

FAMILY



SCIENCE



NIGHT

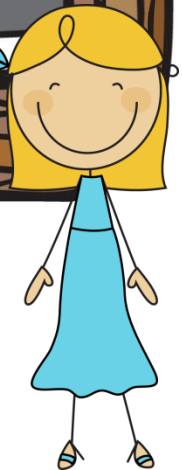




What is Family Science Night?

A Family Science Night is an evening program of hands-on science activities held at a school that provides an opportunity for children and their parents to work together to conduct simple, inquiry-based, age-appropriate science activities. There are two primary goals:

1. Stimulate an excitement and interest in science among elementary school children and their parents.
2. Get parents involved in the educational process.



Science Planning

1. Decide on a date. Find out a budget. Ask for donations from businesses if necessary. (monetary or prizes)
2. Schedule at least an hour for the event.
3. Plan for about 70-80 families. With each year, this should increase significantly.
4. Arrange to use your school cafeteria or gym. You will need tables for setup.
5. Advertise to your school at least 1-2 months ahead with flyers, posters and e-mails. Use technology to assist you with spreading the word. (facebook, twitter, blog, pinterest)
6. Recruit 4-6 adults to help you. This can be the science team or just a random group of adults.
7. order pizza, supplies, etc for stations.
8. Send out labels for students to put on shirts the day of event.
9. Have a room for teachers/volunteers to eat before or after event.
10. Turn in receipts.
11. Surveys: Have parent survey's ready for evaluation of the night.

FAMILY SCIENCE NIGHT STATIONS

1. Surface Tension
2. Call Me!
3. Coke Geyser
4. Hide a Butterfly
5. Insect Rubbing
6. InstaShow
7. We Scream for Icecream!
8. Colors! Pinch & Mix
9. Potato Guns
10. Build a Terrarium
11. The Amazing Windbag!
12. Tree Rings
13. Magnetic vs. Non Magnetic
14. Rock on!
15. Slime Time!
16. Instaworms



SURFACE TENSION

Materials:

- 6 + bottles of water
- 6 + pipettes
- disposable plates
- Pennies
- Paper towels

Penny Float!

Surface Tension

PURPOSE

Observe the surface tension of water by placing as many drops of water on a penny as you can without them falling off.

PERFORMING THE EXPERIMENT

1. Place a clean dry penny on the tray.
2. Partially fill a dropper with water. (Note that you take water into the dropper by squeezing the plastic or rubber bulb, placing the tip of the dropper well under the surface of water in a cup, and releasing your squeeze to let water into the dropper. You let drops out of the dropper by gradually squeezing the plastic bulb. Before you begin the experiment practice using the dropper over the cup of water until you can let the drops out only one at a time.)
3. Hold the plastic dropper vertically about 1 centimeter above the penny in order to place drops of water on the penny one by one.
4. You and your adult partner should both count the drops carefully as you drop them on the penny. Don't lose count! Watch from the side as the water builds up. The surface tension of the water will finally break, causing the water to spill off the penny.
5. Carefully empty the water from your tray back into the cup.
6. Dry your penny and tray with a paper towel see if you can pile more drops on during a second try, and record your result. Then let your adult partner try the experiment.
7. On the data sheet, record the maximum number of drops of water that you were able to get onto the penny at one time.

Think about it!

1. Could you coat the penny with something that would help you add more drops of water before it spills off?
2. Could you coat the penny with something that would make the water spill off when fewer drops are added?
3. How would you modify the dropper so that you could release smaller drops and thus get more drops on the penny?

EXPLANATION

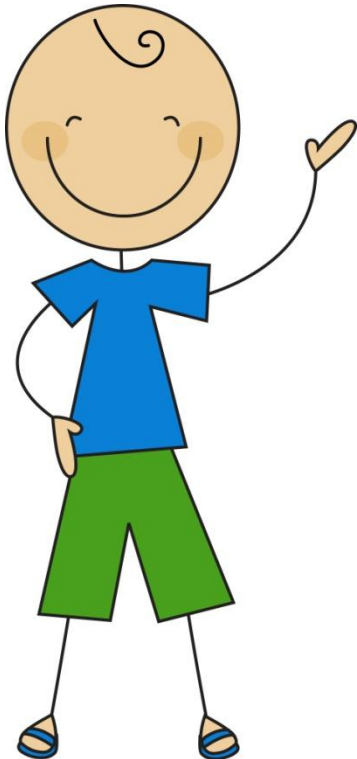
The structure of water molecules makes water act in some interesting ways. This activity shows you one of the wonders of water, namely its ability to cling to itself and to pile up on a surface. Because of the way hydrogen and oxygen atoms are joined within a water molecule, water molecules are attracted to or pulled toward one another. This is called cohesion. There is a difference in this attraction among water molecules at the surface of water and in all the rest of the water. A water molecule at the surface is attracted mostly by water molecules beneath it. A water molecule below the surface is attracted in all directions by the water molecules around it. Thus, water molecules can form a kind of "skin" on the surface of the water. This results in what scientists call surface tension. Surface tension helps a drop of water hold its shape. It also lets some insects walk around on the surface of the water.

Penny Float!

Surface Tension

Make a prediction!
think: how many drops of water will
fit on the head of a penny?

I predict _____ drops of
water will fit on the head
of my penny.



Prediction	Total drops

Did you know that
scientists do things many
times? we call these
trials! go again!

Prediction	Total drops



CALL ME!

Materials:

Bathroom paper cups

Paper clips

String

scissors

Call Me!

PURPOSE

To use string and cup to observe how sound travels. To talk to another person.

PERFORMING THE EXPERIMENT

1. Make holes in the bottoms of the cups with an end of a paper clip. Be careful not to make the hole too big, just big enough to get the string through.
2. Thread one end of the string through each hole.
3. Knot the ends of the string to hold them in place.
4. With another caller stretch the string out.
6. Hold a conversation.

Think about it!

