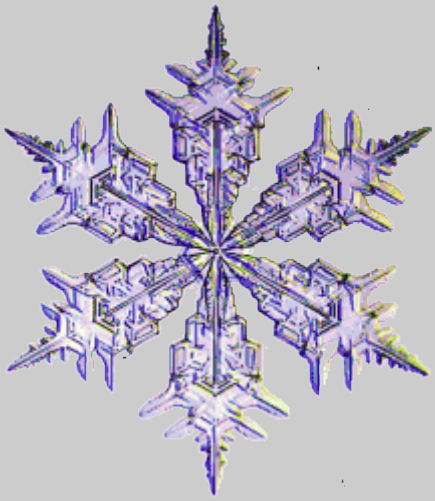
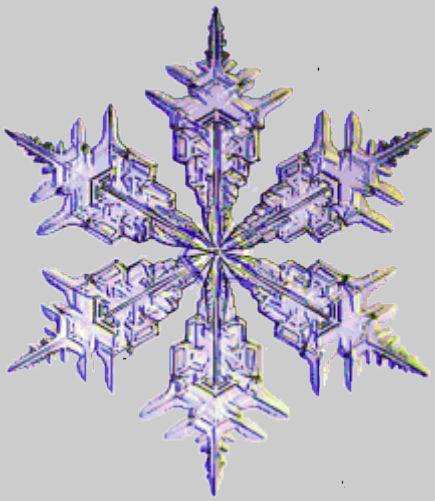
COMMANDER RALPH'S

SNOWFLAKE

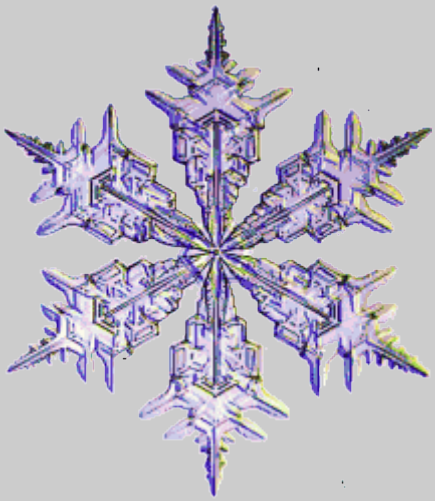


FUN BOOK

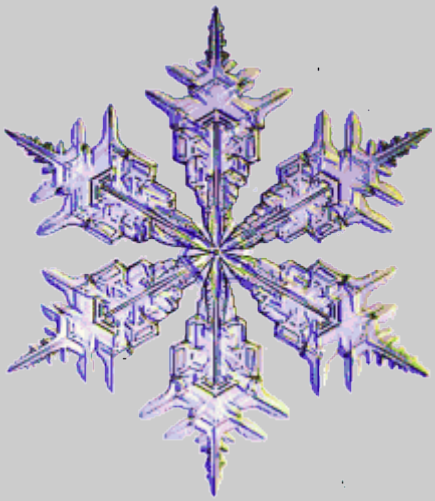


This activity fun book brought to you by Commander Ralph the Lionheart

To follow
Commander Ralph's Adventures
and
Captain Bootsie and His Fearless Crew
visit their website at:
http://www.cptbootisesmagictimemachine.com/



Commander Ralph Here!
I've got lots of fun stuff for you!
So have a good time!



SNOWFLAKE WATCHING

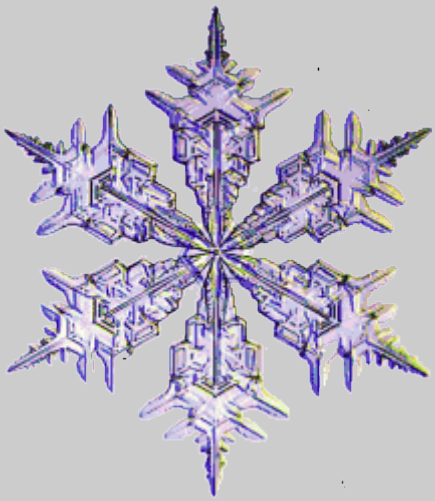
Things to use:
Magnifying Glass (if possible)
Black construction paper
Sleeve of your Coat
Snowflake Chart

