

WINTER WONDERLAND

When the weather turns chilly or not so chilly, why not try some playful winter activities for preschool and elementary kids. (No snow required)

POLAR BEAR BLUBBER

How do polar bears stay warm with icy water, freezing temperatures, and relentless wind in the Arctic?

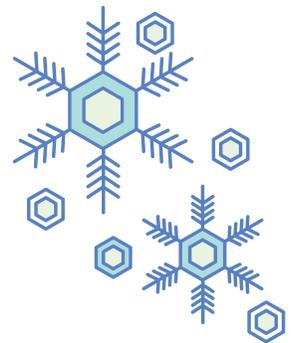


FROST ON A CAN

Learn how to make frost on a can for an easy science activity you can share with the kids!

FAKE SNOW

Too much snow or not enough snow? It doesn't matter when you know how to make fake snow!



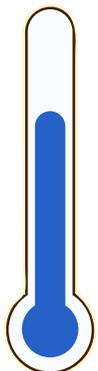
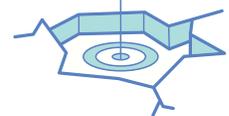
SNOWSTORM IN A JAR

When the weather is too cold to make it outside for play, enjoy simple winter science inside!



ICE FISHING

Kids will love this fishing for ice cubes science project that can be done no matter the temperature outside.

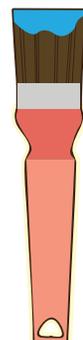


DIY THERMOMETER

This DIY thermometer is an AWESOME science activity for kids of all ages!

SNOW PAINT

Too much snow or not enough snow? It doesn't matter when you know how to make snow paint!



POLAR BEAR BLUBBER

This super simple polar bear blubber experiment will help kids feel and see what keeps those big guys (and gals) warm!



INSTRUCTIONS:

STEP 1: First you need to fill a bowl with ice and water. Add food coloring if desired.

STEP 2: Next have your kid place his/her hand briefly in the water. It's cold! There's no need to linger in the water for safety.

STEP 3: Now, for the messy part, fill one plastic bag with shortening. Have your kids place one hand in another bag and the other hand inside the blubber/fat filled bag.

STEP 4: Seal the tops with duct tape so water can't get into the bags.

STEP 5: Put both bag covered hands in the ice water. What do they notice? Does the water feel less cold or not?

THE SCIENCE

If your kids haven't already guessed by now what keeps polar bears warm, they will surely have a better idea! Blubber or fat keeps them warm. Polar bears are warm-blooded mammals like us! What the heck are they doing in the Arctic?

Obviously, polar bears aren't covered in cooking lard like Crisco, but they have their own kind of lard or blubber that really helps out.

Polar bears use a combination of fur and blubber to keep warm. Thick fur and thick fat keep these warm-blooded mammals warm in up to -50 degree temps! That's pretty cold.

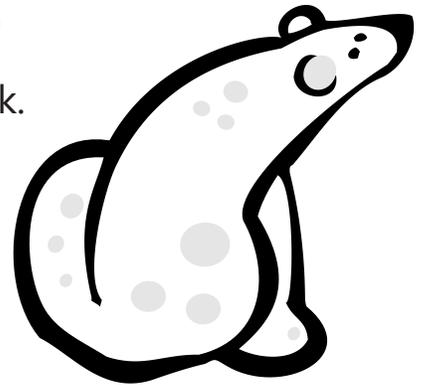
SUPPLIES:

Large bowl
Ice Cubes
Shortening
2 plastic baggies
Duct tape
Food Coloring



Blubber Observations

Use this worksheet to process and evaluate your work.



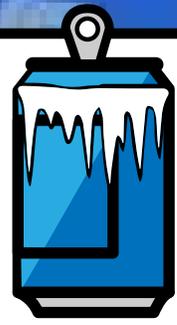
Hand 1 - Results/Observations

Hand 2 - Results/Observations

Which hand got colder faster? Why?

What did you learn?

FROST ON A CAN



Learn how to make frost on a can for an easy science activity you can share with the kids.

INSTRUCTIONS:

STEP 1: Fill the can with ice.

STEP 2: Next, you will add a layer of salt and cover with the can's lid.

