National
Camping School
2021

“Weird Science”

National Camping School’s Annual Theme Program
Each year a theme-related resource booklet is
produced and distributed through the
Cub Scouting National Camp Schools.
The material provided is designed to be used
in the districts and councils presenting
Cub Scout camping activities.

2021 Weird Science Resource Book

Inside this Issue:
FUN!

Welcome!

The material in this resource book is designed to serve your district or council in providing tremendous Cub Scout day camping events!

Many resources were used to compile the information you will find in this booklet. THANK YOU to the leaders who sent in ideas and suggestions and THANK YOU to those who contributed to the resources used. We could not have done it without you!!!
We appreciate your help and all that you do for our scouts and day camp!!

WEIRD SCIENCE - What experimental fun you will have with this theme!
Learn about what is in a scientific laboratory, the why and how things work and all about peculiar and fun experiments. Go outdoors and learn about the world we live in and how science plays a part in all of it. Your adventures may keep you in the lab or take you into the field where investigations and experiments are taking place. Whatever you do, make it fun and memorable for the Cub Scouts and leaders attending!

All materials in this book reflect the high standards of the BSA. Feel free to use (or modify) at your local Cub Scout camping activities to help your camp "explode" with excitement with "Weird Science!"

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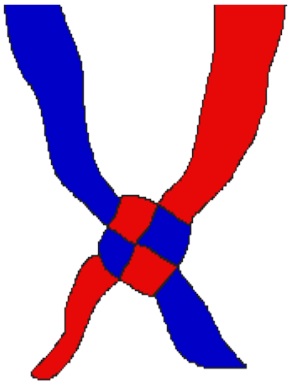
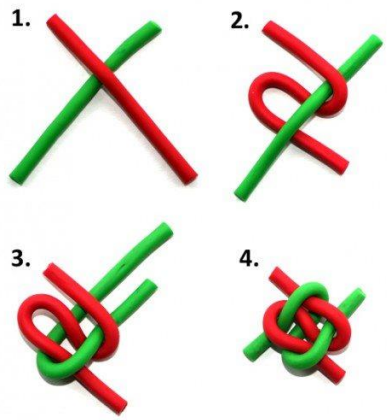
SETTING THE TONE FOR FUN!

Carefully set the tone for FUN from the very start! Starting with your communication with your staff, leaders and parents, to the way your camp looks when the campers arrive, make sure it is warm and welcoming!! If you are using a theme – use it early!!!

Have a nametag decorating station on the first day. The Cub Scouts could also do their den flag and come up with their den yells at this station as well.

Instead of using neckerchief slides, how about tying a Friendship Knot. A picture and diagram to assist are below, but you can find many YouTube videos on how to tie them.





WORLD FRIENDSHIP FUND - The World Friendship Fund is administered by the Boy Scouts of America to help struggling Scouting associations in other lands. Have someone tell a story of how the World Friendship Fund has helped Scouts in other countries. Collect money or have a fundraising project such as recycling and contribute the money toward the World Friendship Fund.

SPECIAL GUESTS - This could be a station or lunch time activity. Make sure the Cub Scouts thank all of those who attend by having a special cheer ready, theme related of course.

DISCIPLINE HELP

Help to keep the Scouts focused and having fun . . .**THE ENVELOPE** is a good way to help do that! Each station or area should have an envelope that can be given to Cub Scout(s) needing a break. If you like, you can put nonsense paperwork inside. The Scout delivers the envelope to the designated break area (maybe it is headquarters, the camp director). The envelope itself serves to let the recipient know that the Cub Scout needed a break. The recipient can give a snack, a drink; have the Cub Scout "try out" a craft/puzzle or other relaxing activity before being sent back with the envelope. Don't forget the buddy system!

SETTING THE TONE FOR FUN!

THEME IDEAS:

Always think outside of the box and have a "Wow" factor or factors that will grasp hold of the entire family.

- Reach out to local resources for their help and knowledge. Local universities and their departments surprisingly are more than happy to help any way that they can.
- Dress the part - dress up in costume, act the part and have fun!!

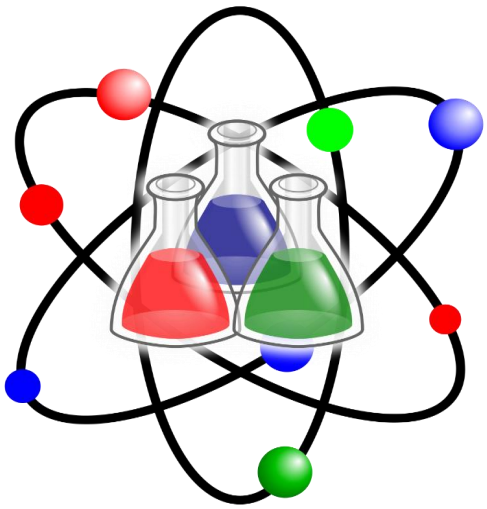
Have a science teacher or scientist come visit camp and bring some fun and easy experiments to share with the Cub Scouts. Talk about their career as a science teacher, how they got where they are and why they chose to do what they do.

Make sure you use the theme throughout camp including station names, props, songs, skits and costumes.

Line the walkway into camp with different items used in a lab, each having one of the twelve points of the Scout Law on them.

Songs, den names and cheers should all be theme related. Ideas are scattered throughout to help with using the theme!

ADDITIONAL LUNCHTIME VISITORS – Science is a theme that covers a wide variety of areas. Think outside the box on this one and let your imagination run wild. Make sure the Cub Scouts thank the guests and/or visitors – have a cheer ready for them to do.



CAMP STATION LOCATION NAMES

Show off your theme from the moment your campers arrive! Posting signs and using theme names to refer to the station locations puts some immediate fun and spirit into your camp – before the fun *really* begins!

LOCATION	SO CALL IT . . . . .
PARKING LOT	The Lab Lab Central Program Launch Test Site Terminal Test Subject Depository Lab Depot Collusion Infusion Auto Observatory
GATHERING AREA	Observatory Test Station Zero Data Delivery Depot Dissemination Station Atomic Activities Gravitational Field Inertia
PROGRAM STATIONS	Name each station for a Scientist Think Tanks Research Stations Cubs Clues Myth Busters Experiment Central Moving Molecules Beakers Solar System (Earth, Mars, etc) Constellations (Cassiopeia, Big Dipper, etc)
FIRING RANGES	Quantum Physics Testing Range Ben Franklin's Lightning Rods Germ Warfare Energy Explosion Atom Smashers/Matter Mashers Einstein's Atom Splitters Kinetic Energy Station Big Bang Bonanza Vociferous Velocity Supersonic Wind Turbines Quantum Leap

CAMP STATION LOCATION NAMES

LOCATION	SO CALL IT . . . . .
FOOD COURT	Stir Stick Station Food Lab/Test Kitchen Petri Dish & Bell Jar Refresh & Refill Hydration Station Bunsen Burner Café Flask & Beaker Macronutrient Mall Nano Nummies Bunsen Burner Eatery Calorie Café Cold Fusion Bunsen Burner Electrons, Protons & Neutrons
WATER FRONT	Funky Fluid Forensics Jacques Cousteau's Water World Time & Space Splash down Test Tube Lube, Sonar Sightings Aquatic Discovery Center H2O Lab, Osmosis Oasis Artesian Aquifer H2Ohhhhhh! Tides of Fun
ADULT VOLUNTEERS	Info Techs Organism Organizers Scientists Endangered Species Professors
SCOUTS	Scientists, Lab Techs, Chemists Test Subjects, Inquirers Investigators Beaker Brigade Recycling Rangers Protons
TRADING POST	Schweitzer's Stow & Go Quantum Leap Quicky Mart Molecule Market Fossils & Funnels Alchemist Shop Magnetic Money Shop Discovery Stations

CAMP STATION LOCATION NAMES

LOCATION	SO CALL IT . . . . .
OBSTACLE COURSE	Tesla's Testing Track Test Tube Tangle Isaac Newton's Gravity Test Galileo's Galaxy Quest Matter & Energy field Orion's Ordeal Momentum Mania Chemical Chaos Chain Reaction Exothermic Exertion Oxygen Outage Circuit Connections Balanced Forces Magnetic Field
NATURE	Energizer Area Nature Alley Nature Lab Sunlight Alley Phytoncide Lab Aromatherapy Area Creativity Cite Citizen Science Renewable Energy
FIRST AID STATION	Lab Rat Recovery Jonas Salk's Bandaid Bay Germ Galley Bump & Bruise Bay Dr Frankenstein's Clinic Molecule Medical Neutron Nurse's Station Observatory

Scientists: Steven Hawking, George Washington Carver, Charles Darwin, Tesla, Louis Pasteur, Galileo, Sir Isaac Newton, Albert Einstein, Jonas Salk, Madam Marie Curie, Alexander Graham Bell, Benjamin Franklin, Thomas Edison, Carl Sagan.

Additional label assistance: test tubes, petri dish, Bunsen burner, bell jar, centrifuge, flask, beaker, atom, experiment, terminal, post, chemistry, chemical, data, fossil, funnel, cell, DNA, electricity, energy, evolution organism, theory, hypothesis, magnet, matter, microbes, microscope, mineral, quantum physics, radiology, research.

GATHERING ACTIVITIES/FILLERS

Name tag making /decorating station! Or, flag decorating station!

Have a leader ready to sing some fun action or theme related songs! How about a Bean Game, Tangrams, theme related Beadie Critters or objects?

SCOUT LAW TOSS!
Put one point of the Scout Law on a 3x5 index card or square piece of paper/card stock. On the reverse side, put the number of the point of the law as it falls in the sequence. Turn each of the 12 Scout Law cards over on a grid so that the number side is up. Place the cards in proper order – 1 through 12. Have each Cub Scout toss a beanbag or alternative onto one of the squares.

The Cub Scout who throws the bag must now say the point of the law on which their beanbag landed. If they do not know it, the next in line may answer. Continue until the grid is completed.

SCOUT LAW RELAY!
Have each of the 12 points of the Scout Law on a piece of paper or card stock – if you laminate them, they will last longer. Mix them up and lay them out on a table. Divide the group into teams (depending on the group size and number of sets of the Scout Law) or this can be done individually.

One Cub Scout from each team will go up to the table and begin to put the Scout Law in order. The next Cub Scout will go up and select the second one, etc. until they are all in order. If a Cub Scout goes up to the table and sees that the order is incorrect, the Cub Scout can correct it, but that is their turn. First team that has them all in order wins!

WEIRD SCIENCE KIM'S GAME
Materials: Table or tray, sheet or towel to cover, science related items. Using the timer, allow each Cub Scout 10 seconds to quickly look at what is on the table or tray. Each Cub Scout then writes down what he/she saw. Remind the Cub Scouts to be specific. The Cub Scout with the most correct items wins.

BEAN GAME (have small snack bags with beans and instruction in them)
Object: Balance beans on back of hand
Material needed: 20 dried beans
Number of players: 2 or more
Winner: The person who balanced the most beans on the back of left hand. Repeat until a bean falls off.
Instructions: Pick up one bean in left hand. Transfer bean to right hand. Place bean on back of left hand. While still balancing bean, pick up another bean in left hand, transfer to right hand, and place on left hand. Continue until the beans are gone or one falls off. If a bean falls off, must start over.

GUESS THE NUMBER OF ATOMS IN THE JAR
As the Cub Scouts enter camp, have a container that is full of "atoms" (small, different colored balls (candy jawbreakers, skittles, etc.) and allow the Cub Scouts to guess how many "atoms" are in the container. The winner is awarded the jar during the closing ceremony.

GATHERING ACTIVITIES/FILLERS

HOW MANY WORDS

Give the Cub Scouts a piece of paper and a pencil. Ask them to see how many words they can make from the letters in the words WEIRD SCIENCE! Make a list before camp so you can have some answers. Have your camp staff help come up with words. For example: nice, win, rid. Winner gets a prize!

PLANET WORD SEARCH (Related to the Weird Science theme)

U	R	A	N	U	S	Y	J	M	N
V	R	U	T	O	R	R	U	E	R
H	V	E	N	U	S	A	P	T	S
R	Y	R	C	N	T	H	I	A	E
S	M	R	P	M	E	M	T	C	H
T	E	C	I	U	J	U	E	O	T
M	H	A	M	A	R	S	R	S	R
P	E	U	L	N	A	E	J	T	A
E	N	E	P	T	U	N	E	R	E
T	C	O	P	L	U	T	O	N	S

Find the following:

Mercury	Venus	Earth	Mars	
Saturn	Jupiter	Neptune	Uranus	Pluto

SCAVENGER HUNT

Choose a word from the Scout Law and put the letters down the side of a piece of paper, with a line next to the letter. Have the Cub Scouts look around to see what they can find that starts with that letter. They can either sit in one area and look or walk around in a specific area. For example:

F riends
R _____
I _____
E _____
N _____
D _____
L _____
Y _____

This can also be played during quiet time after lunch. Have each of the points of the Scout Law so that the Cub Scouts can choose the one they want to do.

BOY'S LIFE COVER PUZZLES

Cut the cover of Boys Life Magazine into puzzle pieces and have them on a table as the Cub Scouts and leaders arrive. Working together or individually, have the Cub Scouts put the puzzle together. You may want to put the picture on cardboard or poster board before cutting out to give them some weight. You can also use science lab pictures cut into puzzles to match the theme.

GATHERING ACTIVITIES/FILLERS

HUMAN KNOT

Group of Cub Scouts make a circle and extend both hands into the center of the circle. The Cub Scouts then grasp the hands of two other people, but not the hands of an adjacent person. Without letting go of hands, the Cub Scouts try to untangle themselves. Grips may change and palms may pivot on one another, but contact must be maintained.

STANDING STAVES

Will need one stave per Cub Scout. Have the Cub Scouts form a circle facing inward. Each player will hold a stave upright in front of their body. When the leader calls, "**NEUTRON!**!" all the Cub Scouts will move to the right leaving their stave behind and trying to catch the stave of the Cub Scout to their right. If the leader calls "**PROTRON"** the Cub Scouts will move to their left and try to catch the stave of the person to their left. Other variations – have the Cub Scouts bypass a Cub Scout and catch the next stave.

WEIRD SCIENCE SCRAMBLE

Unscramble the names of these things you will find on the farm. Work with your den or other Cub Scouts.