Things to Have:
Snow

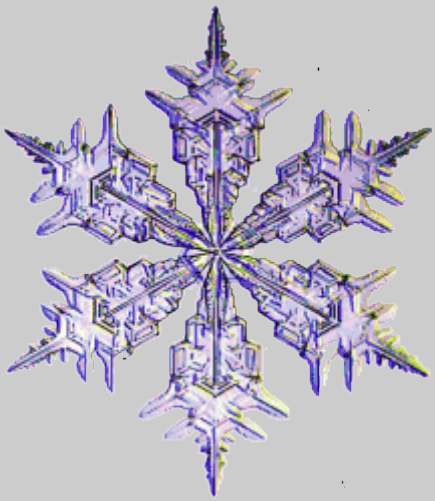
Kids,you might want to help you parents out on this one because you can see better than them. That's right! Your eyes can focus better up close.

Remember that many times when it snows you get nothing but small, grainy snowflakes that look like white sand.

So my advice is...take a look at what falls on your sleeve then if it looks interesting grab you parents and friends and go on a snowflake hunt!



Simple Prisms	Solid Columns	Sheaths	Scrolls on Plates	Triangular Forms
Hexagonal Plates	Hollow Columns	Cups	Columns on Plates	12-branched Stars
Stellar Plates	Bullet Rosettes	Capped Columns	Split Plates & Stars	Radiating Plates
Sectored Plates	Isolated Bullets	Multiply Capped Columns	Skeletal Forms	Radiating Dendrites
Simple Stars	Simple Needles	Capped Bullets	Twin Columns	Irregulars
Stellar Dendrites	Needle Clusters	Double Plates	Arrowhead Twins	Rimed
Fernlike Stellar Dendrites	Crossed Needles	Hollow Plates	Crossed Plates	Graupel

