Teacher's Convention Science Olympics

Curricular Connections:

Skills

Grade 4

Science Inquiry:

Explore and Investigate

- identify, with guidance, ways of finding answers to given questions
- carry out, with guidance, procedures that comprise a fair test
- identify materials and how they are used
- work independently or with others to carry out the identified procedures

Reflect and Interpret

- communicate with group members, showing ability to contribute and receive ideas

Problem Solving Through Technology:

Focus

- identify the purpose of problem-solving and construction activities: What problem do we need to solve? What needs must be met?

Explore and Investigate

- identify steps followed in completing the task and in testing the product
- identify materials and how they are used
- attempt a variety of strategies and modify procedures, as needed (troubleshoot problems)
- engage in all parts of the task and support the efforts of others

Grade 5

Explore and Investigate

- identify one or more ways of finding answers to given questions
- plan, with guidance, and carry out procedures that comprise a fair test
- identify variables that need to be held constant to ensure a fair test
- select appropriate materials and identify how they will be used
- work individually or cooperatively in planning and carrying out procedures

Reflect and Interpret

- communicate with group members to share and evaluate ideas, and assess progress

Problem Solving Through Technology:

Focus

- identify problems to be solved and the purpose(s) of the problem-solving activity: What problem(s) are we trying to solve? What conditions must be met? What controls are required? How will we know that we have done what we set out to do?

Explore and Investigate

- identify one or more possible approaches to solving the problem and plan, with guidance, a set of steps to follow
- select appropriate materials and identify how they will be used
- attempt a variety of strategies and modify procedures, as needed (troubleshoot problems)
- work individually or cooperatively in planning and carrying out procedures

Grade 6

Explore and Investigate

- identify one or more ways of finding answers to given questions
- plan and carry out procedures that comprise a fair test
- identify variables:
    - identify the variable to be manipulated
    - identify variables to be held constant
    - identify the variable that will be observed (responding variable)
- select appropriate materials and identify how they will be used
- modify the procedures as needed
- work individually or cooperatively in planning and carrying out procedures

Reflect and Interpret

- communicate effectively with group members in sharing and evaluating ideas, and assessing progress

Problem Solving Through Technology:

Focus

- identify problems to be solved and the purpose(s) of problem-solving activities: What problem(s) are we trying to solve? What resources can we use? How will we know that we have done what we set out to do? What possible impacts do we need to consider?

Explore and Investigate

- identify one or more possible approaches and plan a set of steps for solving the problem
- select appropriate materials and identify how they will be used
- attempt a variety of strategies and modify procedures, as needed (troubleshoot problems)
- work individually or cooperatively in planning and carrying out procedures

Reflect and Interpret

- communicate effectively with group members in sharing and evaluating ideas, and assessing progress

<u>Attitudes</u>

Grade 4

Students will show growth in acquiring and applying the following traits:

- curiosity
- confidence in personal ability to explore materials and learn by direct study
- inventiveness and willingness to consider new ideas
- perseverance in the search for understandings and for solutions to problems
- a willingness to base their conclusions and actions on the evidence of their own experiences
- a willingness to work with others in shared activities and in sharing of experiences
- appreciation of the benefits gained from shared effort and cooperation
- a sense of responsibility for personal and group actions

Grade 5

Students will show growth in acquiring and applying the following traits:

- curiosity
- confidence in personal ability to learn and develop problem-solving skills
- inventiveness and open-mindedness
- perseverance in the search for understandings and for solutions to problems
- flexibility in considering new ideas
- critical-mindedness in examining evidence and determining what the evidence means
- a willingness to use evidence as the basis for their conclusions and actions
- a willingness to work with others in shared activities and in sharing of experiences

- appreciation of the benefits gained from shared effort and cooperation
- a sense of personal and shared responsibility for actions taken

Grade 6

Students will show growth in acquiring and applying the following traits:

- curiosity
- confidence in personal ability to learn and develop problem-solving skills
- inventiveness and open-mindedness
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- a willingness to use evidence as the basis for their conclusions and actions
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- appreciation of the benefits gained from shared effort and cooperation
- a sense of personal and shared responsibility for actions taken

Event #1

Your team must build the tallest structure to hold a marble.

Materials:
- 25 straws
- 1m of masking tape
- scissors (optional)
- 1 marble
- 10 paperclips

Rules:
- the structure must not be attached to anything
- the structure must hold a marble
- the marble must be able to be removed (not taped)
- You will be awarded 1 point for every centimetre vertically measured from the base of the structure to the top of the marble
- You have 15 minutes starting now

Event #2

Your team must build a container to hold EXACTLY 200 pieces of popped popcorn.