1. TOPEEAMSHR	2. OSMTA	3. NCSIEEC	
4. IMECHCLA	5. EBUT	6. ALB	
7. LCRNOEET	8. KBEEAR	9. ORNUETN	10. ORPNOTR

ANSWER: 1. ATMOSPHERE, 2. ATOMS, 3. SCIENCE, 4. CHEMICAL, 5. TUBE, 6. LAB, 7. ELECTRON, 8. BEAKER, 9. NEUTRON, 10. PROTRON

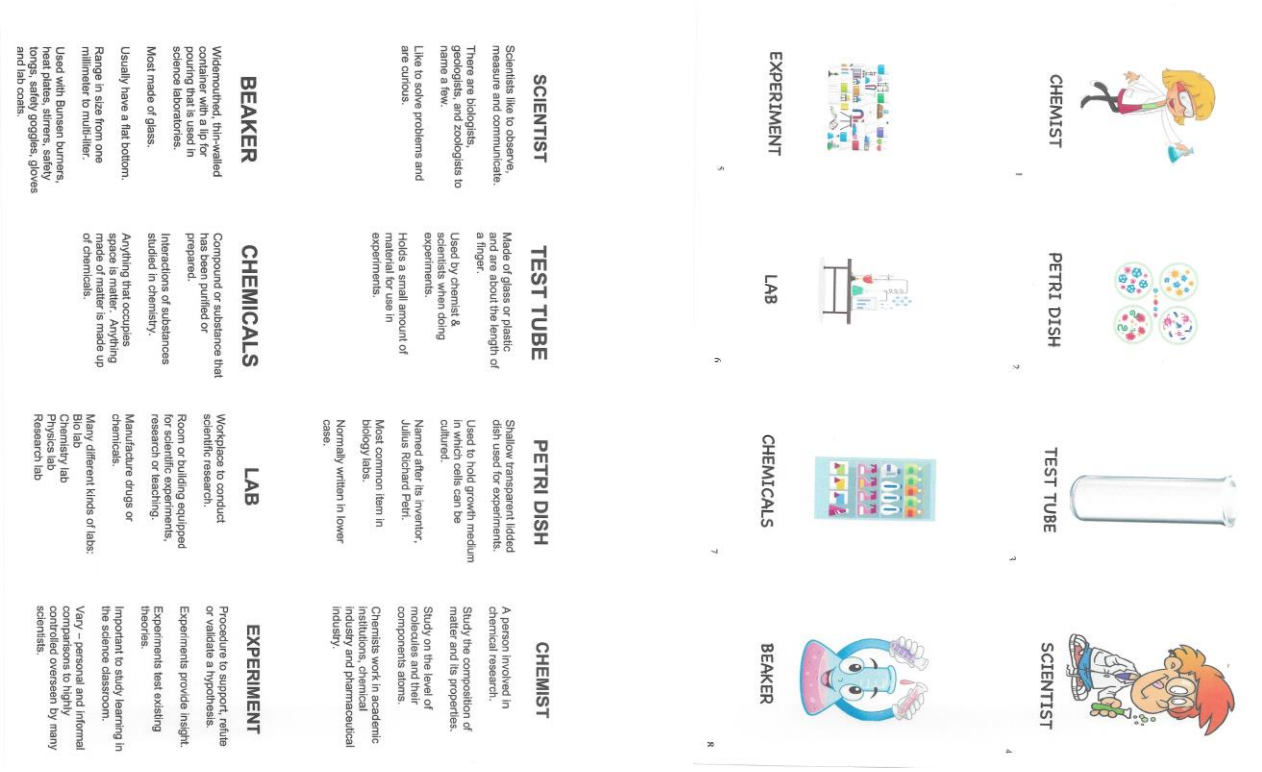
IDENTIFY LAB/SCIENCE "THINGS"

Have different pictures or items you would find in a science lab on pieces of paper and have the Cub Scouts match the pictures with the name of the item.

TRADING CARDS

Make up trading cards – theme related with a picture of a science lab or experiment on one side and fun facts on the other or use the Scout Law - a set of twelve cards with each one having a point of the Scout Law on one side and what it means on the other. Give each Cub Scout a set of cards (which ever the set contains number wise) that are all the same. If you are doing the Scout Oath, give a Scout 12 cards of the word TRUSTWORTHY. The Cub Scouts will then have to go to other Cub Scouts and "trade" his/her card with them after introducing him/herself. In the end, all should have a full set of cards. This is a great way for the Cub Scouts to get to know each other and get excited about camp with a theme related activity. Below are trading cards that are for the Weird Science theme. They fit on an 8 ½ X 11 landscape. You can put 8 on a sheet. Print picture on front and fun facts on the back. Print the cards on card stock to make them a little sturdier. (See next page)

GATHERING ACTIVITIES/FILLERS

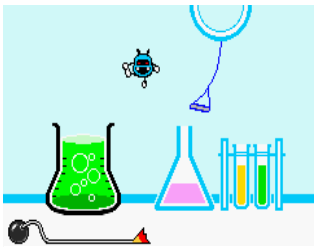


STEM Activities

Have a table set up with quick STEM experiments to give the scouts a sample of what awaits them for the day at camp. Get the excitement going from the get go! Look at the "Experiments" section of this booklet for ideas.

WEIRD SCIENCE ALPHABET

See if you can think of a "science" word that starts with each letter of the alphabet. Or see if you can make a list of things you might find in a lab that start with each letter of the alphabet (think globally)! This could be a den, family or team challenge. Winners get first crack at the refreshments, or a silly/fun prize.



PRAYERS

We Give Thanks

We give thanks for being here together in the name of Scouting. We ask to have clean hands, clean words, and clean thoughts. We ask that we learn to work hard and play fairly. We ask to see the needs of others so we may help. We ask for strength to do a Good Turn each day and to live up to our promises. *Amen*

- -

We Thank You!

Tune: Kum-Ba-Yah

At our table Lord, we praise you,
For good food oh Lord, we thank you,
For our brotherhood, hear us pray
Oh Lord, we thank you,
Oh Lord, we thank you.

- -

We thank you God, for our day camp, and for all the scouts and families who are touched by Scouting. Make us strong as we work together and help other people and as we do our duty to You and our country. Help us to remember to live by the Scout Oath and Law. Amen

- -

Philmont Grace

For food, for raiment,
For life for opportunity,
For friendship and fellowship,
We thank thee oh Lord.

- -

PRAYER

Oh Great Creator of Heaven and Earth, from whose hand comes the rain and who set the sun in the heavens to warm the earth; we thank Thee for this world. We thank Thee for the rich soil that gives a bounty for us to enjoy. We thank Thee for those who work the land that we might have food on our tables and clothing on our bodies. Teach us to be responsible for this earth that we too might be good caretakers of it. Amen.

- - - - - - - - - - - -

Bless all of Us Today

Tune: Auld Lang Syne

Please make us ever thankful Lord,
Be present while we pray,
For food to eat and friends to meet,
Bless all of us today.

- - - - - - - - - - -

PRAYERS

GOD IS GREAT
Tune: London Bridge
God is great and God is good
God is good, God is good.
Let us thank him for this food, Alleluia.

Thank you!
Tune: Kum-Ba-Yuh
For the food we eat, we thank you,
For the friends we meet, kind and true,
For the fun we share, all day through,
Oh Lord, we thank you!

- - - - - - - - - - - -

THE SEA BASE (Florida Sea Base) GRACE
Bless the Creature of the sea,
Bless this person I call me,
Bless these Keys, You made so grand,
Bless the sun that warms this land,
Bless the fellowship we feel,
As we gather for this meal.
Amen

- - - - - - - - - - - -

THE SUMMIT GRACE
For this time and this place,
For Your goodness and grace,
For each friend we embrace,
We thank Thee, Oh Lord.
Amen

There is an opportunity for the Cub Scouts to earn a Duty to God patch while attending camp. Here is how one camp did it – Cub Scouts attend Duty to God sessions for four days, and then attend an Interfaith Service on Friday, put on by the Webelos. Cub Scouts are presented with a segment of the Duty to God puzzle patch, and after attending Day Camp for four years; they will have assembled the complete puzzle.

Visit the P.R.A.Y. website for information on the Duty to God puzzle patches as well as the Duty to God Summer Camp Program. https://www.praypub.org/Data/Sites/1/media/resource-library/promotional-resources/summer-camp-dtg-program.pdf

OPENING AND CLOSING CEREMONIES

OPENING CEREMONIES

Getting your camp off to a good start is very important. An opening ceremony, whether it involves one or many, is a great way to start your day! You can recite the Scout Oath and Law, do the Pledge of Allegiance, or have an opening that includes props and speaking parts for the Cub Scouts. Whatever you chose to do, an opening ceremony will let those attending know that camp is ready to get start! Keep it short, keep it simple, as there is not always a lot of time, and moving as the Cub Scouts came to have fun!!

Please keep in mind that the openings provided below will give you ideas that you can use – they can be modified to fit what is going on in your camp.

Note: If you will be reciting the Scout Oath and Law, have it written on a flip chart and put it up front where all can see or have it on the back of the Cub Scouts name tag so that they will be able to recite it along with the group. Let's help the Cub Scouts do their best!

PRAYER can serve as an opening!

WEIRD SCIENCE
Seven Cub Scouts each with a letter and the words written on the back.

S – is for Science, Weird Science is the name!
C – is for camp, having fun is our game!
I – is for ideas, there are many here to share!
E – is for experiments, have fun, but beware!
N – is for never, never giving up!
C – is for creating, mixing things up in a cup!
E – is for excitement, there's plenty to be found!

SCIENCE and day camp, fun and excitement all around!

FLAG OPENING CEREMONY
Supplies needed: Large cards with a letter on each – to spell out EAGLE, Flag

E - E stands for Eagle, the symbol of our country
A - A is for America, this great land we live in
G - G is for God, the creator of all we hold dear
L - L stands for Loyalty to our country and our land
E - E is for Everyone – please stand and join us in the pledge of Allegiance.

WELCOME TO DAY CAMP
Open with the Pledge of Allegiance followed with Scout Oath and Law.
Props: Scout Oath & Law on poster or flip chart

OPENING AND CLOSING CEREMONIES

After the opening, let the Cub Scouts know that this week (duration of camp) they will be learning all about the science – not only science, but WEIRD SCIENCE. There are many things that happen in the lab of a scientist. Our world depends on those who work in labs! But before we begin, let's find our direction. (You can have a compass that you are looking at or make a large one out of cardboard that you can use for a prop or use the sun in the sky to assist finding the direction). Show the scouts where East and West are and how you were able to identify that direction. Then north and south. Divide the Scouts into four groups – north, south, east and west. Have the north group face the east group and say, "Welcome to Day Camp!" The east group will face south group and say, "Welcome to Day Camp!" The south group will face the west group and say, "Welcome to Day Camp!" and the West group will face north and say, "Welcome to Day Camp!" When all groups are done, the camp will yell, all together "Welcome to Day Camp!"

ROLE CALL OR DEN YELL OPENING
Give your den yell – loud and proud!

I MADE A PROMISE
CUB SCOUT 1: I made a promise—I said that in whatever I did, I would do the very best I could.
CUB SCOUT 2: I made a promise—to serve my God and my country the best I could.
CUB SCOUT 3: I made a promise—to help other people the best I could.
CUB SCOUT 4: I made a promise—to obey the Scout Law the best I could.
CUB SCOUT 5: Today at day camp, I promise to do my best.
CUB SCOUT 6: I am a Cub Scout.
CUB SCOUT 7: Please stand and join us in reciting the Scout Oath

SMILE
Preparation: Make and hold up a sign with the word SMILE written on it.
NARRATOR: A smile costs nothing—but creates much. It happens in a flash, but the memory sometimes lasts forever. It cannot be bought, borrowed, or stolen, but it is something that isn't any good until it is given away to someone else. So, if you meet someone who is too weary to smile, give that person one of yours. No one needs a smile quite as much as the person who has none left to give. Let's give out LOTS of smiles today as we learn new things and make new friends.

SPACE OPENING
Props: (Leader, model rocket)

Cub Scouts, here's a great looking rocket. This is what was made to be a version of what rockets may look like in 2200 AD. We can't be sure that they're right about that, but we can be sure that the world is going to need good people in 2200. All that we learn through exploration of STEM activities will get us there. And we can be sure that we will all be good people if we remember to follow the Scout Oath. Let's think about that as we say the Scout Oath.

OPENING AND CLOSING CEREMONIES

OUTDOOR CODE
A preassigned den presents the colors and leads the camp in the Pledge of Allegiance. Have the Outdoor Code on a flipchart where everyone can see it and have them join in reading it.

Outdoor Code
As an American,
I will do my best to
Be clean in my outdoor manners,

Be careful with fire,
Be considerate in the outdoors,
And be conservation minded.

CLOSING CEREMONIES

As an opening ceremony is important in starting your day, a closing ceremony will let everyone know that the camp day is over. Whether the closing is done by the Cub Scouts, is a Camp Director's Minute or a thought of how the day went, it will bring your camping day to a close! You can use any of the opening ceremonies above by just changing some of the words. REMEMBER, the scouts have had a long day and are ready to go home. A closing ceremony is important to close camp for the day but you will want to keep it short and simple.

SMILE
Preparation: Make and hold up a sign with the word SMILE written on it.
Camp Director: A smile costs nothing—but creates much. It happens in a flash, but the memory sometimes lasts forever. It cannot be bought, borrowed, or stolen, but it is something that isn't any good until it is given away to someone else. So, if you meet someone who is too weary to smile, give that person one of yours. No one needs a smile quite as much as the person who has none left to give. Thank you all for sharing your smiles at camp today.

COMPASS
Preparation: Hold a compass in your hand as you give this talk.
Camp Director: How many of you have ever held and used a compass? Are you able to find which way is north? In Scouting, we have another type of compass. It's called the Scout Oath and Law. It is an excellent guide for making decisions in life. Whenever you are wondering what to do, say the Scout Oath and Law. It will not always give you an easy answer. Sometimes you'll have to really think it through to make your decision. But chances are, it will help you know the right thing to do.

COMPASS PRAYER
CUB SCOUT 1: From the south, we feel warmth and are secure.
CUB SCOUT 2: From the north, the chills of life come and we learn to adapt.
CUB SCOUT 3: From the east, we see the rising sun and the promise of a new day of life.
CUB SCOUT 4: From the west, we see the setting sun and the peace of night.

OPENING AND CLOSING CEREMONIES

CUB SCOUT 5: Look up for hope in all the mysteries of life.
CUB SCOUT 6: Look down for the security and life the earth gives.
CUB SCOUT 7: Look inside yourself to find you in all your splendor.
CAMP DIRECTOR: Until we meet again!

DO YOUR BEST
NARRATOR: When we say the Scout Oath, the words "Do my best" are some of the first words we say. Let's stop for a minute and think about these words. What does the word "best" mean? (Let the scouts answer.) That's right—it means to do something better than we have done it before. You are the only person who knows whether you have done your best. Think about the meaning of this oath and decide that you will always "do your best," no matter what you are doing. Thank you for doing your best at camp today! (This can be an opening by ending with "Let's all do our BEST!")

