



# Winter Science **Webinar**



# Welcome!

We'll be starting promptly at 4:00 p.m. ET

While you wait . . .

- Cozy up
- Bring your hot chocolate
- Think Snow!

**BECKER'S**<sup>®</sup>



# Winter Science **Webinar**



Welcome!

**BECKER'S**<sup>®</sup>

# Before we get started...

**Professional Development Certificate**

**Questions**

Use the *Q & A option* on the bottom of your screen

**Polls**

There will be several polls we'd like you answer throughout the webinar so we can get to know you.

**Recording**

**Next Webinar**





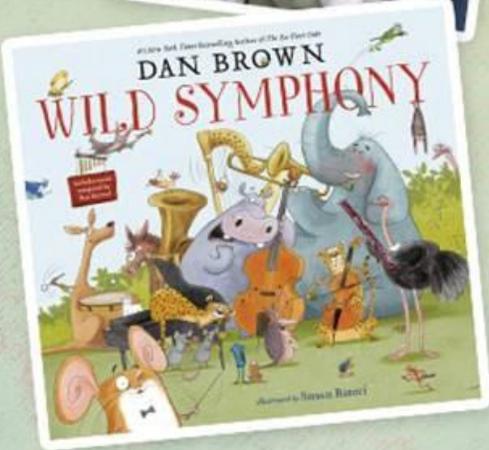
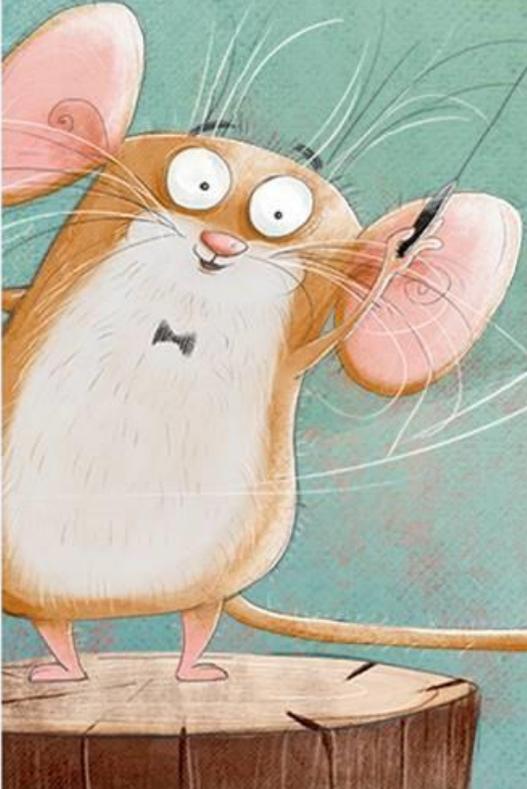
**BECKER'S**  
IS INVITING YOU TO THIS EXCLUSIVE EVENT!

A WEBINAR FOR EDUCATORS

# DAN BROWN

AND HIS  
**WILD SYMPHONY!**

The magic of art, music,  
and poetry in storytelling



# About Me

- Certified K-8 Teacher
- 15 years as a science educator at The Academy of Natural Sciences in Philadelphia, PA
- Reading Specialist with Achieve Now, a Philadelphia nonprofit providing literacy support for public school children grades K-3





# Standards Alignment

- Children have a natural desire to explore, to build, and to question. Through open-ended exploration, children interact with materials in nature and scientific materials/tools to explore and learn about their world. (ECERS-3)
- Children have an innate desire to experiment and investigate while gathering data to make conclusions. (PA Early Learning Standards)
- Adults facilitate children's development of those skills that support discovery and inquiry while promoting their natural curiosity.
- Children first construct scientific knowledge by using their five senses to interact with the environment. That is how they make sense of their world. (Head Start)
- Children's immediate environment and daily surroundings provide the best context for science learning. Some ways they do this include observing, measuring, investigating, sorting, and comparing. (PA Early Learning Standards)
- Adults scaffold children's thinking by asking open-ended questions that encourage problem-solving and critical thinking. (PA Early Learning Standards)
- Young children's inclination to be curious, explore, experiment, ask questions, and develop their own theories about the world makes science an important domain for enhancing learning. (Head Start)