Materials:
- newspaper
- 50cm masking tape
- scissors (optional)
- ruler (optional)
- calculator (optional)
- 3 pieces of popped popcorn

Rules:
- the container must hold exactly 200 pieces of popped popcorn
- The team with the closest sized container will be awarded an additional 50 points
- The next 3 closest teams will be awarded 25 points
- All remaining teams will be awarded 5 points
- You have 15 minutes starting now

Event #3

Your team must build the longest free-hanging nose.

Materials:
- newspaper
- masking tape (I used the remaining tape from the first challenge)
- string about 1 meter
- scissors (optional)

Rules:

- the nose must be attached to one of the team members head
- it must protrude horizontally from the front of the body as far as possible
- the nose itself cannot touch any part of the body except the head
- one brace is allowed either from the waist or the knees.
- You will be awarded 1 point for every centimetre horizontally measured from the toes of the student wearing the nose
- If it touches the floor, this is where it will be measured to
- You have 15 minutes starting now

Sample Post-Science Olympics Reflection Sheet

Name:_____

1. Draw a picture of the structure that your group created.

2. What did you think that your group did very well?

_____

_____

_____

_____

3. What did you think that your group could have improved on?

_____

_____

_____

_____

4. If you were to complete this activity again, what would you do differently and why?

_____

_____

_____

_____

Timberlea's 1st Annual Science Week
Planning sheet 2009

Features:

- Cawst displays
- WBRSF Displays
- Outdoor Ed. Displays
- Science Alberta Crates
- Science Alberta Exhibit (none available)
- 2 Family Challenges
- Openers
- Class Recycle Challenge
- What Science Looks Like grade tables
- Hands-On Tables (volcanoes, coke vs. diet coke, chromatography, dancing raisins, magic mud, Bernouli's principle)

Materials Needed:

Stations

Dixie Cups – 500
Cornstarch – 4
Baking Soda – 10
White Vinegar – 4
Raisins – 1 bag
Sprite – 2 bottles
Coke – 2 cans
Diet Coke – 2 cans
Plastic Spoons – 500
Popsicle sticks – 500
Coffee Filters – 500
Hair dryer – 2
Ping pong balls -6

Challenges

Mini marshmallows – 30 pkg
Spaghetti – 30 pkg
Masking tape - 180 rolls
String - 1 giant roll
Aluminum Foil – Big Roll
Popcorn – 2 bags
Textbooks for mass
Newspaper – LOTS
Scissors – 30 pairs
Meter sticks to measure

Demonstration Materials

Erlynmeyer Flask – 1 large
Knitting Needle- 1 thin
Plastic Cups – 3 large
Balloons – 1 pkg
Eggs – 1/2 dozen

Demonstrations

Eggbert
Knitting needle through a balloon
Balloon and baking soda
Fireballs
Magic Cups
Water Rockets

Tables Needed

Grade Tables – 10
WBRSF – 1
WWY – 2
Science Crates – 12 individual tables
Dancing Raisins & Coke vs. diet coke - 1
Volcanoes – 1
Chromatography – 1
Magic Mud – 1
Outdoor Ed. – 1
Tower Build – 1
Total – 19 large
- 12 small

Jobs

- Newsletter/Bulletin
- Supplies
- Teacher Email regarding times and Recycle Challenge
- certificates for family challenge winners
- Poster to have up at PTI's
- RSVP lists to have at each teacher table for PTI's
- getting student volunteers to run stations
- ballots for Recycle challenge
- Get World Water Youth Teams ready
- responsible for getting LOTS of newspapers
- Banner for the science night, find out about the clay
- Points Score Sheets for science Olympics
- Supervise science Olympics
- build volcanoes
- info cards for each station

Email to Teachers:

Hello Staff!!!

The details for the 1st annual Science Week and Family Science Night have been finalized!!

The Family Night will be Wednesday, April 22nd from 6-8pm.

As mentioned before, the only thing that I would like teachers to do is have a grade partner table "What Science Looks Like in Grade…". This can include sample projects etc. If you want to have an activity there for people to try that would be great!!