BROTHERHOOD CIRCLE CLOSING
Have the camp form a circle. Each Cub Scout places his/her left arm around the shoulder of the Cub Scout on their left and their right arm around the shoulder of the Cub Scout on their right. Camp Director: Now may the Great Master of all Scouts be with us until we meet again.

WE MEET AS CUB SCOUTS CLOSING
Have the Cub Scouts form a circle.
Camp Director: We meet as Cub Scouts [Tiger Cubs – Webelos Scouts], we part as friends, as now we leave, our day camp day ends. Let this circle be a token of friendship, as Akela guides us home.

LIVING CIRCLE CLOSING
All day camp participants form a circle and turn to their right, each placing their left hand into the center of the circle, palm facing downward. Each person grasps the thumb of the person behind them, making a complete circle with the group. Everyone's right hand is held straight up in the Cub Scout sign. Pump joined hands up and down seven times as all say the camp yell! You can also use the Scout Oath, Scout Law, Cub Scout motto, or your own personal words in place of the camp yell.

BOND OF FRIENDSHIP
You will need a 12-inch piece of string or rope for each Cub Scout. Adults and Den Chiefs can assist with tying the knots. Scout Oath posted for all to see.
Camp/Program Director: Every hardworking Cub Scout knows how tie a square knot. Join us in making a circle. Join your rope in a square knot with the person on your left. Place your left hand on the knot and your right hand in the Cub Scout sign. This circle represents the bond of friendship we have in scouting and developed here at day camp. Please join me in saying the Scout Oath. Suggestion – if you know you will be doing this closing, have the square knot be a knot the scouts will learn at one of the stations or at quiet time after lunch so that they are prepared for the closing.

OPENING AND CLOSING CEREMONIES

DO YOUR BEST!
Camp Director: We have had a great day at camp. Here is a thought to take home with you – Work while you work, play while you play; one thing at a time that is the way. All that you do, do with all your might; Things done halfway are not done right. Go out and do your best!

LIVING CIRCLE
Have the Cub Scouts form the Living Circle then say the following: Let this circle be a token of friendship not broken, like the vast farm land that surrounds us. As through our Cub Scouting we do roam, towards our ultimate horizons that guide us home.

WHAT IS YOUR FAVORITE OPENING OR CLOSING CEREMONY FOR CAMP? Write it below!

SKITS, CHEERS/APPLAUSES, JOKES, RUN-ONS AND SONGS

Incorporating skits, cheers, run-ons and songs is a great way to add pizzazz to your Day Camp. They allow the Cub Scouts to share their talents and have some FUN, burn off some energy and learn something new!

POSITIVE VALUES – Fun is an important element of Scouting, but we must remember that everything we do with our Cub Scouts should be positive and meaningful. Activities should build self-esteem, should be age-appropriate, and should not offend participants or the audience.

SKITS

Skits appeal to Cub Scout–age youth. Skits are a great way to add fun and camaraderie among the campers and dens at Day Camp. They help channel a scout's imagination and give him or her a chance for creative expression. Participation in skits helps build confidence and teaches the importance of teamwork and cooperation.

Tips for Skits
A few simple rules to remember when using Cub Scout skits are:

1. Keep it simple!
2. Keep it short—usually no more than two to three minutes.
3. Avoid long dialogue and memorized lines.
4. Use simple costumes and props.
5. Every Cub Scout in the den should participate.
6. Be sure the audience can hear. It cannot be too loud!
7. Use skits that are of a positive nature and that reflect the values and purposes of Cub Scouting.
8. Practice, practice, practice!

The skits below can be used as the Cub Scouts plan for their closing program at the end of camp. Using Skits on a Stick, lets the scouts come up with their own skit to share. Remember: Always preview all skits before the Cub Scouts perform them.

SKITS ON A STICK – Theme Related
You will need four different color popsicle sticks or a way to designate each category – one color for CHARACTER, one color for SETTING, one color for PROBLEM and one color for the SCOUT LAW. Using the example below, write on each of the popsicle sticks. Using different colors will allow you to put the sticks in one container. If they are not color coded, you will need to put them in different containers. Have one Cub Scout in the den pick a red, yellow, blue and green popsicle stick. Using the information on the popsicle sticks, the Cub Scouts will create a skit. Don't forget the theme – add information that is related to the theme – character can be related to the science/space field; setting can what is found in a science lab or experiment site ; problem can be an issue with science tools, etc. Let the Cub Scouts have some fun and show off their creativity!

SKITS

SKITS ON A STICK (con't)
Theme Related

CHARACTER – RED	SETTING – YELLOW	PROBLEM – BLUE
Scientist	In the lab	Test Tube
Lab Techs	Out in the field	Bunsen Burner
Chemists	At a meeting	Bell Jar
Doctor	Experiment Site	Flask
Astronaut	Observatory	Bubble Gum

CHARACTER – RED	SETTING – YELLOW	PROBLEM – BLUE
Actor	At a Baseball Game	Arrow
Anteater	At a Football Game	Baseball
Army Sergeant	At a Gas Station	Bat
Astronaut	At an Amusement Park	Bewitched
Bank President	At McDonalds	Bubble Gum
Barber	At School	Bug
Batman	At the Beach	Candy
Bear	At the Circus	Corn
Boxer	At the Empire State Building	Crowded
Brain Surgeon	At the Ice Skating Rink	Fat
Bus Driver	At the Police Station	Fortune
Car Salesman	In a Castle	Gold

Add - SCOUT LAW – GREEN

JOKES make great skits.

PENQUIN SKIT
Cast: Bus driver, penguins (scouts dressed in black trash bags) and a police officer.
Driver with a busload of penguin's chugs across the stage. Police officer stops the driver.

Police: "Where are you taking these penguins?"
Driver: "I'm taking them to the beach."
Police: "Penguins don't need to go to the beach. Why don't you take them to the zoo where they belong?"
Driver: "Good Idea!"
The driver changes direction and goes off stage with the penguins. Shortly the driver returns back on stage with the penguins – all carrying towels and lotion and wearing sunglasses and beach hats. The police officer stops him again.

Police: "I thought I told you to take these penguins to the zoo!"
Driver: "I did! They had a great time so now I am taking them to the beach!"

CHEERS/APPLAUSES

Cheers and applauses are a great way to say “great job” to those who are doing their best! Always make sure they are positive and sincere!

STEM CHEER
Give me an S - S
Give me a T - T
Give me an E - E
Give me an M - M
What’s that spell? STEM!

THUMBS UP APPLAUSE: Hold your hand in front of you. Make a fist, hold your thumb up, and say, “Great job!”

ROUND OF APPLAUSE: Audience members clap while moving their hands in a large circular, clock- wise motion.

RAINSTORM APPLAUSE: Extend one hand palm up. Using your other hand, start by tapping one finger at a time, and then adding the number of fingers you tap, increasing the sound to simulate a rainstorm starting and building to all hands clapping. Then decrease the storm by slowing down the action one finger at a time.

BSA APPLAUSE: Divide group into three sections, giving each a letter to yell. Point to each and have them call out their letter. After going through a few times, hold arms open and have all say “BSA!”

DAY CAMP CHEER: Divide the group in half. One side will yell “Day” and the other will yell “Camp.” All together “Day Camp!”

GENIUS: Look surprised and say, "Look what I discovered" or "Wow, look what I made."

GRAND: Everyone is sitting down in their chairs. All stomp their feet three times loudly, then slap leg three times, then clap hands 3 times. Then stand up all together and shout "Ra, Ra, Ra!"

GREAT JOB: Have one half of the audience say, "Great" and the other half say, "JOB." Alternate each side.

INVENTION CHEER: I've made it, I've made it, I don't know what it is, but I've made it.

MAD SCIENTIST: Pretend to hold a test tube in one hand. Pour something into it; then something else, then shout "Success!" or Hold an imaginary test tube up in one hand and pour into it with the other hand. Shake it then shout “BOOM”! Then say: “That was exciting!”

BEN FRANKLIN CHEER: Hold both hands out in front of you as if flying a kite. Jerk back suddenly while saying, "Zap, Zap, Zap."(Lightning). That was enlightening!

JOKES

Cub Scouts LOVE to be silly. Jokes are a great way for them to be just that. Below are some theme related jokes that they can use at camp. Boys Life Magazine is a great location to find other Cub Scout appropriate jokes as well!

Q: How do astronomers organize a party?
A: They planet.

Q: Want to hear a Potassium joke?
A: K

Q: What do clouds do when they become rich?
A: They make it rain!

Q: Why do centipedes have 100 legs?
A: So they can walk.

Q: Why shouldn't you take atoms seriously?
A: Because they make up everything.

Q: What did the thermometer say to the graduated cylinder?
A: You may have graduated, but I've got many degrees.

Q: Why are chemists great for solving problems?
A: They have all the solutions.

Q: What do you call the leader of a biology class?
A: The nucleus.

Q: What is a tornado's favorite game to play?
A: Twister

Q: How do trees get on the internet?
A: They log in!

Q: How can you tell a tree is a dogwood tree?
A: By its Bark!

Q: What is the favorite food of a physicist?
A: Fission chips!

Q: What do you call a number that can't sit still?
A: A roamin' numeral

JOKES

Q: How do bees brush their hair?
A: They use a honeycomb.

Q. What kind of dog would you find in a chemist's house?
A: A lab!

Q: Why do you never trust atoms?
A. Because they make up everything.

Q: What would you name the sequel of the class movie "Tron"?
A: Neutron

Q: How does the moon cut his hair?
A: Eclipse it!

Q: How do Scientists freshen their breath?
A: With Experi-Mints!

Q: Why did the germ cross the microscope?
A: To get to the other slide!

Q: What kind of tree can fit into your hand?
A: A palm tree!

RUN-ONS

Cub Scouts enjoy doing run-ons. These are quick ways to involve everyone at a particular location. They are not only quick, but also snappy and fun. The Cub Scouts can have fun creating their own! Keep them positive.

Knock knock.
Who's there?
Ohms!
Ohms Who?
Sherlock Ohms at your service. . .

Knock, Knock.
Who's there?
Cotton!
Cotton who?
Cotton in a trap, can you help me out?

CS 1: Why is the longest human nose on record only 11 inches long?
CS 2: Beats me, why?
CS 1: Because if it were 12 inches long it would be a foot.

CS 1: I was reading a book on helium?
CS 2: Yeah.
CS 1: I couldn't put it down!

CS 1: What happened when one tectonic plate bumped into another one?
CS 2: I don't know!
CS 1: He said "sorry, my fault!"

CS 1: A photon checks into a hotel and the clerk asked if he needs any help with his luggage. You will never guess what he said.
CS 2: What did he say?
CS 1: No thanks, I'm travelling light!

CS 1: Have you any four-volt, two-watt bulbs?
CS 2: For what?
CS 1: No, four-volt, two-watt.
CS 2: Two what?
CS 1: Yes!
CS 2: No.

CS 1: What is the formula for water?
CS 2: H-I-J-K-L-M-N-O.
CS 1: That's not the formula I gave you.
CS 2: You said H to O.

SONGS

Singing is fun! It builds spirit, enthusiasm and helps build camaraderie! Theme related songs help build on the enthusiasm as well. Circulate the camp songbook to the packs early in the recruiting process to increase participation in singing. Lyrics of all songs should reflect the values and ideals of Scouting.

Tips for Leading Songs -

1. **Choose it -** Select songs to fit the occasion—action songs, quiet songs, patriotic songs, etc. Songs with simple words and tunes encourage participation.
2. **Know it** - Practice before leading it.
3. **Teach it** - Tell the name. Teach the tune and words. You may need to provide song sheets. Teach the songs you will use during the week as part of your program!
4. **Sing it** - Sing it through once. You may have to sing a line or a verse to get them going.
5. **Pitch it** - Set the pitch so everyone starts out on the same key.
6. **Lead it** - Smile at the group and relax. Show enthusiasm and confidence. Use simple hand motions to start the group singing. Keep the time with simple up-and-down or back-and- forth hand motions. Don't stand fixed in one spot.
7. **Stop it** - If the group makes a bad start, stop and start over.

Here is a song to start the day off right:

WHEN THE CAMP BEGINS TO SING
Tune: When the Saints Go Marching In

Oh, when the camp* begins to sing,
Oh, when the camp begins to sing.
Sometimes we can't tell who's the loudest,
When the camp begins to sing!
*Substitute the word camp with the names of the dens. Get a little competition going to see who can sing the loudest.

GRAVITY
Tune: London Bridge is Falling Down

Gravity is pulling down,
Pulling down, pulling down,
Gravity is pulling down
All around you!

Take a ball and toss it high.
Will it stay in the sky?
Gravity will pull it down
All around you.

SONGS

Gravity is pulling down,
Pulling down, pulling down,
Gravity is pulling down
All around you!

Jump up high and down you'll go.
There's a force down below.
Gravity is pulling down
All around you.

Gravity is pulling down,
Pulling down, pulling down,
Gravity is pulling down
All around you!

PROTONS, NEUTRONS, ISOTOPES
Tune: Twinkle, Twinkle Little Star

Protons, Neutrons, Isotopes,
How we wonder what you are.
Making up the elements,
Too small to see, but you are there.

Protons, Neutrons, Isotopes,
How we wonder what you are.

QUARK
Tune: Bingo

There was a Proton made from three, and Quark it was the name-o
Q-u-a-r-k, Q-u-a-r-k, Q-u-a-r-k and Quark it was the name-o
Etc.

SCIENCE, TECH, ENGINEERING, MATH
Tune: Ten little "Indians"

Science Tech Engineering Math
That's what we want, for our path
Learn new things and have some fun
STEM is number One

SONGS

Science means to see new things
Tech means tech-no-lo-gy
Engineering helps build things
And Math gives us wings

EARTH DAY SONG
Tune: Twinkle, Twinkle

Earth Day, Earth Day,
Comes once a year.
But we should make our message clear.
Love and clean our Earth each day.
Make that plan a plan to stay.
Earth Day, Earth Day,
Comes once a year.
Love and care for our
Earth so dear.

SOLAR SYSTEM IN MOTION
Tune: The Farmer in the Dell

The Earth turns around,
The Earth turns around,
Once a day, every day,
The Earth turns around.

The moon goes round the Earth,
The moon goes round the Earth,
Once a month, every month,
The moon goes round the Earth.

The Earth goes round the sun,
The Earth goes round the sun,
Once a year, every year,
The Earth goes round the sun.

WATER CYCLE SONG
Tune: The Farmer in the Dell

Our water is recycled,
Our water is recycled,
The water cycle is what it's called,
Our water is recycled,

SONGS

The sun dries up the water,
The sun dries up the water,
Evaporation is what it's called,
The sun dries up the water.

The vapor forms a cloud,
The vapor forms a cloud,
Condensation is what it's called,
The vapor forms a cloud.