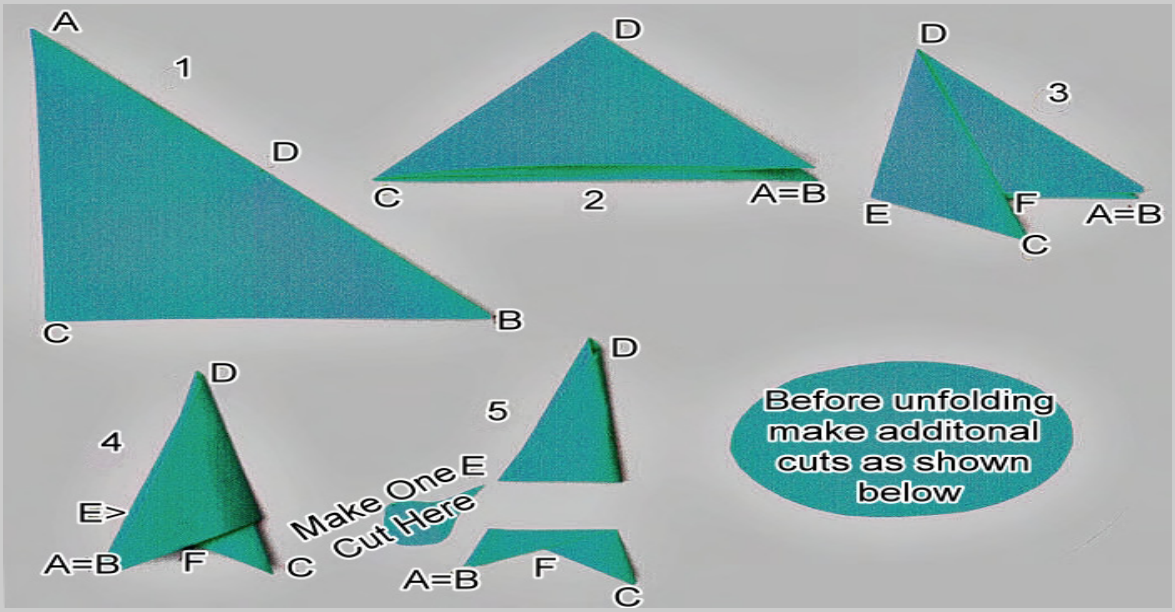


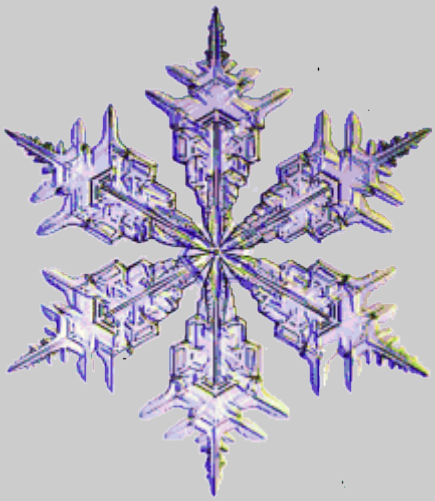
SNOWFLAKE CUTOUTS

Things to Use:
Square Sheet of Paper
Scissors
Imagination

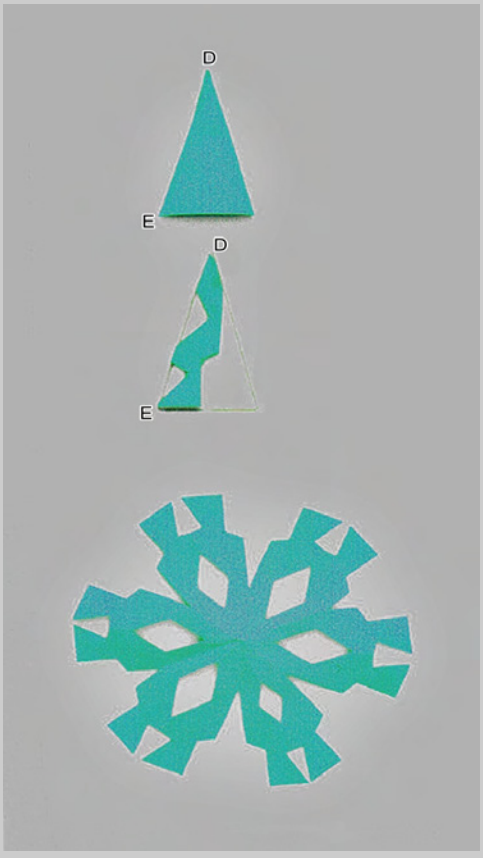
This is an activity that can be enjoyed by the whole family. Remember,if you're a little guy ask you parents to help you make the cutouts with the scissors.

Steps 1-5
Begin with a square sheet of paper and fold it on the diagonal. Then continue with steps 2-5





When making additional cuts for the snowflakes, the point "E" forms the 6 points of the snowflake and the point "D" forms the center of the snowflake.



If you decide to cut off "D", a hole will be in the center.

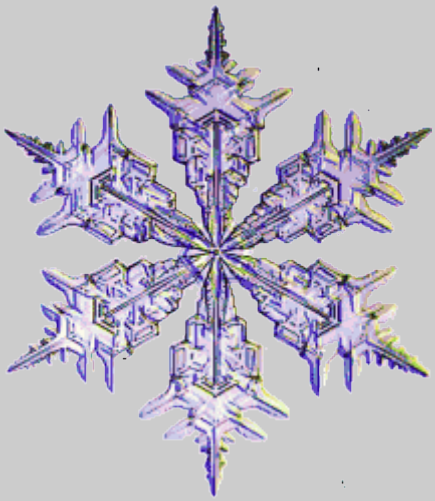
If you choose to cut off "E", the tips will have more points!

Make cuts leaving a 'path' from E to D.

Now open to reveal the snowflake.

The snowflake can be flattened or made into a relief by folding the 12 creases from the center, alternating in and out.