1. What did you have to do in order to hear your partner's voice?
2. If you pinch the string while the other person is talking, what happens?
3. If you let the string droop in the middle, while talking, what happens?
4. Could you see the string vibrate while talking? (no)

EXPLANATION

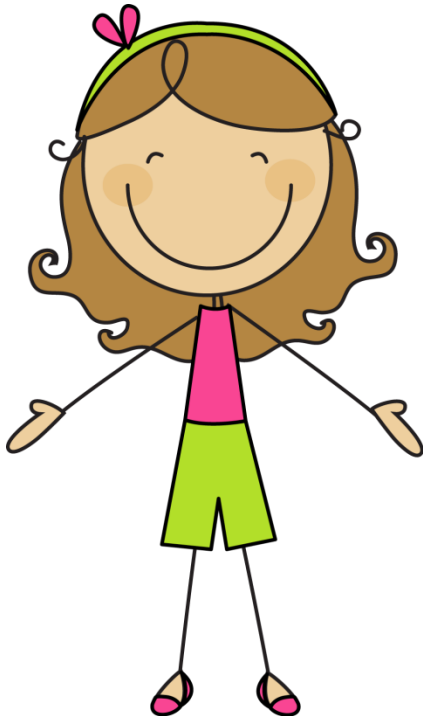
When you talk into the cup, the vibrations (sound waves) travel along the string. The other cup acts as an echo chamber, amplifying the sound waves which we hear. Hello!!!!

Call Me!

Make a prediction!
what do you think you will hear?

I predict I will hear...

Did you know that taut
means the same as tight?
The opposite word for taut
is slack or loose!



what I hear when the string sounds is taut	what I hear when the string is slack (loose)



COKE GEYSERS!

Materials:

- Diet Coke
- Mentos
- Geyser Tube
- Legs to run!

Geysers!

PURPOSE

To learn how gases and liquids interact with one another.

PERFORMING THE EXPERIMENT

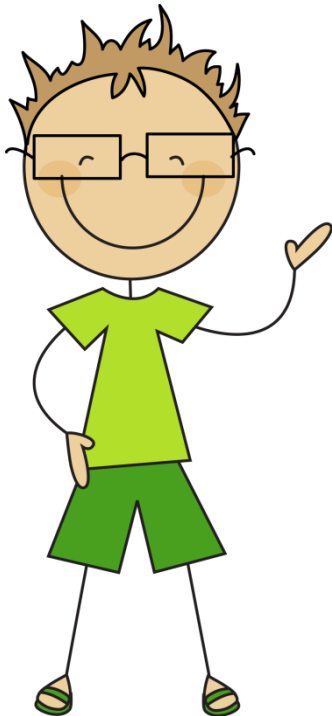
1. You'll need a 2-liter bottle of diet soda (diet doesn't make a sticky mess) and an outdoor location for your geyser.
2. Start by tying one end of the string to the trigger pin (the string might already be attached to the pin).
3. Open the bottle of soda and attach the Geyser Tube. Put the trigger pin into the hole at the base of the Geyser Tube.
4. Twist off the top cap on the Geyser Tube and drop 7 MENTOS candies into the tube. The trigger pin will keep the candy from falling into the soda before you're ready. Replace the twist-on cap.
5. Warn everyone to stand back. Countdown 3-2-1 and pull the trigger. The MENTOS will drop and the soda will go flying into the air!?
6. Pour out the remaining soda and take a look at the MENTOS . You can see where the soda has eaten away at the surface of the candy. No need to waste the candy they still taste great.

Coke Geysers!

Make a prediction!
what do you think you will happen?

I predict ...

Think! Do you think you'd get
a different reaction with
more or less mentos?



Number of Mentos	High/low explosion

Note:

Hide a butterfly and insect rubbing stations are used near a "garden".

This garden may be a painted bulletin board, or a huge poster of a garden. Students will be coloring, cutting, etc. and putting their creations "in" the "garden". Adults at this station will help put up students' butterflies and insect rubbings by stapling or taping it up.



HIDE A BUTTERFLY

Materials:

- Crayons
- Scissors
- Bulletin board paper
w/painted garden
scene
- Stapler

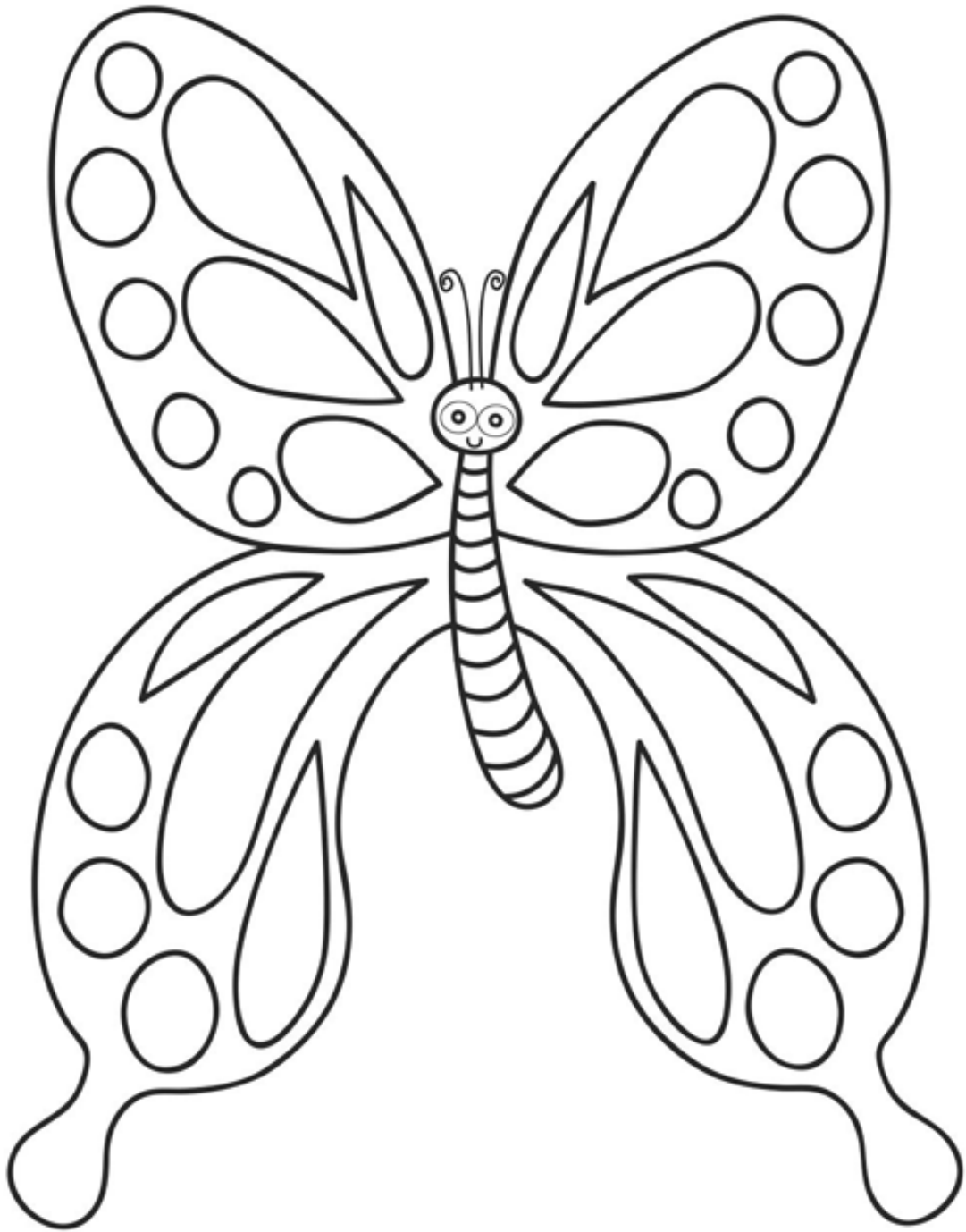
Hide a Butterfly!