STEP 3: Then all you need to do is shake! (somewhat carefully so the contents doesn't spill everywhere)

STEP 4: Watch the frost form. (It can take up to 10 minutes)

SUPPLIES:

Ice
(crushed if possible)

Can

Rock or course salt

THE SCIENCE

Frost forms when an outside surface cools past the dew point. The dew point is the point where the air gets so cold, the water vapor in the atmosphere turns into liquid. This liquid freezes. If it gets cold enough, little bits of ice, or frost, form.

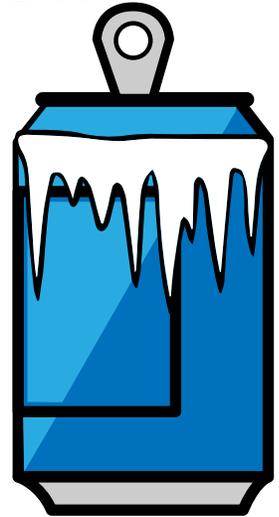
How do you end up with frost on the outside of the can when you are indoors? Shaking the ice and salt together creates a chemical reaction. The melting ice reacts with the salt and actually creates a cooler temperature that goes below freezing.

The moisture from the air will collect on the outside of the can and will actually freeze because of this lower temperature and form the frost.



Frost on a Can Observations

Use this worksheet to process and evaluate your work.



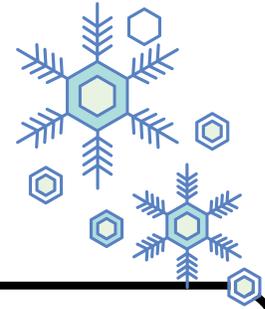
What do you think will happen to the can?

Do you think adding salt will make a difference? Why or why not?

How long did it take for frost to form?

What did you learn?

FAKE SNOW



Treat the kids to an indoor snowman building session or fun winter sensory play with this super easy to make fake snow recipe!

INSTRUCTIONS:

STEP 1: Start by pouring equal amounts of cornstarch and baking soda onto the tray or into a bowl.

STEP 2: Mix the baking soda and cornstarch with your fingers.

STEP 3: Next, you want to add just enough water so that when you squeeze some of the mixtures in your hands, you can form a ball! Gently loosen any clumps until your fake snow looks just like real snow. Add snowflake or other winter theme cookie cutters to your fluffy fake snow!

SUPPLIES:

**Corn starch
Baking soda
Tray
Water
Play Accessories;
Cookie Cutters,
Plastic Snowflakes,
Pinecones**

WHAT IS BAKING SODA

Baking soda is one of the most widely used leaveners in baked goods. This simple chemical compound, also known as sodium bicarbonate, is found in crystalline form in nature but is ground to a fine powder for use in cooking.

WHAT IS CORNSTARCH

Cornstarch, sometimes referred to as cornflour, is a carbohydrate extracted from the endosperm of corn. This white powdery substance is used for many culinary, household, and industrial purposes.



SNOWSTORM IN A JAR

Kids will love creating their own snowstorms with common household supplies, and they can even learn a bit about simple science in the process too.



INSTRUCTIONS:

STEP 1: Add 1 cup of water to the vase or jar.

STEP 2: Mix in 1 tsp of paint (acrylic glitter paint works well too).

STEP 3: Then pour oil in almost to the top of the container.

STEP 4: Break the Alka seltzer tablet into pieces and drop one at a time into the oil. You may want to add additional pieces for a blizzard!

STEP 5: Observe the reaction that takes place.

SUPPLIES:

Oil (vegetable oil or baby oil)