# Science for Littles

In preschool, science is more about practicing skills and fostering a love of science than content

- **Making Observations** is the #1 skill to practice in early education
- **Asking Questions** is #2!
- Other skills that can be fostered through science instruction in the ECE classroom:
  - **Cause and Effect**
  - **Following Directions**
  - **Order of Operations**
  - **Background Knowledge Acquisition**





# Poll

**Mess** in your classroom.  
How does it make you feel?



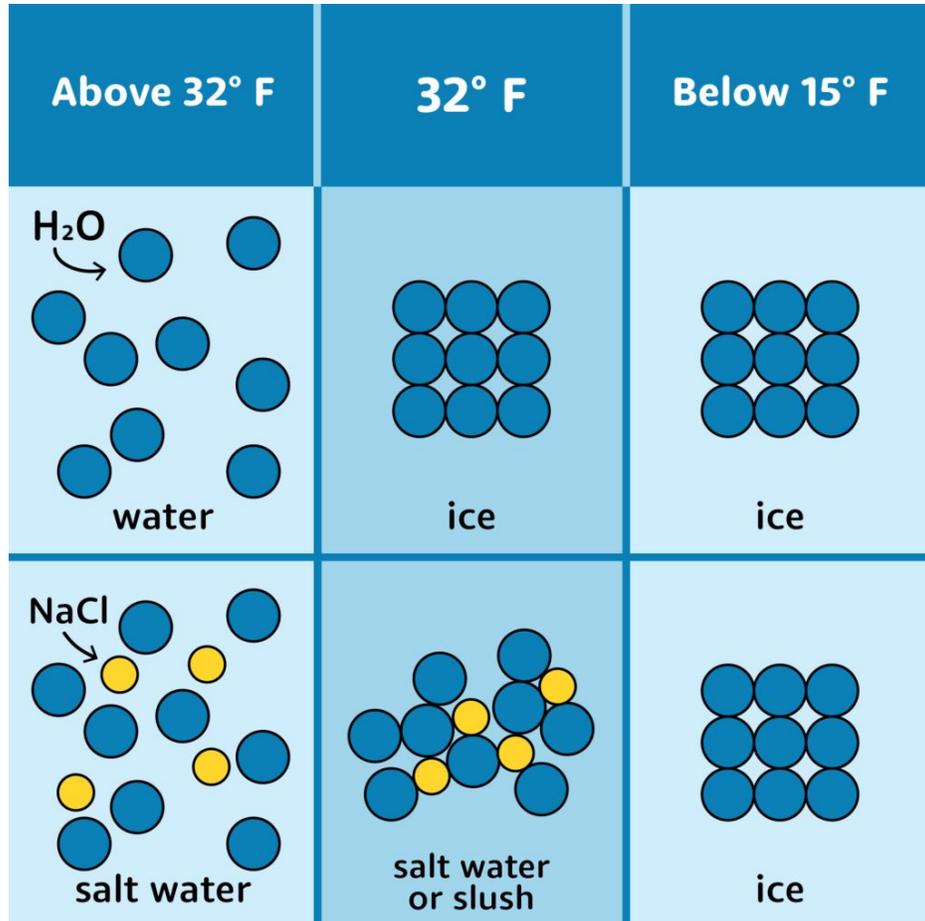


# Hands on Science: Ice Sculpting

## Supplies

- Ice or snow  
(If doing exploration inside, freeze water in a tray or bin)
- Kid-safe Paint
- Kosher Salt  
Feel free to experiment with different salts!
- Marble (*optional*)

# Ice Sculpting: How does salt melt ice?



Credit: DuPage Rivers

Salt doesn't melt ice, but salt added to water lowers its freezing point by making it harder for the water molecules to make the rigid formations they need for ice to form.