The Science Olympics will run as follows:

Monday, April 20 – 10:15 – 12 all 4-8 M classes
Tuesday, April 21 – 8:15 – 10 all 4-8 L classes
10:15 – 12 all 4-8 K classes

Please have your students numbered from 1- how ever many you have that day (labels or masking task and sharpies work well for this)

Also, we will be having the class recycle challenge. Details below:

Objective: To create a practical, usable object.

Purpose: To promote reducing, reusing and recycling in our classrooms.

Participants: All ECDP to Grade 8 homeroom classes! Each class is considered a team.

Materials: Each class will be responsible for collecting the materials below. Only the following items in the number specified, and the 2 additional items may be used.

Items	Points
1 Cereal box	1 pt
2 tissue/paper towel rolls	1 pt each
1 can	1 pt
1 egg carton	2 pts
Milk-to-go container (5 max)	1 pt for 3 or less, 2 pts for 4-5
Foil (will be provided)	1 pt
Water bottle	2 pts
Styrofoam cup	1 pt
Plastic bag	1 pt
2 additional products	2 pts (4 if they are recycled items!)
Maximum	17 pts

Rules

1. Projects have to be usable and constructed out of the listed materials. You do not have to use all of the items, but the more you use the more points you get.
2. Materials can be cut, manipulated etc.
3. All projects must be completed by 2:45 on Wednesday, April 22nd and in the atrium with your class letter and number on the BOTTOM of it.
4. You may use an adhesive of your choice to put the product together.
5. Can be painted/coloured.

Judging

Please list the items used and tally the points earned on the bottom of your project. Ballots will be distributed during the Family Science Night to families for voting purposes. They will be instructed to base their vote on creativity, aesthetics, practicality and durability.

Have fun and be creative!!!

Science Olympics

Organization

Teams of 1 of each from grade 4 –8.

I had the teachers number them randomly and then they found the rest of their groups when they got there.

Prizes

I awarded the 1st place team with a pack of Magnetix that I got from Toys R' Us for $10 each.

Script

There will be three events. Follow instructions or you will get zero points for that activity.

There will be a start time and a stop time for each event. You will get exactly 15 minutes to complete each task.

Before each event begins you will send 1 person from your team to collect the materials for that event. The rest of the team can go to your spot and start brainstorming ideas while you are waiting for the time to start.

At the end of each activity you will be given 5 minutes to clean up your area, return any unused items and return to the middle of the gym floor in your grade seating plan.

You cannot use materials from any of the other events. Scissors and rulers are not to be used as part of any of your structures.

All events are measurable so you are aiming for : the longest, the tallest, holds the most weight etc.

Following the events all 3 scores will be added for each team to determine the final standings.

Event #1

Your team must make the strongest chair possible.

Materials:
- 30 full sheets of newspaper
- 1 roll of masking tape
- ruler
- scissors are optional

Rules
- the chair must stand 15cm off the floor and must be able to be moved
- the chair must have more than 1 leg and must not be a stump
- you may cut or rip the paper anyway that you like
- you cannot use the scissors, core of the tape, or ruler as part of your structure
- the chair must be able to stand on its own, free-standing. This means that you cannot hold it up, prop it up against anything, attach it to the floor or wall etc.
- the chair must be able to hold free flat weights (I used Math Makes sense practice books, maximum of 20)
- your team will get 5 points for every book that it holds
- you have exactly 15 minutes starting now

Event #2

Your team must build the tallest freestanding structure.

Materials:
- 1/8 of a package of spaghetti noodles
- 1 cup of mini marshmallows

Rules:
- you must use the pasta and marshmallows to build a freestanding tower
- the base of the tower must be on the floor and may not be taped down
- you may not attach it to anything, hold it up or prop it against anything
- you will be awarded 1 point for every centimeter high that your structure is
- you have 15 minutes starting now

Event #3

Your team must build the longest free-hanging nose.

Materials:
- newspaper
- masking tape (I used the remaining tape from the first challenge)
- string about 2 meters
- scissors (optional)

Rules:
- the nose must be attached to one of the team members head
- it must protrude horizontally from the front of the body as far as possible
- the nose itself cannot touch any part of the body except the head

- one brace is allowed either from the waist or the knees.
- You will be awarded 1 point for every centimetre horizontally measured from the toes of the student wearing the nose
- If it touches the floor, this is where it will be measured to
- You have 15 minutes starting now

Science Night

Teacher Demonstrations

1 every 10 minutes

Magic Trick

Materials:

- 3 opaque cups
- lightning gel (sodium polyacrylate)

Fill 1 cup about 1/4 of the way full with water. Ask everyone to follow the cup with water to see if they can keep an eye on it. Ask them which one, say they are right and pour the water into another cup. Repeat, this time pour the water into the cup with the powder. Do it again, this time, dump the other 2 cups upside down to show that they are empty. Take the third cup and say "so I really shouldn't dump this over Mr./Mrs. Head right now?" And then do it. Nothing will come out as the powder turned the water into a solid.

