Lowell Parks & Conservation Trust

Mass Audubon
Protecting the Nature of Massachusetts

SNOW!

Click here for video

Let’s investigate!

I wonder...

1. How much liquid water is in snow?

2. What is in snow besides water?

To find out all you need is:

- a clean jar or glass
- plastic wrap (or lid)
- rubber band (if no lid)
- white sheet of paper

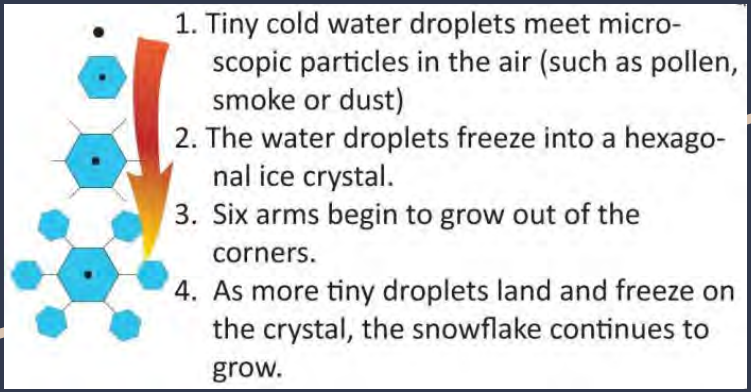
- Fill up the jar or glass with some snow.
- Note the height of the snow in the glass.
- Allow the snow to melt.
- Note the level of water now in the jar.

Is there more or less water than you guessed?

Let’s investigate the melted snow.

- Take the plastic wrap off the jar and place the jar on top of the white paper.
- Look down into the jar.
  - What do you see in the water?
  - How might this differ depending on where you collect the snow and how old the snow is?
- You can even take a closer look at the particles in the water with a magnifying glass!

Why is there so much stuff in snow, even if it's fresh and looks clean?

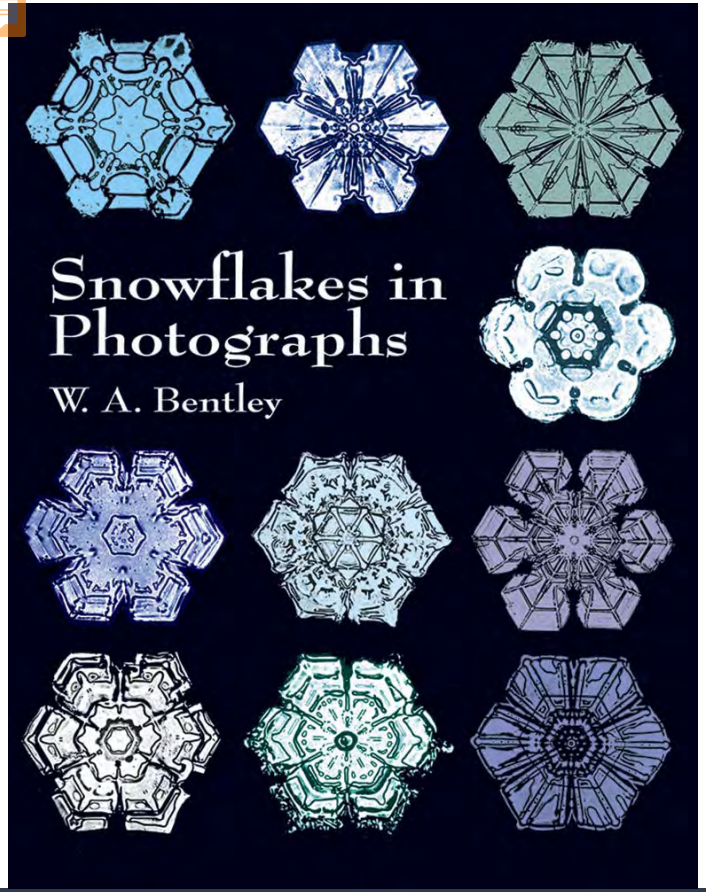


Every snowflake begins when water molecules come into contact with **dust** or **pollen** high in the atmosphere.

The snowflake gets exposed to more dust and pollution as it gets closer to Earth's surface.