Ice and snow almost always have a thin layer of water at the surface. As salt dissolves in the water, that water will no longer freeze at the same temperature as the water around it.

This salty water (with a lower freezing point) melts the ice below it.

# Hands on Science: Ice Sculpting

## Poll

How likely are you to use the “Ice Sculpting” experiment in your classroom?



# Book Break: Nonfiction Books

## Uses of Nonfiction Books

- In centers
- Small group instruction
- Send home for book lending
- Supplemental to story time



## Choosing Nonfiction Books

- Offer both illustrated books and books that have photographs
- Look for diagrams with arrows, numbers, timelapse images
- Provide books above reading/comprehension level- if they have good pictures!
- Errors? Just correct and tape over it!

## Making the Most of Nonfiction Books

- Post-it questions
- I Spy
- Make a classroom documentary or encyclopedia
- Provide complementary images to cut, laminated images to draw on, etc.

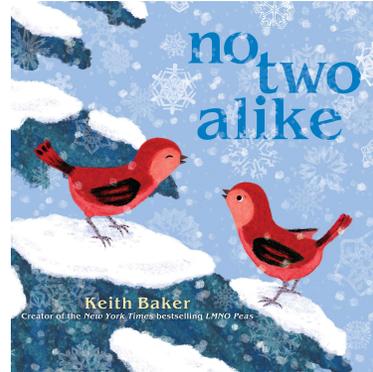
# Book Break: Nonfiction Books



Martha E.H. Rustad



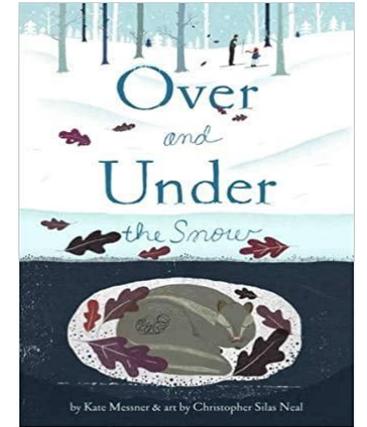
Kathryn Clay



Keith Baker



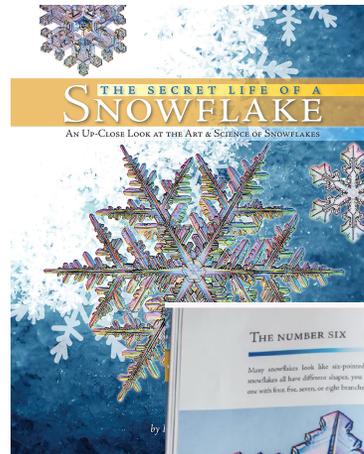
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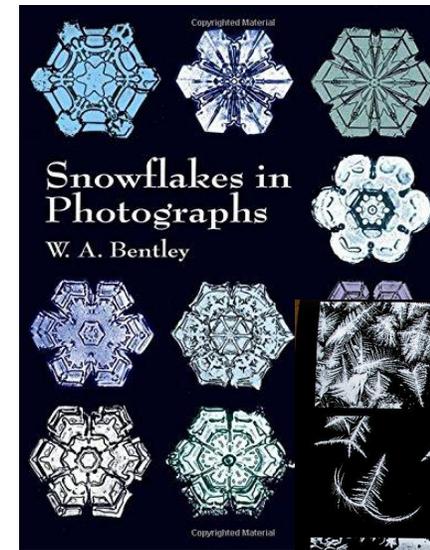
Kate Messner