Explain that this is the same type of material used in diapers to keep babies dry.

Eggbert

See attached write-up

Needle Through a Balloon

See attached write-up

Inflate a Balloon Using a Chemical Reaction

Put some vinegar in a bottle. Put some baking soda in a balloon. Put the balloon on the opening of the bottle. When you are ready, dump the contents of the balloon into the bottle. If the seal is tight, the balloon will inflate due to the gases being released by the reaction.

Mentos and Pop Explosion

Put a roll of mentos into a 2L bottle of pop very carefully and stand WAY back to see the reaction.

Fireballs

Using a flammable powder (I can't remember what it is called) suck some of it into a pipette and then blow from the pipette at a candle flame. Resulting flame will be a large whoosh.

DANCING RAISINS

Purpose

To determine if raisins will sink or float in water and Sprite.

Hypothesis

What do you think will happen when you drop raisins in a glass of water? How about in a glass of Sprite? Why?

Experiment

1. Drop 3 or 4 raisins into the cup of water.

2. Now drop 3 or 4 raisins into the cup of Sprite.

Observations

Note what happened to the raisins in water. Note what happened to the raisins in Sprite.

Conclusion

Raisins are denser than the liquid in the soda, so initially they sink to the bottom of the glass. The carbonated soft drink releases carbon dioxide bubbles. When these bubbles stick to the rough surface of a raisin, the raisin is lifted because of the increase in buoyancy. When the raisin reaches the surface, the bubbles pop, and the carbon dioxide gas escapes into the air. This causes the raisin to lose buoyancy and sink. This rising and sinking of the raisins continues until most of the carbon dioxide has escaped, and the soda goes flat. Furthermore, with time the raisin gets soggy and becomes too heavy to rise to the surface.

Carbonated beverages are prepared by putting the beverage into a can under high pressure of carbon dioxide gas. This high pressure causes the carbon dioxide gas to dissolve in the liquid. When you open a can of soda the noise you hear is produced by the carbon dioxide gas as it rushes out of the can. When the can is opened, the decreased pressure allows some of the carbon dioxide gas dissolved in the liquid to escape. This is what makes the bubbles in a soft drink.

Coke vs. Diet Coke

Purpose

To determine if there is a difference between the buoyancy of Coke and Diet Coke.

Hypothesis

Do you think a can of Coke will float in water? Do you think a can of Diet Coke will float in water? Why?

Experiment

1. Place a can of Coke into a bucket of water.

2. Place a can of Diet Coke into a bucket of water.

Observations

Note what happened when each of the cans was placed in water.

Conclusion

Why does one can sink, and the other can float?

The cans of soda have exactly the same volume, or size. But their density differs due to what is dissolved in the soda. Regular soda contains sugar as a sweetener. If you look at the nutrition facts on a can of regular soda, you will notice that it contains sugar...a lot of sugar. In some cases a 12 ounce can of regular soda will contain over 40 grams of sugar. Diet sodas, on the other hand, use artificial sweeteners such as aspartame. These artificial sweeteners may be hundreds of times sweeter than sugar, which means that less than a few grams of artificial sweetener is used in a can of diet soda. The difference in the amount of dissolved sweeteners leads to a difference in density. Cans of regular soda tend to be denser than water, so they sink. Cans of diet soda are usually less dense than water, so they float.

BERNOULLI'S PRINCIPLE

Purpose

To use a balloon, ping pong ball and a hairdryer to demonstrate Bernoulli's principle.

Hypothesis

Is it possible to keep a balloon and a ping pong ball in the air using only a hairdryer? Why or why not?

Experiment

1. Hold a balloon out at arm's length and let go of it. Does it stay there, or drop?

2. Hold the balloon above your head at arm's length, then blow hard at it as you let go. Can you keep the balloon in the air?

3. Hold a hairdryer in one hand, turn it on, and point it up toward the ceiling. Place the balloon in the stream of moving air, and let go. Does the balloon fall to the ground or stay up? Why does this happen?

4. If you tilt the nozzle slowly a little to one side, does the balloon stay in the air stream? Can you bring the nozzle back to vertical and make the balloon follow? How far can you tilt the nozzle before the balloon falls? What causes the balloon to stay in the stream of moving air?

