this step include:*

* Have a fluent reader model the first read of a text or resource.
* Have students engage in a buddy/partner read.
* Use recordings of the text to provide additional opportunities to hear expert reading.

**Step three: Engage in group discussion about the content.**

Allow students time in partnerships or small groups to discuss the content of the resource.

*Options for this step include:*

* + Allow for discussion/conversation (in the students’ home language if possible) with a small group of students reading the same text set prior to writing or provide heterogeneous language groupings to talk about content and discuss what students are learning.
  + Have students refer to the student-friendly glossary included with each text set to identify meanings for new vocabulary necessary for comprehension.

**Step four: Write about what was read.**

*Options for this step include:*

* Use the “Rolling Knowledge Journal” and/or “Rolling Vocabulary Journal” as a shared writing routine/ graphic organizer to help to scaffold the writing process and capture student knowledge over time.
* Provide students with several supports to help students engage in writing/drawing about what they read:
  + Use mentor texts about which students can pattern their writing.
  + Allow them to write collaboratively.
  + Show students visual resources as prompts, etc.
  + Provide language supports such as strategically chosen sentence starters.

## **Repeat steps one through four with each resource in the text set as appropriate.**

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**Learning Worth Remembering**

**Cumulative Activities** – The following activities should be completed and updated after reading each resource in the set. The purpose of these activities is to capture knowledge building from one resource to the next, and to provide a holistic snapshot of central ideas of the content covered in the expert pack. *It is recommended that students are* ***required*** *to complete one of the Cumulative Activities (Rolling Knowledge Journal or Rolling Vocabulary) for this Expert Pack.*

1. **Rolling Knowledge Journal**

* Read each selection in the set, one at a time.
* After you read *each* resource, stop and think what the big learning was. What did you learn that was new *and important* about the topic from *this* resource? Write, draw, or list what you learned from the text about (topic).
* Then write, draw, or list how this new resource added to what you learned from the last resource(s).

**Sample Student Response**

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| **Title** | **Write, Draw, or List** | |
|  | **New and important learning about the topic** | **How does this resource add to what I learned already?** |
| 1. “Storms” | General overview of extreme storms with Bill Nye. Information on weather and storms in particular. |  |
| 1. *Explorer’s Guide to World Weather* by Celeste Fraser | General overview of what weather is and how geography affects the climate. | Gives background about the kinds of storms seen in the video. |
| 1. *Severe Weather* by Bruce Cooper(excerpt, pages 14-23) | Tornadoes may also be water spouts or dust devils. Typhoons and Tropical Cyclones are like Hurricanes. | Adds to what I have learned about thunderstorms, tornadoes, hurricanes, and blizzards. There are tornadoes called water spouts and dust devils. Hurricanes, typhoons and cyclones are the same type of storm, but named for where the storm happens in the world. |
| 1. *Hurricanes* by Shaun Taylor | Hurricanes are gigantic, circular storms that form over tropical oceans. Scientists track hurricanes using satellites. We can stay safe during a hurricane by being prepared. | Gives specific examples of severe weather (hurricanes) and ways to prepare. There are many ways to prepare for a hurricane. You can prepare for a hurricane by knowing the evacuation plan. Put together an emergency supply kit. Protect your house by nailing plywood over windows. |
| 1. Ten Freaky Forces of Nature | There are flaming twisters that form in wild fires; snow rollers are drum shaped snowballs that form when snow doesn’t stick to the ground and rolls; ball lightning, that looks like balls of fire, can be the size of a person’s head and float/move across the ground. | Adds to my knowledge about severe weather; I didn’t know about the fire twisters, snow rollers or ball lightning. There is also information about other types of freaky nature. |

1. **Rolling Vocabulary: “Sensational Six”**

* Read each resource then determine the 6 words from each text that most exemplify the central idea of the text.
* Next use your 6 words to write about the most important idea of the text. You should have as many sentences as you do words.
* Continue this activity with EACH selection in the Expert Pack.
* After reading all the selections in the Expert Pack, go back and review your words.
* Now select the “Sensational Six” words from ALL the word lists.
* Use the “Sensational Six” words to summarize the most important learning from this Expert Pack.