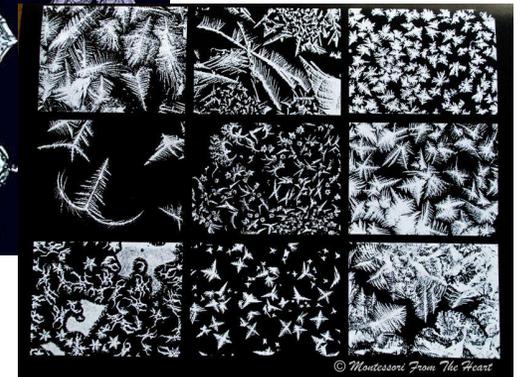
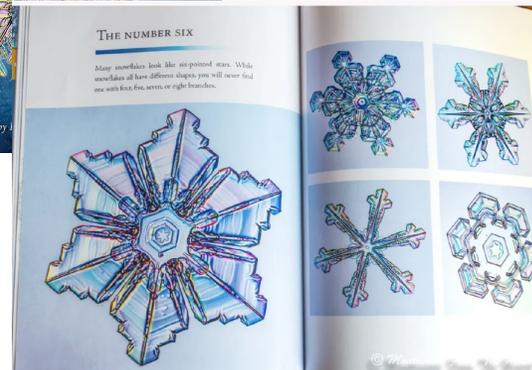
Mark Cassino



Kenneth Libbrecht



W.A. Bentley



# Hands on Science: Inquiry Experimentation

## Inquiry Experimentation

Students set what they want to learn from an experiment

Students can work on different questions

Encourages sharing of results

More like science in the real world

May be messier, require more modifications

## Step-by-step Experimentation

Teacher/book sets goal of experiment

Students generally work on same question

More like science in upper grades/popular science experiments

Easier to contain and manage outcomes

Encourages tool usage and data collection

Inspire love of and excitement about science





# Hands on Science: “Snow”

## “Snow” Choices:

- Insta-snow
- Sugar  
(granulated/powdered)
- Salt
- Powdered potatoes
- White pom-poms
- Glitter
- Cornstarch
- Powdered milk
- Shredded paper
- Cotton balls
- Marshmallows
- Sand
- Crushed ice
- White beads
- Rice  
(cooked/uncooked)





# Hands on Science: “Snow”

## Observation Questions

- 
- 
- 
- Which snow has the largest pieces?
  - Which snow has the most pieces?
  - Does the snow have pointy pieces or round pieces?
  - Are all the snows the same color?
  - Do any stick to your fingers when you touch them?
  - Are any sparkly?
  - What do your snows smell like?
  - If we shake your snow in a closed container, does it make any noise?



# Hands on Science: “Snow”



**How does each snow change when water is added to it?**





# Hands on Science: “Snow”

## Choices Students Can Make:

- 
- 
- 
- They can choose which 2-3 snows they want to learn more about.
  - They can choose to add cold water or room temp water.
  - They can choose to add the water to the snow or the snow to the water.
  - They can choose to add ice cubes or crushed ice.
  - They can drip water on with an eye dropper or pour water on with a small cup.
  - They can choose to stir or not stir the water into their snow.

# Hands on Science: “Snow”

## Poll

How likely are you to use this  
“Snow” experiment in your classroom?





# Book Break: Fiction Books

**Books don't have to be factual to be impactful!**



**Fiction in ECE science instruction can help students to:**

- Contextualize complex scientific ideas
- Think critically about real vs. imaginary
- Build emotional connections to content



**Choosing Science-Centered Fiction Books**

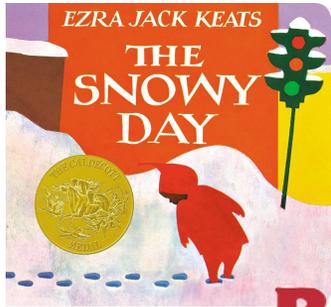
- A realistic setting and plot are more helpful than realistic characters
- Look for books in which characters are curious, search for solutions through experimentation or research, or have one idea about something and change their minds when presented with evidence
- Pick books that are fun (and sometimes ridiculous!)