5. Place a table tennis ball in the air stream created by the hair dryer. Does it float? Can you place both the balloon and the table tennis ball in the air stream at the same time? Which object must be placed on top for them to both remain floating? Why is this the case?

Conclusion

The reason the balloon stays in the moving stream of air has to do with Bernoulli's Principle. Bernoulli's Principle says that the pressure decreases inside a stream of flowing air. When the balloon begins to move out of this low pressure stream, the higher pressure of the air in the room pushes it back into the moving stream. When you tilt the nozzle, the pressure in the room is still high enough to push the balloon back into the air stream, even if the moving air stream is at an angle. Eventually, at a large tilt, the force of gravity will become greater than the force of the air pressure holding the balloon in the stream, and the balloon will fall.

Lumpy Liquids and Squishy Solids

Have you ever turned a liquid into a solid just by tapping on it? In this experiment you make just such a liquid.

For this experiment you will need:

* corn starch
* water
* dixie cup

Add 1⁄8 (2 tablespoons, or 30 cm3) cup of dry cornstarch to the cup. Add about 1/16 cup (1 tablespoons, or 15 cm3) of water to the corn starch and stir slowly. Add water slowly to the mixture, with stirring, until all of the powder is wet.

Your goal is to create a mixture that feels like a stiff liquid when you stir it slowly, but feels like a solid when you tap on it with your finger or a spoon.

Scoop the cornstarch mixture into the palm of your hand, then slowly work it into a ball. As long as you keep pressure on it by rubbing it between your hands, it stays solid. Stop rubbing, and it “melts” into a puddle in your palm. Can you think of other tests you can do with it?

<u>Why does the cornstarch mixture behave like this?</u>

Think of a busy sidewalk. The easiest way to get through a crowd of people is to move slowly and find a path between people. If you just took a running start and headed straight for the crowd of people, you would quickly slam into someone and you wouldn't get very far. This is similar to what happens in the cornstarch mixture. The solid cornstarch acts like a crowd of people. Pressing your finger slowly into the mixture allows the cornstarch to move out of the way, but tapping the mixture quickly doesn't allow the solid cornstarch particles to slide past each other and out of the way of your finger.

We use the term “viscosity” to describe the resistance of a liquid to flow. Water, which has a low viscosity, flows easily. Honey, at room temperature, has a higher viscosity and flows more slowly than water. But if you warm honey up, its viscosity drops, and it flows more easily. Most fluids behave like water and honey, in that their viscosity depends only on temperature. We call such fluids “Newtonian,” since their behavior was first described by Isaac Newton (when he wasn’t discovering the laws of gravity or developing the calculus). The cornstarch mixture you made is called “non-Newtonian” since its viscosity also depends on the force applied to the liquid or how fast an object is moving through the liquid.

EGG in a Bottle

Get your parents to try this experiment at home!

Here's an amazing way to get a hard-boiled egg into a bottle, even though the mouth of the bottle is smaller than the egg! What's more, you don't even need to touch the egg to get it to go in!

For this experiment you will need:

- a hard-boiled egg
- a glass bottle with a mouth just slightly smaller than the egg (a fruit-drink bottle works well)
- a 8-cm by 8-cm (3-inch by 3-inch) piece of newspaper
- a match

Remove the shell from the egg. Set the egg on the mouth of the bottle to see that the egg does not fit through the mouth.

Fold the piece of newspaper into a strip that can be dropped into the bottle, about 1 cm by 8 cm.

Light the match and use it to ignite the folded strip of paper. Remove the egg from the mouth of the bottle and drop the burning strip of paper into the bottle. Before the fire goes out, set the egg back onto the mouth of the bottle. Within a few seconds the egg will squeeze through the mouth and into the bottle.

Why does the egg slide into the bottle, even though no one is pushing it?

This happens because the pressure of the air is pushing it. Before the burning paper was put into the bottle, the pressure of the air inside the bottle was the same as outside the bottle. The burning paper, however, heats the air inside the bottle. This causes the air inside to expand. When the egg is placed on top of the bottle, it seals the bottle, and the fire eventually goes out. When the fire goes out, the air inside the bottle cools. As it cools, the air contracts, and the pressure of the air inside the bottle becomes less than the pressure outside. Then, the higher outside pressure pushes the egg into the bottle!

Needle Through a Balloon

Try this experiment at home!

