Science Activities

Children are fascinated by the world around them and are eager to learn science related themes. The ideas that follow came from the wonderful women on my yahoo email lists childcareland2 and shelleylovettsecprintables.

Some of our favorite science activities include:

Planting a garden - Each year we plant a garden with different kinds of seeds ... pumpkins ... flowers etc. The children are amazed how much the plants grow in such a short time and that you can get a big pumpkin from a small seed. The children are involved in every step of the gardening from planting to watering. If you do not have a garden plot you can use you can always plant flowers in small containers.

Magnets - We us magnets to try and pick up different objects around the room ... I have the children go around and see what the

magnets will stick to and then we all sit down together and the children share what their magnets stuck to. I also lay different objects out an a table and create a chart that the children fill out. They record if their magnet picked up or stuck to the item on the table.

Flying Balloons - this activity is hysterical because the kids laugh so much .... You blow up a balloon with air and let it go so it flies around the room and discuss what make the balloon fly.

Measuring - we have measuring cups in our sand and water table so children can measure the sand and water.

Apples - we cut apples in half and watch it turn brown and talk about why it turned brown.

Feely Boxes - Fill boxes with different items and have children guess what is inside. Some great things to use are cotton balls ... marbles .... spaghetti noodles ... cheerios etc....

Freezing Water. Fill little small dixie cups with water about half way. Put in the freezer. Check every hour to see how the water is turning into ice. Once it is frozen leave cups out and check to see how it melts.

Shelley Lovett
childcareland.com

You can order insect larvae from Insect Lore (www.insectlore.com) and watch them change and grow. My daycare has done ladybugs, butterflies and right now praying mantis. The children learn how they change and even what each can and will eat. I have 10 praying mantis inside right now and each day we look for aphids for them to eat.

Colleen Stephansen
Colleen's Child Care
NAFCC Accredited Child Care in Riverbank, CA

Static electricity - Take an inflated balloon. Rub the balloon vigorously against a child's hair or sweater. Experiment with different objects...where the balloon will stick? The curtains, the Wall, the Refrigerator or ?

Magnets: We do all sorts of things with our Magnet wands: want will it pick up and what will it not. I even have tons of letters, animals, etc with magnets that they play with too.

a fun website: How to Introduce Science to a Toddler - eHow.com address: http://www.ehow.com/how_11444_introduce-science-toddler.html

Plant a seed. Watch it grow. also, Plant two different pots of the same thing - put one where it gets sun and water it, put the other one in a dark place and dont' water it or at least not as much. Then compare the plants.

Watch the rain. Talk about the sounds that you hear during a rain storm. What are the signs that a storm is coming. Talk about storm safety. This will often help a younger child to not be so scared of storms.

Scents: Gather different objects with different scents. Blindfold the children, then place the object close the child's nose, and ask them to smell it and try to identify what it is. ALso could use the old film canisters - the black ones are best. put a scent in the canister, poke a hole or two in the lid so that child can smell it and try to guess what it is.

Colleen (KS)

One that I did with my children that was a big hit was rainbow toast. You need, food coloring, paintbrush, and bread. You mix the food coloring with water and paint on the bread. Make sure that the children do not get too much water on the paintbrush or the bread will get soggy. Once bread is finished painting, toast in the toaster, the colors merge and the bread turns wonderful colors. The best part is the children get to eat there toast afterwards.

Thanks,

Cheryl Martin
Cheryl's Childcare/Eden, NC

In my classroom we make crystal snowflakes using borax and near boiling water. We start by making a snowflake from a pipe cleaner and then we tie that ot a cord tied to a pencil. We do that so it is easily wound up if the pipecleaner snowflake is too long and touches the bottom of the can.
Next we take a lagre coffee can and add almost boiling water 3/4 of the way to the top. then we add the borax laundy detergent and keep mixing until the water is saturated. We than place our pipecleaner snowflake in to the water. Take care to keep the pipecleaner off the bottom of the can and away from the sides of the can. If you do not crystals will form and the snowflake will be attached to the can. Carefully move the can to a safe locationa nad wait for the crystal snowflake to form. This can happen in a few hours or overnight depending on the saturation of the water. We use this to discuss how snowflakes are made of crystals.

Carol Wilt

Magnets -- we play with magnets in the sand and get the iron fillings out of it. The kids think it is great that there is stuff in sand that magnets can pull out. They then take the fillings and put them on paper so they can make them stand up and dance.

Squirrels, Birds & Insects -- We hunt for different insects and see they defensive reactions such as watching millipedes and pill bugs curl up into balls. We watch the different birds and see what they do in the trees. Sometimes, if we are still enough we are able to feed the chickadees right from our hands. We feed the squirrels nuts and seeds and watch them store them in their cheeks or in the ground.

Outside in the rain -- play in the puddles and rescue worms from them. Watch the worms wiggle and squirm and work their way back

into the ground. Look for their holes after it has stopped raining.

Flowers -- watch the tulips or daylillies grow in the garden. Sometimes the squirrels come and dig up the bulbs. The kids give me daily reports on their progress.

Make ice cream from scratch -- we have a non-electric ice cream maker which the kids love to use to make ice cream. They help to put the ingredients together and help to stir it as it freezes.

Baking in general = chemistry in the kitchen -- the kids help to bake our treats and learn about what baking soda & yeast does. The kids love to watch bread rise or to punch out all the air from it to make it rise again. They also like to see the baking soda and vinegar combine to cause a balloon inflate on top of a pop bottle.

Water play -- learn about dam making and how water moves. They make the water move really fast causing the boats and toys to go around as well without them actually touching them.

Tammy's Home Daycare

Some of our favorite science activites, most are done as art

q-tip paints- dip q-tip end into water color let dry,
let children try to use the q-tip dry, ask what is happening discuss what happens to dried out markers.
spray the paper with water and let them use the q-tip on that , discuss what is happening

Magnifying glasses and bincoulors- amazing what they find using them inside and outside.

frozen paper- lightly spray a piece of paper with water, place on cookie sheet in freezer, leave till frozen
take out use water colors, cryaons, markers ect. discuss what happens as the paper begins to thaw.

rain paintings- we use washable makers make a picture set out in the rain(a light rain) watch what happens. One day one of my children wanted to rain paint (yes it was the most beautiful day in the world) both my assistant and I said sorry the sun is shinning, this child

looks up at us and says there is the water bottle.

Senory bottles- dirt bottle, fill a bottle about 1/4 full with dirt, fill with water, shake and see how the dirt seperates

Cathy

Bubble Blaster Bags... We made these last week & the boys(I have an all boy group this year) loved them. I got this website from my chemistry class that has many experiments listed www.exploratorium.edu/science_explorer/bubblebomb.html

Chris in Wi.

Sensory Bags: A clean way to explore coloring mixing. In a gallon size freezer bag place at least two squirts of primary colored paint. Reinforce
the top of the bag with packing tape. Encourage the children to squish,
smooth, squeeze, and smear the paint until it is mixed completely. Also
works well with hair gel. Shaving cream and food coloring also works but
does not last long. Practice fine motor skills by having the children "draw" or write their name on the bag.

Egg Carton Rainbows: During our Rainbow Theme, the children enjoyed using
eye droppers to mix colors in an egg carton. Fill each space with a bit of
water. Use food coloring to color the water in three different spaces. It
works better not to put the three cololrs right next to each other. The
children became very absorbed in this activity. Ice cube trays do work a
little better with the younger children because they are sturdier.

Volcanoes: All time favorite with even the young children. Create a "volcano" by placing a cup or small bottle in a dampened sand area and build
a mountain around it. We've also created a volcano out of clay. Place baking soda inside the "volcano". Pour vinegar dyed red and watch the
volcano erupt.

Amber D.
Play 'n' Learn Family Child Care

One of the things my kids love to do is make colored carnations. I buy white carnations and make a fresh cut in the stem. Then put the flower in a glass filled with water with about 15-20 drops of food coloring. We try to decide which will color first. I usually use red, blue and green, and then do one carnation with a 3 way split in the stem and stuck in all three colors. They have fun checking them every hour or so to see if there is any progression and the next day they love seeing the end results.

Lisa

The following ideas were sent in by Judy Santos who has collected science acitivity ideas from various sources:

Science center

My science center has a trifold which has a display of the 'things' we
Are studying at the moment. Right now it is 5 senses. It'll change in October.
I have a couple of feely cans, some smelly bottles, some spinning color
Tops and paddles, drop zone identifying activity, sandpaper hands to match up, a survey asking about favorite foods, books, journals for noting thngs about our classroom pets (millipede, walking sticks, and

tadpoles), paper for drawing observations, directions for drawing the different pets, hand lenses, a child's microscope, viewing boxes, trays of things to look at..... all of these things are neatly (haha) stored in cubbies (except the animals and trifold and the 'activity' of the week--which on Friday goes into a cubbie for exploring later).

Next month will be Earth, soil, rocks, water. I will have dirt, sand, clay, gravel, water, peat, bark mulch in topless 8 oz. size milk cartons.
There will be popsicle sticks to stir and get samples with. Viewing tools,pictures of earth, soil (like gardening and farming pics), rocks, water (like lakes, rivers, oceans...), my rock colletion. a tub of pea gravel to hide things in (maybe small earth balls or gold), and lots of books on the subjects.

November will be early tools. I'll have wedges, inclined planes, wheels,arrow heads, rope..... and lots of pictures of our forefathers using hand tools. and books

In December I will have lots of toys to build and clocks and small motors to disassemble. Along with kid size tools. Our topic is parts of whole and push/pull.

Scientist of the week

I have been working on a compilation of easy to do science experiments for the Scientist of the Week.

A CORK IN A BOWL
- a glass
- a cork
- a bowl filled with water
1- Float the cork on the water in the bowl.
2- Place the glass upside down directly on the surface of the water, over the cork.
3- Push the glass to the bottom of the bowl. The cork goes down, or seems to "sink", but it remains on the surface of the water.
(The air in the glass pushes the water surface, where the cork floats, down to the bottom of the bowl. As long as the glass is full of air, water can't get in.)

I DON'T WANT TO GET MY FEET WET

- a bowl filled with water
- a glass
- a piece of paper

1- Crumple the paper and place it in the bottom of the empty glass.
2- Put the glass upside down over the bowl, and push it down into the water.
3- Remove the glass and examine the paper; you will discover it is still dry.
(There is air in the glass, and when the glass touches the surface of the water and you push down. the air is imprisoned. The water can't go into the glass because the air is taking up the space. To wet the paper, the air would have to be released; the air can be released if you tilt the glass.)

I'M FLOATING... I'M SINKING...

- 2 sheets of paper
- a container of water

1- Place 2 dry sheets of paper on the surface of the water. They float.
2- Completely wet one of the sheets of paper.
3- You will notice that the dry sheet floats and the wet sheet of paper sinks.
(When the paper is wet, the small air cells that the paper is composed of are filled with water, therefore it sinks. When the paper is dry, the small air cells make it float.)
(This experiment can also be done with two sponges. The air cells in the sponge are visible because they are very big. Make sure the wet sponge is completely soaked to do this experiment.)

YOU DON'T SEE ME, BUT I AM HERE

- 2 balloons
- string
- weigh scales

1- Inflate two balloons the same size and tie securely so as no air can escape.
2- Tie each balloon with an 18" string.
3- Tie the string of each balloon to each end of the

scales so that they balance.
4- Pop one of the balloons with a needle. The other balloon will go down.
(The two empty balloons were of equal weight, so why does the balloon filled with air go down when we pop the other? Air has weight: the popped balloon has no more air, therefore it is lighter.)

THE BALLOON THAT THOUGHT IT WAS VERY STRONG

- a balloon
- an empty jar

1- Take the balloon and hold it so that it is partially in the empty jar.
2- As you blow into the balloon, the part that is inside the jar will expand until it touches the sides of the jar.
3- Continue blowing up the balloon and soon you will be able to lift the jar with the help of the balloon.
(The air pressure inside the balloon exerts force in all directions, pressing against the sides of the jar sor forcefullyl that it is impossible to free the balloon unless some air is released.)

POTATO AND APPLE OR APPLE AND POTATO?