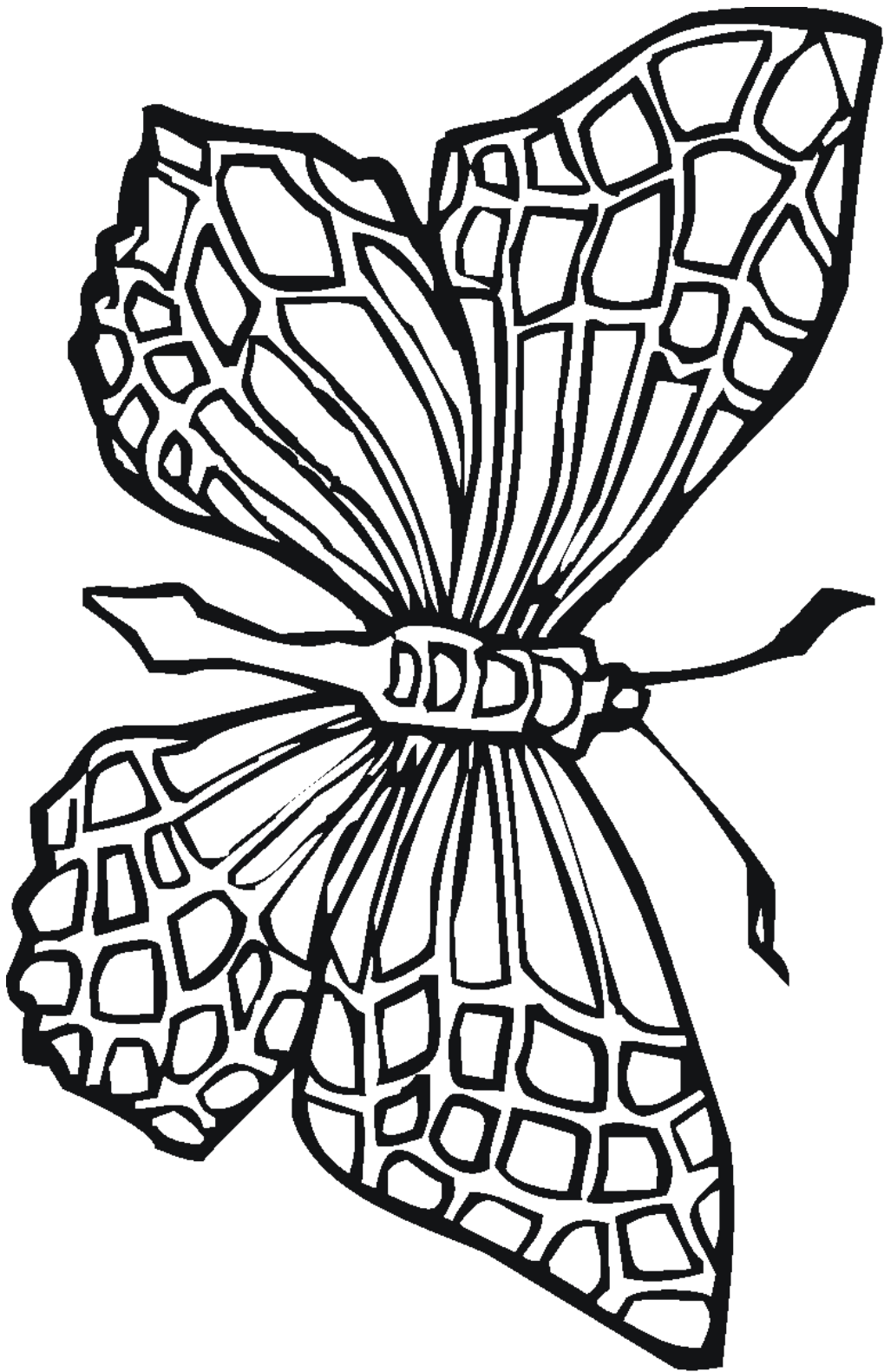
PURPOSE

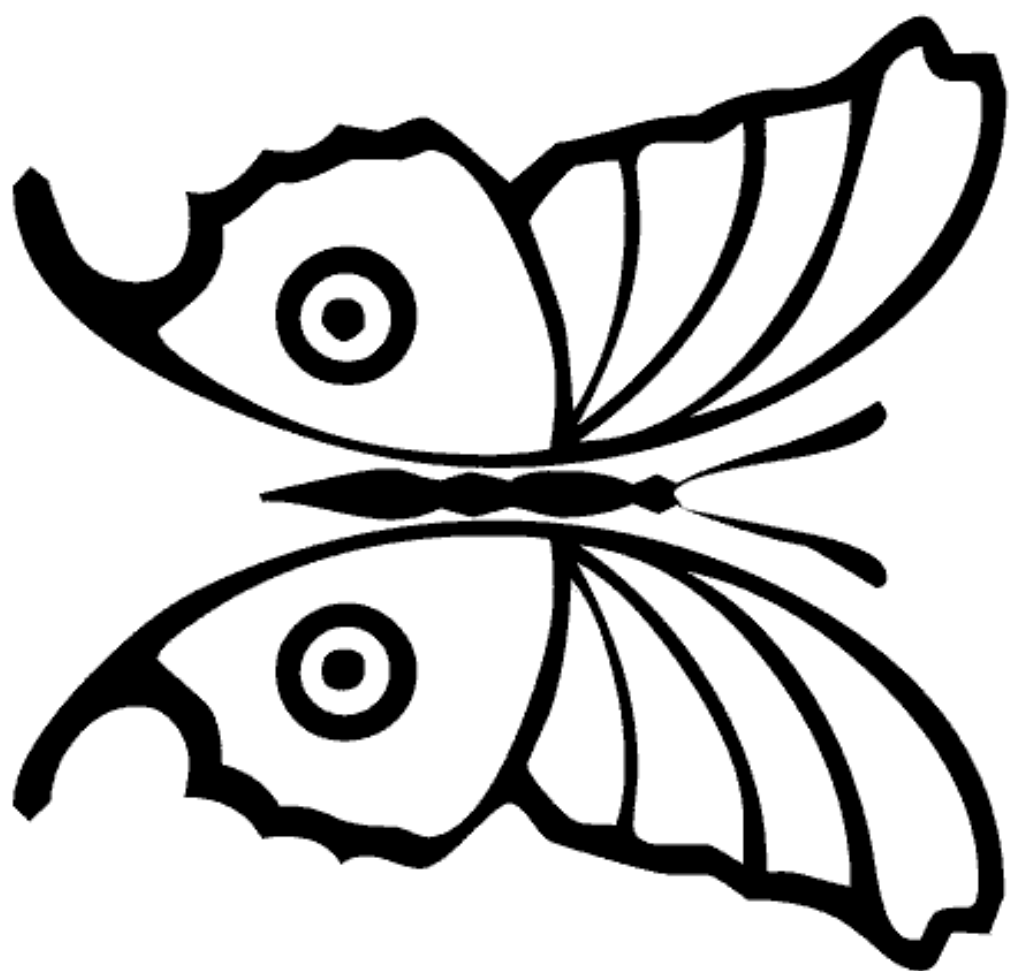
To color a butterfly and camouflage it in a scene.

What to DO

1. You'll need a butterfly sheet.
2. Color your butterfly.
3. Cut out your butterfly and glue, staple or tape to your "garden".









iNsect RUBBiNg

Materials:

Crayons

Scissors

Insect rubbing plates

Stapler

Insect Rubbing

PURPOSE

To make observations of the shape of an insect.

What to DO

1. You'll need an insect plate.
2. Put a white sheet of paper underneath your plate and rub with a crayon.
3. Cut out your insect and glue, staple or tape to your "garden".



iNSTA SNOW

Materials:

Water

Petri-dishes

Steve Splanger snow

Pipettes

Insta Snow

PURPOSE

To observe an object (polymer) absorb water.

PERFORMING THE EXPERIMENT

1. Fill the petri dish with $3/4$ water. (it's a very small quantity of water.)
