

SNOW

SCIENCE

25+ SNOW ACTIVITIES FOR WINTER LEARNING



ART
SCIENCE

STEM
GROSS MOTOR

LEARNING
ACTIVITIES

WELCOME!



Welcome to SNOW Much Fun Winter Science Activity Pack!

Winter provides a magical learning opportunity for children to explore science, art, and the natural world through snow. This pack is designed for children aged 4-12 and offers a variety of hands-on activities that spark curiosity, creativity, and problem-solving skills. Whether you're a parent, educator, or both, this pack will turn snowy days into rich learning experiences that kids will remember for years to come.

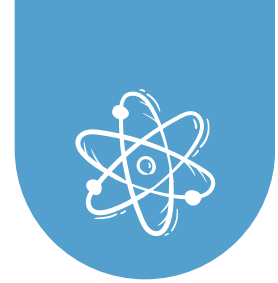
The activities are grouped into five categories:

1. Science Activities: Hands-on experiments to teach core STEM concepts.
2. Art Activities: Creative projects using snow as a medium.
3. Learning Opportunities: Practical lessons and problem-solving challenges.
4. Physical Activities: Physical games and challenges to get kids moving and exploring the snowy outdoors.
5. STEM Challenges: Engineering and design tasks using snow and winter materials.

Each activity includes step-by-step instructions, a materials list, and discussion points to extend learning. Activities can be adapted to suit your child's unique interests and abilities, ensuring that every child can participate and succeed.

We hope this pack will bring joy, discovery, and SNOW much fun to your winter days!

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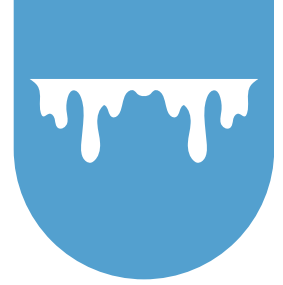
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MELTING RACE



Objective: Test which materials melt snow the fastest and learn about heat transfer and melting points.

Materials:

- Fresh snow (enough to form three equal piles)
- Table salt
- Sand
- Sugar
- Three small bowls or trays
- Timer or stopwatch
- Notebook and pencil for recording observations

Instructions:

1. Divide the fresh snow evenly into three small bowls or trays.
2. Sprinkle table salt over the snow in one bowl, sand over the second bowl, and sugar over the third bowl. Ensure you use the same amount of each material.
3. Set a timer for 10 minutes and observe the changes.
4. Record which material melted the snow the fastest and describe the differences in the melting process.
5. Repeat the experiment with other materials, such as baking soda or flour, to see how they compare.

Discussion Points:

- Which substance melted the snow the fastest? Why do you think that happened?
- How does salt affect ice on roads and sidewalks during winter?
- What other applications can you think of for these substances?

Extension Activity: Create a bar graph to visually represent how long it took each substance to melt the snow. Discuss the role of heat transfer in the process.

THE SCIENCE BEHIND MELTING SNOW

Snow melts when heat is transferred to it, causing the solid ice crystals to change into liquid water—a process known as melting. This occurs when the snow reaches its melting point. Adding substances like salt, sand, or sugar can speed up or influence this process, but they work in different ways. For example, salt lowers the freezing point of water, causing snow to melt faster, while sand absorbs heat and provides a rough surface that helps break up the snow. Understanding these effects teaches us about heat transfer, freezing points, and how materials interact with ice and snow.

FUN FACT

Snow Reflects Heat: Snow reflects up to 90% of sunlight, which helps keep it from melting quickly.

COLORFUL SNOW SCIENCE



Objective: Explore how colors spread through snow and observe the process of diffusion.

Materials:

- Fresh snow
- Food coloring (various colors)
- Droppers or small squeeze bottles
- Clear plastic cups or trays
- Notebook and pencil for observations
- Magnifying glass (optional)

Instructions:

1. Collect fresh snow and place it in clear plastic cups or trays.
2. Use droppers or squeeze bottles to apply different colors of food coloring to the snow.
3. Observe how the colors spread through the snow.
4. For a closer look, bring the tray inside and examine the diffusion process with a magnifying glass.
5. Record your observations in a notebook, focusing on how colors blend and move.

Discussion Points:

- How do the colors spread through the snow? Does the texture of the snow affect the process?
- What happens when two colors meet? Can you predict the new color?
- How does temperature affect diffusion?

Extension Activity: Freeze colored snow into blocks and observe how the colors change as the ice melts.