It starts to rain or snow,
It starts to rain or snow,
Precipitation is what it's called,
It starts to rain or snow.

Our water is recycled,
Our water is recycled,
The water cycle is what it's called,
Our water is recycled,

OUR FIVE SENSES
Tune: BINGO

We have five senses that we use each and every day.
Sight, smell, taste, touch, hear.
Sight, smell, taste, touch, hear.
Sight, smell, taste, touch, hear.
These are our five senses!

DID YOU EVER SEE A MAGNET?
Tune: Did You Ever See a Lassie?

Did you ever see a magnet, a magnet, a magnet?
Did you ever see a magnet pull this way and that?
On iron and steel, its pull is unreal!
Did you ever see a magnet pull this way and that?
A magnet has action, it's called an attraction!
Did you ever see a magnet pull this way and that?

SONGS

THE ATOMS FAMILY LYRICS
Tune: The Adams Family

Chorus:
They are so small. (snap-snap)
They're round like a ball. (snap-snap)
They make up the air,
They're everywhere,
Can't see them at all. (snap-snap)

Verse:
They're tiny and they're teeny,
Much smaller than a beanie,
They never can be seeny,
The Atoms Family.
(Chorus)

Verse:
Together they make gases,
And liquid like molasses,
And all the solid masses,
The Atoms Family.
(Chorus)

Verse:
Neutrons can be found,
Where protons hang around;
Electrons – they surround,
The Atoms Family.
(chorus)

SONGS

SCOUTING THUNDER
Tune: Scotland the Brave

We put the "out" in Scouting,
We hike the trail to Eagle
We lift the light of Scouting over the world.
We'll never be hiked under,
Listen to our SCOUTING THUNDER,
We are the light of Scouting over the world.

CUB SCOUT FRIENDSHIPS
Tune: Edelweiss

Friendships near, Friendships far,
Friendships made here in Cub Scouts.
Find a place in your heart,
For the memories you made here.
Think of them often and you'll laugh and smile,
Laugh and smile forever.
Friendships near, friendships far,
Friends and memories of Cub Scouts.

AMERICA (Repeat as a round)
America, America,
How can we tell you how we feel?
You have given us your treasures,
We love you so!

SONGS

CUB SCOUT HARMONY
Tune: I'd Like to Teach the World to Sing

I'd like to teach the world to sing,
In Cub Scout harmony,
Cub adventures would be the thing,
That everyone would see.

Each Tiger, Wolf, Bear and Webelos,
Is doing all they can,
To "Do Their Best" with all the rest
Of Cub Scouts in the land!

GIVE A GIFT
Tune: I'd Like to Teach the World to Sing

I'd like to give the world a gift
That all men will be free
And though I'm just a growing scout
There's things that I can see.

I see that Scouting is a way
To start to understand
That caring, helping, smiling, learning,
We share across the land.

And so I'll tell you there's a fight
That you can give to me
Please help me grow in mind and spirit
To be what I want to be.

HE'S GOT THE WHOLE WORLD IN HIS HANDS

He's got the whole world in his hands,
He's got the whole world in his hands,
He's got the whole world in his hands,
He's got the whole world in his hands,

SONGS

He's got the Lively Lucky Lions in his hands…
He's got the Teeny Tiny Tigers in his hands…
He's got the Brand New Bobcats in his hands…
He's got the Wiggle Worm Wolves in his hands…
He's got the Big Brave Bears in his hands…
He's got the Weary Working Webelos in his hands…
He's got the Dedicated Den Leaders in his hands…

CUB SCOUT SMILE
Tune: John Brown's Baby

I've got something in my pocket,
It belongs across my face,
I keep it very close at hand,
In a most convenient place,
I'm sure you couldn't guess it,
If you guessed a long, long time,
So I'll take it out and put it on,
It's a great big Cub Scout smile.

COOL CAT BEAT

[This is a syncopated rhythm chant more than a song. Call each group forward to join in the chant. Groups can be individuals, dens, other groups, e.g. Red Patrol, Camp Staff, Camp Director. By the end of the song, everyone should have joined in the group.]

Hey there, _____, you're a real cool cat,
You've got a lot of this and a lot of that,
We all think that you're real neat,
So come on down and do the Cool Cat Beat.

[Everyone points alternately left and right with their hands in the air]
A-h-h-h-h-left, chicka chicka chicka chicka chicka, [point left]
And a-right, chicka chicka chicka chicka chicka, [point right]
Turn around, chicka chicka chicka chicka chicka, [turn in a circle]
Get down, chicka chicka chicka chicka chicka.

AUDIENCE PARTICIPATION

The beauty of day camp is it brings both Cub Scouts and adults/leaders together to have fun! It is important to make sure that you include everyone in your programs, your songs, and your closing programs. If the Cub Scouts see that EVERYONE is participating, they are more likely to participate as well. HAVE FUN!

Rhythmic Exercise
Everyone stand.
Now, hands on your hips, hands on your knees,
Put them behind you, if you please.
Touch your shoulders, touch your nose,
Touch your ears, touch your toes.

Raise your hands high in the air,
At your sides, on your hair,
Above your head as before
While you clap, one-two, three-four.

Now hands upon your head again,
On your shoulders, around you spin.
Then you raise them up so high.
And make your fingers quickly fly.

Then you stretch them out toward me,
And briskly clap them one, two, three.

A SCOUT IN A TOY STORE
Have everyone follow your actions as you read the story:

This is the story of a scout whose mother left him in a large store. Apparently, the scout had been left for some time and was bored with his surroundings, he tapped his foot to show his irritation. (Tap your foot.) A kindly old gentleman in passing the scout offered him a stick of chewing gum. He unwrapped it and started to chew (chew). He became tired of waiting for his mother and walked into the toy department. (Walk). As he entered the door, he saw a small lion whose head was nodding up and down As the scout watches it, he too, started to nod (nod up and down). Becoming interest in the playroom, the scout picked up a horn and squeezed it with his right hand. (Open and close your right hand). Having entirely forgotten his mother by this time, he climbed upon a hobbyhorse and started to rock (rock). He was having such a good time that he didn't realize that someone was shaking him. (Shake all over). He had fallen asleep and his time in the toy store was all a dream! (Everyone stretch like you are just waking up!)

AUDIENCE PARTICIPATION

EGBERT THE BOY INVENTOR

This stunt can be used as a story for small groups, an audience participation stunt or worked into a skit, adding props if you wish. Divide the group into eight sections and assign one sound to each. As the story is read, the appropriate sound is made after each of the following words:

Polish - Bubble, Bubble
Whistle - Whistle
Motor - Clicketa, Clacketa,
Gears - Clap Hands Together
Machine - All Sounds Together Twice
Brushes - Stamp feet
Hinge - Squeak, Squeak
Spring - Boing-g-g
Buzzer - Buzz, Buzz

Everyone in town knew about Egbert! Egbert, the boy inventor of Brainsville. Afternoon after afternoon, while the other boys were out playing football or baseball, Egbert was in his basement working out the details of some new invention. Egbert did have one thing in common with the other boys, he didn't like to keep his shoes clean and shiny! And so, his latest contraption was to be a shoe shine MACHINE.

First of all, Egbert mixed some water, some wax and some dye in a flask and boiled it to make the POLISH. From the flask, he arranged a glass tube with a device at the top that would WHISTLE when the mixture was ready. He set up a small MOTOR and fitted it with an arrangement of GEARS. These turned two BRUSHES, a glass tube was connected with a valve and HINGE, that opened to drip the POLISH. A SPRING kept them in position over the place where the shoes would be fastened. As a final touch, Egbert added a BUZZER, which would sound when the shoes were completely shined.

When everything was assembled, Egbert looked at his MACHINE with satisfaction. The POLISH was boiling and the WHISTLE sang out loud and clear. The MOTOR hummed smoothly, the BRUSHES revolved and the SPRING held fast. Only the GEARS were a little noisy and the HINGE squeaked, but there were minor matters. The BUZZER control looked good.

Egbert disconnected the plug, ran upstairs and brought down his dirtiest pair of oxfords. Full of confidence, he clamped them under his contraption and plugged in the electricity. For a moment, everything ran beautifully and he beamed at his MACHINE. And then, disaster struck! In his excitement, Egbert had neglected to remove the shoe strings and one of them became twisted in the revolving BRUSHES. Across the room flew the SPRING. The GEARS jammed as they chewed up the shoes, making the MOTOR burn out with a loud splitting sound. The whole liquid assembly shuddered. The HINGE stayed open and the POLISH shot out all over Egbert. For some strange reason, only the WHISTLE and the BUZZER, continued to sound alternately--WHISTLE, BUZZER, WHISTLE, BUZZER, until poor Egbert's genius brain practically rattled. He looked around at the mess and promptly fainted. It was not one of Egbert's most successful MACHINES!

AUDIENCE PARTICIPATION

NORMAN THE GENIUS

Instead of assigning parts for this one, why not try it with everyone doing all the parts??

NORMAN:	Oh, My (raise both hands)
GENIUS:	All clap and cheer
RIGHT:	This (raise right hand)
LEFT:	That (raise left hand)
THIS:	Right (raise right hand)
THAT:	Left (raise left hand)

This is the story of NORMAN, a boy who wanted very much to be a GENIUS. But no matter how hard he tried, it just didn't work out. You see, NORMAN had a problem -- he could not tell RIGHT from LEFT.

At school, the teacher would say, "When you know the answer, raise your RIGHT hand". By the time NORMAN figured which hand was which, it was too late. At home, it was the same. It was "NORMAN, you have your LEFT shoe on your RIGHT foot."

Things weren't any better outside. In football, they'd send him in at LEFT end and he'd be RIGHT. In baseball, they'd yell, NORMAN, move to your LEFT". He'd move to the RIGHT. Poor NORMAN. No matter what he did, it wasn't RIGHT. Or LEFT, but NORMAN was determined. Finally, he figured out what to do. He'd call it THIS and THAT. This for RIGHT and THAT for LEFT. Somehow, it all seemed easier. And in no time, he had it down pat.

One day, while NORMAN was home alone, a burglar forced his way in. NORMAN was frightened. The burglar asked where his mother's jewels and furs were. NORMAN said, "In the closet". But when the burglar said, "Which way is THAT?" NORMAN, of course answered, LEFT. The burglar followed these instructions and found himself in the kitchen. Being a smart burglar, he said, "THIS isn't RIGHT". And NORMAN said "Oh yes, it is-- but you asked for THAT." The burglar became angry and said, "now listen, I asked where the closet is, do you understand THAT?" NORMAN answered, "Oh yes, THAT is LEFT." The burglar said, "THIS is enough!" And NORMAN said, "Oh no, THIS is RIGHT." Exasperated, the burglar said, "Oh, forget it. Just tell me where the closet is." And NORMAN said, "Turn THIS". But, naturally, the burglar misunderstood and turned the knob on the door in front of him and plunged headlong down the basement stairs.

Just then, NORMAN'S parents came home, and when he told them what had happened, his father said the words he'd been waiting so very, very long to hear, NORMAN, you're a GENIUS!

AUDIENCE PARTICIPATION

LEFT/RIGHT STORIES

Have the group either stand or sit down. Give something to each Cub Scout that they can pass around during the story. It can be a patch, a coin, a sticker or anything theme related. When the story is over, they get to keep the item they end up with. Here's how it works - when the group hears the word "left," they will pass their item to the left. When they hear the word "right," they will pass it to the right. These stories are always lots of fun!!

SCIENCE EXPERIMENT!

My friend Wyatt wanted to help me with my very special secret experiment that I was doing. I was going to create something really cool – bubble gum!! Wyatt came over and I put him **right** to work getting all the ingredients I would need. I made a checklist for him so nothing would be **left** out.

Since this was the first time that Wyatt was in my lab, he didn't know where anything was. The recipe called for powdered sugar, gum base, corn syrup, flavoring (not sure what flavor would be **right**), and glycerin. Wyatt started to ask where everything was, but as he asked, I kept telling, not here, not here. I realized that almost everything was **right** upstairs in the kitchen. So, we **left** the lab and went **right** to the kitchen to get what we needed.

"Where's the powered sugar?" asked Wyatt. " It is in the cabinet **left** of the stove, **right** above the toaster" I told Wyatt. He went on to ask about the gum base, corn syrup and flavoring as well. We found the gum base in the cabinet **right** below and **left** of the stove. The corn syrup was in the pantry **right** below the cereal **and left** of the pancake mix. The flavoring was on a shelf with like five different favors, which one would we choose? Vanilla was to the **left** of the root beer and **right** of the lemon which was to the **right** of the peppermint. Or was the peppermint to the **left** of the root beer and vanilla to the **right** of the lemon? Oh, who cares, let's just pick one and get this experiment going. I closed my eyes and pointed **right** to the peppermint. Good choice we decided. Only one more ingredient and it was **right** here, the corn syrup. Oh wait, one more – there is one more ingredient **left** – the glycerin. But where would we find that? "**Right** here," said Jamie. Thank goodness for grandmas!

Aiden and Wyatt worked **right** next to each other, working together to complete their science project. Wyatt checked off the ingredients so nothing would be **left** out and the experiment would be done **right**. I mixed it all together to the **right** consistency, but something didn't seem **right** with the gum. Let's check the recipe again to make sure it is **right** and that nothing was **left** out. Ooops, looks like something was **left** out - citric acid. Since we were working with the stove, Jamie was **right** there with us and helped us find the citric acid and then finish making the gum. We only had to wait until it cooled off before we could jump **right** in and chew our experiment. We were happy as it tasted really good - nothing was **left** out and flavor was just **right**!!

AUDIENCE PARTICIPATION

MY CRAZY SCIENCE EXPERIMENT

On Saturday morning I woke up and jumped ***right*** out of bed. I was so excited that I didn't have to go to school today. I decided to go on a hike to get some exercise. I couldn't wait - I ***left*** with my lunch and something to drink in my backpack, along with some other stuff to keep me busy, looking forward to the day ahead of me.

As I walked down the street, I went to the ***right*** and walked a few more blocks. To my surprise, there ***right*** in front of me, was a farm. Why was there a farm in the middle of my neighborhood? I was so confused. Oh well, I entered the farm not sure what I would find. I moved to the ***left*** and then to the ***right***. I stopped to get my bearings and ***right*** there in front of me was this weird looking green cow. He had a large head and big eyes. On the ***right*** side of his head was a great big ear. On the ***left*** side was a small ear. I stood frozen in my tracks. What's going on? Am I dreaming? What should I do? I moved to my ***right*** and the cow moved to his ***left.*** I moved to my ***left*** and he moved to his ***right.*** I took a step forward; he took a step backwards. The cow seemed to be doing everything that I was doing, just the opposite. I looked at the cow and told him that my name was Tom. He just stood there looking at me. I wasn't sure what to do next. I heard a noise coming from my ***right*** and then another one from the ***left.*** Which way do I look first – ***left*** or ***right*** or ***right*** then ***left***? There were blue horses and green ducks. And rows of chocolate bars growing ***right*** in the field. Wow, what was going on? I was really confused. I heard more noise and looked ***right*** over my shoulder. There was my friend, Bobby. He wanted to know why I ***left*** him? As he came running at me, he ran ***right*** into me and knocked me down. As I hit the ground, the ***left*** side of my head hit the ground. Bobby helped me up off the ground and I started to share with him what I saw.