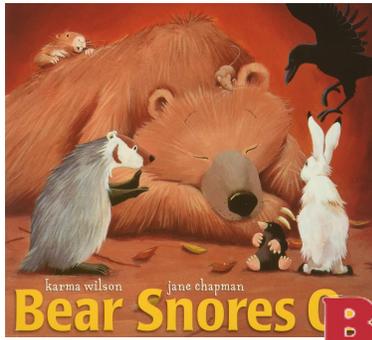
**Making the Most of Fiction Books**

- Pair with nonfiction books on similar topics
- Change the setting, change the story

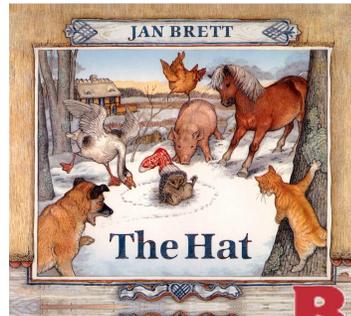
# Book Break: Fiction Books



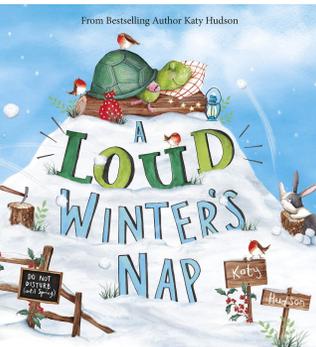
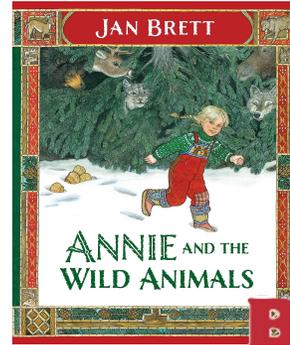
Ezra Jack Keats