Purpose
To determine if it is possible to stick a needle through a balloon without popping it?

Hypothesis

What will happen when a knitting needle is pushed into a balloon?

Experiment

1. Blow up a balloon – not too full – and tie the opening shut. Dip the tip of a knitting needle in Vaseline and spread the Vaseline along the entire length of the skewer.
2. Insert the needle with a gentle twisting motion into the end of the balloon opposite the knot. Continue pushing and twisting the skewer until the tip emerges from the other end, near the knot.

Conclusion

The rubber in the balloon consists of many long molecules that are linked together. It's similar to the way all of the noodles in a plate of spaghetti stick together. These long molecules are called polymers; when molecules of a polymer are chemically attached to each other, it is called cross-linking. These links hold the polymer molecules together and allow them to stretch…up to a point. When the force or tension pulling on the cross-links is too great, they will break, and the polymer will pull apart.

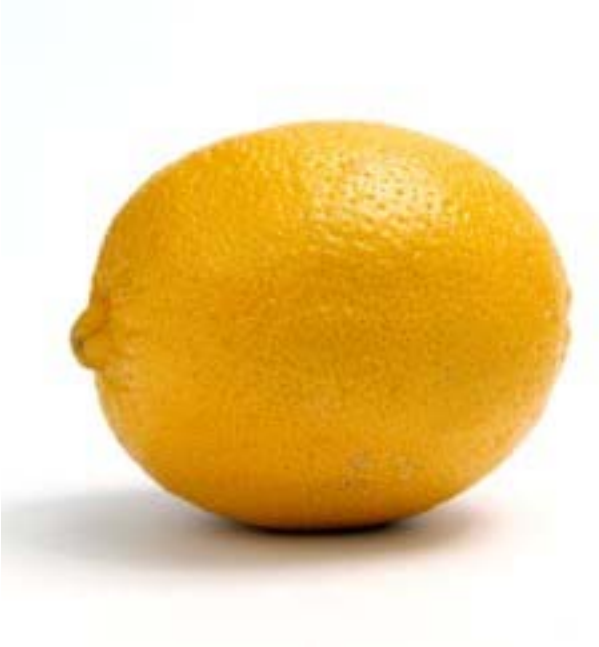
Look at the rubber near the ends of the balloon where you first inserted the skewer. Does it look lighter or darker than the rubber in the rest of the balloon?

The rubber at the ends of the balloon is stretched out less than in the middle of the balloon. Therefore, there is less force pulling on it. This allows the tip of the skewer to break some polymer cross-links, push aside the molecules of rubber, and slide into the balloon. However, enough cross-links remain so that the balloon holds together.

In the side of the balloon, there are fewer polymer molecules. When you push the tip of the skewer through the rubber in the side of the balloon and the skewer breaks a few of the cross-links, the tension on the remaining cross-links is too great, and the balloon pops.

Demonstration Tables

Invisible Ink with Lemon Juice



What you'll need:

* Half a lemon
* Water
* Spoon
* Bowl
* Cotton bud
* White paper
* Lamp or other light bulb

Instructions:

1. Squeeze some lemon juice into the bowl and add a few drops of water.
2. Mix the water and lemon juice with the spoon.
3. Dip the cotton bud into the mixture and write a message onto the white paper.
4. Wait for the juice to dry so it becomes completely invisible.
5. When you are ready to read your secret message or show it to someone else, heat the paper by holding it close to a light bulb.

What's happening?

Lemon juice is an organic substance that oxidizes and turns brown when heated. Diluting the lemon juice in water makes it very hard to notice when you apply it the paper, no one will be aware of its presence until it is heated and the secret message is revealed. Other substances which work in the same way include orange juice, honey, milk, onion juice, vinegar and wine. Invisible ink can also be made using chemical reactions or by viewing certain liquids under ultraviolet (UV) light.