Over there to the ***right*** is a green cow, and to the ***left*** were blue horses and to the ***right*** green ducks. Bobby looked at me and said "what are you talking about? I don't see any of that. We are at the ball park – are you ready to play ball?" I looked at Bobby, scratched the ***right*** side of my head and said "let's play ball. I don't want to be ***left*** out." I am not sure what I saw that day, but ***right*** or wrong, it was pretty crazy!"

NORMAN THE GENIUS

This is the story of NORMAN, a boy who wanted very much to be a GENIUS. But no matter how hard he tried, it just didn't work out. You see, NORMAN had a problem -- he could not tell **RIGHT** from **LEFT**.

At school, the teacher would say, "When you know the answer, raise your **RIGHT** hand". By the time NORMAN figured which hand was which, it was too late. At home, it was the same. It was "NORMAN, you have your **LEFT** shoe on your **RIGHT** foot."

Things weren't any better outside. In football, they'd send him in at **LEFT** end and he'd be **RIGHT**. In baseball, they'd yell, NORMAN, move to your **LEFT".** He'd move to the RIGHT. Poor NORMAN. No matter what he did, it wasn't RIGHT. Or **LEFT**, but NORMAN was determined. Finally, he figured out what to do. He'd call it THIS and THAT. This for **RIGHT** and THAT for **LEFT**. Somehow, it all seemed easier. And in no time, he had it down pat.

One day, while NORMAN was home alone, a burglar forced his way in. NORMAN was frightened.

AUDIENCE PARTICIPATION

The burglar asked where his mother's jewels and furs were. NORMAN said, "In the closet". But when the burglar said, "Which way is THAT?" NORMAN, of course answered, **LEFT.** The burglar followed these instructions and found himself in the kitchen. Being smart burglar, he said, "THIS isn't **RIGHT**". And NORMAN said "Oh yes it is-- but you asked for THAT." The burglar became angry and said, "now listen, I asked where the closet is, do you understand THAT?" NORMAN answered, "Oh yes, THAT is **LEFT."** The burglar said, "THIS is enough!" And NORMAN said, "Oh no, **THIS** is RIGHT." Exasperated, the burglar said, "Oh, forget it. Just tell me where the closet is." And NORMAN said, "Turn THIS". But, naturally, the burglar misunderstood and turned the knob on the door in front of him and plunged headlong down the basement stairs.

Just then, NORMAN'S parents came home, and when he told them what had happened, his father said the words he'd been waiting so very, very long to hear, NORMAN, you're a GENIUS!

LET'S GO ON A SPACE RACE

Today is the day! Our pack is going to have a space race. I wonder who will win and who will have the honor to say that they are #1! Ok, time to line up for the race. Wyatt was on my right and Conner was on my left. To Billy's left was Sean and to Wyatt's right was Mathias. We all flew right up to the starting line. This was going to be a tuff race. We were all such good friends and no one wanted to be left behind. We all wanted to win together, but I am not sure how that would happen. I had to go out and do my best, just like our Leader had told us. "Ready, set, go. . . . ."

We all took off flying through space, anxious to finish first we did not know what the race track was like, so we took off as fast as we could. I was off first speeding through the Milky Way. Coming close on my **right** was Mathias. And on his **right** was Billy. Wyatt was bringing up the **left** side followed closely on the right by Conner. Through the Milky Way, then on to the Big Dipper. We went to the **right** and to the **left**, **left** and then **right.** There were so many asteroids, stars and comets. They were all over the place and we were hoping we would make it through without crashing. Mathias was racing and leaning to the **right** and almost ran **right** into a huge asteroid. Good thing Conner came by and steered him to the left. It could have been disastrous.

Next we went traveling through the planets. To the **right** of the sun we passed Mercury. To the **right** of that was Venus. Earth was there **right** in front of us! Do we go to the **left** or to the **right** or land to take the win? We weren't sure if the race was over or not. After all, we had a few more planets to go around. There was Mars and to the **right** of that was Jupiter. I saw Mathias to the **right** of Neptune, close to Pluto. Wyatt and Conner were to the **left** of Uranus by Saturn. Sean was to the **left** of Neptune by Uranus. I was paying so much attention to what everyone was doing that I ended up crashing into an asteroid. Oh no, I wouldn't be able to finish the race. I wasn't sure what I would do. I just did not want to be **left** to come in last.

I could not believe what was happening right in front of my eyes. Wyatt, Conner, Billy, Sean and Mathias all turned around to come help me. A few went to the **left** and the others went to the **right**. But they all ended up **right** beside me. They had decided that it was more important to do the **right** thing, which was to help me, than to leave me broke down on the track. So, tow rope in hand, we all crossed the finish line together! We were all number #1 – we did what we set out to do! We did our best!

GAMES AND ACTIVITIES

Games are a great way to teach Cub Scouts about teamwork, playing fair, doing ones best AND having FUN! Cub Scouts do not require prizes, nor do they care if the game is not finished. They like games! Some tips – choose an appropriate game – one that is right for the age level and playing area; be prepared – have everything you need; start positive – start the game with enthusiasm – make it look fun! Explain the rules and make sure everyone can hear them; make the instructions brief. Demonstrate or do a dry run if needed. While the game is being played, watch for ways to adjust the game if necessary; end the game BEFORE it reaches its peak of enjoyment; delay setting a winning score and REACH FOR LASTING RESULTS. Lord Baden Powell said, "Scouting is a game - with a purpose!" Sportsmanship and fair play fit into what it is we are trying to accomplish in Scouting.

We have included games and activities that you can use at Day Camp or adapt to be used at Day Camp. While deciding which ones will work, think about how they can be modified for the different levels of scouting and be age appropriate. Sometimes changing the size of the ball or rolling instead of throwing, will allow the game to be played by all! Be creative and have FUN!

THE LEAF GAME

To play this game, first rake up a small pile of leaves.
Each player chooses a leaf from the pile and studies it carefully. If you wish, you can let everyone use a magnifying glass. But don't let the players make drawings or take notes.
Now scramble the leaves together.
See how many can pick out their own special leaves. At first glance, one leaf may look like all the others. But that's only at first glance. Explore more!

GENIUS BALLOON RACE

Divide your group into even teams. Set up a goal at the other side of the playing area. Line your teams up opposite the goal. Give the first person in the line a balloon. Tell them simply that they must go down to the goal and back with the balloon, give it to the next person in line, who does the same thing, on to the last player. The first team to finish with all the players is the winner. What makes this a genius race? Simple -- no one is allowed to touch the balloon with their hands! It takes a genius to figure out how to transport that balloon! One little concession; let the receiving person touch the balloon or they may never pass it from one to another.

LITTER SWEEP RELAY

Object: To be the first team to make a clean sweep of all the litter.
Materials: A broom for each team and a small pile of dry trash: soda cans, paper, small plastic bottles, etc.

How to play: Divide into two teams and give each team a broom and a small pile of dry trash - soda cans, paper, small plastic bottles, etc. At the start signal, the first team member on each team sweeps the trash to a certain point and back. The next team member then takes over, and so on until all have run. The first team finished wins. If a team member loses any trash he must sweep back and pick it up.

GAMES AND ACTIVITIES

RECYCLED LID FRISBEE TOSS

Collect a variety of plastic lids from containers such as margarine tubs, yogurt containers, coffee cans, etc. With a permanent marker, mark half the lids with one letter and the other half with another letter (for example "C" and "S" for Cubs and Scouts). Divide the group into two teams. Give each team a set of lids. Using tape or string, mark two target circles about 15 feet away from a base line. Each team must stand behind the base line and sail their lids, frisbee style, into their target. A point is awarded for each lid that lands in the target. A point it taken away if a lid lands in the opposing target.

MOON CHALLENGE BINGO (Game card below)

This is a challenge game that can be done at home OR, it could be modified to be used at a Cub Scout Day Camp.

- Find a Tool - bring in an assortment of tools that could be chosen by the Cub Scouts. OR have them draw and create a tool.
- Make a Moon Drawing or Sketch - have paper/markers/crayons and pictures at the location of the activity
- Grab a Food - Have snack choices and talk about if the snack would work in zero gravity, or less than perfect gravity.
- Build a Model - have play dough, clay, etc. to build a sample crater.
- Pretend You are Walking - provide cushions/foam/blankets to make an uneven surface to walk on.
- Create a Homemade space helmet - can be done with construction paper, using a cleaned gallon milk carton or cardboard box.
- Choose a personal item - Cub Scouts can draw a picture of something they have at home, or have a choice of personal items that they could review to decide which might be best for them.
- Take a selfie with the actual moon - Have pictures of the moon in different sizes and views at the location of the activity. Leaders may take pictures and if possible, print on site, or send to e-mails of parents that are on file.
- Make up your own categories to bring more excitement into the activity.

GAMES AND ACTIVITIES

Ring on a String
Select one player for "it." Place the rest of the players in a circle around and facing him/her. Place a ring on a string and tie ends to make a continuous circle. All players move hands as if passing the ring, and it is "its" job to find the player in possession of the ring. If he/she does so, that player is "it."

Static Electricity Game
Each person is given a balloon. At the signal they blow up their balloon, tie a knot in it, rub it on their hair to make static electricity, then stick it on a wall. The balloon staying up the longest is the winner.

Paper Airplane Challenge
Give each scout one sheet of paper. Have them design and make airplanes by folding the paper. No other materials may be used. Have a contest judging the planes in one or several categories. Some suggestions are: distance, loops, tricks, or landings, judging the best in each category. It is best to allow the scouts to do the judging. Everyone will be a winner!

Nature's Bingo
Scouts go outside or on a hike with empty Bingo sheets. Have them observe nature and fill in spaces with words or drawings of what they see. When the scouts return, play bingo with a list previously put together by a leader who hiked the trail or sat outside and observed their surroundings.

Calendar Checkers
Place a calendar page on the ground. Have the scouts stand at least six feet away and take turns tossing 3 checkers onto the calendar page. When everyone has tossed their checkers, have them total up their score. The date they have landed on determines their number of points.

Recycle
Have scouts stand outside in a circle. Give one scout a ball of yarn and have him or her call out one component of recycling. That scout will then toss it to someone else, who will call out another part of the recycling cycle that is related to the previous scout's response. For example, the first scout may say "newspaper" and the next scout could say "paper plates" because paper plates are made from recycled newspapers, so they are connected. Once every scout is part of the recycling cycle, have them pull their strings tight and observe how they're all connected.

Ecosystem Word Association
In groups of three, one scout will name something they see in their surroundings that is related to nature – "pond," for example.
A second scout in their group will say something associated with that word. Since the first word was pond, the second scout might say "frog." This word does not have to be visible in their surroundings – it just has to relate to the previous word.
Scouts continue to go back and forth with word associations for one minute. The third scout scribes and keeps time. At the end of one minute, the group tallies up the points. They get one point for each word that is part of the ecosystem of the first word. They also get a point for all the words that are visible in the environment around them.

Say for example that the group has these words on their list: pond, frog, green, algae, moss, tree, bark, owl, fly, bird, and eggs. They get one point for all the words that are part of the local ecosystem: frog, algae, moss, tree, owl, and bird. They also get a point for all the words that they can see from where they're standing: pond, green, algae, moss, tree, bark, and bird. So that group would get a total of 13 points. Once the groups have finished, have them rotate the roles until everyone has been the scribe at least once. How about changing the word to recycle?

Science Four-Square

You may have the squares for Four Square drawn on your blacktop, but even if you don't – it's easy enough to draw one with chalk. It can be any size you'd like, but it's usually a 10' x 10' square divided into four smaller squares.

To start, four scouts stand in their own square facing each other, and they bounce/pass a ball to take turns. A scout who is not in the Four-Square shouts out the names of two animals. For example, whale and snake. (Change this to the current theme!)

As the scouts bounce the ball back and forth, scouts use their turn to say in which way the animals are alike. Scouts might say things like "they both wiggle to move around," "they don't have legs," "they breathe air," or "they swallow animals whole."

When they've exhausted all the ways they are alike, switch to listing their differences. Some examples can be "whales can't live on land," "snakes lay eggs," "snakes have teeth," etc.

Once no one can come up with any more differences, switch who gets to be in the Four-Square game and start over with two new animals. Scouts who are waiting can be fact checkers or second opinions to the answers.

With older scouts, you may want to give a time limit for how long they can take to come up with an answer. If they don't say an answer within the time limit, they are out of the game. This would be a great game to learn more about the them or for the scouts to share what they have learned.

Build-Your-Own Launcher Challenge

This challenge is a fun way to strengthen engineering skills. Scouts can work in teams for this activity.

First, provide scouts with materials to build a catapult. The materials could be popsicle sticks, rubber bands, cardboard, paper, glue, tape, plastic or paper cups, pencils, string, cardboard tubes, or any other materials you have on hand.

Have each team use the materials to build a catapult with the goal of launching an aluminum ball or ping pong ball as far as possible. The team that successfully launches the ball the farthest wins.

GAMES AND ACTIVITIES

SCIENCE STEW
Cub Scouts sit in chairs in a circle with one Cub Scout in the center. The leader assigns the name of a science related item to each of two Cub Scouts in the circle. When the name of their science item is called, the two "protons" or "neutrons" run to change places, while the Cub Scout in the center tries to get one of the vacant places. When the leader calls ''science stew," every one scrambles to get a different seat. The one left standing is "It" for the next round.

SCIENCE LAB CHALLENGE
Each Cub Scout or Cub Scout team tries to list as many things that can be found in a science lab as possible in a 3-minute time. The Cub Scout or Cub Scout team with the most answers wins.

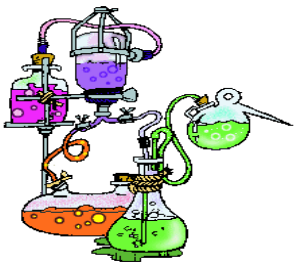
SCIENCE ALPHABET
See if you can think of a "science" word that starts with each letter of the alphabet. This could be a den, family or team challenge.

BEAKER/TEST TUBE RELAY
Materials: 6 cups, beaker or test tubes per team, One bag of seeds, pasta shells, or dried peas
Team members follow a line, or rope on the ground, and walk heel to toe. Each team member must stop (about every 3 feet) and drop a seed in a small beaker, test tube or cup set near the line. When he/she reaches the end, he/she runs back and taps the next scout on the team.