- a raw potato, washed
- an apple, washed
- a blindfold

1- Take a piece of peeled potato, and a piece of peeled apple.
2- Blindfold one of your classmates, and ask him or her to pinche his or her nose really well.
3- Have your classmate taste a piece of potato and a piece of apple.
4- Can your classmate tell which is which?
(Probably not. In order to taste food, the nose is more important than the tonge. When you have a cold, you can't smell very much, which prevents you from fully appreciating what you eat.)

DON'T RUN OUT OF AIR

- a balloon
- a pop bottle

1- Slip a balloon (NOT inflated) into the bottle,

stretching the top of the balloon over the bottle opening.
2- Now try to inflate the balloon.
3- Try as you may, you will not be able to!
(The bottle is full of air taking up all the space, and can't escape because the balloon is closing the bottle's opening. It is therefore impossible to inflate the balloon.)

I LOVE HEIGHTS
- a small bottle
- a piece of string (14" to 18" long)
- a large jar
- food colouring
1- Tie the string around the neck of the small bottle.
2- Fill the large jar with very cold water.
3- Fill the small bottle with very hot water (the parent at home, and the teacher at school, will help with this part!) then add food colouring (add a LOT so that the hot water is very dark).
4- Holding the small bottle by the string, and keeping it upright, lower it slowly into the large jar until it reaches the bottom.
5- The coloured (hot) water will escape from the small bottle by rising to the top, and will float over the cold water for a few seconds.
(Hot water rises because it is more dilated than cold water (the interval - or distance - between molecules is greater. Consequently, hot water is lighter than cold water, and will float on the surface up until the moment the cold water and the hot water will mix and become lukewarm. Then the colouring will spread in the liquid.)

THE MAGIC BAG
- a plastic bag
- a sharp pencil
- water
- a container (to put under the experiment)
1- Fill the plastic bag with water.
2- Close it by tying a knot in it (or sealing it if it is a water-tight ziplock bag).
3- Push the pencil through from one side to the other.

4- The water will not leak. (Be careful when you remove the pencil, though! Stay over the container - preferably a large enough tub.)
(When the pencil pierces the plastic, the molecules press against the pencil to seal the opening made by the pencil, so that no drop of water can escape.)

Worm Composting

Check out my units on worms. There are so great activities to do with
the earthworms that I got from a course I took one summer.
http://www.geocities.com/hickschicks1gr/worms.htm
and six science lessons at:
http://hastings.ci.lexington.ma.us/staff/SLee/science/

sink or float

There is a book titled "Who Sank The Boat?" by Patrick MacGee (I think
that is the author's name) which would be perfct for a unit on floating
&sinking

We made a predicition chart for various comman objects as to wheter
They would sink or float and then we tested the results. I used a foam
Core board with magnetic tape and graphics of objects I printed out from print artist. We also made boats out of clay and foil and tried different shapes to test their bouancy. We discussed what they learned. (the more suface level your boat has the better it floats.) We also used meat trays with a piggy graphic on them and predicted how many pennies it would take to sink the piggy. You can use a bowl too. Be prepared with pennies though because again, the bigger the surface area, the more pennies it took to sink the trays.

Just some quick thoughts on Science Day ideas.

Purchase 4 small identical potted plants.

Label them:
1. Water, Light, Air
2. Water, Light, NO Air (seal with plastic bag, water from bottom)
3. Water, Air, NO light (Cover with a paper bag)
4. NO Light, no air, no water
Watch what happens...then display.
****

Put a white chrysanthemum in colored water.
++++++++++

Weigh and measure students and compare to you
++++++++++

grow mold on piece of bread
++++++++++

make sprouts and eat!
++++++++++

yeast rising....have kids mix water, flour, sugar and yeast and watch what happens....explore variables and compare sizes

Beans and Peas sprout very quickly. Here are some things to do with them.

1. Stuff a clear plastic (or glass)jar with cotton batting or quilt batting. Soak beans (I used dried kidney beans from the grocery store) overnight. Slide beans between the cotton and outside of the jar. Sprinke enough water over the cotton in the jar to keep it moist all the way to the outside. The beans will start to sprout in a couple of days. If you add one or two beans a day, starting now, by the 15th you should have little bean plants at various stages of development. They show up very nicely aganst the white background.

2. Using the same technique put a few beans in the jar, let them grow
until they have a root and a pair of leaves (about a week) then turn the jar over. The roots and sprout will change direction. (proving that roots grow down and stems up)

3. Soak some beans(the larger the better - try lima beans)for 24 hours. The beans will swell a little and when they are split open carefully you can see a very tiny plant inside complete with a root

and pair of leaves. Some inexpensive magnifying glasses help with this project.

4. I got this idea from GEMS I believe. Take a small ziplock bck and cut several thicknesses of paper towel to fit the bag. Tape(clear tape) a bean in the middle of the paper towel. Moisten the paper towel well and seal the bag. Make sure there is no air and the bag is flat. Hang the bag on a wall where it will get sun. As it grows record the amount of growth of root and stem using a fine marker. The
kind you use on transparencies. The GEM book had a premarked ruler that could be taped to the bag but you could make your own.

5. Start plants from the top of a carrot, eye of potato, top of a turnip etc. Put a little gravel in a dish, place vegetable pieces on top of gravel and enough water to come to the top of cut root. They will sprout leaves and roots in a week or so. Put an onion in the top of a jar (you can support it with tothpicks. Put water in the jar so that it touches the bottom of the onion. Explain that the carrot is a root, the potato a tuber and the onion a bulb in order to demonstrate
ways that plants start other than seeds.

6. To show how roots and stems transport water. Fill a jar with water
colour with food colouring (blue is the best). Put a carrot, a celery stalk and a white flower (carnation for eg) in the jar. In 24 hours you will see the flower, any leaves on the celery and the top of the carrot showing blue coloration. When you cut thin slices of the carrot and the celery you will see the tiny holes in the root and stem where the blue water has travelled. I usually scrape the side of the celery stalk gently with a sharp knife until you can see the tube that carries water all the way up.Great tie in to a physical science or chemistry unit

Science Corner - Make Your Own Plastic
Explore the word of Physical Science by making your own plastic!

All science experiments should be closely supervised at all times.

Raisin Elevators
Supplies:

a.. Clear, Carbonated Soda Water
b.. Clear Glass
c.. 4-5 Raisins
Pour clear carbonated soda water into a clear glass. Drop four or five raisins into the glass. After 40 - 60 seconds, the children will observe raisins moving up and down in the glass. Teacher should help the children draw the conclusion that the air bubbles caused the upward movement. Let children observe the glass later in the day when the carbonation has ceased. This will reinforce the role of the air bubbles in lifting the raisins.
---submitted by Debbie.

Soda Fizz
Supplies:

a.. tsp. of Bakins Soda
b.. Empty Soda Bottle
c.. tsp. of Vinigar
d.. Balloon
Demonstrate the following activity : place a teaspoon of baking soda into an empty soda bottle and add a teaspoon of vinegar. The two substances create a gas when they are mixed. This can be demonstrated by placing a balloon over the top of the soda bottle. It will expand from the gas. More of each substance will expand the balloon even more. Allow each child to mix the two substances. Provide a paper plate, small cup of vinegar and a small cup of baking soda. Each child can use a spoon to put the baking soda on the plate and an eyedropper to add the vinegar. The mixture will fizz.

---submitted by Debbie.

Wave Maker
Supplies:

a.. Clear, Plastic Bottle (atleast 10 inches high)
b.. Denatured Alcohol
c.. Blue Food Color
d.. Vegetable Oil
Fill the bottle three-fourths full using denatured alcohol. Add blue food
coloring (make it a deep blue) Fill the bottle with cooking oil, leaving a
small space at the top. Glue the top on for safety. The substances will
not
mix and the water will move like a wave over the oil when moved up and
down.
---submitted by Debbie.

Sink and Float Experiments
Supplies:

a.. Large Bowl (or whatever) filled with Water
b.. Various Objects
Have the children predict (teacher can graph) whether they think an object
will sink or float.
---submitted by Debbie.

Disolving Experiments
Supplies:

a.. Clear Cups (or whatever) filled with water
b.. Various objects
Have the children experiment with different materials to see if they
will
dissolve in water.
---submitted by Debbie.

Ice Cube Experiment
Supplies:

a.. Small Glasses
b.. Vegetable Oil
c.. Ice Cube
Fill glass with oil. Place an ice cube in the glass - the ice floats near the top. Observe your experiment for a while. Notice that as the ice melts, water droplets sink to the bottom. Why? As water freezes, it expands and takes up more room. This makes it less dense and therefore it floats on the oil. Once it has melted, the water is heaver that the oil and it falls to the bottom.
---submitted by Mary in MN.

Explosions
Supplies:

a.. Alka Selzer Tablets (generic work fine and are cheaper)
b.. Empty Film Canisters (clear ones work best)
c.. Hot Water
Draw a line around bottom of film canister about 1 cm from bottom (a little less than 1/2" for the metrically impaired). Fill up to that line with warm water. I use tap water that is hot enough to be steaming and fill a coffee mug with cover on it so the kids can pour the water themselves. Place 1/4 of an alka selzer tablet in the canister and immediately secure cover, turn upside down and place on sidewalk/driveway or similar surface in open area (BTW, this is an *outdoor* activity!) Stand back and wait for

"explosion" as
the gases build up and the film canister bottom goes FLYING in the air
about
20 feet. Be sure to buy lots of Alka Selzer because the kids want to do
this
one again and again!!!!
---submitted by Mary in MN.

Crystal Garden
Supplies:
Place broken pieces of brick or terra cotta clay in a glass bowl or jar.
Pour the following solution over this:

a.. 1 tsp water
b.. 1 tsp ammonia
c.. 4 tsp bluing
d.. 1 tsp Mercurochrome
e.. 4 tsp salt
Add more of this solution each day until the crystal garden has grown
to the
desired size. (Adult supervision required.)
---submitted by Melissa in TX.

Air Blowers
Supplies:

a.. Party Blower
b.. Plastic Baggie
Take a party blower (the ones that unfurl as you blow into them) and a
plastic baggie. Blow air into the baggie, capturing it as it becomes full.
Attach the blower (mouth-end into the end of the baggie) and secure so
no
air leaks out. By squeezing the baggie, you can blow up the party horn.
The
child can then control the movement of air, the air takes up space,

etc.
Lots of principles here!

Rainbows -Version1
Supplies:

a.. Small Mirror
b.. Small Dish of Water
Place a small mirror in a small dish of water. Place in direct sunlight and
watch the rainbow form on an adjacent wall. Try moving the mirror in and out
of the water and see the differences. Shows light diffraction, etc.
---submitted by Lela.

Rainbows -version2
Supplies:

a.. Shallow Dish
b.. Milk
c.. Food Coloring
d.. Liquid Dish Soap
Place milk in a shallow dish and add drops of several different food colors
around the dish. Add a drop of liquid dish soap and watch watch what happens! Interesting chemical reaction! ---submitted by Lela.

Rainbows -version3
Supplies:

a.. Jar of Cold Water
b.. Food Coloring
Place a clear jar of cold water on the table so it can be undisturbed but
observed. Add drops of food coloring and watch the "rainbows" appear.
Try
varying the water temp, consistency (add oils, etc), stirring and so on.
Shows color mixing, properties of matter, etc.
---submitted by Lela.

Egg in a Bottle
Supplies:

a.. Glass Apple Cider or Apple Juice Jug
b.. Newspapers
c.. Hard Boiled Eggs
You need a glass empty apple cider or apple juice jug. Put torn newspapers
in the jug and light. As soon as the fire gets going place a hard boiled egg
on top. Soon it will get sucked into the jar with a pop. My kids love this.
---submitted by Teresa from Texas.

Race to the Top
Supplies:

a.. Pole bean or pea seeds, one per child
b.. Potting soil
c.. Dowel rods or sticks, one per child
d.. Potting cups, one per child
e.. String lengths, one per child
Anchor strings to a hanging dowel rod or hang directly from the ceiling
by a
push pin. Let each child plant her own bean/pea in a cup. Tie the end of a
string to a stick and insert the stick in a child's cup so the bean can climb up the stick and then on the string. Repeat with all the cups. Water
the beans periodically and watch them climb the string.
---submitted by Cheryl. : All science experiments should be closely supervised at all times.