Karma Wilson



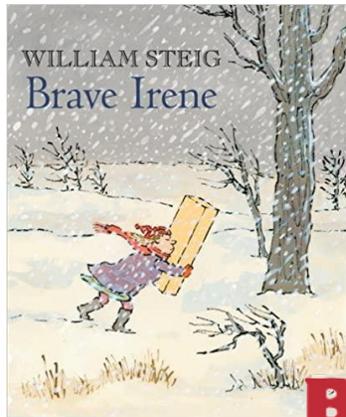
Jan Brett



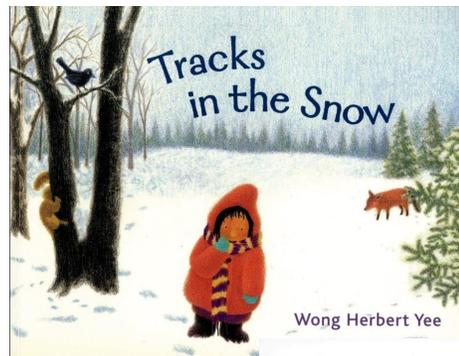
Katy Hudson



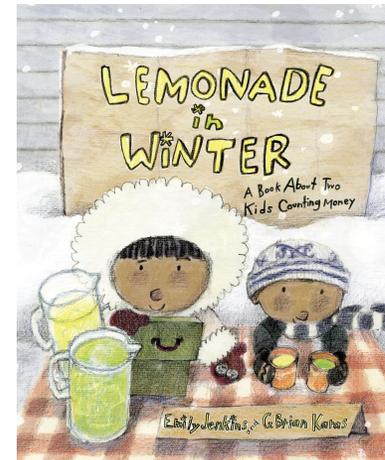
Susanna Isern



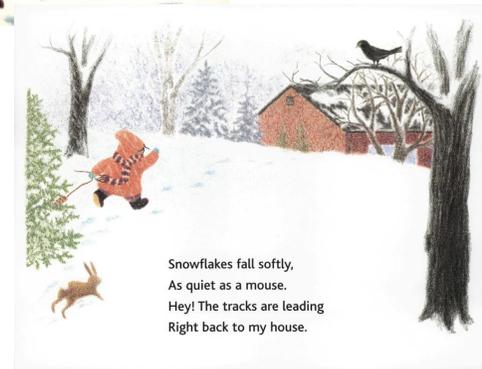
William Steig



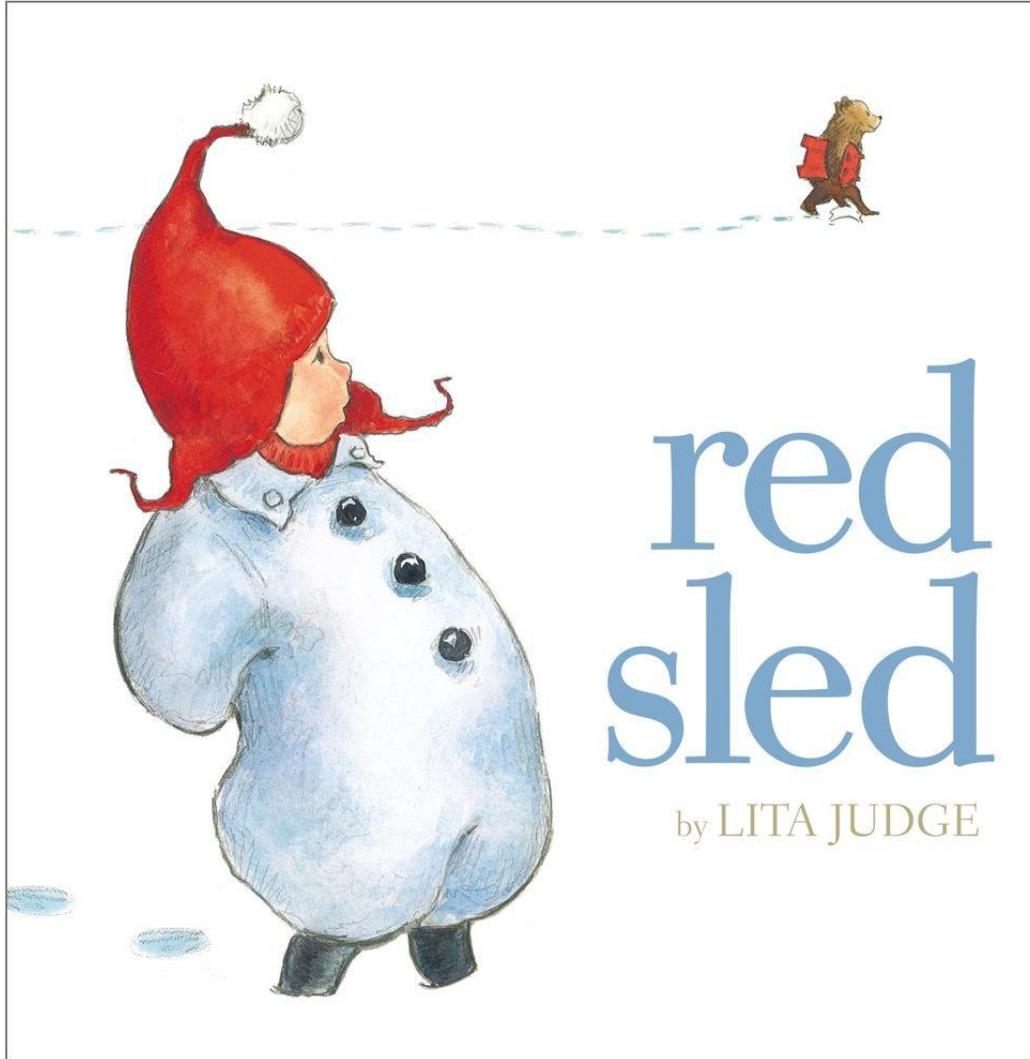
Wong Herbert Yee



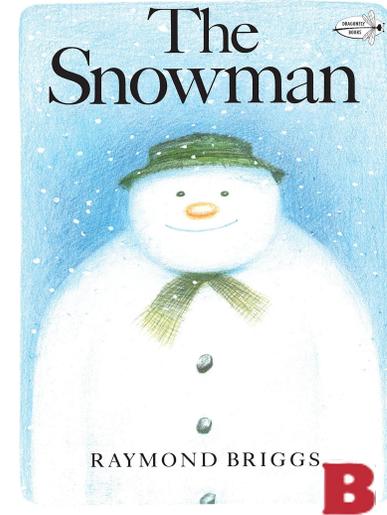
Emily Jenkins



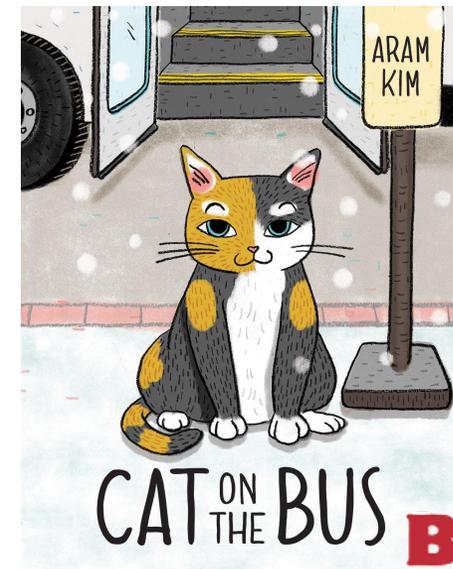
# Book Break: Fiction Books



Lita  
Judge



Raymond  
Briggs



Aram  
Kim

# Hands on Science: Wild Winter

## Animal Dens

### Winter Den Dramatic Play

#### Tips for building a “den” in your classroom

- **Boxes, an unused table, or store-bought tent can all be used to make the den**  
Open-sided beach shelters work best!
- **Add a play tunnel to the entrance to the den**
- **Don't overthink it!**  
It doesn't need to be Instagram-worthy to be effective. Move your shelves to block off a corner and you have a den!
- **Take it to the next level and build a den outside.**  
Use the playground equipment in new ways or bring the tent outside
- **This is a great family activity, too!**  