THE SCIENCE BEHIND COLORFUL SNOW

The colors spread through snow due to diffusion, the movement of molecules from areas of high concentration to low concentration. Snow acts as a porous medium, allowing the colored water to move and mix, creating vibrant patterns. The process of diffusion is faster in warmer temperatures but still visible in cold snow due to the liquid water within the snowpack. This experiment highlights how molecules interact in a dynamic environment.

FUN FACT

Snow is Actually Clear:

Snow appears white because the ice crystals reflect and scatter all colors of light, which combine to appear white to our eyes.

SNOW INSULATION EXPERIMENT



Objective: Understand how snow acts as an insulator.

Materials:

- Two small containers (like jars or cups)
- Fresh snow
- Warm water
- Thermometer
- Timer
- Notebook and pencil for observations

Instructions:

1. Pack snow tightly around one container, leaving the top open.
2. Leave the second container uninsulated for comparison.
3. Fill both containers with the same amount of warm water and measure their initial temperatures.
4. Record the temperature of the water in both containers every 10 minutes for an hour.
5. Compare the rate of heat loss in the insulated container versus the uninsulated one.

Discussion Points:

- Why does the snow-insulated container retain heat longer?
- What other natural or artificial insulators work similarly?
- How might this property of snow help animals survive in winter?

Extension Activity: Test how the thickness of the snow insulation affects heat retention.

FUN FACT

Snow Has Sound

Absorption Qualities: A thick layer of fresh snow can absorb sound, making the world seem quieter after a snowfall.

THE SCIENCE BEHIND SNOW INSULATION

Snow is an excellent insulator because its structure traps air pockets, which reduce heat transfer by slowing the movement of warm and cold air. This property allows snow to retain warmth, explaining why animals like polar bears dig snow dens to survive extreme cold. In human history, structures like igloos have used this principle to keep their interiors surprisingly warm, even in freezing environments.

SNOW VOLCANO



Objective: Observe a chemical reaction and explore how snow affects the reaction's flow.

Materials:

- Fresh snow
- Small plastic bottle or cup
- 2-3 tablespoons baking soda
- ½ cup vinegar
- A few drops of dish soap (to create foamy eruptions)
- Food coloring (optional, for visual effect)
- Spoon
- Tray or outdoor space

Instructions:

1. Build a volcano shape out of snow around a small plastic bottle or cup, leaving the opening exposed.
2. Add 2-3 tablespoons of baking soda into the container.
3. If desired, add a few drops of food coloring to make the "lava" colorful.
4. Add a few drops of dish soap into the container to make the reaction extra foamy.
5. Slowly pour in about ½ cup of vinegar and watch the eruption!
6. Observe how the snow interacts with the flow of the reaction and discuss your findings.

Discussion Points:

- What causes the eruption? How do baking soda and vinegar react?
- How does the snow affect the flow of the reaction?

Extension Activity: Experiment with different ratios of baking soda to vinegar and observe the changes in the eruption.

THE SCIENCE BEHIND SNOW VOLCANOES

The reaction between baking soda (a base) and vinegar (an acid) produces carbon dioxide gas, creating pressure and causing the eruption. Adding dish soap traps the gas in bubbles, making the "lava" foamy and more exciting. Snow surrounding the reaction absorbs heat and slows the gas release, altering the flow and speed of the eruption. This demonstrates how temperature and external materials, like snow, can influence chemical reactions, much like volcanic activity in icy regions.

FUN FACT

Snowiest Month Ever

Recorded: Tamarack, California, experienced 32.5 feet of snow in January 1911, the most snowfall recorded in a single month.

FREEZING POINT EXPERIMENT



Objective: Discover how salt lowers the freezing point of water.

Materials:

- Fresh snow or crushed ice
- Salt
- Two small bowls
- Thermometer
- Timer
- Notebook and pencil

Instructions:

1. Fill two bowls with equal amounts of snow or crushed ice.
2. Sprinkle salt on one bowl and leave the other as a control.
3. Insert thermometers into both bowls and measure the temperatures.
4. Observe changes over 15-20 minutes and record the results.

Discussion Points:

- Why does salt cause the snow to melt faster?
- How does this process affect road safety in winter?
- What other substances might lower the freezing point?

Extension Activity: Test different types of salt (table salt, rock salt, etc.) and compare their effects.

FUN FACT

Ice is a Mineral: Ice is considered a mineral because it has a defined chemical structure (H₂O) and occurs naturally.

THE SCIENCE BEHIND FREEZING POINTS

Salt lowers the freezing point of water by disrupting the bonds between water molecules, making it harder for ice to form. This process, called freezing point depression, is why salt is effective for melting snow and ice on roads. The melting snow absorbs heat from its surroundings, demonstrating how heat transfer works in real-world winter conditions.

