



Wind Training Webinar

You are part of a national network!








- Science museum in Philadelphia, PA
- Developed the activities and training
- Network of organizations
- Expertise in collaboration & gender equity

Leap into Science National Network currently includes 12 states, and will grow to 20 by 2021.

Goals for Today



1. Understand **Leap into Science program model** for connecting science and literacy
2. Be able to **lead wind workshops** using Core Four strategies
3. Understand **expectations** for what to do after today's webinar




Wind Workshops






Preschool	Elementary	Family
Ages 3-5	Ages 6-10	All Ages
Structured Activities	Structured Activities	Mix of structured & station-based



The Leap into Science Model

Why Science and Literacy?

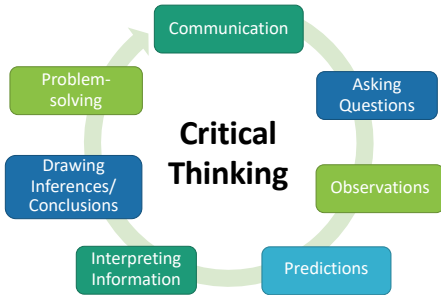



Children's books + Hands-on science

What **skills** are children practicing when learning through reading and science explorations?

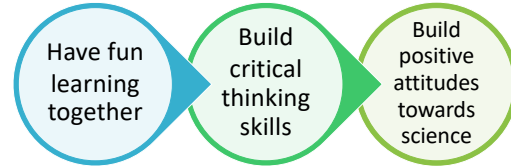
Common Skills

Leap
into
science
Engagement
through play



Goals for Children & Caregivers

Leap
into
science
Engagement
through play



Not content mastery

--- Break out discussion ---



Let's Watch!

Wind Preschool Workshop

Leap
into
science
Engagement
through play



Workshop Sequence

Leap
into
science
Engagement
through play



- Pique curiosity
- Build knowledge



- Investigate ideas
- See themselves as scientists



Engage: Breeze & Gust

Leap
into
science
Engagement
through play

What does it feel like on a windy day?

Blow gently



Blow stronger

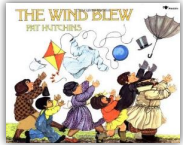


*What do you notice? What do you think will happen?
How did it feel? How was it different?*

Read: Storytime

Leap
into
science

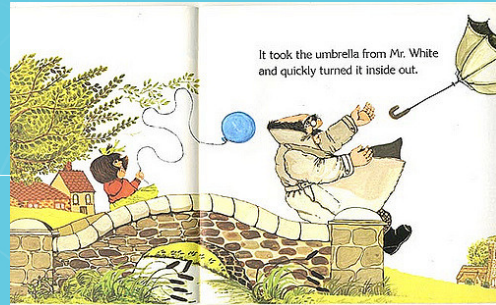
What do you think this story might be about?



- Pause to ask questions.
- Have children make observations & predictions as you read.
- Keep book wide and visible.

Where do you see objects moving in the story?
Are they moving in a breeze or gust?

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science



It took the umbrella from Mr. White and quickly turned it inside out.

Explore: Making Wind

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science

What do you notice about how the objects move?



How can you move it even farther?
What would happen if you used the fan instead of the bottle?



Explore: Wind Detectors

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What happens when you make a breeze on your wind detector? What about a gust?



Reflect: Discussion

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What things did you move with wind?
How did you make a breeze or gust?



How were you a scientist today? Did anything surprise you? Did you have fun?

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Elementary Wind Workshop



Engage: Wind Words

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How do you know it's a windy day just by looking out the window?



What could you tell about the wind if you saw the pinwheel spinning outside?

