SCIENCE NORTH SCIENCE NORD

INTERPRETIVE PLAN

Developed in partnership with ONTARIO SCIENCE CENTRE

ABOUT WILD WEATHER

Science North is pleased to present the highly interactive and entertaining traveling exhibition Wild Weather, developed and produced by Science North, in partnership with the Ontario Science Centre.

ABOUT THE EXHIBITION

Severe weather is a powerful and unpredictable force that causes great damage to communities, infrastructure and lives. This 3,000 square-foot traveling exhibition is designed to immerse and engage visitors in the science of severe weather.

Visitors are given unique opportunities to experience severe weather: they will witness the destruction of tornadoes, follow turbulent cloud formations and lightning strikes, and meet a researcher studying the force of wind in the lab. Through *Wild Weather*'s unique experiences, visitors will discover how technologies and scientific discoveries are improving our ability to forecast severe weather and prepare for future climate changes.

Wild Weather is divided into key theme areas, each with its own mix of experiments, challenges, models, computer interactives, multimedia experiences, and full-scale images. Visitors are invited to delve into the science behind some of the world's most severe weather phenomena: tornadoes, thunderstorms, hurricanes and heat waves.

The goals of the Wild Weather exhibition are to:

- provide an engaging, educational, and entertaining experience for visitors to explore severe weather—its power and its unpredictability;
- increase visitors understanding of the science behind severe weather, its connection to the world's changing climate, the emerging technologies and forecasting techniques; and
- showcase the stories of people who are working to better understand severe weather events in order to improve our ability to predict and mitigate the impacts of severe weather, and prepare for future conditions as our climate changes.

AUDIENCES

- Teens and young adults
- Adults
- School groups
- Photographers
- Meteorologists
- Youth groups
- Seniors groups

EDUCATIONAL THEMES

- Climate change
- Meteorology
- Climatology
- Science
- Technology

ADDITIONAL RESOURCES AVAILABLE

- Marketing & Brand Guide
- Educational Guide

WILD WEATHER

SCIENCE NORTH SCIENCE NORD

ZONE A Tornadoes

Tornadoes are among our planet's most unpredictable form of weather. Use technology to track tornadoes, and discover the inner-workings of this fierce form of weather. Spectacular large images of tornadoes add to the immersive feel of the zone.

Exhibit Name	Objectives	Key Components	Visitor Experience
How Do Tornadoes Form?	• To visually show how tornadoes form	• Video animation of tornado formation • Instructional and interpretive graphics	Discover how computer simulations can be used to research how tornadoes form with accompanying graphics.
Tornado Chasers: In the Lab and in the Field	• To feature laboratory tornado research (feature the WindEEE Research Institute) • To show how laboratory research informs our knowledge of how tornadoes behave and the damage they can cause to different types of structures • To show how dangerous in-the-field research informs our knowledge of how tornadoes form	• Meet the researchers • Video kiosk (60" screen) • Seating • Touchscreen video selection interface to choose show • Graphics displaying the two dichotomies of in the field versus in the lab	Choose between studying tornadoes in the field or safely in the lab. Meet a tornado researcher investigating the effects of tornadoes on buildings and structures in a unique research facility – WindEEE. Pick up the chase with an in-the-field researcher. Discover how tracking and studying tornadoes on the ground can help improve future forecasting.

ZONE A Tornadoes CONTINUED

Exhibit Name	Objectives	Key Components	Visitor Experience
Solving Storms: Tornadoes	• To familiarize visitors with tornado-detecting technology • To examine how climate change is affecting tornado frequency and intensity	• Two touchscreen computer interactives with audio at separate stations: 1. Forecast Tornadoes 2. Climate Change and Tornadoes • Graphics that help distinctly tell the story of what is featured at each separate section (interpretive graphics + 2 distinct title signs)	1. Forecasting: Learn the different ways that forecasters use radar to forecast tornadoes. Begin your training and then test your new skills on a real-life scenario. 2. Climate Change: Examine the effects of a changing climate on tornado development, intensity, and frequency.

ZONE B Severe Thunderstorms

From a light roll to a loud clap of thunder, experience the sights and sounds of a thunderstorm without getting wet. Get "struck" by lightning in slow motion and discover how lightning forms. Examine the amazing convective power of thunderstorms and examine how damaging winds, hail and heavy rain contribute to a severe thunderstorm's ferocity. Images of supercells, anvil clouds and lightning strikes surround you.

Exhibit Name	Objectives	Key Components	Visitor Experience
Storm Symphony	• To examine a storm from a distance • To showcase the beauty of a thunderstorm • To add an artistic element to the exhibition	• 60" monitor • Computer • Pushbutton activation • Audio • Bench seating	Experience a symphony for both your eyes and ears. Relax for a few moments and discover amazing videography by weather enthusiasts set to sound. See the entire development lifecycle of large-scale thunderstorms.
Cloud Formation: Updraft	• To show the process of convection rise and fall, and how this process drives thunderstorm formation • To illustrate a scientific process in an attractive, artful way that will encourage visitors to pause	• Interpretive graphics with illustrations	Discover how a thunderstorm cloud forms and the different stages of the lifecycle of a thunderstorm.