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| **Title** | **Six Vocabulary Words & Sentences** |
| “Storms” | Words: twister, extreme, surface, downpour, soak, barometer   1. A twister rages across Oklahoma, destroying many houses. 2. It is an extreme storm that can cause damage if you are caught in one. 3. The surface of the earth is affected by many storms. 4. If a downpour occurs, you will need to run for cover to keep from getting wet. 5. The strong rainstorm can soak your clothes and make you cold. 6. When the barometer falls, you can expect a storm to come through your town. |
| *Explorer’s Guide to World Weather* by Celeste Fraser | Words: climate, equator, moisture, precipitation, temperature, water vapor  1. Climate is the average weather in a place over long periods of time.  2. Areas near the equator, middle of the earth, are very hot.  3. Moisture is the liquid in the air or on the surface of something.  4. The moisture that falls to the ground, like rain or snow, is called precipitation.  5. Temperature is how hot or cold a place is.  6. Clouds are formed from water vapor. |
| *Severe Weather* by Bruce Cooper(excerpt, pages 14-23) | Words: hailstones, shockwaves, water spout, dust devil, storms, whiteout  1. Hailstones the size of baseballs and grapefruit have been reported to fall during storms.  2. When the shockwave reaches your ear, you hear it as thunder.  3. When a tornado forms over water, it is called a waterspout.  4. Whirlwinds, sometimes called dust devils, form when hot air spins up from the ground.  5. The storms hurricanes, typhoons, and tropical cyclones are the same type of storm, but have different names depending on where the storm occurs in the world.  6. Sometimes visibility is so limited that a blizzard is called a whiteout. |
| *Hurricanes* by Shaun Taylor | Words: air pressure, condenses, eye, evacuate, satellite, tropical  1. The combination of high winds and low air pressure cause storm surges to happen during a hurricane.  2. Warm air cools condenses, forming clouds.  3. The center of a hurricane is called the eye.  4. One way to stay safe during a hurricane is to evacuate and go to a safer area.  5. Satellites orbit the Earth measuring things, like the weather, for scientists.  6. Hurricanes form over tropical oceans because the warm air pushes up through the cool air, creating a tropical depression. |
| “Ten Freaky Forces of Nature” | Words: freaky, hailstorm, vertical, fire whirls, snow rollers, ball lightning  1. Nature has a lot of powers that can be described as freaky.  2. Hailstorms are dangerous and can drop ice chunks the size of baseballs at more than a 100 miles an hour.  3. Powerful vertical winds carry raindrops into the very cold atmosphere during severe storms, causing hail to form.  4. Fire whirls are flame throwing, swirling tornadoes of fire that occur during wildfires.  5. Snow rollers are log shaped snowballs that form when snow doesn’t stick to the ground and rolls.  6. Ball lightning, which look like balls of fire, can suddenly appear in a thunderstorm, be the size of a person’s head and move across the ground, then floats or darts in the air before disappearing. |
| **Sensational Six** | Words: storms, climate, hailstorms, evacuate, moisture, precipitation,  **Storms** can strike anywhere in the world, depending on a place’s **climate**. Clouds form from **moisture** in the air, causing **precipitation** like rain or snow. Sometimes, wild storms occur. Wild weather includes severe thunderstorms that may generate tornadoes or twisters and **hailstorms**. We can stay safe during storms like this by being prepared and **evacuating** if it’s dangerous. |

**Student Copy**

**1. Rolling Knowledge Journal**

* Read each selection in the set, one at a time.
* After you read *each* resource, stop and think what the big learning was. What did you learn that was new *and important* about the topic from *this* resource? Write, draw, or list what you learned from the text.
* Then write, draw, or list how this new resource added to what you learned from the last resource(s).

**Sample Response**

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| --- | --- | --- |
| **Title** | **Write, Draw, or List** | |
| **New and important learning about the topic** | **How does this resource add to what I learned already?** |
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**2. Rolling Vocabulary: “Sensational Six”**

* Read each resource then determine the 6 words from each text that most exemplify the central idea of the text.
* Next use your 6 words to write about the most important idea of the text. You should have as many sentences as you do words.
* Continue this activity with EACH selection in the Expert Pack.
* After reading all the selections in the Expert Pack, go back and review your words.
* Now select the “Sensational Six” words from ALL the word lists.
* Use the “Sensational Six” words to summarize the most important learning from this Expert Pack.

**Sample Response**

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| --- | --- |
| **Title:** | **Six Vocabulary Words & Sentences** |
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| **Sensational Six** | Words: |

**Learning Worth Remembering**

**Singular Activities** – the following activities can be assigned for each resource in the set. The purpose of these activities is to check for understanding, capture knowledge gained, and provide variety of ways for students to interact with each individual resource. Students may complete some or none of the suggested singular activities for each text. Singular activities should be assigned at the discretion of the teacher.

1. **A Picture of Knowledge-** (Recommended for *Explorer’s Guide to World Weather* and *Hurricanes*)

* Take a piece of paper and fold it two times: once across and once top to bottom so that it is divided into 4 quadrants.
* Draw these shapes in the corner of each quadrant.

1. Square
2. Triangle
3. Circle
4. Question Mark

**?**

* Write!

Square: What one thing did you read that was interesting to you?

Triangle: What one thing did you read that taught you something new?

Circle: What did you read that made you want to learn more?

Question Mark: What is still confusing to you? What do you still wonder about?

* Find at least one classmate who has read [selection] and talk to each other about what you put in each quadrant.