2. Add one capful of powder from the test tube to the water in the petri dish. Filling the cap with powder requires good eye-hand coordination. Before uncapping, gently shake the powder to loosen it up. Tap the tube to move the powder and watch as the powder erupts into the fluffy fake snow as soon as it touches the water.
3. Put your snow in a ziplock bag!

EXPLANATION

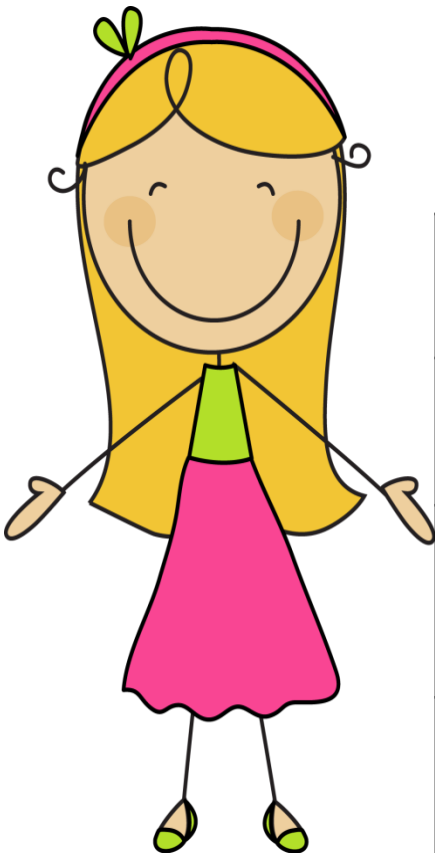
Within 5 seconds, an amazing reaction occurs. The polymer absorbs every drop of water and instantly erupts to over 100 times its original size. If you would like to reuse the instasnow, it will dry out in about 3 weeks. Leave uncovered and undisturbed.

Insta Snow

Make a prediction!
what do you think you will happen?

I predict ...

with the rest of your
snow, test what happens
when you add more water!



Drops of water in the snow	observation
1	



WE SCREAM FOR ICE CREAM

Materials:

Chocolate Milk

Salt

Ice

Ziplock bags (gallon)

Ziplock bags (small)

Spoons

Paper Towels

We Scream for Ice-cream!

PURPOSE

Students observe the different properties in liquids and solids. Students will observe the change in substances.