ZONE B Severe Thunderstorms CONTINUED

Exhibit Name	Objectives	Key Components	Visitor Experience
Hailstorms	• To showcase how hail forms through updraft and downdraft within a hailstorm. • To show how citizen science can inform research	• Touchable models of various sizes of hailstones • Set of hail pads (in a protective case) that demonstrate damage done by different sizes of hail • Video of hail falling on various surfaces (including into water) on digital photo frame	Explore models of different types of hail. Examine the imprints of hail made on hail pads, and explore how ordinary citizens are helping to inform hail science. Watch amazing video of the impact hail can have.
Cloud Wheel	• To show how various types of clouds are indicative of different weather	• Giant cloud sector wheel (similar to spinning the wheel on a game show) to illustrate various types of clouds, and how these cloud types can be associated with different types of weather	Spin the wheel on the cloud selector to reveal various cloud types, and discover the associated weather patterns. Watch out for the cumulonimbus clouds -- a thunderstorm may be not far off!

ZONE B Severe Thunderstorms CONTINUED

Thundergames	• To encourage visitors to practice estimating the distance of a thunderstorm from the delay between the lightning strike and the sound reaching their ears • To provide a cooperative, multiplayer experience to encourage social learning	• A small table-top play area with a vertical, visual divider between two opposing visitor stations • Two stools – one at each opposing station • A button-activated interactive, with a moveable play piece for each player, lights and sounds	Play with an opponent to determine how far away a thunderstorm is. Player 1 moves his/her piece closer or further away from a lightning strike, then begins the game by pressing the Start/Strike button. As the lightning strikes, Player 2 estimates how far away the lightning was from Player 1's piece, and positions his/her piece at the correct corresponding distance. Player 2 receives feedback on whether he or she has chosen the correct distance.
Slo-mo Lightning	• To illustrate all the incredibly small steps that occur in lightning formation • To show how the use of technology, such as high speed cameras, has increased our knowledge of how lightning forms and behaves • To provide the thrill of being in the scene of a lightning strike	• Slow-motion video viewer technology • Large projection screen • Interpretive and instructional graphics	Watch how lightning progresses in slow motion from the sky to your feet! Stand directly in front of a lightning strike progressing on a large vertical projection, as though lightning is striking at your feet.
How Does Lightning Work?	• To explain how lightning is formed, the general types of lightning, and how technology can illuminate the mysteries behind these phenomena • To showcase a lightning scientist	• Graphics • Touchscreen computer interactive (with audio).	Learn from a researcher who is uncovering how this weather phenomenon really works. Discover how lightning forms and discharges, and the various types of lighting through videos with your personal lightning guide.

ZONE B Severe Thunderstorms CONTINUED

Sprites, Elves and Jets	• To explore the world of other strange lightning phenomena, such as sprites, elves, and jets • To illustrate the beauty of these short-lived, not-often-seen phenomena	• Graphics with images and/or illustrations	Discover lightning phenomena you may have never heard of, and have likely never seen. Discover the transient beauty of sprites, elves, and jets. Spectacular photographs illustrate these fleeting phenomena.
Thunderstorm Dangers	• To illustrate the different paths lightning can take to strike you • To show the dangers that flash flooding poses	• Touchscreen computer station • Audio	Explore this light-hearted animation of how to avoid being struck by lightning. Choose where you would go in a thunderstorm to stay safe, and then see what happens. There are five distinct ways that lightning can strike you, and some of them may be surprising. If someone is struck by lightning, it is not always possible to determine how it happened, but any of the types of the lightning strikes can be deadly. Observe real-life flash flood situations and determine the best course of action in a flooding emergency.

ZONE C Hurricanes

Hurricanes produce destructive winds, heavy rainfall with flooding, and damaging storm surges that can inundate coastal areas. Examine the destructive power of hurricanes, while discovering how these storms form and are forecasted. Play the role of forecaster, and determine the path and strength of an incoming hurricane.

Exhibit Name	Objectives	Key Components	Visitor Experience
Anatomy of a Hurricane	• To explain the anatomy of a tropical cyclone • To explain how and where tropical cyclones form	• Graphics	Examine the ins and outs of hurricanes – from the eye to the outer edges – in different ways through a variety of visuals. Discover what makes a hurricane one of nature's fiercest and largest storms.
Solving Storms: Hurricanes	• To allow visitors to determine the track and intensity of a storm based on different meteorological conditions and measurements • To examine how climate change is affecting tropical cyclone frequency and intensity	• Two touchscreen computer interactives with audio at separate stations: 1. Forecast 2. Climate Change • Graphics that help distinctly tell the story of what is featured at each separate section.	1. Forecasting: Take your training to learn forecasting methods; then apply your knowledge to a real case study. 2. Climate Change: Examine the effects of a changing climate on hurricanes.