BEAUFORT WIND SCALE: ON LAND

CATEGORY	SPEED	EFFECTS
0 CALM	Less than 1 mile per hour	On land, everything is still.
1 LIGHT AIR	1-3 miles per hour	Wind blows smoke, but not a weather vane.
2 LIGHT BREEZE	4-7 miles per hour	Leaves on trees rustle, wind is felt on skin, and weather vanes move.
3 GENTLE BREEZE	8-12 miles per hour	Leaves and small twigs move. Light flags wave.
4 MODERATE BREEZE	13-18 miles per hour	Leaves, twigs, and small branches move. Dust and loose paper blown around.
5 FRESH BREEZE	19-24 miles per hour	Small leafy trees begin to sway. Hats will blow off in the wind.
6 STRONG BREEZE	25-31 miles per hour	Large branches begin to move. Umbrellas are hard to use if it's raining.
7 NEAR GALE	32-38 miles per hour	Whole trees move. Working against the wind is hard.
8 GALE	39-46 miles per hour	Twigs break off of trees. Cars are pushed around on the road.
9 STRONG GALE	47-54 miles per hour	Large branches break. Small trees may blow over and construction signs and barricades blow over.
10 STORM	55-63 miles per hour	Trees break off or uproot, and saplings bend over. Shingles may blow off rooftops.
11 VIOLENT STORM	64-75 miles per hour	There is lots of damage to trees, and some structures and rooftops may be damaged.
12 HURRICANE	Over 75 miles per hour	Heavy damage happens to trees and buildings.



Read: Storytime

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into
science

What do you think this story might be about?



Where do you see objects moving in the story?
How was Kate like a scientist?

- Pause to ask questions.
- Have children make observations & predictions
- Define other vocabulary words like tamed.
- Keep book wide and visible.

Explore: Wind Detectors

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Can you make a wind detector that can easily tell the difference between a breeze and gale?



Testing is key!

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Encourage the process of science by having kids observe, predict, test and re-design their wind detectors.




Reflect: Discussion

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How did your device help you see the strength of the wind?



How were you a scientist today? What jobs require knowing about wind? Did you try something again?




Wind Family Workshop



Engage & Read

What's it like on a windy day?



Explore: Activity Stations

Trap the Air
Families observe the presence of air by placing a crumpled paper towel in the bottom of a cup and placing the cup upside down straight into a container of water.

- What do you think will happen to the paper towel?
- Why do you think the paper towel didn't get wet?
- What do you think would happen if you tipped the cup? What makes you think so?

Building Up
Families exchange bottles of different sizes in water and observe the air bubbles that escape as the bottles fill with water.

- What happens when you fill the larger bottle compared to the small one?
- How could you put the bottle in the water so that no air bubbles escape?

Crumple Time
Families compare squaring an empty bag and an air-filled bag.

- What do you feel when you squeeze the bag? How are they different?
- Which bag makes it harder to squeeze the paper inside? Why do you think that is?

Race the Wind
Families explore moving different types of top boats across the water using a hand-crank fan.

- How could you make a gently breeze to move the boat? What about a gust?
- Can you make your boat sail backwards?
- How else could you create wind to make your boat move?

Design an Air Rocket
Families create simple air rockets from drinking straws and launch them at a target.

- How far away from the target can you stand and still hit it with your rocket?
- How could you add paper and tape to your rocket to change how it flies?

Reading Station
Families are invited to read additional books and draw or write about their experiences with wind and air.

Wind Detectors
Families test pinwheels and other homemade wind-detecting devices to observe how they indicate the presence and strength of the wind.

- How do you think that object would move in a gentle breeze? What about a gust? What makes you think so?
- How could you make softer or stronger winds in your room?
- What happens if you point the pinwheel in a different direction?

Flying Colors
Families design and build their own wind detectors to test their craft materials.

- How could you change your detector to better show if the wind is a breeze or a gust?
- What do you think would happen if you used a longer piece of ribbon instead?
- Which materials might move in a strong wind, but not a gentle one? How could you find out?

Test the Wind's Force
Families use an air cannon to knock over structures built from stacked cups or blocks, and reference the Beaufort Scale to label the wind strength.

- What happens if you hold the air cannon closer or further away from your target?
- What happens if you aim at the top of your tower? The middle? The bottom?
- Which makes a stronger breeze—cups or blocks? How can you tell?

Leaf Blower
Families use squeegee bottles and small fans of cardboard to move leaves and other objects with air.

- How could you make a gentle breeze with the bottle? What about a strong gust?
- How could you make that object move even further?
- Which of these things are easy to move by blowing? Which are harder?

What Moves?
Families explore moving various small objects using squeegee bottles or fans and sort them into categories based on how easily they move.

- Do you think this object will move in the wind or not? What makes you think so?
- Can you find a way to create wind that will make something from the "Super Strong" table move?



Trap the Air



Crumple a paper towel in the bottom of the cup.

Turn the cup upside down, and put it straight down into the water. Don't tip the cup!

Bring it back up without letting go.

What do you notice about the paper towel?
Why do you think that happened?



Design an Air Rocket




Put a piece of clay on top of a thin straw.

Slide the thin straw into the wider straw.