SNOW DENSITY



Objective: Understand the relationship between the weight and volume of snow and water.

Materials:

- Fresh snow
- Measuring cup
- Kitchen scale
- Clear container
- Notebook and pencil

Instructions:

1. Measure one cup of fresh snow and weigh it using a kitchen scale.
2. Allow the snow to melt completely in a clear container.
3. Measure the volume of water produced and calculate its density (Density = Mass ÷ Volume).
4. Compare the density of snow to that of liquid water.

Discussion Points:

- Why is snow less dense than water?
- How does packing the snow change its density?
- What role does air play in the structure of snowflakes?

Extension Activity: Compare the densities of different types of snow, such as fluffy snow versus packed snow.

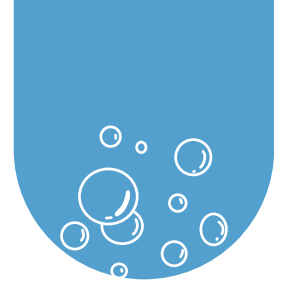
FUN FACT

Avalanches are Triggered by Layers of Snow: Avalanches occur when weak layers of snow collapse under the weight of new snow, often triggered by vibrations or movement.

THE SCIENCE BEHIND SNOW DENSITY

Snow contains a large amount of air, which makes it significantly less dense than water. By measuring the weight and volume of snow and its melted water, you can explore density and the role of air in the snowpack. Fresh snow is light and fluffy because it contains more air, while packed or wet snow is denser because the air pockets have been compressed or filled with water.

FROZEN BUBBLES



Objective: Observe the effects of freezing temperatures on soap bubbles.

Materials:

- Bubble solution : store-bought or homemade recipe ->
- Straw or bubble wand
- Freezing outdoor temperatures (below -14°F is best)
- Wind-free day
- Tray or flat surface (optional)

Instructions:

1. Blow bubbles outside in freezing temperatures and let them land on a surface.
2. Watch as the bubbles freeze and form intricate crystal patterns.
3. Observe how the bubbles behave as they completely freeze.

Discussion Points:

- What happens to the bubble film as it freezes?
- How do the crystal patterns form?
- How does temperature affect the speed of freezing?

Extension Activity: Experiment with different bubble solutions to see how the freezing patterns vary. Take photos to analyze the patterns closely.

THE SCIENCE BEHIND FROZEN BUBBLES

In freezing temperatures, soap bubbles solidify as the water in their thin film freezes, forming ice crystals on the surface. As the air inside the bubble cools and contracts, the bubble may collapse or create fascinating patterns. This process illustrates how temperature and environmental conditions influence the behavior of liquids and gases, making it a simple but captivating way to explore the freezing process.



• 1 cup warm water

• 2.5 tablespoons corn syrup

• 2 tablespoons sugar

• 2.5 tablespoons dish soap

A light blue rectangular box containing a recipe. At the top, there is a banner with the word "RECIPE" and two small hearts above it. Below the banner is a list of ingredients.

SNOW DYEING



Objective: Create tie-dye patterns on snow and transfer them to fabric.

Materials:

- Fresh snow
- Food coloring or natural dyes
- White fabric (cotton works best)
- Gloves (optional, to prevent staining hands)
- Tray or flat surface

Instructions:

1. Spread fresh snow evenly on a tray or flat surface.
2. Drop food coloring or natural dyes onto the snow, creating vibrant patterns.
3. Place the white fabric over the dyed snow and gently press it down to transfer the color.
4. Allow the fabric to sit for a few minutes, then remove and shake off any remaining snow.
5. Rinse the fabric in cold water and let it dry.

Discussion Points:

- How do the colors blend on the snow versus the fabric?
- What happens to the snow as it interacts with the fabric?
- How could you use natural dyes to create different effects?

Extension Activity: Experiment with folding the fabric into different shapes before placing it on the snow to create unique patterns.

THE CREATIVITY BEHIND SNOW DYEING

Snow dyeing blends the magic of winter with the artistic flair of tie-dye. Watching vibrant colors seep into the snow and imprint onto fabric sparks curiosity and creativity. This activity invites kids to experiment with color blending and design while turning the snowy outdoors into their art studio.

FUN FACT

World's Largest Snowfall

in One Day: The most snow to fall in 24 hours was 75.8 inches in Silver Lake, Colorado, in 1921.

SNOW SCULPTURES



Objective: Use creativity to design animal-inspired or abstract snow art.