PERFORMING THE EXPERIMENT

1. Measure about $1/2$ cup of chocolate milk and pour it into the small zip-lock bag.
2. Make sure the bag is sealed and place the bag in the large zip-lock bag.
3. Add ice to fill the larger zip-lock bag. (at least $1/2$ full)
4. Sprinkle A LOT of salt. At least 4 handfuls.
5. Seal the big bag and shake for about 5 minutes or flip back and forth for 5 minutes. Keep going until you can see the mixture is turning into a solid.
6. Open the large bag and take out the small bag.
7. Open the small bag and use a spoon to taste your results.

Think ABOUT it!

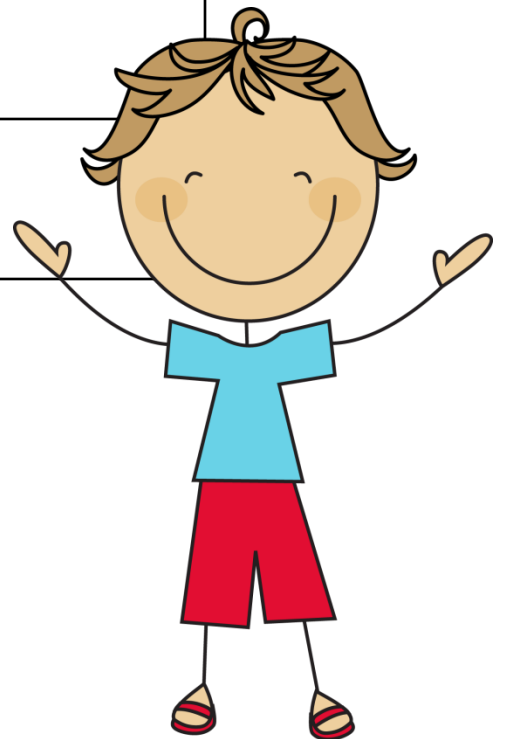
1. What caused the ice-cream to freeze?
2. Do you think the ice-cream would taste the same if you had just put the chocolate milk in the freezer?

We Scream for Ice-Cream!

Identify the state of matter!

Is it a solid, liquid or a gas?

Item	State of matter
milk	
zip-lock bag	
ice	
salt	





TREE RINGS

Materials:
Tree Ring Cookies
Pencils
Recording Sheet

Tree Rings

PURPOSE

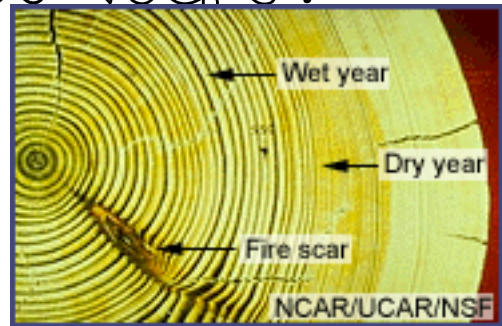
To determine the age of a tree and to recognize any climate changes that may have occurred during the tree's growth.

What to DO

1. Obtain a tree ring cookie.
2. Count each of the rings on your cookie. Each ring represents a year.
3. The pith (central layer) and the bark (outer layer) are not counted.

Think about it!

1. How old was your tree ring?
2. What type of weather was present when your tree was alive?
3. Did your tree ring have any dry years? Wet years?



NOTES

- The youngest rings are those closest to the bark.
- The oldest rings are those closest to the pith.
- Wide rings mean your tree had a year that was wet or cool.
- Narrow rings mean your tree had a year that either had a severe winter or drought.

Tree Rings



draw your tree ring in the box
above.

1. How old is your tree ring? _____
2. What weather was present? Yes or No
3. If so, how could you tell?



SLiME!

Materials:

Steve Spangler's Slime Kit

Beakers (15ml)

Popsicle stick

Small ziplock bags

Slime

PURPOSE

To make observations and use the 5 senses to describe an object.

What to DO

1. Measure 15 ml (or 2 oz) of green PVA solution into a plastic cup. Dip your popsicle inside. Take it out. What do you observe?
2. Use the lid of the Borax solution bottle as a measuring cap. Pour 1 capful of Borax solution into the cup containing the PVA.
3. Use the stirring stick (popsicle stick) to mix the solutions in the cup. You'll need to stir for a minute or so until all of the PVA molecules are "linked" together. Have the students lift the stick straight out of the cup and comment on any changes they see.
4. Store the slime in a ziplock bag.

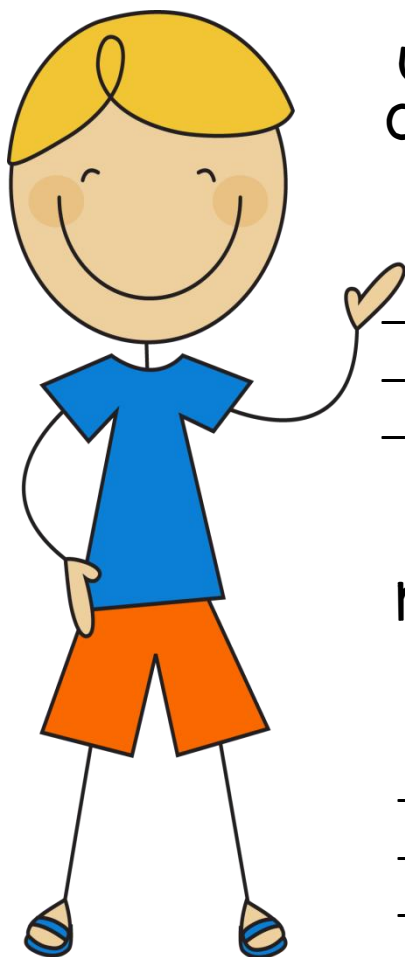
Slime Time!

Describe!

describe the slime. color, texture, odor and anything else you observe.

Slow Pull Test

grab a glob of slime with your fingers and slowly pull on the ends. what happens? does it stretch or break? write your observations.



Ball Test

roll your slime into a ball. sit it on your plate. what happens?



iNSTA WORMS

Materials:
Steve Spangler Insta
Worm Kit
Ziplock bags

Insta worms

PURPOSE

To make observations and use the 5 senses to describe an object.