White washable school paint

Alka Seltzer tablets

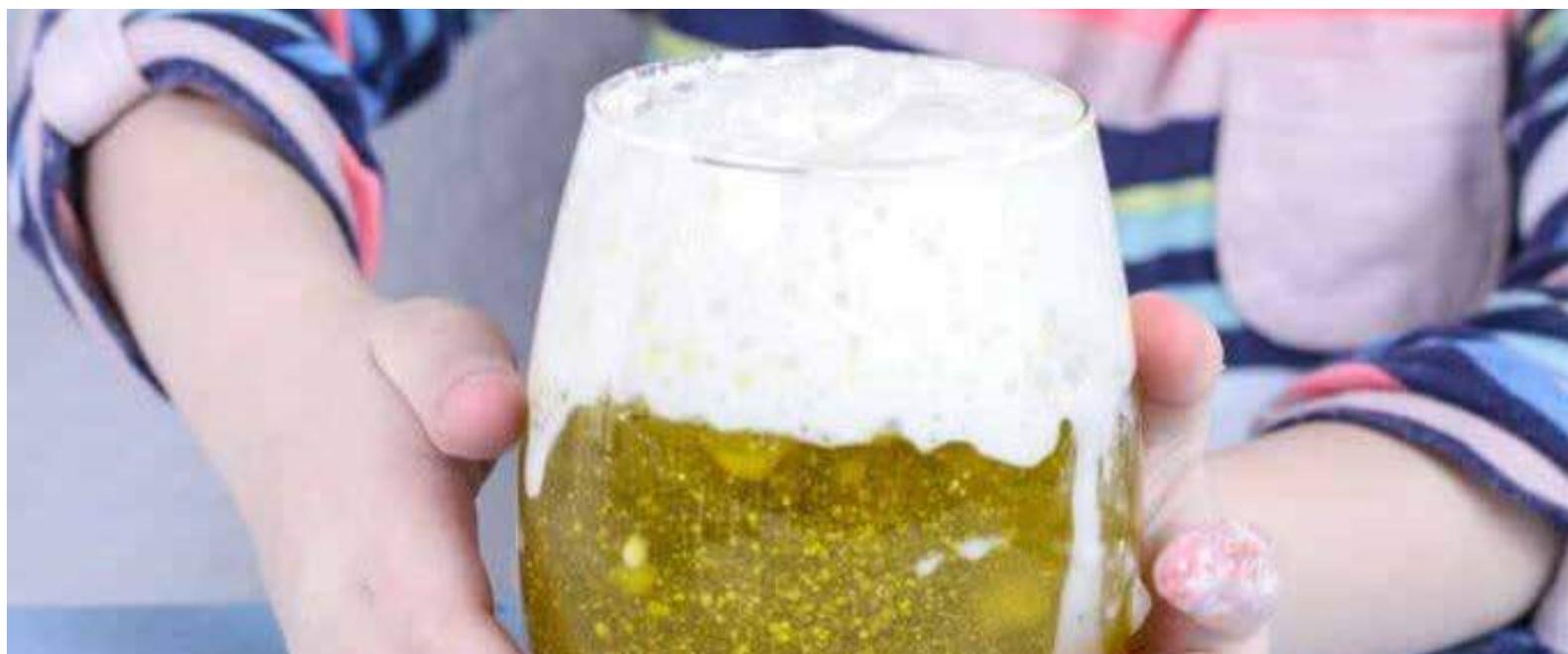
Cup, jar, or bottle

THE SCIENCE

Is water lighter or heavier than oil? Make sure you notice that the oil sits on top of the water. What happens to the paint?

Did you observe the reaction that happened when the tablet was dropped into the cup? This reaction is what creates an awesome snow storm effect. The table contains an acid and a base that when mixed with the water, creates the bubbles.

The bubbles are a result of the carbon dioxide gas that is released during the chemical reaction. To make the snow effect, the bubbles pick up the white paint and carry it to the surface. Once the bubbles reach the surface they pop and the paint/water mixture drops back down!



Snow in a Jar Observations

Use this worksheet to process and evaluate your work.



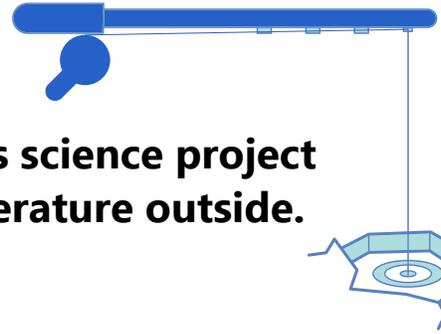
Is water lighter or heavier than oil?

What happened to the paint?

What did you see when you added the antacid?

What did you learn?

ICE FISHING



Kids will love this fishing for ice cubes science project that can be done no matter the temperature outside.

INSTRUCTIONS:

STEP 1: Add half a dozen or so ice cubes to a cup and fill with water.

STEP 2: Lay the string over an ice cube.

STEP 3: Sprinkle salt over the string and ice.

Wait 30-60 seconds.

STEP 4: Gently pull the string. The ice should come along with it!