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less than 1/2" for the metrically impaired). Fill up to that line with warm
water. I use tap water that is hot enough to be steaming and fill a coffee
mug with cover on it so the kids can pour the water themselves. Place
1/4 of
an alka selzer tablet in the canister and immediately secure cover, turn
upside down and place on sidewalk/driveway or similar surface in open
area
(BTW, this is an *outdoor* activity!) Stand back and wait for "explosion" as
the gases build up and the film canister bottom goes FLYING in the air
about
20 feet. Be sure to buy lots of Alka Selzer because the kids want to do
this
one again and again!!!!

Subject: Re: Best Science Practices

What do you consider best science practices to be and
how do you teach science at your particular grade level?

Ilove providing science discovery activities in my

classroom. The best science is to provide the stuff and let them make
discoveries.
You need to keep an ear open so you can write their findings
down. I
keep a journal for each child in the center. I also have journals
for each cage and plant. They love doing observations. I will
see
things like, "I see a new bud on the plant." Of course, their's
will
say, "I c n bud o d pt." My students love making anatomy drawings.
Since we have several insects, we will often draw and label our
bugs. They like doing it over and over, because they get so much
better as they go along. I keep a poster of the human body with
labels so they can see similarities and differences and also use
the
words in their own labeling. My favorite bug is the stick bug
because they are soooo easy to draw. My kids are very successful
right away with this activity. I keep a tub of stuff available
for
discoveries at all times. Besides the usual magnets, senses,
simple
machines, water, air, yadayadayada, I add things like
~Potting soil with different grades of seives.
~Marbles and butter lids and even vaseline to discover how ball
bearings work.
~Feathers of all kinds in along side a tub of water.
~Rubber duckies in water.
~sponges in water.

~dead flowers to remove seeds from, then we make planting tapes.
~nuts and nut crackers.
~gears.
~pvc pipes, joints and elbows to assemble.
~dig sites in the sand table--this is cool, i take an old pottery
vase and break it in large piecesand they have to act like archeologists and CARELULLY dig up and put back together the
vase--
they have to decide what to use to stick it back together--glue,
masking tape, sticky stuff.....
~OLD computers to disassemble with several tools
~clocks to take apart
~old computer discs to take apart
~old markers to tear apart (gloves required)
~lenses, mirrors
~lots of nature artifacts to examine and observe
Libby

http://www.kidzone.ws/science/index.htm

http://oncampus.richmond.edu/academics/as/education/solsites/science/scik.html

http://oncampus.richmond.edu/academics/as/education/solsites/science/scik.html

http://www.kingslocal.k12.oh.us/Schools/SLE/shall/Scienceplans.htm

Hopefully you'll find something here these look good to me
Kathy

Science Experiments

Here's 7 experiments that I have in my files taken from this listserv:

1. Floating Layers

Materials: deep clear plastic container, colored water, syrup, and vegetable oil Activity: place the materials on the table. Ask one of the children to carefully pour the syrup into the container until it is a quarter full. Have a second child slowly pour the same amount of vegetable oil into the container. Another child can add the same amount
of colored water. Watch as the three liquids separate into layers and
float onto each other. Now you are ready to add small objects to float
(a grape, raisin, keys, kidney beans)

2. Dancing Raisins
Materials: carbonated clear drink, raisins, clear container
Activity: Pour the carbonated beverage into the container. Have the children drop a few raisins into the drink. Watch what happens! The raisins rise and fall because the gas bubbles stick to the wrinkles of the raisins. As the bubbles are less dense than the drink they raise the raisins. The gas bubbles burst and the raisins sink.

3. Color explosion experiment using milk
Pour a bit of room temp milk into a glass pie pan and put drops of food
coloring around edges, one or 2 drops each color like at 12 o'clock, 3 o'clock, 6 and 9 (use those position for placement of color drops). Then put a drop of dish soap gently in the center. Watch what happens.
This is a thriller!

4. Smelly marker chromatography
Cut a strip from a paper towel about 2" wide. make a scribbled blob of
black (use Mr Sketch smelly markers, they seem to work the best) about
2-3" up from one edge. place edge of paper towel in water that is in a
small saucer (the side that has the black blob) sit back and watch what
happens as the water travels up the paper towel and passes through the
black ink

5. M&M experiment

Place m&m's in a shallow dish of water, M side up and watch the M dislodge from the candy and float to the surface!

6. Pesky pepper people (similar to milk experiment)
Sprinkle a lot of black pepper on the surface of a bowlful of water. dip a toothpick in liquid soap and touch the soapy end to the center of
the bowl of water in the middle of the pepper. Watch what happens.

7. Chicken bone experiment
Place a clean dry chicken bone (like a leg bone or a wing bone and/or a
raw egg in a jar and cover with white vinegar. Let sit for a week or so. take out and observe changes.

Fun Friday Science

I have copied a number of ocean /beach experiements that might fit the
bill. I did several of them at the time we
were studying penguins. One that I made up that was quite successful
at this time was to do with why baby
penguins don't go in the water until they have grown into an adult with
adult feathers:

I found two feathers.
One was very downy and one was more like a crow feather. I explained
to the kids that these were NOT penguin
feathers but that they were similar enough to let us conduct this experiment. We examined them and the kids
told me that the crow one was most like an adult penguin feather and the downy one was like a baby penguin
feather. The experiment was to dip one feather at a time into a bucket
of water and see what happened. What
happens of course is that the crow feather has the water drip right off
virtually unchangedand the downy one
turns into a soggy mess. From this it's easy to see that baby

penguins
can't get dry (and therefore stay warm) in the cold
Antarctic weather if they were to go in the water. We left the downy
one to dry and it didn't all the rest of that
day but by the next day it was back to it's original downy self, which was interesting too for the kids to see.

The kids loved this experiment and for many days after parents told me that the kids were looking for feathers in their own backyards
so they could replicate the experiment!

It was just a simple thing but it was fun and really got the point across much better than talking about it. Now,
my goal for next time that I do this theme is to have found enough feathers so each child can have their own to
dip,

Just as an aside.... when I did this experiement... the directions and materials arrived in our mailbox. We have
a regular sized mailbox in our classroom and part of our daily routine is to open it and find out if any mail
is there for us! This might be a fun way for your Friday Science Experiements to arrive. If you want to know
a bit more about our mailbox.... you can look in the Kinderkorner Archives at Messages #71860 and #101365.

Here are those ocean beach experiments I have saved on my computer from
many different sources:

Make some waves. Use a 2 liter bottle to make a wave machine. Fill the
bottle 1/2 full with water. Add blue food coloring and fill the bottle with either mineral oil or baby oil. Seal the top. (I hot glue it so I am sure it won't be opened) When you turn the bottle on its side and rock it back and forth you get some nice waves.

Salt Water Test. Before your class arrives, fill two bowls with water.

Add 3 tbs. of salt to one of the bowls. Have the children put a raw egg in each bowl and watch what happens?. Ask them why they think this might happen and record those responses. Let the kids smell the bowls to see if that helps. Then explain that the egg floats, because salt water is more dense than fresh water.

Oil Spill. Fill a small tub with water add cooking oil colored with food coloring to the water. Explain to the class what happens when oil gets on the animals. Demonstrate with a feather. Brainstorm a list of materials that could be used to clean up the spill. Some might be dish detergent, cotton, sponges, paper towel, foam, etc. Try each one a record the results.

Seawater Float

Ask students if they have ever swum in salt water. Did they know it is easier to swim or float in salt water than in fresh water? Try this experiment to demonstrate. You will need the following:
large glass warm tap water 1 raw egg salt teaspoon

1. Fill the glass about half full of warm water.
2. Carefully slip the egg into the glass. (It should sink to the bottom.)
3. With the egg in the glass, add 1 teaspoon of salt to the glass and stir gently. Keep adding 1 teaspoon of salt at a time until the egg floats to the surface.
4. Have groups explain what happened and how this would affect swimmers in salt water.

Which Freezes First?

Why do ponds or lakes sometimes freeze in cold weather? Why doesn't the

ocean usually freeze? Use this experiment to compare the time required
for fresh and salt water to freeze.

You will need the following materials:
2 paper cups salt tablespoon marker access to a freezer

1. Fill both cups half full of water.
2. Add 1 heaping tablespoon of salt to one of the cups and stir until the salt dissolves. Label the cups fresh water and salt water.
3. Put both cups in a freezer. Check every half hour to see which freezes first.
4. Repeat the experiment, but now add 1 tablespoon of salt to one cup
of water and 2 tablespoons of salt to the other. What will happen?

Special Note: This Science activity can be combined with a Math activity by letting children predict what will happen and making it into a
graph!

Freeze!

This activity is a variation of the previous activity.

You will need the following materials:
a one-cup measure salt warm water a tablespoon a plastic ice-cube tray
a crayon a freezer

1. Challenge children to suggest how they could find out which freezes
faster-plain water or saltwater. (Great opportunity to graph their predictions!)
2. Discuss their ideas, then suggest the following activity for groups to try, or try a different approach suggested by the children.
3. Let students work in groups. First have them pur plain warm water into one side of an ice-cube tray, and label it with the word plain in crayon.
4. Then ask a group member to stir one tablespoon of salt into one cup

of warm water. Have another student fill the other side of the tray with the saltwater, and label it with the word salt. (As children label the sides of the tray, discuss with them why labeling is so important in
science experiments. What if they forgot to use labels?)
5. Now, instruct students to put the tray in the freezer. Have them check the trays every half hour or so to see which compartments have
started to freeze. (The plain water will freeze first. Unless your freezer
temperature is lower than 32 degrees F, the saltwater will not freeze at
all.)
6. Ask the children what they think the experiment showed. Which freezes faster-saltwater or plain water?
7. Ask the children if they think the ocean ever freezes and under what
conditions. (It does, but only in the far north where water temperatures are extremely cold, or where the water is not very salty.)

Seeing Sea Salt

This experiment shows that although salt is invisible in seawater, it is there and remains there even after water evaporates into the air.

You will need the following materials:
2-cup measure hot tap water 1/4-cup measure salt spoon pie plate

1. Put 1 cup hot tap water into the 2-cup measure.
2. Measure 1/4 cup salt into the hot water and stir until all the salt dissolves.
3. Put the pie plate on a windowsill or near a heater. Pour in the salt water.
4. Make an observation chart.
5. Each day for a week, check the pie plate and record what you see. After a week, report the findings to the class.

Ocean Currents

The following activities help children understand two key causes of

ocean currents-wind and variations in temperature.

Ocean Motion
You will need the following materials:
newspapers rectangular pan water food coloring

1. Spread out several layers of newspaper to protect the work surface.
2. Fill the pan halfway with water.
3. Have children take turns blowing across the surface of the water. What happens if they blow gently? What happens if they blow very hard?
4. Put a drop of food coloring into the water at one end of the pan. Have children blow from that end of the pan. What happens to the colored
"current"?

Sea Breezes (a variation of the above activity)
You will need the following materials:
a fish tank a plastic cloth or towel water
Ask the children if they know or can guess what causes waves on the ocean. Then invite them to try this activity to find out:

1. Place a plastic cloth or towel beneath the fish tank to protect the area from spilled water. Then fill the fish tank almost to the top with
water. Let children take turns blowing across the surface of the water
at once. (Stronger winds will cause bigger waves. Also, the bigger the
tank, the bigger the waves will be, just as bigger waves build over bigger bodies of water.)
2. Discuss what students discovered. They should conclude that wind is
a major cause of waves. (Earthquakes and landslides under the ocean also cause waves.) Encourage students to imagine what the waves would be
like in the ocean during a storm.

"Making Waves"
You will need the following materials:
bottles or jars with corks or screw on lids blue or green food dye

cooking oil water a funnel (optional)

1. Invite children to make "wave-makers" so they can see how waves in
the ocean look.
2. Help children fill their bottles about two-thirds with water. (A funnel would be helpful.)
3. Add blue or green food dye to the cooking oil to represent the color
of the ocean. Then fill the bottles of water to the top with the colored cooking oil
4. Have the children close their bottles tightly and turn them on their
sides. When they rock them gently back and forth, they can see waves.