What to DO

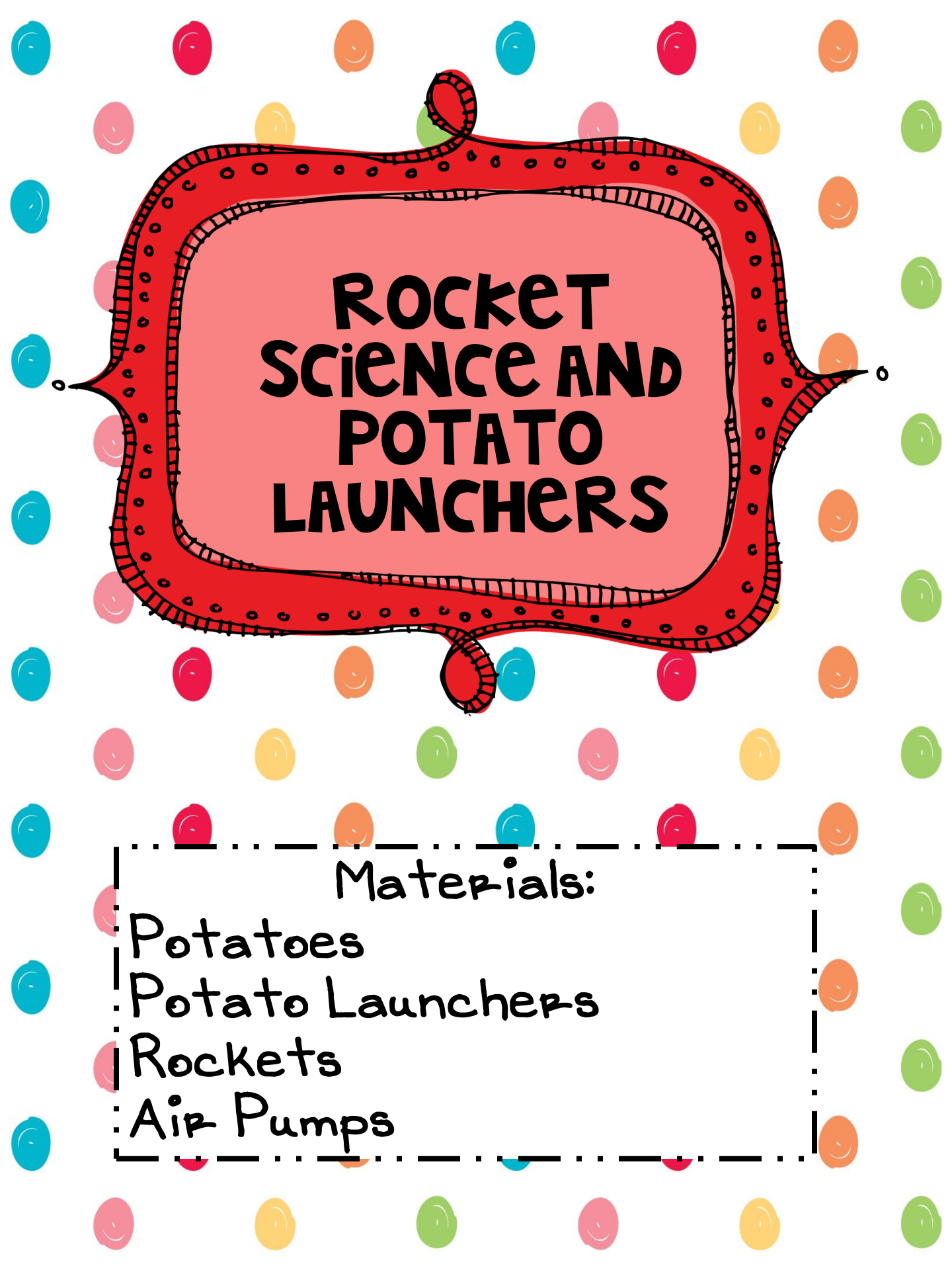
1. Squirt a small stream of the Worm Goo into one of the cups containing the Activator Solution.
2. Carefully pull out the "worm" from the solution. Don't worry if the worm breaks, just dip the gooey end back into the activator solution to seal it up.

Think about it!

What characteristics does your worm have?

EXPLANATION

When you make instant worms, you are learning about polymers. The Worm Goo is really a liquid called sodium alginate. Sodium alginate is a long chain of molecules called a polymer. Polymers are large molecules made by linking many smaller molecules together. Specifically, sodium alginate is a protein found in algae, seaweed and kelp and also used to thicken foods like ice cream.



ROCKET SCIENCE AND POTATO LAUNCHERS

Materials:

Potatoes

Potato Launchers

Rockets

Air Pumps



**ROCK
ON!**

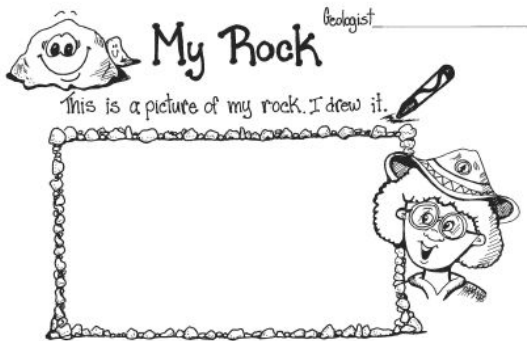
Materials:

Rocks

Aims Handout

AIMS handout
inserted here. source:
Primarily Earth "My Rock"
link:

http://store.aimsedu.org/aims_store/index.php?dispatch=products.view&product_id=819



My rock's name is _____

My rock is _____ (light or dark)

My rock is _____ (rough or smooth)

The colors in my rock are _____

My rock is special because _____



Name _____

My Rock's Measurements

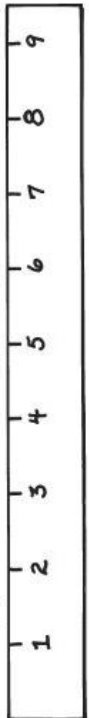
My rock is this long.
(glue string here)



My rock is this big around.
(glue string here)

My rock measures this many inches.