Materials:

- Fresh snow
- Natural items (twigs, leaves, stones) for decoration
- Bucket or molds (optional, for shaping)
- Gloves

Instructions:

1. Pack snow tightly into the desired shapes using your hands, buckets, or molds.
2. Create animal-inspired or abstract designs by sculpting details into the snow.
3. Decorate your sculptures with natural items like twigs, leaves, or stones.
4. Display your artwork and take photos to document your creations.

Discussion Points:

- What inspired your sculpture design?
- How did the snow's texture affect your ability to shape it?
- What challenges did you face while working with snow as a medium?

Extension Activity: Host a snow sculpture competition with friends or family, setting themes or challenges for each sculpture.

FUN FACT

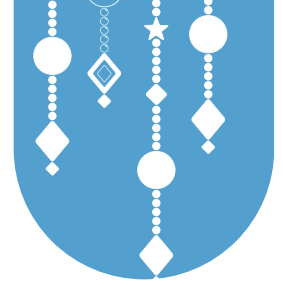
Coldest Temperature

Ever Recorded: The coldest temperature on Earth was -128.6°F (-89.2°C) at Vostok Station in Antarctica.

THE CREATIVITY BEHIND SNOW SCULPTURES

Building snow sculptures transforms the snowy landscape into a playground for artistic expression. Whether shaping animals, abstract designs, or imaginative characters, this hands-on activity encourages kids to think outside the box. Natural decorations like twigs and berries add a personal, nature-inspired touch to their creations.

ICE SUN CATCHERS



Objective: Freeze snow and water with natural items to create decorative sun catchers.

Materials:

- Fresh snow
- Water
- Natural items (leaves, berries, twigs, etc.)
- Shallow containers or molds (e.g., pie tins, plastic lids)
- String

Instructions:

1. Fill shallow containers with a thin layer of snow and water.
2. Arrange natural items on top to create a design.
3. Place a loop of string at the edge of the container, ensuring part of it is submerged to create a hanger.
4. Leave the containers outside or in a freezer until fully frozen.
5. Once frozen, remove the ice sun catchers from the molds and hang them in a sunny spot.

Discussion Points:

- How do the natural items look when frozen in ice?
- What happens to the sun catchers as they begin to melt?
- How could you use different materials to create unique designs?

Extension Activity: Experiment with adding food coloring to the water to create colorful sun catchers.

THE CREATIVITY BEHIND ICE SUN CATCHERS

Ice sun catchers turn everyday natural items into shimmering works of art. By freezing leaves, berries, and other finds into snow and water, kids create beautiful decorations that sparkle in the sunlight. This activity inspires a connection to nature while allowing for unique and colorful designs.

FUN FACT

Snowflakes Can Be Smaller Than a Penny or Larger Than Your Hand:

Most snowflakes are tiny, but large, fluffy flakes can reach up to 2 inches wide in very moist air.

SNOW PAINTING



Objective: Use colored water to paint vibrant designs in the snow.

Materials:

- Fresh snow
- Spray bottles or squeeze bottles
- Food coloring or natural dyes
- Water

Instructions:

1. Fill spray or squeeze bottles with water and add food coloring or natural dyes to create a palette of colors.
2. Find a fresh patch of snow and spray or squeeze the colored water onto it to create designs.
3. Experiment with blending colors, creating patterns, or painting pictures in the snow.

Discussion Points:

- How do the colors interact with the snow's surface?
- What happens to the designs as the snow begins to melt?
- How could you use snow painting to create a collaborative artwork?

Extension Activity: Challenge yourself to paint a scene or image that reflects winter themes, such as animals or snowy landscapes.

FUN FACT

Snowflakes Aren't

Always White: In rare cases, snow can appear red, green, or brown due to algae or pollutants in the atmosphere.

THE CREATIVITY BEHIND SNOW PAINTING

Snow painting offers a unique way to explore art outdoors, turning the blank canvas of snow into a colorful masterpiece. Spray bottles filled with vibrant water let kids create patterns, pictures, and words with ease. This activity combines movement, imagination, and color in a way that's distinctly wintery.

FROZEN LANTERNS



Objective: Create glowing lanterns by freezing snow and water in containers.

Materials:

- Fresh snow
- Water
- Large containers or buckets
- Smaller containers (to create the hollow center)
- Candles or LED lights

Instructions:

1. Fill large containers with a mixture of snow and water.
2. Place smaller containers inside to create a hollow center, weighing them down if necessary.
3. Leave the containers outside or in a freezer until the water freezes solid.
4. Remove the smaller containers and take the frozen lanterns out of the molds.
5. Place candles or LED lights inside the hollow center to create a glowing effect.