ZONE C Hurricanes CONTINUED

Exhibit Name	Objectives	Key Components	Visitor Experience
Hurricane Impact Gallery	• To give pause in the exhibition on the impact of hurricanes on people, communities and the landscape	• Graphics (photojournalism style photos) • Photos and experience can evoke visitor reflection and emotion	See the storms through the eyes of survivors. Examine the impacts large-scale storms like hurricanes can have on communities, people, infrastructure and landscape.

ZONE D Severe Heat

Heat waves are the deadliest form of severe weather. Discover how heat waves form and their connection to our changing climate. Experiment to see how activity level, hydration and shelter from the sun can affect a person during a heat wave. Explore drought on our planet and see its dramatic effects on our water and landscape.

Exhibit Name	Objectives	Key Components	Visitor Experience
What Causes a Heat Wave?	• To illustrate how heat waves form	• Interpretive graphics	Discover how heat waves form and stay over the continent.
Drought: Before and After	• To show the effects of drought	• Touchscreen computer interactive	Use sideswipe graphics to view before and after photos of drought areas.
Body Heat Alert	• To showcase how dangerous heat can be to the human body • To inform visitors about things they can do to protect and help their bodies during hot weather	• 23” visitor interface touchscreen to control the experience. Interactive sliders on the touchscreen allow visitors to select different levels of three factors (activity, hydration, sun/shade) that affect the “person” on the large screen. • Large monitor depicting the person and what is happening to them based on the visitor’s selections.	See how heat, sun, activity level and hydration affect the human body.

ZONE D Severe Heat CONTINUED

Exhibit Name	Objectives	Key Components	Visitor Experience
Solving Storms: Heat Waves	• To examine how heat waves are forecasted and the influence of climate change on heat waves	• Two touchscreen computer interactives with audio at separate stations 1. Forecast a Heat Wave 2. Climate Change • Graphics that help distinctly tell the story of what is featured at each separate section.	1. Forecast a Heat Wave: Examine the atmospheric conditions to forecast a heat wave. Issue a heat warning to residents that may be affected. 2. Climate Change: Discover the changing climate conditions that are allowing for the increased severity of heat waves across the globe.
Monitoring Heat Stress	• To showcase a real instrument for measuring heat stress on the human body	• Real black-globe thermometer instrument • Graphics	Examine a real scientific instrument – a black-globe thermometer – and discover how these are used to monitor heat stress on people under real outdoor conditions.

ZONE E Exit Experiences

Exhibit Name	Objectives	Key Components	Visitor Experience
Weather Warning Signs	• Provide an exit experience that rounds out the weather warning messages of the rest of the exhibition.	• Different warning signs related to severe weather	Check out these warning signs and realize the impact of severe weather on everyday life.
Blown Away Photo Opportunity	• Fun photo opportunity that adds an element of humour	• Setting backdrop graphic of crashing waves with palm trees bent in the wind • Physical props like an inverted umbrella and hurricane warning flags on a pole • Large fan to blow hair and clothes	Step into the scene of a hurricane and pretend to get “blown away”! Be sure to send your photo out on social media!
Weather Around the World	• To discover interesting weather phenomena that occur around the globe (weather phenomena, extreme temps, etc.)	• Touchscreen computer interactive • Sound	Explore a map of the world to discover the amazing and unique weather phenomenon from around the globe (e.g. fires in Australia, monsoons in Mumbai, searing heat in Iraq).

ZONE E Exit Experiences CONTINUED

Exhibit Name	Objectives	Key Components	Visitor Experience
Best Weather Videos	• To provide a place to showcase amazing videos about weather • To provide a resting place for contemplation	• Video nook • Seating	View videos of amazing weather events and showcase other severe weather phenomena not showcased in exhibition.
“Weather or Not?” Multiplayer Quiz	• To dispel common myths and showcase amazing facts about weather phenomena.	• Multiplayer quiz, with stations for 3 players; pushbuttons and large monitor	Common myths about weather and weather safety are prevalent. Can you determine the facts from the fiction?

ABOUT SCIENCE NORTH SALES

For more than 30 years, Science North has taken its experiences far and wide, venturing beyond Northern Ontario to reach audiences around the globe. Our exhibitions have captivated more than 11 million visitors in eight countries!

Science North stands out for its uniquely science-based exhibit experiences. Our exhibits are crafted around engaging educational themes, are highly interactive, and built to last.

11+ **million** international exhibition visitors

8 countries

170+ venues

30 years of experience

20 exhibitions activated

SCIENCE NORTH SCIENCE NORD

If you have any questions about *Wild Weather* or any of Science North's traveling exhibitions, permanent experiences or services, please contact us at:

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SCIENCE NORTH SCIENCE NORD

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