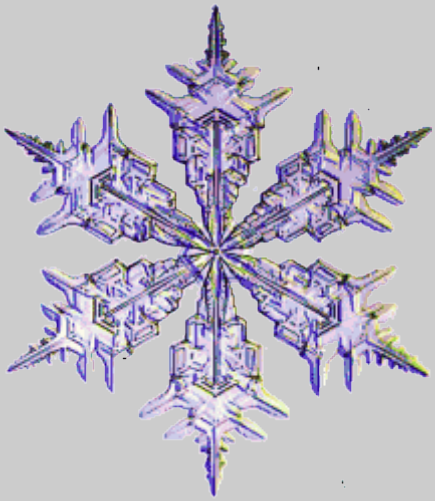
Cutting out Snowflakes at random is one thing but I have a challenge for you!

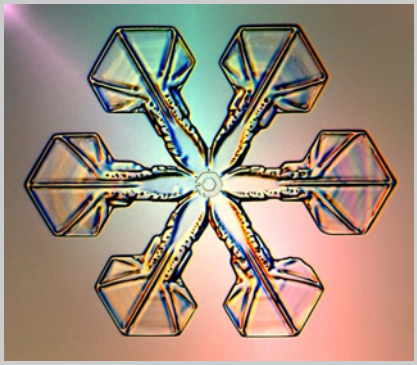


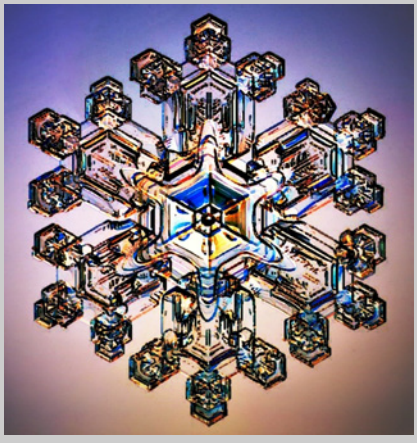
Why don't you try try making snowflakes that look like the real thing!

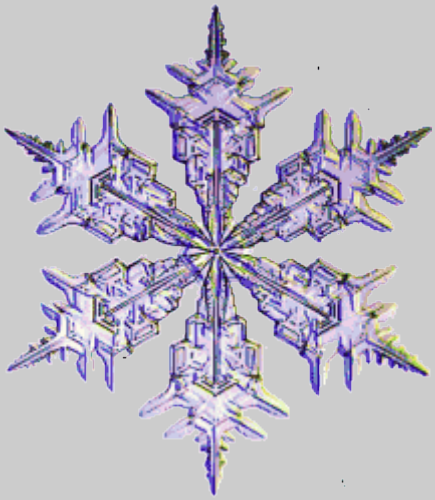
I challenge you to make a snowflake like the one on this page and the next.
You need to put on your thinking caps and use your imagination!

Are you ready for the challenge? You didn't think I would make it easy did you?









MAKING YOUR OWN SNOWFLAKE FOSSILS

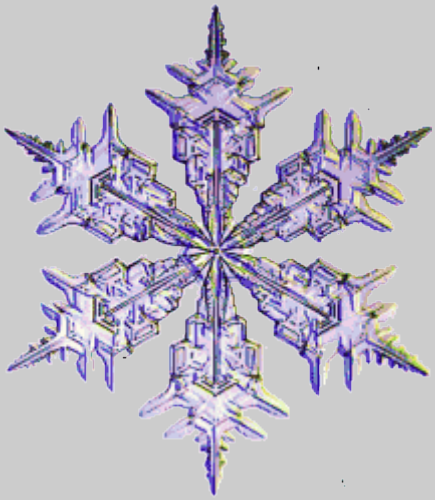
Did you know that it's possible to preserve newly fallen snow crystals, creating your own snow crystal fossils?

NO?

Well....of course you can, but it will take lots of practice and then you can look at them under a microscope any time you want and especially where it's warm!