QUARTER DROP: Have the players form 2 teams. For each team, place a gallon jar 2 to 3 feet in front of the line. Fill each jar with water and place a smaller glass jar in the bottom of the gallon jar. Have each player try to toss a quarter or iron washer into the jar and into the smaller jar.

PENNY DROP: Pour water about six inches deep in a bucket and drop in a dime. Each player is given six pennies. In turn, players drop their pennies in the water, trying to cover the dime with the penny. The successful player wins the dime.

WISHING WELL: You will need a pie pan, tub of water, pennies or small rocks/pebbles. This tossing game is played by placing a light pie pan so that it floats in a tub of water. Each player stands at a distance of six or eight feet and attempts to toss the pennies or pebbles, into the pie pan. Each one that lands and remains in the pan is worth a point.



GAMES AND ACTIVITIES

KNOT-STEP CONTEST: Line up players; each has a piece of rope. Call out the name of a knot. Each player ties the knot. Judges quickly check the knots, and those players who have tied them correctly can take one step forward. First player to reach the finish line is the winner. This game can be adapted for each age group – just change the type of knots that must be tied.

FLOAT THE NEEDLE: Have a bowl of water and a needle and challenge Cub Scouts to try to make the needle float. After they have tried and failed, place a small piece of tissue on water and the needle on top of that. As the tissue gets wet, it will sink to the bottom. The surface tension of the water will allow the needle to remain afloat.

FIND THE ATOMS

Have wooden, plastic eggs, ping pong balls, hidden throughout camp with words of encouragement in or one them. Have the Cub Scouts pick them up throughout the day and share them as part of the closing.

BLANKET BALL

*A*ny number of players, two sheets or blankets, two balls or large soft objects (even rolls of toilet paper work well). Form two groups. Group members grab hold of a blanket's edges, with a ball in the center of the blanket. Players practice throwing the ball up and catching it by moving the blanket up and down in unison, trying to get the ball as high as possible. After the groups have developed some skill in catching their own ball, they toss the ball toward the other group to catch on their blanket. Groups continue throwing the balls back and forth. *Variation:* Try using water balloons outdoors on a hot day.

States of Matter Game

This game is great for demonstrating the different types of molecular action in the three states of matter. Because it involves physical activity, it's also a fun game to play either inside or outside.

Introducing the Game

Before playing the game, review the three states of matter and how molecules behave differently as matter heats up or cools down. Refer to these examples:

- Solids - Molecules are tightly packed and move slowly, staying in a rigid formation. (Ice would be an example of matter in a solid state.)
- Liquids - As solid matter is heated, the addition of energy causes molecules to move more quickly and spread apart. (Water is a liquid.)
- Gases - With the addition of more heat, the molecules move even faster and spread even farther apart. (Steam is the gaseous form of water.)

GAMES AND ACTIVITIES

Playing the Game

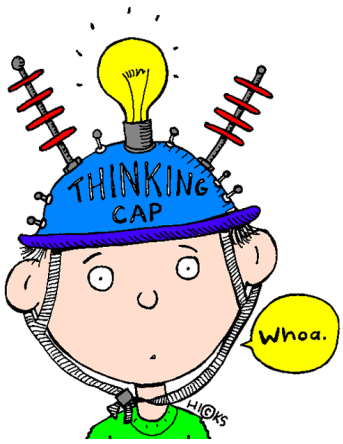
1. Tell scouts that they are going to role play water molecules in each of the three states of matter. Before starting, they need to move to an open space in the room or push in all the chairs and clear some space to move in the room. Check the room for electrical cords on the floor or other obstacles. Be sure to tell scouts to stay clear of computers, LCD projectors, Smartboards and any other fragile equipment.
2. Scouts begin by standing in place with their arms at their sides or crossed over their chests. Explain that unlike real molecules, they are not allowed to touch each other or any object in the room. If they touch something or someone, they have to sit out for a few minutes. Designate an area for this
3. To begin, tell them that they are "solid" particles of ice and can move side to side but must stay in the same area since solids keep their shape.
4. Announce that they are getting warmer and the ice is beginning to melt and become a liquid. They should begin walking around the room, mixing and mingling, but are not allowed to touch anything.
5. After a few seconds, say that they are getting even warmer and are beginning to change into steam, the gas form of water. This stage has to be monitored very carefully because they will try to run and bump into each other. Anyone who touches another person or object in the room is out.

To control the movement of your scout "molecules," tell scouts that they are heating up or cooling down as they change state. Or simply announce different states of matter and have them move accordingly.

WEIRD SCIENCE SCRAMBLE RELAY

Write the letters WEIRD SCIENCE on separate pieces of paper, make two sets of them.

Divide into 2 teams. On signal the 1st one of each team races to where the cards are all scrambled. Scout picks up any letter from the pile and the pencil beside it, writes any word beginning with that letter on the paper, then races back to tap the next in line. They all take turns doing this until all the letters have been used. If a scout can't think of a word beginning with his/her chosen letter, he/she may choose a different letter not used and write a word for that letter. However, he/she can't come back and tap the next until a word has been written and the team can't complete the relay until every letter has at least one word written on it. The first team done is declared the winning team.



GAMES AND ACTIVITIES

DESIGN A PAPER PLATE PINBALL GAME

Materials

- Paper plates (The ones with high edges work best, or oval plate)
- Scissors
- Construction paper
- Tape
- Markers
- Marbles

Directions

1. Provide each scout with one paper plate and access to various craft supplies. I demonstrated how to create some simple arches using strips of construction paper. You can do this activity with just construction paper and tape, or try other materials as well, like pipe cleaners or straws.
2. Let the scouts get busy creating and testing out their pinball machines with marbles.

BALL STRAW BLOWER RACE

Directions

Take two paper tubes and tape to the floor/ground. Give each scout a straw and do a ping pong ball race!

If the ping pong is too easy to blow, use a heavier ball or object. Test out different ones – the experimentation in creating different variations of games is also fun!

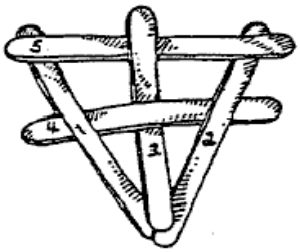
GAMES AND ACTIVITIES

PAPER CUP STACKING

Directions

Recycle and reuse paper cups into a fun stacking game. How high can you go?! Get the little ones to help bring and stack cups too!

AMAZING FLYING MACHINE (BOMB POPS)



Materials

5 Craft sticks (tongue depressors work best)

Weave the 5 sticks together as shown above. Fly like a Frisbee. The plane “explodes” on contact with the ground or other surfaces. Assemble it again, and have more fun.

PROGRESSIVE INVENTION KIT

This can be a combination of a craft project and game. It can be varied in many ways to suit the needs of your camp. It can combine the fun of a game with teamwork, thinking fast and imagination.

Materials

Give each scout 2 or 3 scrap items without telling them what they will be doing with them. The bigger the variety, the better so that they can all pick different things.

Divide group into 2 teams. Each team sits around a table or in a circle on the floor. Have items available to each group such as stapler, scissors, glue, tape, hammer, and nails, etc.

On signal, player #1, combines his items in some fashion to make a project. After using all his items, he then passes it to the next person, who adds all his items in some way using glue, nails, tape, staples, etc. as needed.

This continues around the team until everybody's items have been added and a completed project is in front of them.

When a whistle is blown, the project is done. Then the group takes a few minutes to make a description of their project, giving it a name and telling what it does. Here's where a scout's imagination can create some unbelievable contraptions. The explanations will be shared and are bound to bring a lot of laughs. This could also be done in a den by pairing the scouts off to do this. At the end of this, everybody should get a genius award of some kind for their participation.

PAPER PLATE TOSS

Materials
Take a paper towel roll and tape to the floor. Cut out inner circles from various paper plate sizes. Do a paper plate toss.

How many can you get in in how many seconds/minutes? Make it more challenging by scooting further back!
Include an extra step and have Cub Scouts do the process from different distances – by measuring them and showing the numbers of successful rings per each distance.

GEOMETRIC CARDBOARD SHAPE SCULPTURES

MATERIALS
Cardboard, ruler and/or Yard Stick, Scissors, Pencil, Craft Paint

1. Grab an old box or piece of cardboard. You can make them any size, but the picture above is a 2" x 4" shape with 1/2" slits cut one inch from the corners. Measure all of this out using a ruler or yard stick.

2. Cut out your individual pieces.
3. Take craft paint and paint them all.
4. Let these dry completely before you play.

Have fun making shapes and designs. Who can create the tallest structure without it falling over?

CREATE AN OBSTACLE COURSE USING CREPE PAPER

Take a roll of crepe paper and tape lines across a hallway wall or between two things outdoors. Zig Zag the lines high and low. Encourage scouts to walk through without breaking the crepe paper.

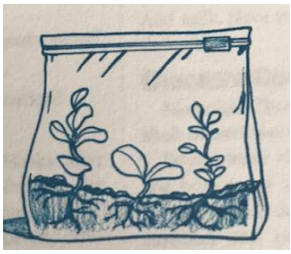
Ping Pong Ball Toss

Use varying paper tubes in heights and painter's tape to tape down or you can even insert them on top of a cardboard box and hot glue down. Place foil over the opening and ping pong balls on top so they don't fall down.

Tip: If you have large colored plastic balls you don't need the foil. Use a ball or make your own (we crumpled a piece of leftover foil!) to knock down the balls.

CRAFTS

PLASTIC BAG GREENHOUSE



Materials
Resealable plastic bags (gallon size)
Potting soil
Seeds (lima beans, popping corn, pumpkin seeds, citrus or other fruit seeds)

Instructions
Place enough potting soil (about 2 in.) in the bag so that the bag "stands" on its own. Push seeds into the soil. If you put them close to the side of the bag, you can see how the roots grow. Sprinkle just enough water to moisten the soil. Close the bag. Keep your greenhouse in a place where it gets plenty of light – but not in the direct sunlight. Transplant into an indoor garden or in a pot (outside, weather permitting) when they grow too tall for the bag.

SODA BOTTLE COMPOSTING

Materials

- 2-liter soda bottle (make sure it is transparent)
- Scissors
- Raw food scraps (vegetable/fruit peel, tea bag, coffee grounds, raw left overs)
- Soil
- Water spray bottle

Instructions
Remove the label and rinse your soda bottle. Cut the top off the bottle (the end with the lid).

Throw a handful of soil into the bottom of the bottle. Follow this with a handful of food scraps. Repeat this process until the bottle is full, finishing with a layer of soil. Once your bottle is full, spray the bottle with water (it shouldn't be too wet, but should be damp).

Place your composter in a sunny spot. When the topsoil dries out, you should spray it with water to maintain a constant level of moisture. Watch and wait as your food scraps decompose and turn to soil. You will need some patience – the whole process will take about 8 weeks. Take photos of the bottle once a week so that you can compare changes that take place from week to week.
(urbangardenersrepublic.com)

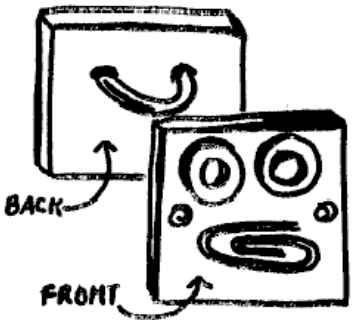
CRAFTS

GENIUS KITS

Contents of your Genius Kit

2 plastic cups
2 balloons
2 flexible straws
1 green sphere
4 shiny pipe cleaners
2 paperclips
1 clothes-pin (keeping the bag closed)
1 slime-colored, brick-shaped block
1 spark doodad (without a spark)
1 flat, rectangular mesh
2 wooden Popsicle sticks

INVENTION/GENUIS KIT NECKERCHIEF SLIDE



Materials

Bag of many small items
Small block of wood (size appropriate for slide)
Cable staple 5/8” x 11/8” or small piece of PVC pipe

Give each scout a bag of small items; screws, pipe-cleaners, nails, felt, construction paper, washers, paper clips, etc. Hammer the cable staple in the back of the block of wood or glue the pvc pipe to the back. Let the scouts’ imagination loose and see what they can do with their invention/genius kit neckerchief slides.

COMPASS NECKERCHIEF SLIDE

Materials

Toy Compass, 10" Suede Cord**,** 3 Pony Beads, 4" Pipe Cleaner**,** Low Temp Glue Gun

Instructions:

Hot glue suede cord all around compass. Leave both ends hanging from the compass. Cut ends into a

point to make stringing pony beads easier. Slide both ends into one pony bead and push it all the way to the compass. String one pony bead onto each end. Tie knot to secure. Trim. Hot glue a 4" piece of pipe cleaner on to back of compass to twist into a neckerchief slide.

BEADED NECKERCHIEF SLIDES

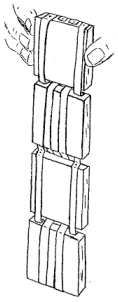
Weave a neckerchief slide to match your uniform.

Materials
30 Pony Beads, 24" 1mm Black Round Elastic, White Glue

Instructions
Cut elastic cord into 24" lengths. Stiffen ends with white glue. String the first row of three beads onto cord and push to the center of the cord. Lace the 2nd row of beads onto one cord. Lace the other cord through the same beads in reverse order. Pull both cords snugly. Continue with the next row of beads until you have laced rows. Loop beads around and string one cord through first row of beads. Tie cords together pulling tight. Put a dab of white glue on knot. Let dry, then trim the lace.

Other neckerchief ideas:
How about a small plastic animal glued to a piece of pvc pipe or leather? Or make it out of fun foam. Anything farm related could be made into a neckerchief slide.

SOMERSAULT CLATTER BLOCKS



For this project smoothly sanded blocks and a package of twill tape are needed. Any number of blocks may be used, but it seems to work best with between four and seven (four seem to work well for cubs to manage). Length of blocks is to be 2½", and width may be the same or may be narrower. A large yardstick will work well (1¾" wide by ¼" thick). Loosely weave two outer tapes around blocks as shown, stapling tape at top of each block (very small nails can be used instead). Then weave a double center tape through blocks in the reverse direction, stapling at the bottom of blocks. Grasp end block, tilt forward and back, and blocks somersault down tapes.

CRAFTS

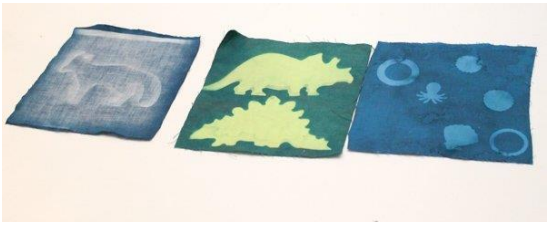
FUNNY PUTTY

This stretchy, rubbery putty bounces and picks up newspaper comics.