Encourage den building at home and let students share their experiences with their families



# Hands on Science: Wild Winter Animal Dens

## Winter Den Dramatic Play

### Encouraging more impactful play

- **Bring the outside in**  
Use natural soundtracks, open the windows (let the chilly air do the work!), use natural materials or materials printed with natural patterns
- **Give lots of options-include specifically “human” accessories that do the same job as the natural materials**  
Include winter clothing and sleeping bags. (Body pillow covers make great preschool sleeping bags!)
- **Different dens include different elements**  
Some animals add food to eat either when they get up from hibernation. Consider adding additional elements-what would you need to spend winter there?



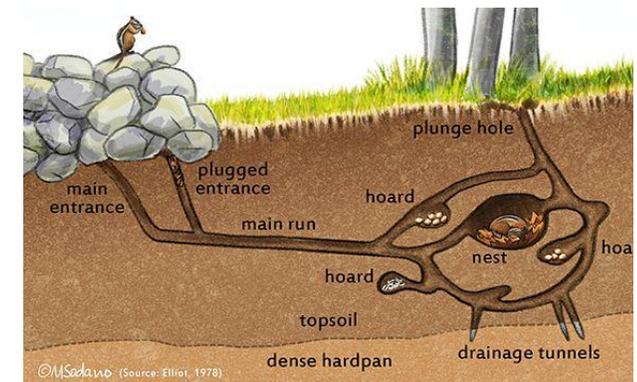
# Hands on Science: Wild Winter

## Animal Dens



Bears will dig out their dens in a variety of places including in the sides of hills or under the roots of trees. Bears tend to not make their dens too much larger than themselves, but mama bears with cubs will make a larger den to include them and their cubs.