Floating Hot and Cold
A major effect of currents is the mixing of colder and warmer ocean waters. Water temperature varies in different places. Water near the
North and South Poles is very cold, while water near the equator is much
warmer. At any location, surface water is warmer than deeper water. Here's a way to observe how temperature variations influence ocean currents.
You will need the following materials:
glass bowl pitcher of ice water pepper measuring cup of hot tap water
food coloring

1. Fill the bowl two-thirds full with ice water. Sprinkle some pepper on the surface of the water to help children see the movement of the
"currents".
2. Color the hot water with several drops of food coloring. Slowly pour
about one-forth cup of hot water into the bowl of ice water. It should
stay on the surface in a discernable layer because cold water is more dense than hot water.
3. Have students observe what happens as the hot water cools. (It should begin to sink, mixing with the colder water; watch how the pepper

moves.)
4. Repeat the experiment, but reverse the position of the two temperatures of water. This time, start with a bowl of hot water. Pour colored
ice water into the bowl. What should happen?

"Current Events" (a variation of the above activity)

You will need the following materials:
a pitcher or container water an ice-cube tray a freezer red food coloring a globe a glass baking dish

1. In advance, mix red food coloring into water to turn it dark red. Pour the red solution into an ice-cube tray, and then freeze it.
2. Referring to the globe, remind the children that all the oceans on earth are really one giant "super ocean". Explain that water from all the oceans mixes together and moves around the earth. Invite children to
see how this happens.
3. Half fill the fish tank with warm water, explaining that this is a model of the ocean.
4. Referring again to the globe, ask the children where they think the
ocean is the coldest-at the North Pole or the Equator. Confirm that not
only is the ocean coldest at the North Pole and the South Pole, but it is frozen solid! Now have two volunteers place one ice cube at each end
of the tank to represent the frozen ocean at the poles. Remind the group of the experiment they did with warm and cold
water, and ask them to predict what will happen. (Explain to the children that you made the ice cubes red so they can see what happens to the
cold water as it mixes with warmer water.)
5. Now let the children observe the motion of the cold (red) water. Where does it go? (Along the bottom, towards the warmer water in the
middle.) W#hat happens to the cold water as it begins to warm? (It begins to
rise.) What happens to the warm water on top of the tank?
6. Color the hot water with several drops of food coloring. Slowly pour
about one-forth cup of hot water into the bowl of ice water. It

should
stay on the surface in a discernable layer because cold water is more dense than hot water.
7. Have students observe what happens as the hot water cools. (It should begin to sink, mixing with the colder water; watch how the pepper
moves.)
8. Challenge children to draw on what they observe in the tank to explain how the water in the oceans mix together. Help them understand that
the colder, heavier water from the poles moves along the bottom of the
ocean toward the equator, where the water is warm. The warmer, lighter
water from around the equator moves along the surface of the ocean toward the poles where the water is cold. These movements
are called currents. Because of currents, the cold waters and the warm
waters of the world oceans are constantly changing places. Following the experiments, discuss questions such as:
* Why do you think water on the surface of the ocean is warmer than
deep down?
* What do you think happens to currents during a storm? On a calm day?
* How do you think currents affect fish? Ships? Swimmers?

Sandy Shores

You will need the following materials:
sugar cubes empty jars with covers

1. Ask the class what they would feel under their feet if they walked barefoot on a beach. Sand, of course! As children share their ideas, ask
them to describe what sand feels like.
2. Then ask the children to think about what sand is made of. guide them to learn that grains of sand are tiny pieces of rocks and shells that
rivers and streams have tumbled and banged against each other. Over
time, these rocks have broken into very tiny pieces. The rivers then carry

these tiny pieces , which are now sand, to the oceans, where tides and
currents bring the sand up onto the beach.
3. To give the students an idea of how rocks can be broken into tiny grains of sand, divide the class into groups. and give each group a jar with a few sugar cubes in it. Let the group members take turns shaking
the sugar cubes in the jar to see what happens when they tumble and bang
against each other.

Making Sand

You will need the following materials:
small rocks and shells hammer box

1. This activity is similar to the activity above. Talk about sand with the children. What is sand? Where does it come from? How is it made?
2. Set out hammer and small pieces of rocks and shells.
3. Place the rocks and shells inside the box lid and let children take turns smashing the rocks and shells until it is sand. (I recommend adult supervision with this activity.)

Examining Sand

You will need the following materials:
magnifying glasses sand rocks shells

1. Place the above materials on a table in your Science center.
2. Following a discussion about sand, let the children go to the Science center and explore the similaritites and differences between the
sand, the rocks, and the shells.

Sorting The Sea...
Have the children study seashells, sand dollars, and other sea items have the children sort them into their own categories.
What is Sand?...
Use a magnifying glass to examine sand. Talk about how sand is actually tiny pieces of rocks, shells or coral. Explain that sand is

created
when materials such as rocks rub together. Over time, tiny pieces of rock wear off and these pieces become sand. To explain this concept have the children rub two sugar cubes together to make "sand". My children had fun with this. Leave all items out for children to examine.

D AND SEA JAR- Fill a clear plastic bottle or jar with layers of rocks,
shells, sand, and water. Encourage the children to shake the jar as you
discuss how sand is formed over a long period of time from the grinding
of rocks against other rocks and shells.

WAVE BOTTLE- Fill a small plastic jar with a little more that half full
of water. Add two or three drops pf blue food coloring to the water and
mix well. Fill the rest of the jar with mineral oil. (fill to the top or air bubbles can form). Put the lid on tightly hot gluing it to stay in place. Hold the bottle sideways and gently tip it to create "waves". Before adding the oil and water you can drop some
sand and shells into the bottle, and some sequins for the sparkling effect.

Sink the Boat:
Students can practice estimation by constructing foil
boats and using pennies to see how many the boat will hold.
Salt of the Sea:
Using 2 clear cups, fill each 3/4 with water. In one
cup, stir in 3 T. of salt. Label the cups A and B. Ask
students to predict what will happen when you place an egg in
cup A. Place the egg in carefully. Next ask the students
what will happen when you put it in cup B. Ask why? Salt
adds density to the water so objects float.

How is Sand Made?
Put sugar cubes in a clear jar. Have students take
turns shaking the jar then observe what happened to the
cube. Explain that is what happens when rocks get tumbled

together in rivers or waterfalls, or by the wind.
Saltwater Painting:
Mix 1/4 C. warm water with 6-t. salt and 3 drops of
food coloring in each jar. Paint pictures with the mixture.
The water will evaporate leaving the colored sand.

Blubber Mitten Activity

To find out what it's like to have a layer of blubber to keep warm, try
this easy Blubber Mitten experiment. you'll need:
Crisco (or other fat)

2 zippable sandwich bags

A bowl of ice water with ice cubes
Procedure:

1. Fill one of the zipper bags about 1/3 full of shortening, then turn the remaining zipper bag inside out. Place it carefully inside the bag with the shortening so that you are able to zip the one bag to the other. This creates a "blubber mitten" for you to put your hand in.
2. Put your bare hand in the bowl of cold water and see just how cold it is!
3. Next, place your hand in the "blubber mitten" and now place your mittened hand in the ice water. How cold does the water seem with the
"blubber mitten" on? Do you think a nice layer of blubber would be great
protection against cold? Walrus, whales, and seals also have wonderful
layers of blubber which help to keep them warm.
-Used with permission from Susan Teel.

6. Oil spill. Explain to the class that each year thousands of animals are killed by oil that comes into their environment. Birds are especially in danger since the oil weighs down their feathers making it
impossible for them to float, get food, get away from predators or fly. Divide

the class in to small groups and give each group a feather, and a small
cup of cooking oil. Show the student by running their
fingers up and down the feather they can pull apart barbs (the strands)
and make them neat. This is important for birds to allow them to survive. Dip the feather in oil can you straighten out the barbs? Put the
feathers in water and have each child write about what happens.
7. Clean Up. I like to do this activity in a small kiddy pool, but for small groups you could also use those disposable pans used for lasagna.
You will need to fill that with water. You will also need cooking oil, spoons, food coloring and some other materials that your class will generate. The first day I tell the students that tomorrow we will have an
oil spill to clean up. We brainstorm a list of things
we think we could use to clean it up. I record all answers, then we will vote on a few to try. The next day I bring in some of the things they
suggested. Dye the oil and add it to the water. Try the suggestions. (some I have tried are paper towels, spoons, detergent, sponges, rope,
etc.) Try them all and record what happens. After remind your students
that in most oil spills only 10 percent of the oil can
be recovered. What can we do to help?

Science: Saltwater
Crystal shares this early childhood activity saying, "It's a sensory and discovery experiment to teach some of the
differences between fresh water and saltwater.
Materials: Saltwater, freshwater and a small cup for each child.
Description: During circle time teachers set a cup of fresh water and a
cup of saltwater next to each child and ask if he / she can tell which is one is the saltwater.
Give each child a small amount of saltwater to taste and talk about why
it's different from the freshwater. Ask them to give their opinion on
the taste of the saltwater. Some of their reactions might surprise you!

Comments: The kids loved it they talked about how it tasted most of the
day. Some of them actually asked for more. It is a great sensory experience, especially for children who don't have many opportunities to go
to the beach and taste the sea for themselves.

Subject: Re: Sink and Float

Using one of the objects that sinks but is not too heavy, see how much
salt
it takes to make it float. (a peanut works) This goes especially well if you
are doing your unit on the ocean at the same time.

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suggested. Dye the oil and add it to the water. Try the suggestions.
(some I have tried are paper towels, spoons, detergent, sponges, rope,
etc.) Try them all and record what happens. After remind your students
that in most oil spills only 10 percent of the oil can
be recovered. What can we do to help?

Make sure you do the blubber experiment for your sea life science.....

fill a latex glove with crisco, then put another glove inside it (I put my
hand in the clean glove, put it into the crisco filled glove, then carefully
pull my hand out of the glove....

Let the kids put their hands in the glove, then put it into ice cold water....put the other ungloved hand in too, so that they can see how blubber
on whales (and other sea mammals) keeps them warm...

Hope I explained this well - easy to do, but hard to put into words!!

DOLPHIN TALK CHARADES - Create a classroom code of dolphin sounds with
their
meanings on the board. For example: 4 short clicks = Lots of fish here,
2
squawks = Sharrrk!, 3 whistles = Come and play, and so forth. Have kids
take
turns getting up and acting them out and the rest of the class try and
guess.

DOLPHIN'S SKIN - Find a piece of smooth rubber. Run it under warm water
and

let the kids feel it.

A DOLPHIN'S BODY IS BUILT FOR SWIMMING - You will need a empty 12 oz. Soda bottle and a square food storage container with a lid. Close the lids on both containers. Fill a dishpan with water. Put both objects in. Try to predict which object will reach the other side first. Give them a push together. Which one reaches the other side first. Why? Was your prediction correct? Which object is shaped like a dolphin's body?. (The bottle will reach the other side first because of it streamline design, the food storage container just pushed against the water.)

BLUBBER BLANKET - Fill one latex glove with lard. Put another one on your hand, now push it down into the lard filled glove. Fill a dishpan with ice water. Put your hand in the ice and explain how you cannot feel the cold because the fat (lard) is insulating your hand. Now let each child try on the glove and put their hand into the ice. This also can be taught by filling a small plastic cup with lard. Have one cup that is empty. Show the kids the two thermometers, put one in each cup. Set the cup in a dishpan of hot water for 5 minutes. Check the thermometers again. Which one got warmer faster?

SEEING WITH SOUND - Student form an "Ocean" by holding hands in large circle. Select 5-8 kids to be "Fish". They move to the inside of the circle and swim around. Choose 2-3 kids to be "Dolphins" They are

blindfolded
and
go to the ocean to "Hunt". The dolphins call out "Who is there' as
though
they were sending out their echolocation clicks. The "Fish" must
answer
with
the word "fish" as if it where the echo that is bouncing off the fish.
The
object of the game is for the dolphins to catch the fish by listening
to
where they are. Once all fish have been caught, pick new Fish and
Dolphins.

Math

COUNT THE CLICKS - Have one child be a dolphin (let him/her tell
you
which
kind) and make as many clicking sounds with their mouth as they can
in
ten
seconds. Have the rest of the class listen very carefully and count
them.
If
a child cannot click they can tap a pen on the table. Make a graph of
each
child's guess. Let the children take turn being the one who does the
clicking.

Using one of the objects that sinks but is not too heavy, see how
much
salt
it takes to make it float. (a peanut works) This goes especially well
if you
are doing your unit on the ocean at the same time.