Lay your rock on the ruler. Mark its length. Color it in.





THE AMAZING WINDBAG!

Materials:

Windbags
Handouts



PINCH AND MIX

Materials:

Zip-Lock bags

Steve Spangler Pinch

and Mix

Spoons

Pinch and Mix

PURPOSE

To make observations and mix colors.

What to DO

1. Squirt 1-2 tablespoons of each color goo into the zip-lock bag. Aim for one color in each bottom corner and the third color in the middle of the bag.
2. Take care to gently squeeze as much air out of the bag as possible before sealing it.
3. Pinch and mix the goo to your heart's content!



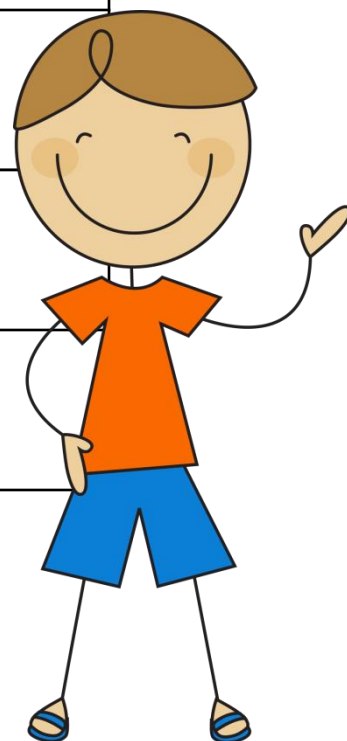
MAGNETIC VS. NON MAGNETIC

Materials:
Magnets
Pencils
Various objects

Magnetic vs. non-magnetic

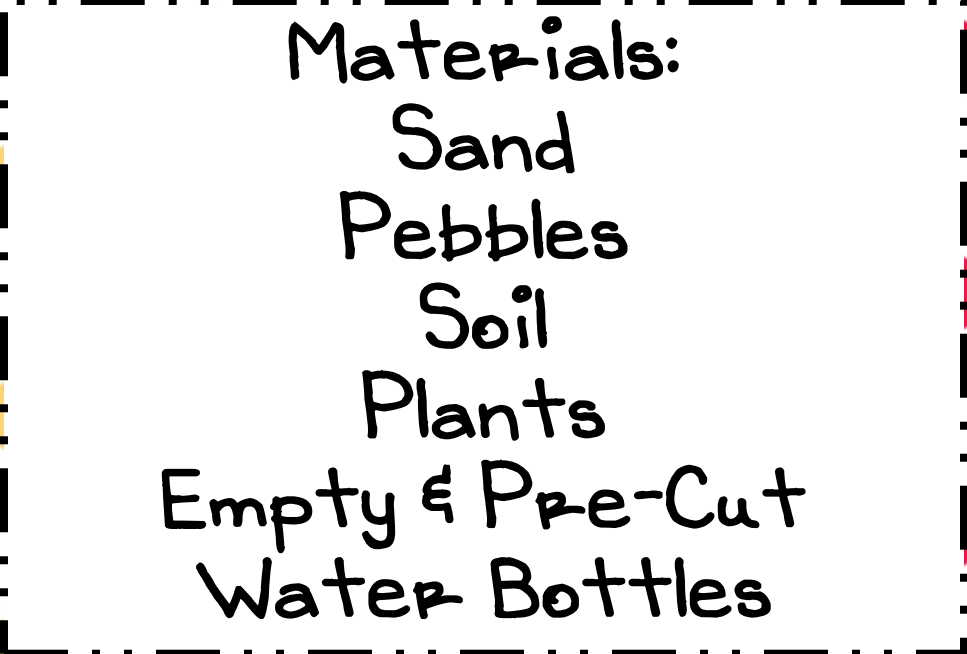
Is it magnetic?

Item	Yes or no.





BUILD A TERRARIUM



Materials:
Sand
Pebbles
Soil
Plants
Empty & Pre-Cut
Water Bottles

Terrariums

PURPOSE

To make an ecosystem using living and non-living things.

What to DO

1. You will first need to cut your bottle in half. The top part will act as a "lid".
2. First put pebbles on the bottom of your bottle. Next add sand.
3. Add soil on top of the sand.
4. Cut some leaves and place in soil.
5. Add a small amount of water.
6. Take your terrarium home!

Example of Assignments for volunteers

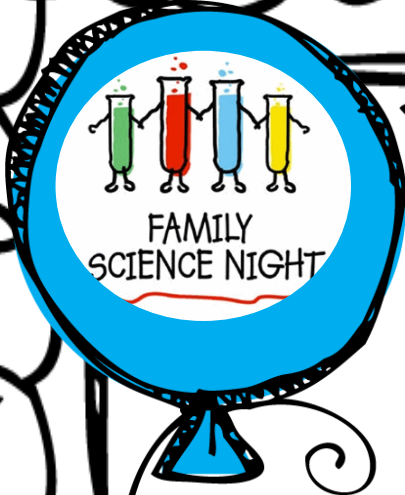
Name	Station	location
Alaniz (sub: Worden)	Sign In	entrance
B. Martinez (sub needed)	Sign In	entrance
Silvas (sub needed)	Sign In	entrance
Flores	Sign In	entrance
Nava	Tree Rings	under pavillion
Dishman (Sub: Vangie Lopez)	Tree Rings	under pavillion
Rhodes	Slime Station	under pavillion
Gorbet	Slime Station	under pavillion
L.West (sub needed)	instaWorms	under pavillion
Robertson	InstaWorms	under pavillion
O'Reilly	InstaWorms	under pavillion
JH	Rocket! Science & Potatoe Guns	outside
Green	Rocket! Science & Potatoe Guns	outside
Davis	Rocket! Science & Potatoe Guns	outside
Chaney	InstaSnow	cafeteria
M. Hinojosa (Zambrano)	InstaSnow	cafeteria
Meza (sub needed)	Call me!	cafeteria
Sullivan	Call me!	cafeteria
Trevino (sub needed)	Call me!	cafeteria
Snyder	We Scream for IceCream!	under pavillion
Avelar (sub needed)	We Scream for IceCream!	under pavillion
Hiracheta	We Scream for IceCream!	under pavillion
Norris	We Scream for IceCream!	under pavillion
Betz	We Scream for IceCream!	under pavillion
Gonzalez	We Scream for IceCream!	under pavillion
Shepard	Surface Tension	cafeteria
Zuris	Surface Tension	cafeteria
Jackson (Middleton)	Rock On!	cafeteria
Aleman (sub needed)	Rock On!	cafeteria
Hamilton (sub: Tomlinson)	The Amazing Windbag	under pavillion
JH	The Amazing Windbag	under pavillion
Snedeker	Hide a Butterfly/Insect Rubbing	library hall
Hunt (sub: Vineyard)	Hide a Butterfly/Insect Rubbing	library hall
Thomas	Coke Geysr	under pavillion
JH	Coke Geysr	under pavillion
Sorrells	Coke Geysr	under pavillion
Carver	Pinch & Mix	cafeteria
Carver	Pinch & Mix	cafeteria
Alvarado	gofer/sub	everywhere
Chapman	gofer/sub	everywhere
Howell (sub needed)	Magnetic vs. Non-magnetic	cafeteria
JH	Build a Terrarium	cafeteria
JH	Build a Terrarium	cafeteria