Reptiles will go into a state similar to bears during the winter and often build or find similar dens. Animals like chipmunks who can't keep themselves warm enough without moving around and eating during the winter make more elaborate winter resting places.





# Hands on Science: Wild Winter

## Animals Stay Awake



### Under, Through, On Top

Explore how animals move through the snow.



#### Supplies:

- Footprint stones, plastic animals, photos of animals that do not hibernate
  - Insta-Snow (damp sand or kinetic sand will also work) in a tray or bin
  - Play-Doh or clay
- 

# Hands on Science: Wild Winter

Animals that stay awake in the winter in places that have snow have unique ways of moving through the snow:

**Under the snow**



- Mice
- Voles
- Shrews

**Through the snow**



- Deer
- Moose

**On top of the snow**



- Rabbits
- Foxes

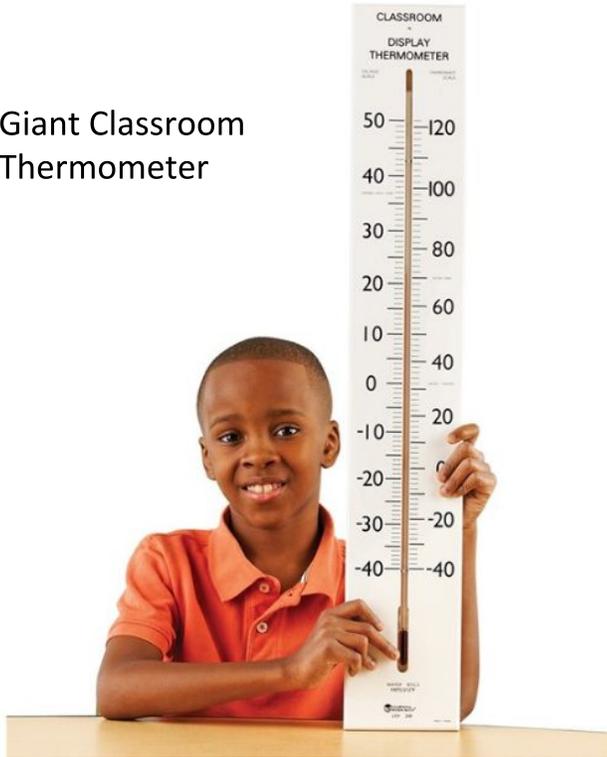
# Hands on Science: Wild Winter Poll

How likely are you to use these  
“Wild Winter” activities in your classroom?



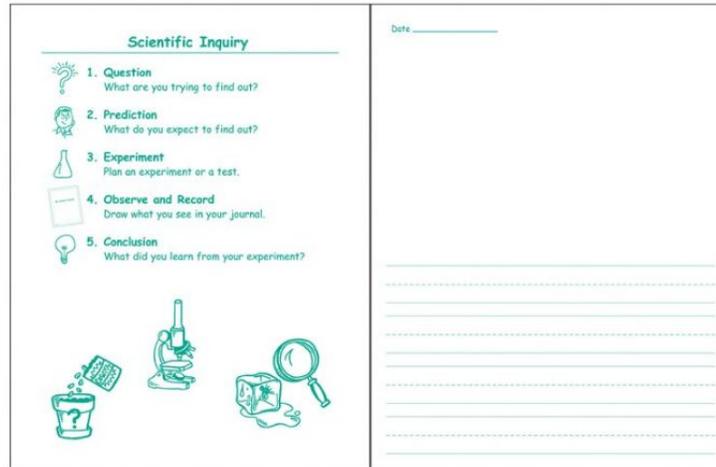


Giant Classroom Thermometer



# Ready for Winter Science?

Woodland Footprints



Becker's Science Journals

Polar Footprints



Insta-Snow



# BECKER'S®



## Becker's Seasonal Science Storytimes Book Set

*Every Season has a Story to Tell*

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seasonal**science**



Thanks for joining us!

Stay Tuned  
for  
Seasonal Science  
Spring!

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