Snow globes

The only snow globes I have ever made became a Science lesson as
we
evaluated much water is in snow. My kiddos packed a jar as full as

they could with
snow...usually from our last snowfall of the year...and then added bits and
pieces of a tiny snowman (some premade from sculpy clay -carrot nose,
black
coal, red buttons, pieces of twig for arms and a smalll sliver of materal for a
scarf). We added a sprinkle of glitter and then hot glued the top on. They
were always amazed at how little water there was in the jar after we set them in
a sunny window for the rest of the day. Most predict that the jar will
be
full. We also made predictions as to how long it would take them to melt. After
we completed the Science activities I would add a little sticker indicating
that it was the remains of our 'last snow man of 200_'. Made for a fun
keepsake. I guess I ma trying to say that we didn't turn the jars upside down.....

I teach training's for early childhood
educators and
the one thing everyone says is that they need ideas for the nature area.
They all have seashells and a bird nest or two and call it a nature or science
center. That is pretty much a joke. /there is an unlimited number of science
ideas for children. Here is a list that I have been working on
A---ants, apples, air, alligators, astronomy
b--birds, bones, berries, bears, birds, bees, banana, beans, butterfly,
butter, bubbles
c- clouds, caterpillars, cows, crickets, corn, carrots, crabs
d- dirt, dinosaurs, diamonds, daisy, ducks,
e--eggs, earth, eyes
f--fish, flowers, frogs, feathers
g--grass,gems, grapes,

h--hays,harvest, honey, hives,
i--insects, ice, inchworms
j--jam, juice
k--keys, kite, kaleidoscope
l--lemon, limes, lettuce,lima beans, light, ladybugs, leaf, litter
m--magnets, melon, mushrooms, mustard seeds, milk, mold
n--night,nickels, nose
o--oranges, onions, oatmeal, octopus, ocean, owls,
p--peanuts, plums, pumpkins, peach, pickle, potato, pepper, penguins, pebbles, pond life, pearls,
q--quills
r--raisins, rice, radishes, rose, river, rainbows, rockets
s--spinach, salt, sugar, strawberries, space, snails, snakes, spiders, swamp,
shells,seeds, senses
t--toads, turtle, tomatoes, telescopes,
u--umbrellas
v--velvet,volcano, veins, violets, vision,vegetables
w--water, watermelon, weather,
x--x-rays
y--yams
z--zoo, zinnia,

in my class i also use discovery boxes.
some people use water tables, rice table , sand table etc. I use just about
anything and everything.

some things that i put in the boxes are
water
rice
sand
pasta
seeds
beans
spaghetti (cooked and sometimes uncooked)
ice
mashed potatoes (flakes and cooked)
salt
rocks
sand and magnets (use magnet wand and let kids pretend they are using
metal

protectors on the beach)
oatmeal
sand and doggie bones (play archeologists)
jello
dirt

Science Experiment

Here are some favorites of mine, they are all fun to do, and the kids love them!

color explosion experiment using milk - pour a bit of room tem milk into a glass pie pan and put drops of food coloring around edges, one or 2 drops each color like at 12 o'clock, 3 o'clock, 6 and 9 (use those position for placement of color drops). then put a drop of dish soap gently in the center, watch what happens. this is a thriller!

smelly marker chromatography - cut a strip from a paper towel about
2" wide. make a scribbled blob of black (use mr sketch smelly markers, they seem to work the best) about 2-3" up from one edge. place edge of paper towel in water that is in a small saucer (the side that has the black blob) sit back and watch what happens as the water travels up the paper towel and passes through the black ink

M&M experiment - place m&m's in a shallow dish of water, m side up and watch the M dislodge from the candy and float to the surface!

Pesky pepper people (similar to milk experiment) - sprinkle a lot of black pepper on the surface of a bowlful of water. dip a toothpick in liquid soap and touch the soapy end to the center of the bowl of water in the middle of the pepper. Watch what happens. There is a little story you can tell with this, but I can't remember it, anyone out there know it?

The good old rubber bone and rubber egg experiment - place a clean dry chicken bone (like a leg bone or a wing bone and/or a raw egg in a jar and cover with white vinegar. Let sit for a week or so. take out and observe changes.

My science center is the popular place in my room. I've collected

oodles of stuff over the years. I put things out for themes and also seasons. I change things after a few weeks - sometimes everything, sometimes I take out a few things and put in new. Here are some of my things:

-Five Senses. Sort things smooth and rough, tuning forks, squishy feely things like you can get at Science stores, smell jars, sound match cannisters made from film containers, kaliedoscopes, magic wands with the glittery stuff inside, the spinning doodle pens, anything pretty like rock crystals, lazer disks, etc.

-Slinky. I made steps on the counter with blocks and lots of masking tape to keep it stable. The kids loved having the slinky go down the steps and then off the counter!

-Lots of plastic spiders, frogs, lizards (the stretchy kind that you find at science stores)

-Things I find in nature like lichen covered sticks, seeds, leaves, rocks, etc.

-Magnet Center. I have a variety of different magnet activities like the guy with magnetic filing hair, things in a plastic jar with water (kids find out magnets work through water as they pull things up the side of the jar by rubbing the magnet on the outside of the jar), magnet sort, push and pull cars (I hot glue magnets on the front and backs of cars/trucks and kids can move cars by magnetic force).

-Float and Sink discovery tub.

Easy science experiments from A to Z:

A: AIR
SHOW:
Blow air through a straw onto your hand.
Ask: Can you feel the air?
Can you hear it?
Can you see it?
IDEAS:
You can feel moving air. You can hear air as it moves out of the straw.

However, you cannot see air. Basically, air is a mixture of two invisible gases, oxygen and nitrogen. Since air is matter in the gaseous state, it has weight and can push against things. Air also takes up space. Blow up a balloon and let the air out as a demonstration or fold a piece of paper to make a fan to show we can feel moving air.

B: BALL

SHOW:

Hold the ball high. Let go. What does the ball do? Why doesn't the ball drop up? Ask the class.

IDEAS:

As soon as the ball is released it begins to move down - that is, it falls. Every object is attracted by the earth's gravity. When an object is free to fall, the force of gravity pulls it "down." It pulls down toward the center of the earth.

C: CUP

SHOW:

Float a cup in a bowl of water. Put pennies into the cup. What happens to the cup? How many pennies did it take to make the cup heavy enough to sink? Let the class help you count the pennies.

IDEAS:

The cup on its own floats. As more and more pennies are put into the cup, it sinks deeper and deeper into the water.

D: DROP

SHOW:
Sprinkle some water with a medicine dropper or spoon on a piece of waxed
paper. What happens to the water? Ask the children before you tell.
IDEAS:
On waxed paper, water rolls up into drops of different sizes. Water does
not
seep into the waxed paper. As a result, each sprinkle of water pulls itself
together to form a drop. Large drops are heavier and therefore flatter
than
small drops. When two drops touch, they fuse (go together) into one larger
drop.

E: EGG
SHOW:
Stand a hard-boiled egg on its end. Let go. What happens to the egg?
IDEAS:
When the egg is released, it rolls over and comes to a rest on its side.
If
the egg were perfectly balanced on one end, it might remain upright. Since
the egg is not in perfect balance, gravity pulls it down to the lowest
possible position, which is the position when the egg is on its side.

F: FLOAT
SHOW: Several objects that float; other objects that sink. Why do some of
these float?
Why do some sink?
IDEAS:
Objects that are heavier will sink. Objects that are lighter will float.

F: FORK
SHOW:
Hang a fork from a string. Let the fork hit the edge of the table.

What do
you hear? Ask
the class as you show them.
IDEAS:
The fork gives off a sound when it hits the table, because the force of
the
impact makes
the tines of the fork vibrate, or move back and forth. The vibrating tines
produce the sound. Forks of different sizes will make different sounds.
Your
child might want to show two different sizes of forks.

G: GLOVE
SHOW:
Wear an old glove on your right hand. Hold an ice cube in each hand. Which
hand feels
cold first? Show the class and ask, "Which hand do you think felt cold
first?" WHY?
IDEAS:
The left hand feels cold first. The glove on the right hand stops the flow
of
heat from the
right hand to the ice. In other words, the glove is a heat insulator. Hence
the right hand retains its heat and stays warm. The unprotected left hand
loses its heat to the ice and feels cold.

H: HOOP
SHOW:
Push a hoop. Ask the class, "what does the hoop do?"
IDEAS:
The hoop, like a wheel, rolls when it is pushed. The hoop has the shape of
a
circle. Of all geometric shapes, the circle is the one that rolls on
a

surface with the greatest ease. Of course, it is this roundness that gives
the wheel its great importance in land
transportation. (You can also use small cars or trucks to further demonstrate
wheel or hoop movement.)

I: ICE
SHOW:
Put an ice cube in a dish. Let it stand for a while. What happens to the
ice?
Talk about it with the class.
IDEAS:
The ice in the dish melts into water. Ice is the solid (hard) state that
water can assume at temperatures of 32 degrees or below. Ice melts and
becomes liquid water again when the room temperature is more than 32
degrees
F.

J: JET
SHOW:
Make a jet flyer. Blow up a long balloon. Let go of it. What does the balloon
do?
IDEAS:
Upon release, a jet of air pushes out of the balloon's opening. As the air
escapes, the balloon darts around the room in a helter-skelter manner.
This
illustrates one of Newton's laws f motions, "For every action, there is an
equal and opposite reaction."

K: KEY
SHOW:
Try to pick up different kinds of keys with a magnet. Which keys does
the

magnet lift? Why?
IDEAS:
If the magnet lifts the key, the key is made of, or contains iron. If the magnet does not lift the key, it does not contain iron In that case the key may be made of brass, aluminum or another non-magnetic material.

L: LIGHT
SHOW:
Hold your hand up in the sunlight. What do you see? Do this outside.
IDEAS:
You can see the shadow of the hand. It forms when light is blocked by an object through which light cannot pass. A shadow is an area that is not reached by the light.

M: MAGNET
SHOW:
Line up some paper clips. How many paper clips can your magnet pull?
IDEAS:
The number of paper clips that a magnet can pull gives a measure of the strength of the magnet. The stronger, the magnet, the longer the train of clips the magnet can haul.

N: NAIL
SHOW:
Make a mark with nail polish at the base of your nail. Leave the polish on for a few days.
Where is the mark after a few days?
IDEAS:
After a few days the mark on the nail is above the base. As the new nail tissue grows, the old dead tissue is pushed out of the finger. The movement of the polish mark shows at what rate the nail grows.

N: NUT
SHOW:
Display several nuts such as pecans, walnuts, almonds or hickory.
Ask:
What
is inside the shell? Why are they important for the plant they came from?
Crack the nuts.
IDEAS:
Nut is the popular name for a type of plant seed or fruit which grows
in a
shell of woody fiber. The term nut may mean the shell as well as the mean
inside. The kernels of most edible nuts form highly concentrated foods,
rich
in protein.

O: OIL
SHOW:
Put some water in a glass. Add some cooking oil. What happens to the oil?
Ask
the class if they can figure it out.
IDEAS:
The oil floats on top of the water because of two basic characteristics.
First, Oil is less dense than water. Second, oil does not mix with water.
It
is possible to disperse oil in water for a short time by shaking the mixture
vigorously. When the shaking stops, however, the oil runs together and
floats
back to the top.

P: PENCIL
SHOW:
Try to write on waxed paper with a pencil. What happens?
IDEAS:
The pencil does not write on waxed paper. In order to leave a mark,

the
lead
(graphite) of the pencil must rub off on the paper. The waxed paper is too
smooth. Hence, no graphite rubs off on it.

P: POPCORN
SHOW:
A few kernels of unpopped corn. Show some corn that has been popped.
What
happened?
IDEAS:
Pressure of the heat makes it expand and change. We will pop some corn to
help with this demonstration.

P: PUDDING
SHOW:
Put a package of instant pudding in a quart bottle, plus 2 cups of milk,
and
shake. What happens to the dry pudding mix, the liquid? Why?
IDEAS:
When the bottle was shook, the dry pudding and the liquid start to mix.
With
the pressure or energy, the ingredients start to change. When allowed
to
rest
a few minutes we get semisolid PUDDING to taste.

Q: QUARTER
SHOW:
Spin a quarter on a table. What do you hear?
IDEAS:
At first the quarter spins silently. When it begins to fall, it rattles
against the table faster and faster. The pitch of the sound rises. When
the
quarter comes to rest flat on the table, the sound stops.