Hold the wider straw, and blow into it to launch your rocket!


How can you change your rocket to go even farther?





Reflect: Discussion

How did you move something using wind?



How were you a scientist today? Did anything surprise you? Did you have fun?



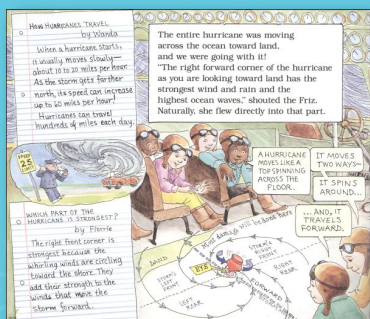
Engaging Caregivers

What strategies have you found to be effective in engaging caregivers in their children's learning?

--- Break out discussion ---



Facilitating an effective read-aloud



The Magic School Bus: Inside a Hurricane
by Joanna Cole

Read-Aloud Books

- Captivating stories
- Clear and accurate science concept
- Relevant ethnicity, culture and language
- Keep pages wide & visible when reading



Avoid:
Too long, text-heavy, too many unfamiliar words

Exploratory Books

Choose books that...

- Extend concepts by providing additional information
- Highlight diverse communities
- Focus on the process of science



Avoid:
outdated content, text-only books

Guidelines for Workshops

1. Lead all sections of workshop sequence.
2. Use Core Four strategies effectively.
3. Engage children and caregivers inclusively.

What's flexible?

- Materials
- Length, time & location
- Number of attendees
- Read-aloud book that follows criteria

[illegible]

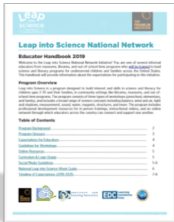
Leap
into
science
Engineering by
TRANSFORMING EDUCATION

Expectations

What are you expected to do after today?

Educator Handbook

- Expectations
- Timeline
- Resources
- Social Media
- Curriculum & Logo Usage
- Links for reports



The thumbnail image shows the cover of the 'Leap Into Science Educator Handbook 2019'. The cover has a light blue header with the 'Leap into science' logo. Below the header, the title 'Leap Into Science National Network Educator Handbook 2019' is prominently displayed. The main body of the cover contains a detailed description of the handbook's purpose, a list of program goals, and a table of contents. At the bottom, there are logos for various partner organizations including the Department of Education, the National Science Foundation, and the National Aeronautics and Space Administration.

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graph LR; A[Lead workshops] --> B[Add each workshop to The Connectory]; B --> C[Complete workshop reports]; C --> D[Lead workshop during National Leap Week]; D --> E[Complete annual survey & interview]
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Expectations

Leap
late
science
— the science of learning —
©2016 The Leap Late Science Program

Lead workshops

Add each workshop to The Connectory


Complete workshop reports


Lead workshop during National Leap Week

Complete annual survey & interview


Attend quarterly calls for all trained educators in our state.

Posting Workshops





THE
CONNECTIVITY
curiosity meets opportunity




*A searchable database of STEM experiences
for children and families in your area.*

As you schedule your workshops, you are
required to post them in **The Connectivity**.

Posting Workshops

- **Join:** Create your user account.
- **Create Program:** Add your organization/program provider information and submit for approval.
- **Add Opportunities:** Add your Leap into Science workshops & submit for approval.



theconnectory.org/signup

Workshop Report

After each workshop you conduct, you will complete the Workshop Report.

Leap into Science

ABOUT NATIONAL NETWORK VIDEOS CURRICULA EDUCATORS STATE LEADERS CONTACT US MY ACCOUNT ▼

EDUCATORS


Schedule your workshop in the Connectory → Complete the workshop report after every workshop → Share on Facebook

leap.fi.edu

National Leap into Science Week

Feb 24 - Mar 1, 2020

- Annual celebration of science and literacy in all national sites
- Host Leap programming during that week
- Share on social media #leapweek #leapintoscience



Social Media

Facebook Group: Leap into Science Educators

Share programs, questions, ideas

www.facebook.com/groups/leapintoscience

Twitter: #leapintoscience @TheFranklin @ngcproject

Advertise programs, share pictures

More Curriculum & Training

Balance 2018 **Wind 2019** **Light & Shadows 2020**

In 2020:

- Web-based training
- Assemble own kits

Questions

Thank you!

Visit leap.fi.edu

Connect with your local State Leadership Team

Casi Herrera at cherrera@ngcproject.org