Things to Use:
Glass microscope slides
Cover slips
Super Glue (not the gel kind; it should be thin and watery)
Cardboard collection board
Magnifying Glass
Artist's paintbrush

Things you need:
Snowflakes



Once you've got everything ready and the snow is falling and snowflakes abound...now you're ready to got to work!

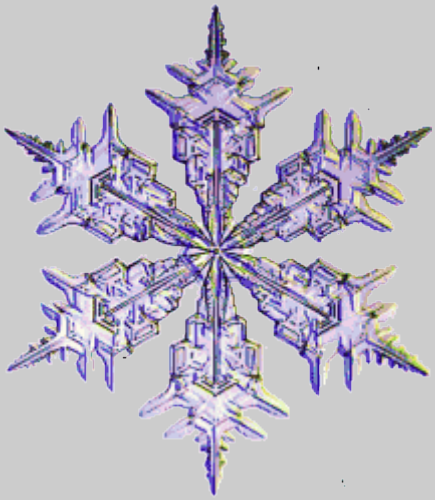
Step 1: Go outside with some glass microscope slides, cover slips, and super glue.
Cover up the slides and cover slips until they become as cold as the surrounding air.

Step 2: Let snow crystals fall onto a cardboard collection board, and scan around with a magnifier to find an attractive specimen.

Then very carefully pick the crystal up using a small artist's paintbrush and place it on one of the slides.

Step 3: Place a drop of cold super glue on the crystal, and drop a cover slip on top.
Be careful not to melt or otherwise damage the snow crystal in the process.

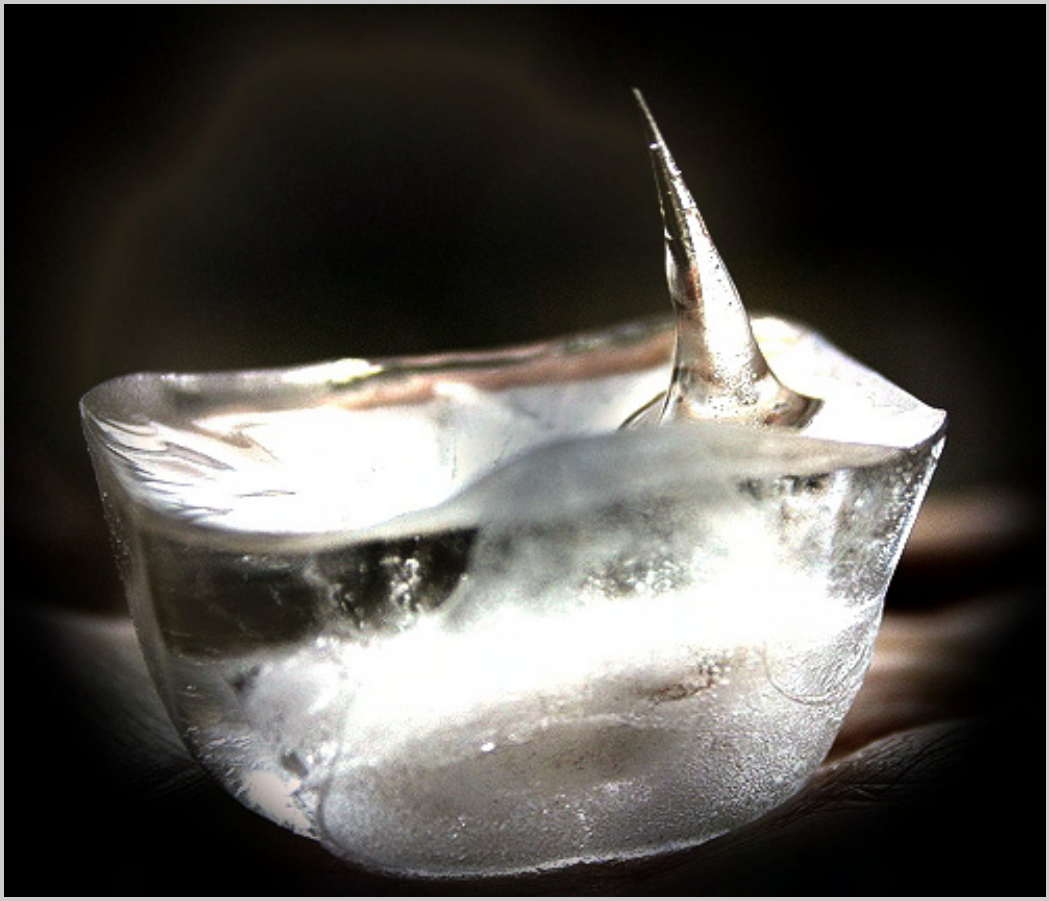
Step 4: Leave the slide outside or in your freezer for a week or two until the glue hardens.