R: ROCK
SHOW:
Look at a rock through a large magnifying glass. What do you see?
IDEAS:
You see many different bits of mineral matter of various colors and shapes.
Some are arranged in layers. Some are shiny, some dull; some rough, some
smooth. Hunt for two or three different shapes or sizes of rocks to use.

S: STRAW
SHOW:
Place a straw in water. Hold your finger tightly on the top end. Lift the
straw out of the water. What happens to the water in the straw?
IDEAS:
The water stays in the straw. As long as the top of the straw is kept closed
with the finger, the water cannot run out. As soon as you take the finger
off
the top of the straw, the water runs out. In the first case, air cannot
enter
the straw so the water cannot leave
it. In the second case, air enters through the top and the water falls.

T: TOP
SHOW:
Spin a top. When does the top fall and stop?
IDEAS:
The top falls and stops when the spinning stops. As long as the top spins
rapidly, it remains upright. As the top slows, it begins to fall. The
friction at the point increases. The top slows even more. Then, the top
falls
on its side and the spinning comes to a halt.

U: UNIVERSE

TELL ABOUT:
Hold up a picture. Ask what you can see when you look up at the sky on a
clear night.
IDEAS:
On a clear night, when there are no trees, buildings, or mountains obstructing the view, you can see half of the universe. You can see the
stars, planets, the Milky Way Galaxy and nebulae. At times you can also
see
meteors, comets and the moon.

V: VORTEX
SHOW:
We will put water in our sink to form a vortex with a few children at a
time.
Let the water run out of the sink. Ask, "What does the water do as it
runs
out?"
IDEAS:
As water goes down the drain, it spins around to form what is called a
vortex. A similar vortex in a large body of water is called a whirlpool.
In
air, a vortex may result in a whirlwind, a hurricane, or a tornado.

W: WATER
SHOW:
Pour some drops of red food coloring in a glass of water. What happens to
the
red color? Is it still bright red? What happens if you stir it?
IDEAS:
The red color gradually spreads throughout the water. The red is evenly
distributed; it is said to be in solution in the water.

Y: YO-YO
SHOW:

Let a yo-yo go. What does the yo-yo do as it falls?
IDEAS:
As the yo-yo falls, it spins around faster and faster. At the bottom of the string, the yo-yo is spinning fast enough to make it climb back up the string to the starting position.

X: XYLOPHONE
SHOW:
Use a small xylophone. Hit a long bar. Hit a short bar. Which bar makes the higher sounds?
IDEAS:
The short bar gives off the higher sound. The shorter the length of the vibrating material, the higher the pitch of the sound. The longer the length, the lower the sound. Play a scale for the class. Let them guess whether some notes are high or low with our eyes closed.

Z: ZIPPER
SHOW:
Zip a zipper. Why does the zipper stay together when it is closed?
IDEAS:
When the zipper is closed, it is held together by little interlocking hooks on each side of the zipper. (Show fingers interlocking also.) These hooks are pried apart by the slide when the zipper is opened.

sink and float

One really really neat activity is to break your whole class into groups.
Give each group --- 1 flat and wide pan with 2" sides.....put 1" of

water in it. Give them a wad of that yucky plasticene clay (NOT playdough) and a collection of paper clips. (Make sure the wads of plasticene are exactly the same amount for each group!)

Their purpose is to design a floating 'something' out of clay that will hold paperclips. They should count how many paper clips there boat/raft will hold before it sinks. This gets to be really interesting....
watching how they each come up with different ideas. They CAN take their boat/raft out of the water and reshape it --- and try it out
with more paper clips -- as many times as they want.

This is a great process, discovery, problem solving activity. Each of them will learn from the others.

I WON'T tell you what the best boat/raft looks like ----- yet. They (and you) will have to think 'outside' the box...!!

ArdisK

Bubbles

Mysterious bubbles

Grade Level(s): 1, 2

Subject(s):

Science

Duration: one 1-hour session

Description: This is a lesson about bubble shape and movement.

Goals: To have students understand the physical elements involving bubbles.

Objectives: Students will:

1. Predict, experiment, explore, and observe bubble movement and shape.
2. Learn through prediction, observation, experimentation, and discussion, why bubbles are round.
3. Through experimentation discover what kind of objects will make a
bubble and why.

Materials:

Florist wire
Dishpans
Bowls
Jars
Flat cookie sheet
Solution: 1 cup Joy dishwashing liquid and 8-9 cups of water, Bubble Journals, pencils, crayons, butcher paper, and straws, Secret Bubble Box (filled with objects around house that a bubble can be created by
using, Ex. Paper towel roll, wire hanger)

Procedure:

Scientific Explanation:

Why are bubbles round? Bubbles are round because there is no greater
force on any part of the bubble to give it shape. The pressure on the outside of the bubbles is equal all around it when it comes out of the florist wire and other close-ended objects.

Focus Phase:

1. Ask the children to predict what shape a bubble will be when blown through different (close ended, not shaped in a circle) shaped florist wire.
2. Model the experiment on a piece of large butcher paper. Show them an
example of how and where to draw and write their predictions and outcomes of the bubbles into their own (previously made) bubble journal.
3. Create a few different examples of wire bended into square

shaped
loops, oblong circles, etc.* any shapes except a circle, and have them make predictions for each wire as to the shape of bubble that will come
out of the wire when blown into.
(Make enough so each child in every group has the same object shape to
experiment with.)
4. Hold the object shapes up one at a time and have them draw their object shape and predictions into their bubble journal for each shape, one
prediction on each page. (Draw the shape of the wire, then prediction
of bubble shape next to it.)
Do this at a separate "Journal table" where the children are not yet around the bubble solution and distracted by the experimental equipment.
5. Explain all rules to keep the classroom under control and safe during the experiment.

Challenge Phase:

1. Now, place the bubble solution at each "experimental table" and make
sure they stay over the container when they blow. Have the children softly blow a few bubbles. Have each group observe their bubbles carefully
as they come out and release from the wire. Make sure they carefully
observe the shape of the bubble.
2. After each group has blown a few bubbles using their object shape.
Have them go back to their journal table to write the outcome of the
bubble and also what they learned about the bubble shape (as modeled in
circle) in their bubble journal.
3. Rotate the object shapes to different tables while the children are
writing their outcome and what they learned. Have the children experiment and then document their findings until they have all gotten a chance
to test each object shape.

4. Make sure you are visiting each table while the children experiment
with the bubbles. Ask them how their bubbles might be the same or different as to what they predicted in their journal and why. It is important to keep their mind of the reason for the experiment. Bubbles can
become a fun distraction if the students are not kept in focus.

Concept Introduction:

1. Bring them back to "circle" and have them discuss their predictions
and
outcomes. Were the bubbles all the same size and why or why not? What
shape were the bubbles and why? Why are bubbles not a square or a triangle? Did the shape of the wire change the shape of the bubble?
2. Have them all sit on the floor with you and tell them to take their hands and feel all over in the air with them. Ask them if they feel anything pushing at their hands in different places of the air. Explain to
the children by using your hands in the air how a bubble might be a triangle if there was a greater pressure on all four sides to give it shape...impossible. Round because equal pressure an all sides.
3. Pull out the secret bubble box full of household items and classroom
(scissors) items. Hold up an item (wire coat hanger) and have the class
predict whether will create a bubble or not and ask them why. Test it
and talk over why it worked. Use some objects they do and do not (object
that is not close ended) work so they are clearly able to understand what creates a bubble and why.
4. Go over the entire lesson and make sure they are able to answer through their group experimentation that:
1.) Bubbles can be made from many different close-ended objects.
2.) Due to equal air pressure, bubbles are a sphere no matter the (close ended) shape of the wire.
(Unless sitting in water where a force is against one side of it.)
3.) Equal air pressure causes a bubble to be round.

Concept Application:

Ask the children, "If you were to blow a bubble through a square shaped straw, what shape would the bubble be? Do you thing you could blow a bubble out of a wooden object?" Have them take turns answering the questions and giving their own rationale for their answers through learning from the experiments.

Assessment:

The children will have demonstrated their science understandings by:
1.) Explaining in their journals through pictures and writings that bubbles are round no matter what shape of object they come out of
2.) Predicting whether an object will create a bubble or not (ask individually) and why or why not.
3.) Explaining (written in journal) why a bubble is not a square, or always the shape of the object is comes out of.

I was in a workshop (for kindergarten teachers) and they gave us clay and told us to try to create a boat that would not sink. (You have to use modeling clay. Playdough melts and makes a huge mess.)
Then we tested our boats. We also added teddy bear counters until it sank (we estimated how many counters would make our boat sink beforehand).
Then we were given aluminum foil. Ball some up and then make a boat with another piece and test both in the water. They were teaching us about surface tension. It's ok to introduce words like these and give a short explanation. When the children see or hear it again later on in upper grades it will be easier for them to grasp its meaning.
When I begin sink/float activities I go to the sand/water table and have the

students place their hands on top of the water and feel the surface. I
tell
them their hand is floating. Then I tell them to push their hands to the
bottom and now they have sank! They love it.

When doing s/f activities I always ask my students if they think an object
will sink (fall to the bottom) or float (stay on top/surface of the water) .
Then I ask why they think the object will sink or float. Some begin to
make
the connection to the type of material things are made of and realize
that
wooden things float and metal things sink.
I use my sentence strip pocket chart and make a graph to hold the items. I
divide the graph with masking tape. I have the word cards and a picture
demonstrating sink and float at the top of the graph.
The students place the objects in the correct side once they test each
item.
If you have balance scales students could weigh items and make predictions
as to if they will sink or float and then try it and see if they were right.
They will be surprised to see that a heavy block will float and a light paper clip will sink. It is fun to watch and listen to them as they experiment.
\

I need to do a sink and float activity to be observed. I usually let the
children explore with the objects and then discuss why some things sink and
some things float. I also need to tie this with math...I was thinking about
graphing the various objects according to whether or not they sink

or
float...any other ideas that I could use with this lesson? I feel like I
do
the same things each year and I would love to add some new stuff...thanks!

Subject: science and art centers

One of my favorite science centers is:
Using empty film canisters, I make two each with: pennies, toothpicks, cotton balls, jingle bells, b-b's, bingo chips, two that are empty, and any thing else I can find or think of that make different sounds. The K's try to find the two that are the same. They can open and check, but must put the tops right back on and mix them up again for others.
Jodee

Subject: Simple science ideas for young kids

Simple science ideas for use with preschool children or toddlers.

Make bubbles: Mix one gallon of water with one cup liquid detergent and
50 drops of glycerine.

Blow bubbles and have the children pop them.

Make Goop: Mix 2 cups water with a little food coloring, add 6 cups of
cornflour/cornstarch to make goop. A great outdoor summer activity.

Bake cookies. The easiest way to do this is to buy the already made cookie
mix and have the children help place the dough onto the sheet. But for
older children, have them start from scrath with a simple recipe.

Bake cupcakes. Buy a cake mix and have the children help mix the ingredients as instructed and have older children pour the cupcake

mix
into the containers.

Make Ice Cream! I love to do this one, and so do my kids. I have done this
with toddlers and school agers...
You will need:
- 2 bags of party ice
- 1 gallon whole milk (or chocolate milk for chocolate ice cream)
- Ice chest
- 1 box of kosher salt
- Paper cups (a least one for each student, and 1 for each teacher in the
building who wants to try it)
- 1 lb. Sugar
- 1 gal. Ziplock bags (2 for each pair of students)
- vanilla extract
- Plastic spoons
- 1 quart ziplock bags (1 for each pair of students)
- paper towels
- Measuring cups, teaspoons and tablespoons

Directions:
- Combine 2 tablespoons sugar with a few drops of extract and 1 cup (8
oz)
of milk in a small ziplock bag (quart size) and zip it up. This is the small bag!!!
- Add 2 cups of ice and 1/2 cup of rock salt in a gallon ziplock bag. Place this bag into another ziplock bag to reduce leakage. This is the large bag!!!!
- Place the sealed small bag into the large bag and seal the large bag.
- Have the children pair off, and have each partner hold one end of the
large bag and shake it until the ice cream is firm.
- After the ice cream is firm, supply the children with cups and spoons
so
they may pour the ice cream into the cups and try it.

Really any cooking is science!!! So try your favorite recipe.