Discussion Points:

- How does the combination of snow and water affect the lantern's appearance?
- What other shapes or designs could you create using different molds?
- How do the lanterns change as they begin to melt?

Extension Activity: Experiment with adding food coloring or natural dyes to the water for colorful lanterns.

THE CREATIVITY BEHIND FROZEN LANTERNS

Frozen lanterns let kids craft glowing winter decorations that bring warmth to cold nights. By freezing snow and water into unique shapes and adding a candle or light, children turn simple materials into magical creations. These lanterns are a beautiful way to celebrate the season's charm.

FUN FACT

Snow is Full of Air: Fresh snow can be up to 95% air, making it light, fluffy, and a great insulator for the ground below.

SNOWFLAKE STAMPS



Objective: Carve simple snowflake shapes into sponges or potatoes for stamping.

Materials:

- Sponges or large potatoes
- Knife or scissors (adult supervision required)
- Paint (washable, if using on snow)
- Trays or plates for paint
- Fresh snow or paper for stamping

Instructions:

1. Use a knife or scissors to carve snowflake shapes into sponges or potatoes.
2. Dip the carved shapes into paint, ensuring an even coating.
3. Press the stamps onto fresh snow or paper to create snowflake patterns.
4. Experiment with different colors and overlapping designs.

Discussion Points:

- How do the stamps' designs change depending on how much paint is used?
- What other shapes could you carve to create winter-themed stamps?
- How does stamping on snow differ from stamping on paper?

Extension Activity: Create a series of stamped patterns to use as wrapping paper or winter-themed decorations.

FUN FACT

Speed of Falling

Snowflakes: Snowflakes typically fall at a speed of 1-4 miles per hour, depending on their size and the wind.

THE CREATIVITY BEHIND SNOWFLAKE STAMPS

Carving snowflake designs into sponges or potatoes turns everyday items into creative stamping tools. Whether used on paper, fabric, or snow, these stamps allow kids to create their own winter-inspired patterns. It's a fun and simple activity that combines crafting with artistic exploration.

SNOWFLAKE MATCHING



Objective: Study and draw real snowflakes to observe their unique patterns and structures.

Materials:

- Magnifying glass or microscope
- Black construction paper or dark fabric
- Notebook and pencil for sketches

Instructions:

1. Collect snowflakes on black construction paper or dark fabric to improve visibility.
2. Use a magnifying glass or microscope to closely examine the shapes and patterns of individual snowflakes.
3. Sketch the snowflakes in your notebook and label any unique features.
4. Discuss why no two snowflakes are exactly alike.

Discussion Points:

- What shapes and patterns do you notice in the snowflakes?
- How do temperature and humidity influence snowflake formation?
- How does snowflake formation differ from other types of ice crystals?

Extension Activity: Create paper snowflakes inspired by your observations and compare them to real ones.

FUN FACT

Snowflakes Form in

Clouds: Snowflakes begin as tiny ice crystals in clouds when water vapor freezes around dust particles.

THE LEARNING BEHIND SNOWFLAKE MATCHING

By observing and drawing real snowflakes, children develop their attention to detail and learn about symmetry and unique patterns in nature. Using magnifying glasses or microscopes introduces basic scientific tools, encouraging close observation and a deeper understanding of how snowflakes form.

MEASURING SNOWFALL



Objective: Track and graph daily snowfall to observe weather patterns over time.

Materials:

- Ruler or yardstick
- Notebook
- Graph paper
- Marker or pencil

Instructions:

1. Choose a specific spot outside to measure snowfall each day.
2. Use a ruler or yardstick to measure the depth of the snow at the same time each day.
3. Record the measurements in your notebook.
4. After a week, graph the data to observe any trends or patterns.

Discussion Points:

- How does snowfall vary day to day?
- What factors might influence the amount of snow that falls?
- How can this information be useful for weather predictions?

Extension Activity: Compare your measurements to local weather reports and discuss any discrepancies.

FUN FACT

No Two Snowflakes Are Alike

While millions of snowflakes fall, each one is unique due to tiny variations in temperature and humidity as it forms.

THE LEARNING BEHIND MEASURING SNOWFALL

Tracking and graphing snowfall teaches kids to observe and record data like real scientists. This activity introduces measurement, charting, and recognizing weather patterns, building foundational skills in math and science while connecting to everyday winter experiences.

BUILD A THERMOMETER SHELTER



Objective: Create a shelter for a thermometer and compare its temperature readings to the open air.