Materials
1 Tbs. Liquid starch
2 Tbs. White glue
Food Coloring
Plastic Easter egg or zip lock bag

1. Mix white glue and food coloring together in a small bowl.
2. Pour liquid starch into a second bowl. Slowly pour the glue mixture on top of the liquid starch.
3. All the concoction to stand for 5 minutes or until the glue absorbs the liquid starch.
4. Remove putty from the bowl and knead. (Note: at first this mixture may look as if it's a mistake, but it isn't. The more you knead the putty, the better the consistency will be).
5. Store Funny Putty in a s plastic Easter egg or zip lock bag.

SUN PRINTS – SUNOGRAPHY



Materials
Objects to put on paper – leaves, rocks, plastic toys, etc.
Construction paper
Plastic wrap

While in the shade, arrange the objects on the paper. Cover with plastic wrap (this will keep the objects from blowing away and attack the sun). Leave the objects for about 2 – 3 hours. The longer it sits in the sun, the more dramatic the results will be.

The sun's UV rays break down chemical bonds in objects, which removes colors and bleaches fabric, paper, and paint. Sun prints work by shielding certain areas of paper from the sun, which remain the dark original color while the rest of the paper gets lighter. The results are more dramatic the longer the paper is left out in the sun.

CRAFTS

SOLAR OVEN

How about a solar oven to make snacks at camp? You can google and get lots of different ideas using pizza boxes, a cardboard box of any kind. The solar oven fits in good with the Weird Science theme!

Here are a couple links that I found:
https://www.homesciencetools.com/article/how-to-build-a-solar-oven-project/
https://www.stevespanglerscience.com/lab/experiments/solar-oven/
https://www.scienceprojectideas.org/how-to-make-a-solar-oven.htm
https://sunshineonmyshoulder.com/wp-content/uploads/2015/03/Science-Fair-Projects-1000.jpg

ANEMOMETER

Materials

- Wooden spool
- Dowel, 1 thick enough to spin freely in spool and at least 12" long
- 3/16" Dowels
- Egg carton
- Cork
- Washer
- Ruler
- Pencil
- Acrylic or poster paint (optional)
- Glue
- Power drill
- Coping saw
- Sandpaper

CRAFTS

- Hole punch, 1/8”
- Workbench

Directions

1. First prepare your cups by cutting 4 egg holders out. Then shape them a bit so they look like a 4-petalled flower. You can paint them if you like. Tip: If you paint one of the holders a different color from the others, then it will make counting the rotations a lot easier.
2. This step can be done before hand so that it is ready for the scouts to use. Hold the spool in place lengthwise using a workbench. Drill a hole through in the middle using a 3/16” drill bit. Check to see if the dowel fits. If not, drill a bit more to make the hole wider. Remove the spool, make a quarter turn and secure it back into the workbench. Drill another hole through the spool. Sand down any wood splinters.

3. Depending on the age group doing this craft, this can be done beforehand as well. Next, switch the drill bit to ¼”. Cut the cork in half and secure into workbench. Drill a hole through the middle. Set aside.
4. Do this before camp. Use a coping saw to cut the 3/16” dowels into four 5” long pieces.
5. Set the spool on a flat surface and place the ¼” dowel through the top hole. Add glue to the four drilled holes and place a 3/16” dowel into each making sure they don’t touch the middle ¼” dowel. Allow to dry.
6. Next, punch a hole in two of the petals of each cup to feed the dowels through. You may need to use a pencil to gradually make the holes bigger. You want the holes to be snug not loose for the dowel.
7. Finally, put together your anemometer by placing the cork and washer on the ¼” dowel. dowel. Then set the spool on. Attach a cup onto each 3/16” dowel and make sure they’re all facing the same direction.

CRAFTS

On a windy day set your anemometer in the ground or a flower pot. Make a chart and take note of how many rotations your anemometer makes in 30 seconds. Compare the results to other days. Or just have fun watching the cups spin. (You can make kits a head of time to have ready for the scouts to use at camp).

SEED BOMBS

Materials
Meadow flower seeds or seeds collected from the garden.
Peat-free compost.
Water.
Powdered clay (found in craft shops).
Mixing bowl.

Creating your seed bomb
In a bowl, mix together 1 cup of seeds with 5 cups of compost and 2-3 cups of clay powder (you could use clay soil instead if you have it).
Slowly mix in water with your hands until everything sticks together.
Roll the mixture into firm balls.
Leave the balls to dry in a sunny spot.
Now for the fun bit! Plant your seed bombs by throwing them at bare parts of the garden and wait to see what pops up!

This is just one version of Seed Bombs - Use recycled materials you have to create "seed bombs." Then plant them in the school yard or send scouts home to use them in their own gardens. Scouts learn about ecology, recycling, and plant life cycles.

CRAFTS

CATAPULT

Materials

- Ping pong balls
- Wooden yardstick
- Something to use as a fulcrum (coffee can, large wooden toy block, a log, pvc pipe)
- Small plastic cup
- Strong tape (like packing tape or masking tape)
- An open space to do the activity
- Optional: Paper and pencil for science journaling

There are a lot of different varieties of catapults! A great way to have some fun at camp!

WINDSOCK

Decorate a windsock to fit any theme. Use blue streamers on gold paper for the blue and gold banquet, or red and white streamers on blue paper for a patriotic theme.

Materials
Cans
Paint
Streamers/Fabric or ribbons

CRAFTS

TIN CAN LANTERN

Tinsmiths used tin piercing to make items such as lanterns, charcoal heaters, and cabinets. This craft requires careful supervision by adults but makes a "keeper craft" the Scouts will truly enjoy.

Materials
Clean tin can, any size Paper, pencil, scissors, water 2-by-4 scrap lumber, duct tape, hammer, flathead nails, small candle and holder

Instructions
Make a paper pattern that will fit around the tin can. Draw a design of dots that will be punched through the can with a hammer and nail. Keep the dots of the design far enough apart so that the can doesn't bend during punching. The spacing will depend on the size of the can and the age level of the scouts. Fill the can almost full with water and freeze solid. After the water is frozen, wrap the paper pattern around the can and tape in place. Use two 2-by-4-inch pieces of scrap lumber slightly longer than the can to make a "frame" along both sides of the can. Secure the ends of the frame with duct tape. This frame will brace the can during punching and still allow it to be rotated. Use a hammer and sharp flathead nail to punch holes in the can following the design. The nails must be sharp or the can will bend. Keep extras on hand and replace as needed. After the ice melts, dry the can. Place a small candle and holder in your lantern. Votive candles work well. If you want a top for your lantern, you can punch a design into an aluminum funnel. The funnels are sturdier than the cans so they won't need ice to hold their shape during the punching.

EXPERIMENTS

Guidelines for Young Scientists

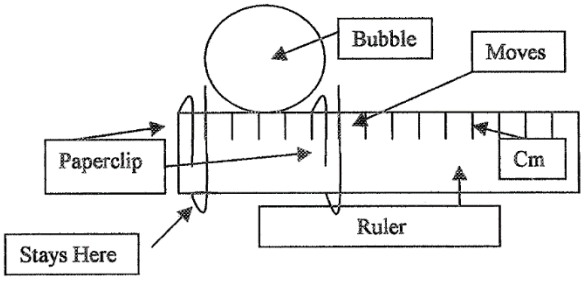
1. Keep a science notebook. Write down what you see. Ask yourself questions about the world. Make a statement that seems to explain what you have observed. Then set up an experiment that will help you find the answer. Journal about camp!
2. Have fun with science. Take your time and stay relaxed! You don't want to get hurried or frustrated.
3. Keep things organized. Before you begin a project, read the steps all the way through. Make sure you understand everything you need to do. Collect all the tools and materials you'll need.
4. Keep things clean. Begin with clean materials and clean containers. Wipe up spills right away.
5. When you're finished, put everything back where it belongs. Pick up after yourself outside, too. The environment needs your help both inside and outside.
6. Don't worry about failures. Every scientist falls at times. Some great discoveries in science started with failures. Even when your experiments don't turnout the way you planned; you're still learning

BUBBLE GUM LAB

Materials: bubble gum, ruler, paper clips, calculators

Which bubble gum makes the biggest bubble?

1. Make the bubble measurer.
2. Blow. Measure. Record.



Name	Bubble Size (centimeter)					
	1	2	3	4	5	Average

EXPERIMENTS

EXPLODING CRAFT STICK CHAIN REACTION

BEAR ELECTIVE

Make it Move

Requirement 1

ALL: FUN SCIENCE ACTIVITY

15 min: setup and experiment

Completion of Make it Move adventure fulfills requirement 2 for the Tech Talk Nova award

STEM

Explore Science (physics, energy), Engineering (structure integrity)

MATERIALS (PER GROUP)

- Large package of Jumbo craft sticks, colored sticks are best

PROCEDURE

1. Weave the craft sticks into a Cobra Weave, shown on the left.
2. Continue until you have a long string of them.
3. When ready, pull them apart.

SAFETY

CAUTION: The sticks fly into the air. Sit well away from them as they "explode."

Cobra Weave

COVID19: This is probably best demonstrated. Each Scout could create a very small square to see how to make one.

the science

The key to the Exploding Craft Stick Chain Reaction comes from potential and kinetic energy. As you weave the craft sticks together, you are continually building potential energy. Each craft stick is bent over the stick before it and pinned under the stick before that, creating tension in the wood. When you finally have the chain length that you want, you let go and all of the tension and potential energy is released in a chain reaction of kinetic energy!

FOR MORE INFORMATION

Experiments & Videos

https://www.facebook.com/101966744853430/videos/568957460476180/

https://frugalfun4boys.com/build-a-chain-reaction-with-popsicle-or-craft-sticks/

https://www.stevespanglerscience.com/lab/experiments/popsicle-stick-chain-reaction/

EXPERIMENTS

FLYING FISH

STEM

Explore math (measuring, symmetry), science (lift) and technology (autogiro).

WOLF ELECTIVE

Air of the Wolf

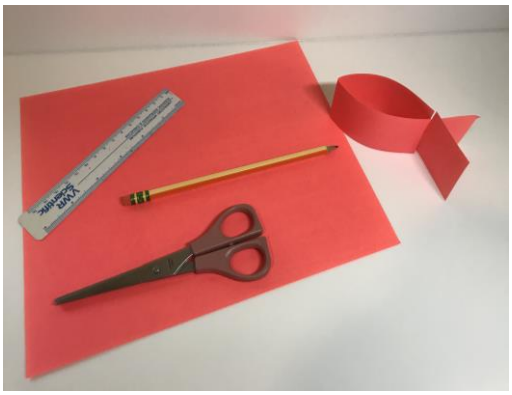
Requirement 1A

ALL: FUN SCIENCE ACTIVITY

5 min: setup

10-20 min: experiment

Completion of the Air of the Wolf adventure fulfills requirement 2 for the Fearful Symmetry Nova award



MATERIALS (PER SCOUT)

Ruler
Scissors
Pencil
Paper

PROCEDURE

Cut a strip of paper 1 inch wide from the long side of a piece of construction or printer paper. Measure 1.5 inches from each end and draw a line along the width of the strip. On one side, cut half-way up the line. On the other side, cut half-way in the opposite direction. Fold paper in half. Connect the two ends joining the cut pieces. It should look like a fish-shape.
Before you fly your fish: How can you get your fish to fly? What direction will it fly?
Fly your fish and test your assumptions.

Test and perfect your launching technique.

The flying fish model can be improved to stay in the air longer. What variables can you test?
Pick a variable and design an experiment to test it.
EXTRA: Have a contest for the best flying fish. Decorate your fish with crayons.

SAFETY

COVID-19: do the experiment individually. If the ruler or scissors are shared, disinfect between use.

the science

Test variables such as type of paper, length and width of strip, length of tail.
Daniel Bernoulli (*pronounce Burr New Lee)* was a Swiss scientist born in 1700. He discovered that fast moving air has a smaller pressure than stationary air and the faster it moves, the smaller its pressure. This can create *lift.*

The flying fish spin in the air, rather than flying like a paper airplane. The spinning is called autorotation. Autorotation slows the fish down, creating lift. The rate of rotation is affected by the length and width of the paper, the size of the tail, and the weight of the paper used.

An Autogiro is a type of aircraft that has an unpowered helicopter-like blade to create lift. To go forward, they have a propeller. In the flying fish, the axis of rotation is horizontal; in an Autogiro, it is vertical.

EXPERIMENTS

FOR MORE INFORMATION

Adapted from AIMS Newletter, 1993.

Experiments

https://www.metrofamilymagazine.com/simple-science-experiment-spinning-paper-blimps/

Video

https://youtu.be/yObRm5VGDxs

FLOATING LETTERS

STEM

Explore Science (chemistry, color mixing)

BEAR ELECTIVE

SUPER SCIENCE

Requirement 5

ALL: FUN SCIENCE ACTIVITY

Completion of Super Science adventure fulfills requirement 2 for Down and Dirty or Out of this World NOVA awards.

1 min: setup

5 min: experiment

MATERIALS (PER SCOUT)

- 3 M&M's and/or Skittles
- Small plastic bowl
- Very warm water
- Stir stick or plastic spoon

PROCEDURE

1. (Adult) Add some very warm water into the small bowls.
2. Add 3 M&M's or Skittles to each bowl.
3. Watch the bowl. What happened to the "M" or "S" letters? What other observations can you make about color changing?

SAFETY

CAUTION: Protect tabletops with plastic tablecloth. The candy dyes can stain.

COVID-19: Do not eat the candy. Put the candy into bags ahead of time and work individually.

the science

The letters on the candy are made of an edible paper, do not dissolve in water and are adhered to the candy with an edible glue. The letters peel off and float as the rest of the candy shell dissolves. The food dyes in the M&Ms or Skittles are water-soluble. The colors will mix and form interesting color combinations.

EXPERIMENTS

FOR MORE INFORMATION

Experiments

https://www.acs.org/content/dam/acsorg/education/outreach/ncw/event/2014/floating-letters.pdf

https://www.stevespanglerscience.com/lab/experiments/floating-letters/

PAPER CHROMATOGRAPHY

BEAR ELECTIVE

Forensics

Requirement 3

ALL: FUN SCIENCE ACTIVITY

5 min: setup

20 experiment

Completion of the Forensics adventure fulfills requirement 2 for the Tech Talk or Fearful Symmetry Nova awards

STEM

Explore Science (color, chromatography, mixing)

MATERIALS (PER SCOUT)

- 1-3 Water Soluble Markers*
- White Coffee Filter
- Pencil
- Water
- Clear plastic cup
- Pipe Cleaner or wired ribbon

* Avoid red, yellow or blue. Brown or black work well. Mr. Sketch works well – test first! Others are Crayola, Cra-Z-Art, Rose Art or store brands

PROCEDURE

1. Write on the coffee filter in a circle around the center with a marker. Predict what colors might be combined to make the marker color chosen. (Hint: black and brown are the most fun!) Write the color of the marker you chose in the center with a pencil.
2. Put a small amount of water in the jar or cups. Fold and place the coffee filter so the center is barely in the water. The marked area should be above the water. Wait and watch the colors separate and rise to the top.
3. After the water has reached the outer edge of the filter paper, remove from water and let dry on newspapers. Was your hypothesis correct?