Check out this time lapse video of snowflakes forming:

https://vimeo.com/87342468



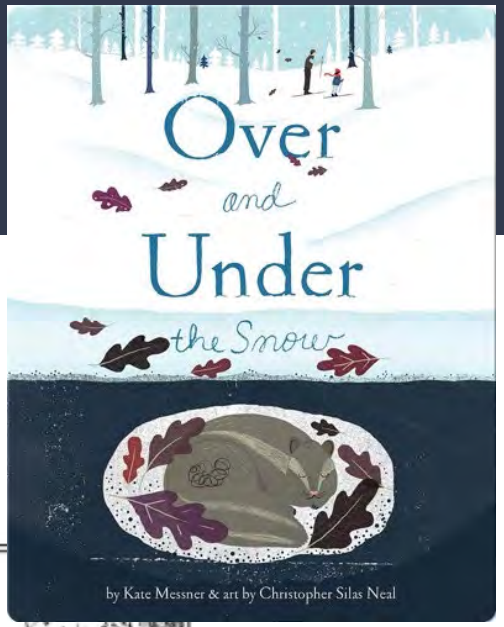
Snowflake Bentley

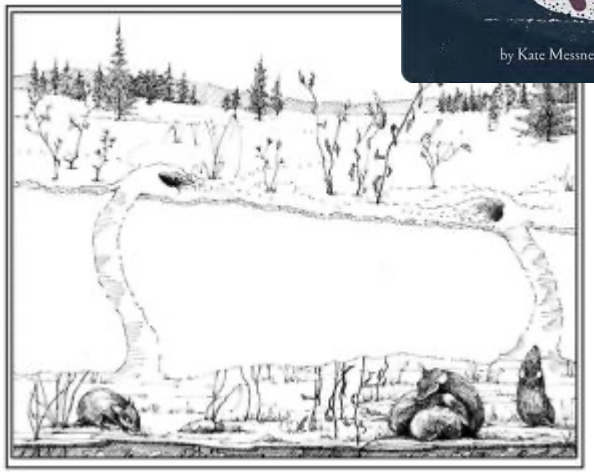
The father of snowflake photography-- the first to capture the “distinct designs and symmetry in beautiful snowflakes.”

“Tiny miracles of beauty.”

Wildlife & Snow: a hidden world

What's moving under the snow in this video?





The **subnivean zone**

https://www.youtube.com/watch?v=bW0Ay5caiMc

Freeze! Now let’s move!

Enjoy the snow!

Let us know what you discover!

YOUNG EXPLORERS

UNDER THE SNOW

THERE IS AN AMAZING, SECRET WORLD UNDERNEATH THE SNOW!

When snow falls, it creates a blanket on the ground that traps the little bit of heat that rises out of the earth. The heat melts just the bottom layer of snow, and this creates a pocket of air that is exactly the right size for tiny creatures to burrow and build tunnels underneath it. Scientists call this the **SUBNIVEAN ZONE**.

COLD BUT COZY

Just like the blankets on your bed, layers of snow keep the subnivean zone warm. Well, warm for a mouse, anyway! Even when the air outside drops below 0°F, the layer beneath the snow stays right around 32°F. Many animals—like red squirrels, mice, moles, voles, and shrews—depend on this special habitat to survive the cold, harsh winter.

THE HOLE STORY

Sometimes you'll see little "mouse holes" in the surface of the snow. These are actually air vents that provide fresh air to the animals living below in their tunnels.

BOTTOMS UP!

Foxes and owls have excellent hearing, and can sometimes hear the little animals moving around under the snow. You may even see a fox dive face-first into the snow, trying to catch a mouse or shrew by surprise.

MOLES VS. VOLES VS. SHREWS

In Massachusetts we have 3 mole, 5 vole, and 5 different shrew species! Here are some tips on distinguishing these secretive mammals:

MOLES

VOLES

SHREWS

Can you spot any holes for air vents in the surface of the snow?

What do you do to keep warm in the winter?

Watch for the snow to melt with the next thaw—can you see any tunnels in the grass?

Watch a video of a subnivean creature digging a tunnel right before your eyes at **massaudubon.org/youngexplorers.**

Mass Audubon

Sources

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https://northernwoodlands.org/outside_story/article/subnivean-shelter-snow

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