Materials:

- Thermometer
- Small box or container
- Foam, cardboard, or insulating material
- Notebook and pencil

Instructions:

1. Design a small shelter using a box or container lined with insulating materials to protect the thermometer from direct sunlight and wind.
2. Place the thermometer inside the shelter and leave it outside for an hour.
3. Record the temperature reading from the sheltered thermometer.
4. Compare this reading to the thermometer when left exposed to the air.

Discussion Points:

- How does the shelter affect the temperature reading?
- Why is it important to protect thermometers from external elements?
- What other types of weather instruments might need similar protection?

Extension Activity: Experiment with different designs or materials for the shelter and evaluate their effectiveness.

THE LEARNING BEHIND BUILDING A THERMOMETER SHELTER

Building a thermometer shelter shows children how tools like thermometers can provide accurate temperature readings when protected from external influences. It teaches the importance of environmental control in science experiments and introduces concepts like insulation and heat transfer.

FUN FACT

Snow is Nature's Blanket:

Snow insulates the soil underneath, keeping it about 32°F (0°C), even in much colder air temperatures. This protects plant roots and hibernating animals.

SNOW SURVIVAL SKILLS



Objective: Learn how to build a mini snow shelter (quinzee) and understand its importance in survival situations.

Materials:

- Fresh snow
- Shovel or small digging tool
- Gloves

Instructions:

1. Pile snow into a large mound and allow it to settle for at least 30 minutes.
2. Carefully hollow out the center of the mound to create a small shelter.
3. Discuss how this type of shelter can protect against cold and wind.

Discussion Points:

- Why is snow an effective insulator?
- What challenges might someone face when building a snow shelter?
- How do animals use snow for shelter in the wild?

Extension Activity: Research the different types of snow shelters used by humans and animals, and compare their designs.

FUN FACT

Insects Survive in Snow:

Some insects, like the snow flea, produce a protein that acts like antifreeze, allowing them to stay active on top of snow.

THE LEARNING BEHIND SNOW SURVIVAL SKILLS

Constructing a mini snow shelter demonstrates how snow can be used as insulation to trap warmth, an essential survival skill in cold climates. This activity helps children understand how humans and animals adapt to harsh winter conditions while fostering creativity and teamwork.

MAPPING ANIMAL TRACKS



Objective: Identify and map animal tracks found in the snow to learn about local wildlife.

Materials:

- Notebook and pencil
- Field guide for animal tracks (optional)
- Camera (optional)

Instructions:

1. Look for animal tracks in the snow during an outdoor walk.
2. Sketch or photograph the tracks you find.
3. Use a field guide to identify which animals made the tracks.
4. Map the locations of the tracks and note patterns, such as trails leading to food or shelter.

Discussion Points:

- What do the tracks tell you about the animal's behavior?
- How can you determine which direction the animal was moving?
- What other clues (like size or habitat) help you identify the animal?

Extension Activity: Create a plaster cast of a track for closer study or as a keepsake.

FUN FACT

Animals Hibernate Under

Snow: Small animals like voles and mice live in the subnivean zone, a space between the snowpack and the ground where temperatures stay stable.

THE LEARNING BEHIND MAPPING ANIMAL TRACKS

Identifying and mapping animal tracks encourages children to use observation and deduction to learn about wildlife behaviors. By analyzing the tracks, kids build skills in critical thinking, spatial mapping, and understanding how animals interact with their environment in winter.

SNOW MAZE CHALLENGE



Objective: Create and navigate a snow maze to develop gross motor skills and spatial awareness.

Materials:

- Fresh snow
- Shovel or snow blower (optional)
- Cones or markers (optional)

Instructions:

1. Choose a flat, open area of snow and use a shovel to carve out a maze with pathways wide enough for walking.
2. Add turns, dead ends, or loops to make the maze more challenging.
3. Navigate the maze yourself or challenge friends and family to complete it.
4. Time each participant to see who can finish the maze the fastest.

Discussion Points:

- What strategies helped you find your way through the maze?
- How could you make the maze more challenging or fun?
- How does navigating the maze help with coordination and problem-solving?

Extension Activity: Create a themed maze, such as one shaped like a snowflake or an animal, and invite others to try it.

FUN FACT

Antarctica is the Snowiest

Continent: Although Antarctica is the coldest place on Earth, it's also technically a desert, with very little annual snowfall. However, the snow that falls doesn't melt, forming thick ice sheets.

THE MOVEMENT BEHIND THE SNOW MAZE CHALLENGE

Creating and navigating a snow maze encourages gross motor movement as children walk, run, or even crawl through pathways. It develops spatial awareness, problem-solving, and endurance while providing a fun outdoor workout.