Ramp it!!! Provide the children with an inclined plane. (Can be made

with
a propped up board.) Have each child pick an item from the class room
and
sit down, before you explain what you are going to do. Show the children a
few basic items, like a car with wheels, a marble and a book. Ask the children if the item will roll down or slide down the ramp, or if it will
not move. Then try it with each item. Have each child guess what the item
that they picked out will do.

Jet balloons. Fill a balloon with air and let it go. What makes the balloon go?

Singing balloons. Fill a balloon with air and pull the neck of the balloon
tight sothat the balloon sings. What is making the noise?

Nature Walk: Take a plastic bag with you on your next nature walk. Encourage your child to collect leaves and small sticks, and acorns, and
put them in the bag. (You can go on a nature walk in you back yard too.)
Ask your child about each item they choose to put in the bag.

Evaporation: Set out three cups, half filled with water. Add food coloring
to the water. Have your child use an eye dropped to drop the colored water
onto a piece of paper towel. Notice how the water evaportates, leaving
the
color behind.

Play with magnets. Supply your children with magets and various items.
Have the chidlren guess which things will stick to the magnet.

When it is raining, watch the rain. Talk about the sounds that you hear

during a rain storm. What are the signs that a storm is coming. Talk about
storm safety!!!

Painting with water: You just need a paint brush, and water in a bucket,
oh yeah, and a nice warm summer day. Let your child "paint" with the water, and watch how the water evaporates in the warm sun. Paint rocks,
trees, the sidewalk anything!!!

Will it disolve? Fill five clear jars with water. Take five different substances, like sugar, cereal, salt, paper, things that will disolve, and
some that won't. Ask your child which will disolve, and which will not. Test each item in the water.

Plant a seed. Watch it grow.

Balance play. Part of science is weighing items. Provide your children with a scale or balance for them to experiment with, and plenty of various
items. This can usually be tied in with your theme. If you are doing winter, let them weigh snow vs water. Which weighs more? If you are
doing
valentines day have them weigh heart shaped beads.

Measure it. Another part of science is measuring. Provide the chidlren
with plenty of opportunities to measure things. Provide measuring cups
in
your sand and water table, and containers of various sizes.

Dish pan measuring. Place something to be measured in a dish pan, ie beads, rice, water, sand etc. and supply the children with measuring cups
and various sized containers to experiment with.

Rubber band music: Place a rubber band on your index finger and thumb

and
pluck it to make a twang sound. Supply the children with rubber bands
so
they can try it. Can the sound change? How can you change it? How does
it
change?

Stages of Growth Explain the stages of growth of a bean. If you can draw,
or find pictures of the stages, laminate them, and ask your child to arrange the picture from first to last.

What scent is this? Gather four or different objects with different scents. Blindfold the child, then place the object close the the child's
nose, and ask the child to smell it and try to identify what it is.

Adopt a tree: Pick a tree outside. At Various times of the year, spring,
fall winter, and summer, take a picture of you and the children outisde
by
the tree. Talk with your children about the differences in the tree, and
the clothing that we wear in the different times of the year.

Paint on Wet Paper: Explain diffusion, the spreading of the paint on the
paper, through the water.

Salt Art: Saturate hot water with salt. Let the water cool, and have the
child use the salt water to paint on black paper. Then after it dries, have the child look at the crystals of salt on the paper.

Sensory fun: Supply the children with many different items to feel, smell
and touch. Like pine tree branches, leaves, dirt, rice... you can find many items for any theme.

Play with a kaliedoscope.

Look at a mirror.

Watch a feather fall to the ground.. then watch a ball.

Cut an apple in half and watch it rust.

Have an ant farm. A fun Ant Farm Village is available through Amazon.com.

Go outside and watch the ants.

What do ants like to eat? Set out a paper plate outside with different
items on it. See which ones the ants take away first.

Bug Hunt : Go for a bug hunt outside. Provide a box or plastic jar to collect them, and magnifing glasses to allow the children a better view.

Bug Jar: Collect bugs in a jar, and let the children examine them with
a
magnifying glass. Return the bugs to their homes so they do not die.

Watch a caterpillar turn into a butterfly. Amazon.com offers a great butterly garden for this, including the live caterpillars.

Compare animal parts with human parts of the body. Ie paws with hands
And feet, arms to feet.

Examine feathers! If you can obtain some feathers, allow your child to
examine the feathers with a magnifying glass. Do feathers float in water?

Plants We Eat: Show the children some common plants we eat. Name the
different parts of the plants, while you show the plants to the children.

Help the children sort the plants. By types of fruit, and veggies. Sort
again by the part of the plant we feats, like we eat the roots of carrots
and potatoes, and we eat the leaves of lettuce, and spinach.

Chick Sequence Cards: Make simple sequence cards for your child. Draw
the different stages of a chick hatching from an egg. Draw an egg in its'
nest, an egg cracking, a chick partly out of the egg, and a chick that is
completely hatched.

Cheese Taste: Allow your child to taste many different types of cheeses.

Float or sink? Have several different items on a tray, and a dish pan of water. Ask the children if they think an item will sink or float. Try it!

Have tadpoles in your class and watch them turn into frogs.

Have a fish tank in your class.

Observing shells and such: Obtain many different kinds of shells and rocks. Allow the children to feel them, and look at them with a magnifying
glass.

Ocean Bottle: Clean out an empty plastic pop bottle. Add water, blue food
coloring, and glitter, and maybe a few pebbles. Seal the bottle closed
using a little hot glue, allow to completely dry before the children can
play with it. Tip the bottle back and forth. roll the bottle on the floor.

Sensory Fish:
You need:
Blue Hair Gel

Ziplock Bag small
Plastic fish
Glitter
Place the fish, glitter and gel into the baggie. Seal the bag, and then tape it shut. Let the children feel and play with the bag at a table. Observe closely so the bag is not punctured.

Examine starfish and seahorses: Explain to your child that starfish and seahorses have an exoskeleton, or their bones are on the outside. Let them examine dried, dead seahorses and starfish.

Leg Count: Show pictures of a crab, octopus, starfish, and frog. How many legs do each of the animals have?

What do fish need to live? Discuss a fishes need in the sea, or lake. Where do fish live? What do fish eat? Etc.

Octopus Color Changes: Discuss with your child how an octopus will change colors to blend with it's surroundings. Cut four or five different colored octopus from construction paper. Set out four or five of matching sheets of construction paper. Ask your child to match the octopus with it's background.

Watching fish: Go to an aquarium, point out the parts of a fish, (body, fins, eyes, gills, tail etc..) Ask your child which is the biggest, smallest? How do the fish swim? Etc..

More Watching Fish: Visit a pond, lake, or fish store to observe fish

Balloon Power
Materials needed:
20 to 30 small balloons
A Large garbage bag
Fully inflate a small balloon. Ask your child what will happen if

he/she
sits on it. Let your child try it. If it doesn't pop have your child jump
on the balloon to pop it. Inflate enough of the small balloons to fill the
garbage bag. Seal the bag and have your child sit or even jump on the
bag.

Static Balloons: Learn about static electricity by rubbing a balloons on a
childs head, then stick it onto th

Square Balloons: Fill a balloon half full with water. Place the balloon in
a square container, then place in the freezer. When frozen take out of
the
freezer. Show the children what you have done. Ask them what will happen
when the ice melts. Find out.

Make a Telephone: Poke a hole in the bottom of two strofoam cups. Place
a
piece of string in the bottom of one cup and tie a knot at the end of the
string to prevent the string from coming completely out of the bottom
of
the cup. Then thread the string through the bottom of the other cup and
tie another knot. The } is a cup on it's side and the ---- represents the
string. It should look like this: }-----{ Have one child talk in one cup
while another listens with the other cup. How long can the string be
before the phone won't work?

Play with a parachute.

Sun Prints: Spully the child with a dark piece of paper. In the

morning,
on a very sunny day, with little or no wind, havethe children find items
to place on their paper. Every child should recieve one rock, to keep the
paper from blowing away. Have the children arange sticks, grass, acorns
and such on the paper. At the end of the day see how the sun made a picture for them.

Make a feelie box or bag. Place items in the box and see ifhte children
can guess what they are.

Play with a pinwheel.

Build with dry sand, then build with wet sand.

Play with a prism.

Use a magnifying glass.

Crunch dry and green leaves.

Measuring rainfall: On a rainy day, set out a container to measure the
rainfall. Measure how much rain fell that day. Continue to measure the
rain each day, and record for a few weeks. Ask your child to predict how
much water will be collected. Ask at the beginning of the day and ask when
it is raining. Did their answer change?

Egg Carton Fun: Use a plastic egg carton for this activity. Fill each hole
3/4 full with water. Add red food coloring to one hole, blue to another,
and yellow to another. Give your child an eye dropper, show them how to
use the eye dropper to move the colored water to clear water, notice

how
the color changes. Let them experiment. For older children, ask them
how
to make green, purple, brown, and aqua colors.

Rainbow in a jar: Take a large glass jar, fill it 3/4 with water. Drop a
single drop of food coloring into the jar from about a foot above the jar,
so the coloring makes it's way almost to the bottom. Try different colors.

Will it Absorb water? Supply the children with pieces of material to test
like pieces of cotton, plastic, wool, tin foil, etc. Supply the children
with eye droppers and a cup of water. Which materials absorb water and
which do not?

Celery Dye: Place a stalk of celery in a cup with water and blue food coloring (about 10 drops in 1/4 cup water should do). Wait a day or two,
and see what happens.

Condensation: Obtain two jars and their lids. Fill one jar with ice cold
water and the other with room temperature water. Observe the results.
Condensation occurs when the vapors in the air become cool enough to
condense and form water droplets.

Evaporation: Obtain two clear plastic glasses of the same size. Measure
one cup of water and place in each cup. Mark the water leve of each cup
with a permanent marker. Place one in a sunny window and the other somewhere else in the room. Observe the glasses of water over the nest
couple of days. Ask the children where the water is going. Which is

evaporating more quickly? Evaporation occures when the particles of water
become warm enough that they trun into vapors and leave the cup and
escape
into the air. Why did the water in the sun evaporate faster?

Measuring water: Provide the children with a balance and containers that
can hold water.

Creating Ice: Place water in a plastic ice tray and place it in the freezer. Every half hour take it out to inspect the ice. Ask the children
why it is changing? Then after it is frozen, set it in a cup and allow it
to melt again.

Glass and Water Music: Fill a couple of identical glass cups, at least four, with varying amounts of water. Tap the side of each glass with a
metal spoon. Which is the highest sound and the lowest? How could we
change the sound?

Make a paper airplane.

Blow paper across a table with your breath. Try it with blowing with a
straw. Have a race.

Use a microscope.

Examine worms.

Examine snow.

Watch snow melt.

Make a map of your classroom or school.

Examine different types of rocks.

The Sun is Hot: Have your children stand in the sun on a hot day for a few minutes. Then have them stand under a tree or in the shade of a building.
Ask your child which is warmer, in the sun or in the shade? Ask your child "What warms the earth?"

Hot or Cold Weather: Cut out many articles from magazines that represent hot, or cold weather. Ask your child to tell you which pictures are hot weather, and which are cold weather.

Rain Catcher: Obtain a flat bottomed jar with straight sides. Tape a ruler to the side, so that the number 1 is 1 inch from the bottom. Set out the jar on a rainy day, and later that day see how much rain was collected. Obtain a newspaper to check the forecast to see whether they match your results.

Summer or Winter Clothes: Gather an assortment of clothes for summer and winter seasons. Show your child each piece of clothes, and ask your child if the clothing is winter or summer clothing.

Winter Activities: Ask your child what activities can be done in the summer, but not the winter. And vice versa.

Predict the Weather: Have your child go outside in the morning, ask them what they think the weather will be like. Will it rain, snow, be sunny?
What will the temperature be like? Record your child's answers and compare them to the weather.

Make a star viewer: Wrap a black piece of paper on the end of a paper

towel tube. Seal it with tape. Poke pin hole in the paper, then look into
the tube at a bright light, to see the stars.

Have taste trials. Blindfold the children and have them try different types of juice or koolaid. Can they tell you what it is by just the taste?

Buy a tape of animal sounds, can the children name the animals that make
the sounds?

Make a tape of sounds around the school.. water dripping, the door opening, the phone ringing, children drawing iwht markers.. etc. Play the
tape back and see if the children can guess what the sounds are.

Who is it? Make a tape of each child saying, "Hello! Can you guess who
I am?" See if the children can tell who's voice is whose.