SUPPLIES:

**Ice cubes
Glass of water
Salt
Food coloring
(optional)
String or twine**

THE SCIENCE

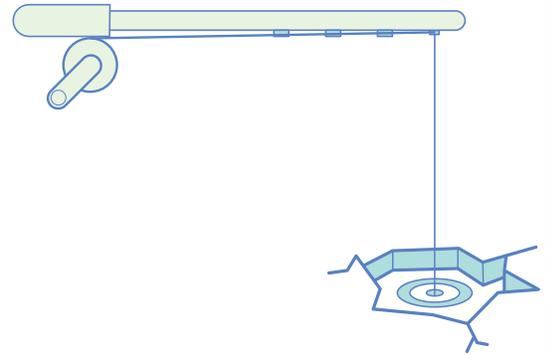
Why does everyone use salt to melt ice?

When added to ice, salt first dissolves in the film of liquid water that is always present on the surface, thereby lowering its freezing point below the ice's temperature. Ice in contact with salty water therefore melts, creating more liquid water, which dissolves more salt, thereby causing more ice to melt, and so on.

Adding salt to ice will lower the ice's melting point. Salt causes a physical change by altering the properties and temperature of the ice cube. However, if the surrounding temperature is still freezing, the ice will re-freeze (reversible change) and freeze the string along with it. Now you have ice fishing!

Ice Fishing Observations

Use this worksheet to process and evaluate your work.



Were you able to 'catch' the ice?

How long did it take for the string to attach?

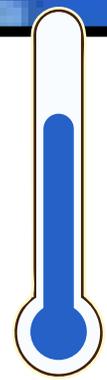
How much salt worked best?

Try different types of string. What type is best for ice fishing?

What did you learn?



DIY THERMOMETER



This DIY thermometer is an **AWESOME** science activity for kids of all ages!

INSTRUCTIONS:

STEP 1: Add red food coloring, 1/4 cup water, 1/4 cup alcohol and a tablespoon of oil into a mason jar and mix.

STEP 2: Stick the straw through the straw hole and tighten the lid onto the jar.

STEP 3: Mold a piece of playdough on the lid around the straw, which will hold the straw about 1/2" from the bottom of the jar.

STEP 4: Place your DIY thermometer outside in the cold, in your fridge, or inside the house, and look at the difference in how high the liquid rises in the straw in different temperatures.

SUPPLIES:

Mason jar with straw lid
Clear straw
Playdough or modeling clay
Water
Rubbing alcohol
Cooking oil (any kind)
Red food coloring

THE SCIENCE

Many commercial thermometers contain alcohol because alcohol has a low freezing point. As the temperature of the alcohol increases, it expands and causes the level within the thermometer to rise.

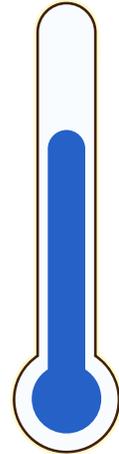
The level of the alcohol corresponds to the printed lines/numbers on a thermometer indicating the temperature. Our homemade version does a similar thing.

However with your homemade thermometer you aren't actually measuring temperature, just seeing temperature changes.



DIY Thermometer Observations

Use this worksheet to process and evaluate your work.



What happens? Does the fluid rise up the straw and stay there?

Why do you think it is important to color the liquid?

Why do you think the straw should not touch the bottom of your bottle?

What is the hottest spot in your home? What about the coolest?

What did you learn?

WINTER WONDERLAND

Try to find all the words in the list below. Remember, the words can be up, down, diagonal, and backwards!

CHILLY
WINTER

TEMPERATURE
FREEZING

COLD
SNOW

FROST
ICE

FUN
SLED

V U B C C D Y Z A U Y U M M C
J K C O S A G V V Y J J M G N
Z B L F N L F R U A A P Q E E
D D U H O O W P C Y K S J B W
F F E S W T I M P R L G D Q X
X R A C J V N M X E T L M J R
N R D L I E T G D K G F I J Q
U Z T E M P E R A T U R E H J
F N I O C H R I F R O S T G C
S P X U A F R G J L U H S Q D
R V D D Y X A M F Y Q Q N S B
F G N I Z E E R F V K N D W L
F U Y N V L N U N T O C E X Y
D F S J B X R Z A R P P Y T R
P R W W B W L I O J M N X F T