Timberlea's 2nd Annual Science Week
Planning sheet 2010

Features:

- Cawst displays
- WBRSF Displays
- Science Alberta Crates (forensics)
- Science Alberta Exhibit (none available)
- 1 Family Challenges
- Openers
- Class Science Fair Displays
- What Science Looks Like grade tables
- Hands-On Tables (coke vs. diet coke, Bernouli's principle, take your own fingerprints, make your own zappy zoomer, invisible ink, make your own floating ball game)

Materials Needed:

Stations

Bendy Straws – 400
Card stock strips – 75 long, 75 short
Paper with circle outline – 100
Aluminum foil
Scotch tape – 25 rolls
String – 100 pieces
Cardstock fishbowl design to colour – 75
Cardstock fish design to colour – 75
Or Stickers
Lemon juice 2 bottles
Lamp with 100 watt bulb
Fingerprint chart
Sticky tack
Coloured chalk
Scissors
Paintbrushes
Glass slides
Hair dryer – 2
Ping pong balls -6

Science Olympic Challenges –

Straws 200
Balloons – 80 round, 80 long
Mini marshmallows – 30 pkg
Toothpicks – 50 pkg
Masking tape - 180 rolls
Scotch tape – 25 rolls
String - 1 giant roll
Small weights (pennies)
Scissors – 30 pairs
Card Stock – 75 sheets
Cardboard – 75 10cm X 3 cm strips
Clip – 30
Plastic lids – 80
Glue sticks – 25
Rulers -30

Demonstration Materials

Erlynmeyer Flask – 1 large
Knitting Needle- 1 thin
Plastic Cups – 3 large
Balloons – 1 pkg
Eggs – 1/2 dozen

Demonstrations

Eggbert
Knitting needle through a balloon
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Jobs

- Newsletter/Bulletin
- Supplies
- Teacher Email regarding times and Recycle Challenge
- certificates for family challenge winners
- Poster to have up at PTI's
- RSVP lists to have at each teacher table for PTI's
- getting student volunteers to run stations
- ballots for Recycle challenge
- Get World Water Youth Teams ready
- responsible for getting LOTS of newspapers
- Banner for the science night, find out about the clay
- Points Score Sheets for science Olympics
- Supervise science Olympics
- build volcanoes
- info cards for each station

Science Olympics

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There will be a start time and a stop time for each event. You will get exactly 15 minutes to complete each task.

Before each event begins you will send 1 person from your team to collect the materials for that event. The rest of the team can go to your spot and start brainstorming ideas while you are waiting for the time to start.

At the end of each activity you will be given 5 minutes to clean up your area, return any unused items and return to the middle of the gym floor in your grade seating plan.

You cannot use materials from any of the other events. Scissors and rulers are not to be used as part of any of your structures.

All events are measurable so you are aiming for : the longest, the tallest, holds the most weight etc.

Following the events all 3 scores will be added for each team to determine the final standings.

Event #1

Your team must make a balloon rocket that travels the farthest.

Materials:
- 2 balloons, 1 long, 1 round
- 1 straw
- 1 roll of masking tape
- 1 clip
- 1 half piece of card stock
- scissors are optional

Rules
- your group must tape the balloon to the straw
- the string (test zone) must be able to pass through the straw
- you may use the card stock to create wings/fins/tail etc. anything that you think will improve the rocket
- the final testing will be done by staff on the long test zone
- your team will get 1 point for every 10 cm that your rocket travels holds
- you have exactly 15 minutes starting now

Event #2

Your team must build a bridge to support the most amount of weight.

Materials:
- 1 package of toothpicks
- 1 large cup of mini marshmallows

Rules:
- you must use the toothpicks and marshmallows to build bridge
- the bridge must span a gap of 15 cm
- the base of the bridge must be on the table and may not be taped down
- you may not attach it to anything, hold it up or prop it against anything
- you will be awarded 10 points for every weight that your bridge is able to support
- the weight will be added to the top, middle of your bridge
- you have 15 minutes starting now

Event #3

Your team must build a Fantastic Flinger.

Materials:
- card stock
- masking tape (I used the remaining tape from the first challenge)
- string about 1 meter
- strip of cardboard
- straw
- glue
- plastic lid
- scissors (optional)

Rules:

- you are to create a "Fantastic Flinger" that will catapult a mini beanbag the furthest
- you may use the instructions given, or come up with your own idea
- your flinger must be activated by pulling the string
- you will be awarded 1 point for every centimeter that your flinger flings the beanbag
- You have 15 minutes starting now

Timberlea's 3rd Annual Science Week
Planning sheet 2011

Features:

- WBRSF Displays
- Science Alberta Crates (F.A.R.M. &)
- Science Alberta Exhibit (none available)
- 1 Family Challenge in Atrium at 7pm
- Robotics Display
- Class Science Fair Displays
- What Science Looks Like grade tables
- Hands-On Tables (gloop)

Materials Needed:

Stations

Hair dryer – 2
Ping pong balls -6

Science Olympic Challenges –

Straws 75
Newspaper 75
Paper Plates 75
Spaghetti 8 bags
Masking Tape 8 rolls
Scissors 25
Weights for bridges
Prizes