FROZEN OBSTACLE COURSE



Objective: Set up a fun obstacle course in the snow to improve balance, agility, and coordination.

Materials:

- Cones, ropes, or natural markers (sticks, rocks, etc.)
- Fresh snow
- Sled (optional)

Instructions:

1. Design an obstacle course with activities like jumping over snow mounds, crawling under ropes, and balancing on icy paths.
2. Include sliding on a sled or hopping across patches of packed snow for variety.
3. Time participants as they complete the course and encourage them to beat their personal best.

Discussion Points:

- Which obstacles were the easiest or hardest to complete?
- How did you keep your balance and coordination?
- How can outdoor activities like this help you stay active in winter?

Extension Activity: Modify the course with themes like “rescue mission” or “animal adventure,” adding props or challenges.

FUN FACT

Snowflakes Have Six

Sides: Snowflakes are hexagonal because of the way water molecules bond when they freeze.

THE MOVEMENT BEHIND THE FROZEN OBSTACLE COURSE

A frozen obstacle course challenges children to jump, balance, and crawl, improving their coordination, agility, and strength. This activity combines physical play with creative design as kids test their limits in a winter-themed setting.

SNOW BOWLING



Objective: Use snowballs to knock down targets and practice hand-eye coordination.

Materials:

- Snowballs
- Plastic bottles or lightweight objects for bowling pins
- Flat snowy surface

Instructions:

1. Set up a "bowling lane" in the snow and arrange bottles or objects as pins.
2. Roll or throw snowballs to knock down the pins.
3. Take turns, keeping score just like traditional bowling.

Discussion Points:

- How does the size of the snowball affect your aim and accuracy?
- What techniques worked best to knock down the pins?
- How could you make the game more challenging?

Extension Activity: Try using colored snowballs or make a themed bowling lane to add excitement.

THE MOVEMENT BEHIND SNOW BOWLING

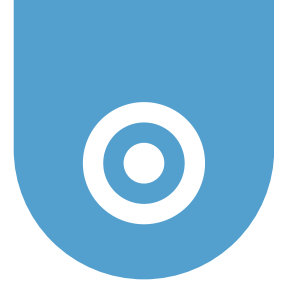
Rolling and throwing snowballs to knock down pins helps kids practice hand-eye coordination, aim, and balance. Snow bowling is a fun and active way to develop motor control while enjoying friendly competition outdoors. It also introduces kids to a new way of playing outside, showing them how items in nature can be used to recreate familiar games and sports, inspiring their imagination and creativity in outdoor play.

FUN FACT

Largest Snowball Fight

Record: In 2016, more than 7,600 people participated in the world's largest snowball fight in Seattle, Washington.

TARGET PRACTICE



Objective: Practice accuracy and focus by hitting targets with snowballs.

Materials:

- Snowballs
- Bullseye or target painted on cardboard
- Lightweight objects to knock over (optional)

Instructions:

1. Create a target by painting a bullseye on cardboard or arranging lightweight objects as targets.
2. Stand at a designated distance and throw snowballs to hit the targets.
3. Score points based on accuracy or the number of objects knocked over.

Discussion Points:

- How did adjusting your stance or aim improve accuracy?
- What factors made hitting the target easier or harder?
- How can this activity help develop focus and hand-eye coordination?

Extension Activity: Can you build a tool to launch your snowballs?

FUN FACT

Snow Can Be Heavy: Wet, dense snow can weigh up to 20 pounds per cubic foot, which is why it's challenging to shovel!

THE MOVEMENT BEHIND TARGET PRACTICE

Throwing snowballs at a target develops accuracy, coordination, and focus. This activity challenges kids to adjust their aim and strength, improving both gross motor control and concentration through active play.

SNOW ENGINEERING



Objective: Design and build a bridge or tower from snow and test its strength.

Materials:

- Fresh snow
- Shovel
- Bucket for packing snow
- Weights (small rocks or books)

Instructions:

1. Use a bucket to pack snow tightly into bricks.
2. Build a bridge or tower by stacking the snow bricks.
3. Gradually place weights on your structure to test its strength.
4. Observe how the structure responds and note when it collapses.

Discussion Points:

- What design made the structure the strongest?
- How does the texture of the snow affect the construction?
- What could you do differently to make the structure more stable?

Extension Activity: Experiment with different shapes (arches, triangles) and compare their strength.

FUN FACT

Billions of Snowflakes Fall Each Second:

An estimated 1 septillion snowflakes (1 followed by 24 zeros!) fall worldwide each year.