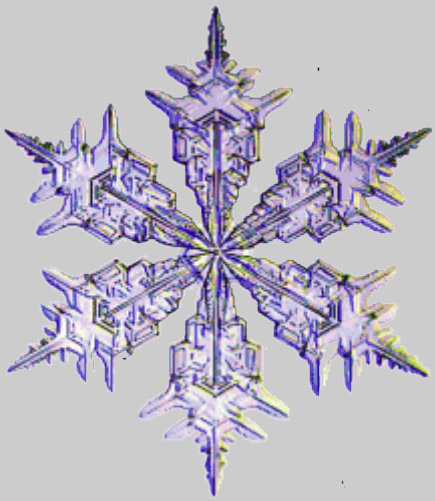


MAKING ICE SPIKES

So what are Ice Spikes you ask?

Ice spikes are odd ice structures that occasionally grow out of ice cube trays. Weird right?





Really it's an upward-facing icicle that forms as a body of water freezes.

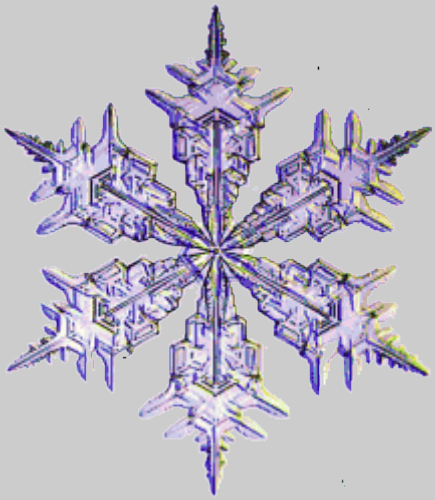
The formation of ice spikes is related to the shape of the water body, the concentration of dissolved impurities, air temperature and air circulation above the water

Well unlike some of the strange things you might find growing in your refrigerator, ice spikes are made of nothing but ice.

So how do you create one? Follow me.....

Ice spikes rarely form when freezing *"normal"* non-distilled water because impurities in the water act as an ice nucleus so the water freezes before an ice spike can form.

Ice spikes are the result of physics, not biology.



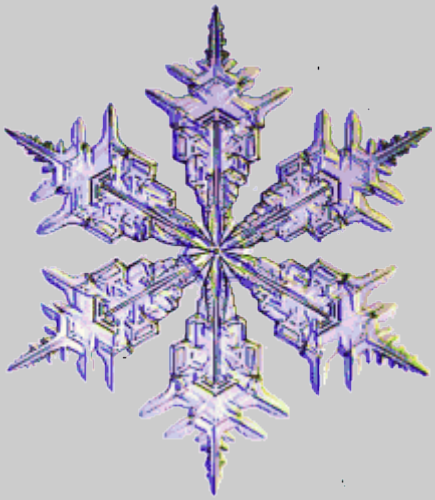
So how do you grow one? Simple!

Things to Use:
Ice Cube Tray
Distilled Water
Refrigerator

Pour distilled water into your Ice Cube Tray...
Leave overnight and see what Ice Spikes you grow!

Now wasn't that simple?

See how much fun science can be?



MY FUN BOOK IS FINISHED....

BUT!

THIS IS ONLY THE BEGINNING..
NOT THE END!

THERE'S LOTS MORE TO EXPLORE!

Soooooo
Join me on my next adventure!