Visit a nature center or zoo.

Discuss and point out the different kinds of trees on your next walk.

Measuring distance. Have children use a ruler to measure different Items and distances.

Graph it. Show the children how to make a simple graph. Graph anything!!!

Make your own musical instruments, clap your hands, tap your belly!!! Use a coffee can with lid for a drum. Make maracas with two plate and beans.

Rhythm sticks: Supply the children with rhythm stick to experiment with.
Play soft and loud. Can the noise change? What different sounds are Made when you hit the table different ways. Try hitting them together, and rubbing them together. Try hitting the floor.

Bounce a ball.

Is it alive? Show pictures of objects and ask "Is it alive?"

Is it a plant or animal? Show pictures of plants and animals and ask "Is it a plant or animal?"

Cause and effect: Try different cause and effect experiments.. light switch, if you jump up, the earth pulls you down etc.

Play with dominoes: have a domino rally.

Have the children run as fast as they can a measured distance out side.
Record the time. Have them run the distance every day at least a few
times. Then at the end of the week, have them run again and time them.
Compare the individuals time with their first time.

Discuss the parts of a flower.

Have a professional bring in some unique animals.

Have a class pet.

Ask "What will happen if...." record the children's answers then try it
and see. Some examples: What will happen if I flip this light switch? What
will happen if I put oil in water? What will happen if I drop this ball?

Compare/contrast: Find two things in the class. Ask the children how They are the same. Ask the children how they are different.

Use a thermometer to read the temperature.

Show the children how a weather vane works.

Provide the children with plenty of measuring experiences, using both

English and Metric units.

Collect data, and construct a chart or graph with the children. Ask Them questions about the graph... which was more or less or the same?

Talk about or observe an animal. What unique body parts does this Animal have? What are the functions of those parts? I.e. claws for protection, big ears to hear better.

Sort animals or plants on a basis of observable physical characteristics.

What does a plant need to grow? You can ask the children, do a few experiments to see what plants need to grow.. sunlight, water, air...

Have the children name parts of a flower.

Have the children think of some edible plants.

Talk about dinosaurs, discuss that they are extinct and ancient. Explain the term fossil.

Talk a little about what we eat. What do bears eat? What do lions eat?

RECYCLE!!!!

Texture: Supply the children with different textured items to feel. Is
The item rough, smooth, bumpy?

Flexibility: Supply the children with different items that range in flexibility. Rubber band, pencil, string, a stick. Which is the most flexible? the least?

Hardness: Supply the children with different items that range in hardness. Which is the hardest? The softest?

Have the children sort items by size.

Have the children sort items by color.

Have the children sort items by shape.

Have the children sort various items, and tell you why they sorted them
that way.

Have the children sort items by weight.

Play with a wind up toy. How does it work?

Talk about directions, north, south, east and west. Post these labels
On the walls in your class and play "Simon Says" using the directions..
Ie. "Simon Says face North"

Faster and Slower. Talk about faster and slower. Roll a ball on the
Floor slowly, then faster. Ask the children how to get the ball to roll faster.

Inclined plane.. slower and faster... do above.. except roll the ball
Down an inclined plane that is very steep vs almost parallel to the floor.. which ball rolls faster?

Play with silly putty.

Wagon fun... Have something really heavy in your class that is not bulky.
Ask the children if they can move it. Then place it in a wagon and have
them pull it... which way is it easier to move?

Provide older children (over 6) with the opportunity to use tools such
As screwdrivers, small hammers with wood.

Play with color filters or "gels" to change the color of light.

Play shadow tag.

Set a rock on a piece of dark paper on a very sunny morning and let

the
children set other objects on the paper. At the end of the day, inspect
the paper. What happened?

Play with a flashlight in the dark.

Play with shadows, make shadow animals.

What is it? See if children can guess an object my the shadow it makes.

Examine dirt with a microscope or magnifying lens.

Collect and sort rocks.

Talk about bodies of water. Lake, river, ocean etc. Pretend using your
sand and water table.

Provide your children with rocks, minerals, sand, soil etc for them to feel and inspect.

Provide the children with fossils to inspect.

The following were submitted by M4M - sbc:

Bouncing Balls

Adapted from *Teaching Physics with TOYS, EASYGuide™ Edition,* published by Terrific Science Press, www.terrificscience.org

Commercial Toy: different kinds of balls

Other Stuff: ▸meterstick or tape measure ▸paper ▸pencil

What to Do:

1. Select an assortment of balls made of different materials.
2. Look at and feel the balls, but don't bounce them yet.
3. Which ball do you think is the best bouncer? Which ball do you think is the worst bouncer? Why?
4. Design an experiment to determine which ball is the best bouncer. Think about how to do a fair test of each ball's bouncing ability and how you will measure the results. For example, would dropping each type of ball from a different height be a fair test? Would dropping each ball on a different surface be a fair test?
5. Perform your experiment and record the results. How do the results compare with your predictions?

How It Works:

What determines how high different balls bounce? When a dropped ball hits the floor, it squishes a bit, or deforms. As the ball bounces back up, it regains its original shape. How much a ball deforms and how fast it springs back into its round shape greatly affect the height of the bounce. A ball made of springier materials will usually bounce higher. A ball made of squishier materials will usually not bounce as high. In air-filled balls, such as tennis balls, the ball's bounce is also affected by the springiness of the air inside the ball.

More Fun?

Want to do more experiments with bouncing balls? Terrific Science Press (www.terrificscience.org/bookstore) offers the following book that includes bouncing ball activities:

▸▸ *Teaching Physics with TOYS, EASYGuide™ Edition*

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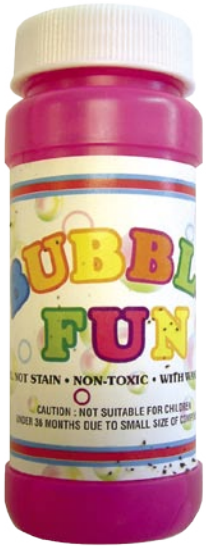
Bubble Solutions



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Commercial Toy: Bubble Solution

Other Stuff: ▸clean Styrofoam® meat tray ▸black construction paper ▸scissors ▸straw ▸several other brands of bubble solution

What to Do:

1. Cut black construction paper to fit inside the tray and lay it on the bottom of the tray. Pour enough bubble solution into the tray to soak the paper and leave a few puddles.
2. Place your straw into one of the puddles. Blow gently through the straw to form a large bubble dome. Carefully remove the straw so that the bubble stays on the paper and does not pop. Time how long the bubbles lasts.
3. Use your straw to blow a second bubble and remove the straw just like you did in step 3. This time, observe the color of the bubble. Is the bubble all one color? Does it stay the same color from the time it forms until the time it pops? What color(s) do you see? Write down the bubble color pattern.
4. Try out different brands of bubble solution. Do the bubbles last any longer or shorter? What color patterns do you see?

How It Works:

Bubbles have air in the middle and a thin soap-film wall on the outside. The bubble will remain intact as long as the soap-film wall remains thick enough to hold the air in. Over time, the wall becomes thinner and thinner because gravity causes the soap film to flow away from the top of the bubble. Eventually, the wall becomes so thin that the bubble pops.

A bubble's change in color is caused by light waves reflecting off the bubble surfaces. When light hits the bubble, some waves are reflected off the outer surface while others are reflected off the inner surface. When the bubble's film is very thick (such as when the bubble first forms), the bubble will appear blue-green. As the film thins, the colors change to blue, magenta, and yellow/white. This color pattern will probably repeat several times. When the film is so thin that it is transparent, dark spots appear that let you know the bubble is about to pop.

More Fun?

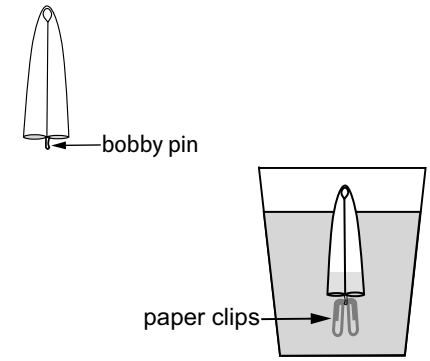
Terrific Science Press (www.terrificscience.org/bookstore) offers the following books that include activities with bubbles:

- *Classroom Science from A to Z*
- *Science Night Family Fun from A to Z*

Want to buy bubble toys? Visit the Terrific TOY Store at www.terrificscience.org/toystore.

Cartesian Divers

Adapted from *Science Night Family Fun from A to Z,* published by Terrific Science Press, www.terrificscience.org



Make-It-Yourself Toy: Cartesian Diver

Stuff You'll Need: ▸clear plastic straw ▸scissors ▸bobby pin ▸clear plastic cup ▸water ▸paper clips ▸empty plastic soft drink bottle with cap

What to Do:

1. Cut the straw in half. Fold one piece in half and secure it by pushing a bobby pin through the open ends.
2. Test your straw diver by placing it into a cup of water. Only the very top of the straw should be above the surface of the water. Adjust the diver by hooking paper clips through the closed end of the bobby pin to add weight to the diver. After the adjustment, leave the diver in the water.
3. Fill the plastic soft drink bottle with water to within 2–3 cm (1 inch) of the top. Transfer the diver into the soft drink bottle. The diver should float.
4. Place the cap on the bottle. Squeeze and hold the sides of your bottle and observe. What happens to the diver? Relax the squeeze and observe. What happens to the diver?
5. Continue to squeeze and relax the bottle while closely watching the straw diver. Can you figure out what's causing the diver's behavior?

How It Works:

The Cartesian Diver is a complex object because it is made of several different parts: the plastic straw, the metal bobby pin and paper clips, and air (inside the straw). When the diver is adjusted so that it just barely floats, the total diver "system" (straw, bobby pin, paper clips, and air) has a density just less than that of water. When you squeeze the soda bottle, the air inside the straw is compressed and water moves into the straw. This extra water now inside the diver causes the mass of the diver and its density to increase. The total density of the diver "system" (straw, bobby pin, paper clips, and air and water inside the diver) is now greater than the density of water and the diver sinks.

When you release the squeeze on the bottle, the air trapped inside the diver expands to its original volume and the extra water is forced out of the diver. The diver now has less mass and is less dense than the water, causing it to float to the top of bottle.

More Fun?

Want to make other kinds of Cartesian Divers? Terrific Science Press (www.terrificscience.org/bookstore) offers the following books and kit that include Cartesian Diver activities:

- *Classroom Science from A to Z*
- *Science Night Family Fun from A to Z*
- "Fowl Play" Terrific Science Home Kit

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Color Change Toys

Commercial Toy: Color Change Duck and Mood Mudd™

Other Stuff: ▸2 clear plastic tubs (cut-off 2-L soft drink bottles also work) ▸water ▸ice ▸tongs ▸hair dryer

What to Do:

1. Fill one container with very warm tap water and the second container with cold tap water. Add a few pieces of ice to the cold water.
2. Use tongs to dip the duck into the very warm water. What happens? Now dip the duck into ice water. What happens? Do the changes happen immediately or are they gradual?
3. Use a hair dryer to blow warm air onto the duck. What happens? Is the change immediate or gradual? What's causing the duck to change colors?
4. Now take the Mood Mudd out of its container and hold it in your hands. What does it feel like? What color is it?
5. Squeeze the Mood Mudd while switching it back and forth between your hands. What happens? Does the change happen immediately or is it gradual?

How It Works:

Both of the toys in this activity change color because of a temperature change. In general, items that change color in response to temperature work by one of two different mechanisms. Some color change toys, like color change cars, use liquid crystals. The molecules in liquid crystals have properties in between the solid and liquid state. At low temperatures, the materials are more like solids and, as they are heated, they change to the liquid crystal state. Liquid crystals reflect light differently than solids. As the wavelength of reflected light changes, so does the color of the toy. Other color change toys use a chemical that changes color in response to temperature changes. Heat-sensitive (thermochromic) paper also works in this way.

More Fun?

Learn about more color change toys and other items. Terrific Science Press (www.terrificscience.org/bookstore) offers the following book that includes an activity with color change objects:

▸▸ *Teaching Chemistry with TOYS*

Want to buy Color Change Ducks and Mood Mudd? Visit the Terrific TOY Store at www.terrificscience.org/toystore.

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Find more toy-based activities at www.terrificscience.org.

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