1. **Wonderings –** (Recommended for *Severe Weather* excerpt and “Ten Freaky Forces of Nature” **)**

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| **I’m a little confused about:** | **This made me wonder:** |
| On the left, track things you don’t understand from the video and the article.  **I am confused about or do not understand….** | On the right side, list some things you still wonder (or wonder now) about this topic.  **I wonder or would like to learn more about….** |

**Expert Pack: Wild Weather**

Expert Pack Glossary

**“Bill Nye the Science Guy: Storms”**

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| *Word* | *Student-Friendly Definition* |
| twister | A tornado or cyclone; a whirl wind  *Twister is another name for tornado.* |
| extreme | Great; not average or normal  *Extreme weather can be dangerous.* |
| surface | The outside layer of something  *The surface of the Earth has many storms.* |
| downpour | Very heavy rain  *A person can easily get wet when there is a downpour of rain.* |
| barometer | An instrument used to measure the pressure of the atmosphere and predict the weather  *Expect rain when the barometer falls.* |

***Explorer’s Guide to World Weather***

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| *Word* | *Student-Friendly Definition* |
| climate | The weather conditions in an area over a long period of time  *Climate is the average weather in a place over long periods of time.* |
| elevation | The height of land above sea level  *The higher the elevation, the colder it is.* |
| equator | An imaginary line that circles Earth halfway between the poles  *Areas near the equator are very hot.* |
| latitude | Lines that run east and west on a globe (used to measure the distance north or south of the equator)  *The North Pole is 90 degrees north latitude.* |
| moisture | A small amount of liquid in the air or on a surface  *The light rain left moisture on the ground.* |
| precipitation | Water that falls from clouds in the form of rain, snow, sleet, or hail  *The weather report predicted precipitation today.* |
| sea level | The surface level of the sea  *Our town is 1000 feet above sea level.* |
| temperature | The measurement of how hot or cold a place is  *In the winter, the temperature drops and it becomes very cold.* |
| water vapor | Water in the form of a gas  *Clouds are formed from water vapor.* |

***Severe Weather* excerpt, pp. 14 – 23**

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| *Word* | *Student-Friendly Definition* |
| hailstones | Pellets or pieces of hail  *Hailstones the size of baseballs and grapefruit have been reported.* |
| shockwaves | A compression wave, such as an explosion  *When the shockwave reaches your ear, you hear it as thunder.* |
| water spout | A funnel-shaped column of whirling spray produced when a tornado touches down on a large body of water  *When a tornado forms over water, it is called a waterspout.* |
| dust devil | A narrow column of whirling wind that carries dust, sand and debris  *Whirlwinds, sometimes called dust devils, form when hot air spins up from the ground.* |
| whiteout | A weather condition when the snow-covered ground and the white sky with falling snow blend together and cannot be seen differently  *Sometimes visibility is so limited that a blizzard is called a whiteout.* |

***Hurricanes***

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| *Word* | *Student-Friendly Definition* |
| air pressure | The pressure of air in the atmosphere  *The combination of high winds and low air pressure cause storm surges to happen during a hurricane.* |
| Caribbean | The region in the Atlantic Ocean located between North and South America  *Islands in the Caribbean are hit by hurricanes every year.* |
| chaotic | Random, without an orderly pattern  *Weather systems are chaotic, which makes hurricanes hard to predict.* |
| condenses | Changes from gas to liquid  *Warm air cools condenses, forming clouds.* |
| evacuate | To move people out of danger  *One way to stay safe during a hurricane is to evacuate and go to a safer area.* |
| eye | The center of something, such as a hurricane  *The center of a hurricane is called the eye.* |
| hurricane watch | A formal warning that hurricane conditions are possible in the area of the watch  *The National Hurricane Center in Miami called for a hurricane watch for the east coast of Florida.* |
| intensity | The degree or force or strength  *Scientists classify hurricanes by their intensity. Less intense storms are category one, and more intense storms are category five.* |
| satellite | A vehicle that orbits the Earth  *Satellites orbit the Earth measuring things, like the weather, for scientists.* |
| storm surge | A quick rise of the ocean’s level, caused by strong winds and a drop in air pressure during a hurricane  *Storm surges can cause floods and damage property.* |
| sustained | Kept up without stopping  *A tropical storm has sustained winds of 39-74 miles per hour.* |
| tropical | Of, or occurring in, the tropics  *Hurricanes form over tropical oceans because the warm air pushes up through the cool are, creating a tropical depression.* |
| tropical storm | A low-pressure weather system with sustained cyclonic winds of 62-119 kilometers per hour  *A tropical storm can grow into a hurricane.* |

**“Ten Freaky Forces of Nature”**

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| *Word* | *Student-Friendly Definition* |
| freaky | Very strange  *Sometimes, severe weather can be freaky or very strange.* |
| vertical | Straight up and down; upright  *Vertical winds can sometimes be dangerous.* |