Science Fair
Medals
Participant Ribbons

Demonstrations

Eggbert - Kathryn
Knitting needle balloon - Michelle
Mento's Geyser Tube - Kathryn
Dry Ice - Michelle

Tables Needed

Grade Tables – 10
Science Fair – 12
Science Crates – 12 individual tables
Hairdryer – 1
Gloop – 1
Keyano - 1
Total – 24 large
- 12 small

Jobs

- Newsletter/Bulletin
- Supplies
- Teacher Email regarding times
- certificates for family challenge winners
- getting student volunteers to run stations
- Get robotics team ready
- responsible for getting LOTS of newspapers
- Banner for the science night, find out about the clay
- Points Score Sheets for science Olympics
- Supervise science Olympics
- info cards for each station

Science Week Schedule

Science Olympics
Wednesday, Feb. 9th 8:30-9:55ish L classes
10:15- 11:35ish M & N classes
1- 2:30 ish K classes

Science Fair

Tuesday, Feb. 8th
Judging – 9:30-12
Class and Parent visits – 1pm – 2:15pm

Science Night

Wednesday, Feb. 9th 6:30pm-8pm

Demonstrations
6:45 –
7 – Family Challenge
7:15 –
7:30 - Science Fair Awards

Science Olympics

Organization

Teams of 1 of each from grade 4 –8.

I had the teachers number them randomly and then they found the rest of their groups when they got there.

Prizes

I awarded the 1st place team with a pack of Magnetix that I got from Toys R' Us for $10 each.

Script

There will be three events. Follow instructions or you will get zero points for that activity.

There will be a start time and a stop time for each event. You will get exactly 15 minutes to complete each task.

Before each event begins you will send 1 person from your team to collect the materials for that event. The rest of the team can go to your spot and start brainstorming ideas while you are waiting for the time to start.

At the end of each activity you will be given 5 minutes to clean up your area, return any unused items and return to the middle of the gym floor in your grade seating plan.

You cannot use materials from any of the other events. Scissors and rulers are not to be used as part of any of your structures.

All events are measurable so you are aiming for: the longest, the tallest, holds the most weight etc.

Following the events all 3 scores will be added for each team to determine the final standings.

Event #1

Your team must build a flyer saucer from a paper plate.

Materials:
- 1 paper plate
- scissors

Rules
- your group must modify the plate
- you may only use the plate and scissors
- the scissors are only to be used for cutting, not as part of the saucer
- the final testing will be done by one member of your team
- your goal is to create the flying saucer that will land closest to the target
- your team will receive points based on how close to the target your saucer lands
- you may test your flying saucer at any time during the creation period
- you have exactly 15 minutes starting now

Event #2

Your team must build a bridge to support the most amount of weight.

Materials:
- 1 newspaper
- 1 meter of masking tape

Rules:
- you must use only the newspaper and tape to build bridge
- the bridge must span a gap of 15 cm
- the base of the bridge must be on the table and may not be taped down
- you may not attach it to anything, hold it up or prop it against anything
- you will be awarded 10 points for every weight that your bridge is able to support
- the weight will be added to the top, middle of your bridge
- you have 15 minutes starting now

Event #3

Your team must build a spaghetti train.

Materials:
- 1 straw
- 1/8 of a pack of spaghetti
- 1 meter of masking tape

Rules:
- you are to create the longest “spaghetti train”
- you must tape the straw to the desk and then attach the spaghetti to it to create as long of a structure as you can
- your structure must NOT touch the ground

- your structure will be measured horizontally from the front of the table
- You have 15 minutes starting now

A great site for more ideas:

http://soinc.org/sample_k6_events#circuit

Timberlea's 3rd Annual Family Science Night

When: Wednesday, Feb. 9, 2011
Where: Timberlea Gym
Time: 6:30pm-8:00pm
Open House all evening, challenge at 7pm

Featuring:

- Grade tables: "What science looks like in grade…"
- Teacher demonstrations every 15 min. starting at 6:45pm
- Hands-on experiment tables
- Science Alberta Crates
- Science Fair Projects!
- School Wide Science Fair Medals will be awarded at 7:30!
- Family Challenge starting at 7pm!!!

Come out see the top 3 Science Fair Projects from every class grades 4-8

Take part in our family challenge!

Please RSVP during PTI's with your child's teacher!

Floor Plan for Science Night