THE ENGINEERING BEHIND SNOW ENGINEERING

Designing and building a bridge or tower out of snow challenges kids to think like engineers. By stacking and testing snow bricks, they explore concepts of balance, stability, and load-bearing strength. This activity combines creativity and problem-solving as they learn to construct sturdy structures using a naturally available material.

SNOW MARBLE RUN



Objective: Create a marble run in the snow using packed paths and tunnels.

Materials:

- Fresh snow
- Small ball or marble
- Shovel or spoon
- Bucket (optional)

Instructions:

1. Pack snow into a flat surface or mound.
2. Carve paths and tunnels using a shovel or spoon to create the marble run.
3. Test the run by placing a marble or ball at the top and watching it travel.
4. Adjust the paths or tunnels to improve the marble's speed or direction.

Discussion Points:

- What adjustments made the marble move faster?
- How does the slope of the run affect the marble's movement?
- What other materials could you use to enhance the marble run?

Extension Activity: Add obstacles like jumps or loops to make the run more challenging.

Challenge Note: Watch the weather forecast, and before a bitterly cold evening, lightly spray or wet your marble run. Allow it to freeze overnight and observe how the icy surface affects the marble's speed and movement. Does it move faster, slower, or follow a different path?

THE ENGINEERING BEHIND SNOW MARBLE RUN

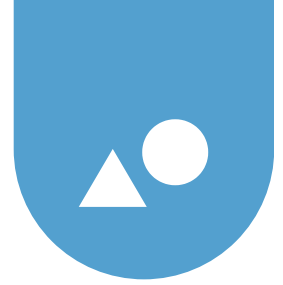
Creating a snow marble run introduces kids to engineering design and the science of motion. By carving paths, tunnels, and slopes, they experiment with gravity, momentum, and friction to guide the marble's movement. This activity encourages trial-and-error thinking as they test and refine their designs to keep the marble moving smoothly.

FUN FACT

The Largest Snowflake

Ever Recorded: According to reports, a snowflake measuring 15 inches wide fell in Montana in 1887.

FROZEN SHAPES



Objective: Explore how water freezes into different shapes and interacts with snow.

Materials:

- Water
- Ice cube trays or silicone molds (various shapes)
- Fresh snow

Instructions:

1. Fill ice cube trays or molds with water and leave them outside to freeze.
2. Once frozen, remove the shapes and place them on the snow.
3. Observe how the ice shapes interact with the snow as they begin to melt.
4. Experiment with stacking or arranging the shapes to create designs.

Discussion Points:

- How do different shapes affect the melting process?
- What happens to the snow around the ice as it melts?
- How could you use ice and snow together in a creative project?

Extension Activity: Color the water before freezing to create colorful ice shapes.

FUN FACT

Snowflake Shapes Depend on Temperature: Simple hexagons form at 28°F (-2°C), while intricate designs appear at colder temperatures around 5°F (-15°C).

THE ENGINEERING BEHIND FROZEN SHAPES

Freezing water into different shapes, like circles or triangles, offers a simple introduction to geometry and material science. Kids observe how ice forms, stacks, and melts while exploring how shape influences stability and balance. It's a playful way to connect creativity with basic engineering and observation skills.

MINI SNOWMEN CHALLENGE



Objective: Build the smallest snowman possible and measure its dimensions.

Materials:

- Fresh snow
- Small tools (toothpicks, tweezers, etc.)
- Ruler or measuring tape

Instructions:

1. Use fresh snow to carefully roll and stack three tiny snowballs to form a snowman.
2. Add small features like a nose, arms, or hat using natural items or craft materials.
3. Measure the height and width of your snowman and record the dimensions.
4. Challenge others to build a smaller snowman and compare the results.

Discussion Points:

- What challenges did you face in building a tiny snowman?
- How does the texture of the snow affect your ability to create small details?
- What techniques helped you make the snowman as small as possible?

Extension Activity: Create a snowman “village” with snowmen of varying sizes and designs.

FUN FACT

Snowiest Place on Earth:

The snowiest place is Aomori City, Japan, which gets over 312 inches of snow annually.

THE ENGINEERING BEHIND THE MINI SNOWMEN CHALLENGE

Building the smallest snowman possible combines fine motor skills with structural engineering. Kids must carefully balance and stack snowballs while ensuring stability, which introduces concepts like scale, weight distribution, and precision. This activity adds a fun challenge to learning about the importance of strong foundations in engineering.



THANK YOU

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See you next month,

The Creature Curriculum Team