The following signs are for you to laminate, cut and post on walls where your station may be located.

Examples of "invites", flyers, are also shown. We are now using mailing labels to put on the students the night of science night as a reminder.

If you have any other creative ideas, please share and leave a comment on my TPT account: second grade cup of tea.

Thank you!



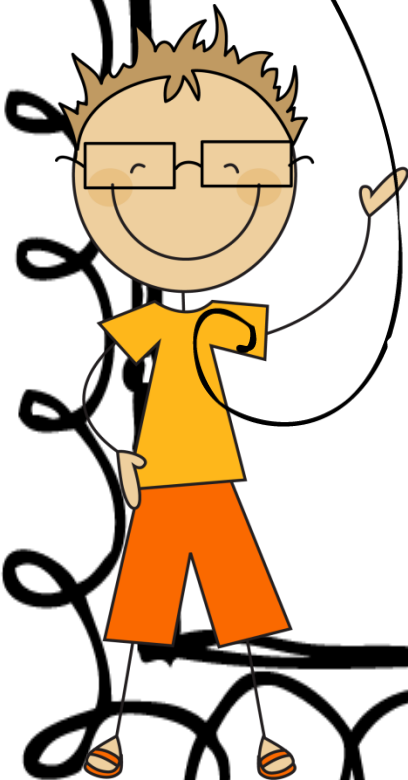
Y

ou are
invited!

To Family
Science Night!
February 9th,
2012

@ 6:30

Bring your family for
fun science
experiments, pizza,
prizes and more!



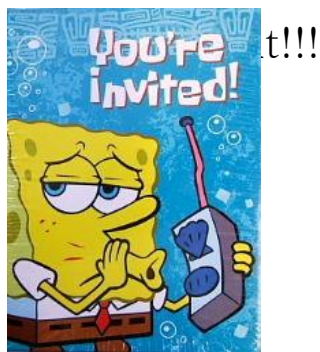
I would cut this out and use yarn to make a VIP "pass". I would add a picture of a famous character every year for the students to wear.



Remember Family
Science Night!
When: Tonight,
December 6, 2007
Where: Petty
Elementary
Time: 6:00-7:30



Remember Family
Science Night!
When: Tonight,
December 6, 2007
Where: Petty Elementary
Time: 6:00-7:30



Remember Family
Science Night!
When: Tonight,
December 6, 2007
Where: Petty
Elementary
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Remember Family
Science Night!
When: Tonight,
December 6, 2007
Where: Petty Elementary
Time: 6:00-7:30

**COKE
COYSE**

SLIME

iNSTA

SNOW

**CALL
ME!**

SURFACE TENSION

Hide

A BUTTERFLY

POTATO LAUNCHERS

PiNCH

AND

Mix

**BUILD A
TERRARIUM**

TREES

RINGS

**iNSTA
WORMS**

**WE
SCREAM**

FOR

ICECREAM

THE

AMAZING

WINDBAG

**EXTREME
BUBBLES!**



Thanks!

Thank you for downloading this file. I have only compiled these activities into one file for my schools' FSN night. This file could not have been possible without the help of the following resources:

Steve Spangler Science
AIMS Education Foundation
Project Wild
Sandia National Laboratories
Texas A&M Corpus Christi's
Earth Mobile
The Science Spot
Dr. Robert McDonald

Please note:
another FSN packet
will be available with
more stations
that you can do
with less \$\$\$ and
household items.
(like glue, borax,
etc.)

If you have any
questions,
comments or ideas,
feel free to email
me at

chiracheta@gmail.com

About me:

I started Family Science Night the day I saw a successful one pulled off at another school. It was a school that didn't have so many reduced lunches as my campus did. I felt as if my students deserved the same, if not better opportunity. Being a second grade teacher, who had just graduated with my M.A. in Reading Education (but a secret love for science) and survived her first year of teaching, I contacted professors, colleagues, and friends. I went out and asked the community for donations. I begged for help. When you have nothing, (I had no budget at the time) how do you pull off something that A) no one believes in and B) host a spectacular night? For you see, we had "Family Nights" before. Where parents sat and listened to staff talk about how to do reading or how to do math with their child. (instead of letting them do it, and providing them the opportunity to do it). Our parents felt intimidated and we were lucky if we had 20 parents show up. So I decided to have all hands on learning, and less talking. For the last 7 years I have kept handwritten handouts, lame copies, etc (and the kids still loved it) but recently I needed to give it a make-over. Also, teachers have been asking for a copy and I was too ashamed of my sloppy compilation of what I had. (they understood why, but I was still mortified!!) so here it is! For you to use, keep and share the love of science with your students and community!

Happy Teaching!

© second grade cup of tea

Acknowledgements



graphics by [goodness&fun](http://goodness&fun.com) © mygrafico.com

other graphics by DJ INKERS



from kevinandamanda.com