EXTRA: If you want, pinch in the center with a pipe cleaner folded in two and make a butterfly. Curl the ends for antennae

EXPERIMENTS

Try 3 spots with different brands of black markers.

SAFETY

CAUTION: Protect tabletops with plastic tablecloth. Place a piece of paper under the filter paper when coloring it.
COVID-19: Do the experiment individually. Do not share materials.

the science

Primary colors are made of one color (red, yellow or blue), secondary colors are mixed of two primary colors together. An example of a secondary color is orange, made of red and yellow. Black and brown can be made of several colors.

The water moves through the filter paper and carries the marker chemicals at different rates along the paper. Chemists use chromatography to separate mixtures. It can aid law enforcement or forensics and is used by art experts to analyze original pigments when restoring paintings. For forensics, it could identify the type of pen that was used to write a document.

FOR MORE INFORMATION

Experiments

https://buggyandbuddy.com/chromatography-butterflies-separating-colors-in-markers/
https://www.acs.org/content/dam/acsorg/education/outreach/kidszone/kids-zone-investigate-with-chromatography.pdf

EXPERIMENTS

MOOOving colors

BEAR ELECTIVE

SUPER SCIENCE

Requirement 5

ALL: FUN SCIENCE ACTIVITY

Completion of Super Science adventure fulfills requirement 2 for Down and Dirty or Out of this World NOVA awards.

5 min: setup

10 min: do the experiment and explain it.

STEM

Explore Science (chemistry, soap, color mixing)

MATERIALS (PER SCOUT)

- Whole milk (enough to cover thin layer of dish)
- ~1 teaspoon dishwashing liquid (Dawn works well)
- Dinner plate or shallow bowl
- Food coloring
- Cotton swab or toothpick

PROCEDURE

1. Pour thin layer (about ¼" deep) of whole milk in pan. Wait until any waves have settled.
2. Place a single drop of food coloring in the dish. Put a drop of different colors in the dish center, but keep colors separated. Do not stir.
3. Dip the end of the swab into the center of the milk. What happens? What color changes do you observe?
4. Dip the other end of the swab into dishwashing liquid and touch the surface of the milk in the middle of the dish. Observe.
5. Try adding another drop of soap with the swab.

EXTRA: Try other kinds of milk with varying fat content and use the Scientific Method to study what happens.

SAFETY

COVID-19: Do individual experiments, without sharing.
CAUTION: Food coloring will stain hands and clothes.
CLEANUP: Pour down drain with lots of water.

the science

Milk is made of water, protein, fats and sugar. Homogenizing blends the milk products and breaks up the fat into tiny spheres called globules. The secret of why the colors move is the tiny drop of soap. Soap breaks up the fat globules because soap molecules are bi-polar. The positive (polar) end of the soap molecule dissolves in water and the non-polar end attaches to the fat molecule. Movement happens because the non-polar molecules are moving to bond with fat molecules. The food coloring is just along for the ride and allows us to see it happen. As the soap becomes mixed with the milk, the movement slows down and will eventually stop. The colors should spread out the most in skim milk and the least in half & half.

EXPERIMENTS

FOR MORE INFORMATION

This experiment:
http://blog.stemscouts.org/tinker-milk/
http://www.acs.org/content/acs/en/education/whatischemistry/adventures-in-chemistry/experiments/colors-move.html
http://www.stevespanglerscience.com/lab/experiments/milk-color-explosion/

Video
Steve Spangler (this experiment) https://www.youtube.com/watch?v=G1eIiQ2hNF8
How does soap work? https://www.youtube.com/watch?v=ga2ff1nO0uo

SODA BOTTLE ROCKET

WEBELOS /AOL

Adventures in Science

Requirement 3D and 3G

ALL: FUN SCIENCE ACT

20-30 min: setup and experiment

Adventures in Science can partially fulfil a requirement for the Down and Dirty, Out of this World and Swing! Nova awards

STEM

Explore Science (chemical reactions) Mathematics (measurements)

MATERIALS (PER SCOUT)

- 2-liter soda bottle, empty
- Strip of paper towel, facial tissue or toilet paper, 4
- in. x 6 in.
- 2 tablespoons baking soda
- 1 cup water
- 2 cups vinegar (inexpensive brand works well)
-

MATERIALS (PER GROUP)

- Funnel
- Measuring Cup
- Board
- Cork that fits the soda bottle.
- Hammer and nail

Optional: craft materials to decorate the rocket

SETUP (ADULT)

1. Build rocket stand (see photo or video below).
2. Test cork to see if it fits bottle, adding tape around the cork if needed.
3. Drive screw or nail into board and place cork. This keeps the cork from flying away.

EXPERIMENTS

PROCEDURE

1. Make a baking soda packet by laying out the paper strip and pouring 2 Tablespoons of baking soda lengthwise along the middle of the strip. Fold up in a hot dog shape, twisting the ends.
2. Quickly put the baking soda packet in the bottle. Lightly place the cork on the bottle, turn over the rocket so it faces up and run away from it. Wait for the launch. It can take 30 seconds.
3. Experiment with different quantities of baking soda to see how high the rocket goes. How can you measure how high it flies? Can you consistently predict where the rocket will land?

SAFETY

CAUTION: Stand at least 10 feet away from the rocket when the cap is on and watch where the bottle is going so no one is in the direction of rocket travel. Attach cork firmly to board so it does not become a projectile. Wash hands after contact with the liquids. Flush the baking soda and vinegar solution down the drain with water.

COVID-19: Some items may need to be shared or used only by one person.

the science

Baking soda is a sodium bicarbonate, a base and vinegar a weak acid, acetic acid. When the two chemicals are combined, carbon dioxide gas is formed. The gas is seen as bubbles and foam at first. The gas expands in the bottle but needs more room, so it pushes the cork out of the bottle.
Newton's 3rd Law of Motion: for every action there is an equal and opposite reaction.

FOR MORE INFORMATION

Experiments
https://frugalfun4boys.com/epic-bottle-rocket-flew-higher-2-story-house/

Video
https://www.youtube.com/watch?v=NJlUwAqZXjk

IRON IN YOUR BREAKFAST CEREAL

STEM

Explore Science (magnetism, food science, solutions).

FUN EXPERIMENT IN FOOD SCIENCE

5 min: setup

1 hour experiment

MATERIALS (PER SCOUT)

- Strong magnet
- Washi tape or Duct tape
- Pencil

EXPERIMENTS

- Quart-size sandwich bag (strong with double zipper)
- 1 cup Total or Special K cereal or Cream of Wheat packet
- Plastic cup or dish (wide)
- Water

PREPARATION (ADULT)

1. Wrap magnet in piece of washi tape or duct tape with at least ½ inch extra tape. This is very helpful in case two magnets stick together.
2. Tape magnet onto the end of a pencil.

PROCEDURE

1. Open box of cereal in front of Scouts (to show you didn't tamper with it).
2. Put a flake on the table. Holding the handle of the pencil, place the magnet near the flake without touching the flake. Does the flake move toward or away from the magnet? (no)
3. Put water in dish or plastic cup. Each Scout should float a couple of large flakes on the water. Then the magnet around slowly above the water and see if the flake will follow the path of the magnet. Why does that happen?
4. Put about a cup of cereal (1 serving) into individual plastic bag for each person. Fill bag about half-full of water. Close the bag well. Carefully turn the bag over to mix a few times. Let sit for 30-45 minutes until it is brown and soupy. Chemists call that a "slurry."

5. With your hand and the magnet under the bag and gently slosh around. Carefully turn it over, keeping the magnet on the bag and see if there are any metal flakes near the magnet. That's iron.

SAFETY

CAUTION: The strong magnets stick together and are hard to separate. Cover with a large piece of tape, adding a tab to ease separation. They break easily if dropped.

Do not eat the cereal. Pour excess cereal and water mixture down the drain. Throw away the baggies and extra dry cereal.

COVID-19: Do the experiment individually. If the pencil and magnet are shared, clean and disinfect between Scouts.

EXPERIMENTS

the science

Iron is an essential element in our human body. Our bodies can't produce iron, but it's naturally in many foods like liver, raisins, spinach and peanuts. Hemoglobin contains iron. Hemoglobin is in red blood cells that carry oxygen from our lungs to our tissues. It also colors our blood red Vitamin C helps our body to absorb iron. It's so important for our body that it is sometimes added to our food products. Cereals are fortified with iron as a food supplement. Iron is magnetic. With a strong enough magnet, you can actually see the food grade iron filings that are added to cereal to meet the minimum daily dietary requirement of iron.

Fun Fact: if all the iron in your body was taken out, you would have enough iron to make two small nails.

FOR MORE INFORMATION

Experiments
https://www.scientificamerican.com/article/get-the-iron-out-of-your-breakfast-cereal-bring-science-home/

Video
For instructors: https://youtu.be/NHqN-Be5nlU
Steve Spangler: https://youtu.be/ZGmWLoyE6eM

DANCING RAISINS

STEM

TIGER ELECTIVE

Curiosity, Intrigue and Magical Mysteries

Requirement 1A and 5

ALL: FUN SCIENCE ACTIVITY

10 min: setup and experiment

Explore Science (chemistry, buoyancy).

MATERIALS (PER SCOUT)

- Raisins (fresh is best)
- 2 Clear plastic cups
- Clear carbonated soda
- Timer

PROCEDURE

1. Pour soda into plastic cups, about ¾ full. Drop 3 raisins into the liquid. Observe the raisins drop to the bottom, bubbles surround them and lift to the surface. Watch the raisins dance!

Observe the raisin that floated to the top the most often. Why do you think this raisin moved better than the others? Save your prize raisin.

1. Raisin Challenge: Add soda to a clean plastic cup. Drop a raisin in the cup when the leader says "Go!". The raisin that gets to the surface the most times in two minutes wins.
2. Observe the winning raisin. What qualities made it win? Pick a new raisin and mold, dent or shape it in a way you think it will win. Have another Raisin Challenge.

EXPERIMENTS

3. EXTRA: Try the experiment with smooth fruit like blueberries or grapes, or spaghetti pieces.

SAFETY

CAUTION: Dispose of food items and cups after use; do not eat.

COVID-19 – Do experiment individually.

the science

Is it magic? Well, no it's science – but it would make a great trick to show friends. Fizzy drinks contain bubbles of carbon dioxide that clings to the raisins. The bubbles make the raisins lighter and they rise. When the bubbles burst, the raisins fall to the bottom. The cycle repeats until the soda goes flat. The bubbles increase the *buoyancy* of the raisin. Buoyancy is the tendency of an object to float in fluids because of the upward force fluids exert on objects.

FOR MORE INFORMATION

Experiments

https://www.stevespanglerscience.com/lab/experiments/dancing-raisins-the-bubble-lifter/

https://coolscienceexperimentshq.com/dancing-raisins/

Also try Swimming Spaghetti: https://boyslife.org/hobbies-projects/funstuff/2184/weird-science/

ROBOT HAND

BEAR ELECTIVE

Robotics

Requirement 3

ALL: FUN SCIENCE ACTIVITY

15 min: setup and experiment

Completion of Robotics adventure fulfills requirement 2 for the 1-2-3 Go! Nova or Out of this World Nova awards

STEM

Explore Engineering and Technology (robotics).

Materials (per Scout)

- 1 piece of cardstock
- 2 drinking straws, pre-cut into 11 pieces 5/8" long*
- 1 Smoothie straw, pre-cut into 3 pieces 3/8" long*
- 1/8" wide ribbon, 5 different colors, each 18" long
- Tape
- Baggie - the length depends on the size of the hand.
- Lightweight items such as ping pong balls or cat toys

EXPERIMENTS

PREPARATION: (ADULT)

1. Trace hand onto cardstock. Cut out the hand.
2. Use scissors to precut straws and ribbon. Place in separate baggies.

PROCEDURE

1. Line up straws for each finger. Use tape to attach the straw pieces to the hand.
2. Thread ribbon through the straws.
3. Crease the cardstock at finger joints.
4. Tape the end of the ribbon on the back of each paper finger.
5. Thread the other ribbon end into the Smoothie straw with all the other ribbons.
6. You can pull each ribbon and a single finger or thumb will move.
7. Try picking up small items with robot hand.

SAFETY

CAUTION: If the youth are cutting out hand patterns or straws, there is the possibility of being cut from the scissors.

COVID-19: Do the experiment individually. If scissors are shared, clean and disinfect between use.

the science

This is a good activity to think about how the human body works, robotic technology used in industry and the world.

FOR MORE INFORMATION

Experiments

Robot Hand: https://cubscoutideas.com/7825/how-to-make-an-easy-cub-scout-robot-hand/
https://www.sciencebuff.org/scienceactivity/diy-robot-hand/

Videos

Robot Hand https://youtu.be/GJ_Zki8e8Kw

EXPERIMENTS

QUIRKY EXPERIMENTS

STEM

Explore Science (vision, symmetry)

TIGER ELECTIVE

Curiosity, Intrigue and Magical Mysteries

Requirement 1A and 5

ALL: FUN SCIENCE ACTIVITY

10 min: setup and experiment

MATERIALS (PER SCOUT)

Marble or small crumpled up pea-sized piece of paper
A chair might be helpful for the first experiment.

PROCEDURE

1. **Spin your foot and draw at the same time**
Lift your right foot slightly and rotate it clockwise. At the same time with a finger in your right hand try and draw a large number "6" in the air. Concentrate on it. Can you do it?

2**. Ring finger riddle**
Put your hands together like they are giving each other a high five. Can you fold down your thumb? That's pretty easy. Separate and fold down your index finger, and then try your pinky finger. Again, easy. Now try your ring fingers. Very difficult, if not impossible.

3. **Floating Finger Trick**
Put two fingers in front of your face, straight and horizontal and separated by a few inches. Stare in between the two fingers. Slowly bring them together. At some point you will see a floating "sausage" finger . If you try and look at the sausage finger it will disappear, you can only see it when you are looking at something distant from your fingers. Best if the background is homogeneous and a different color from your fingers.

4. Aristotle's Illusion
Cross your middle finger over your pointer finger as shown in the figure on the left. Touch a marble or piece of paper crumbled up in the size of a pea. Close your eyes How many items do you feel? (you should feel two items)

SAFETY

COVID-19: Do the experiments individually. Clean and disinfect marbles between Scouts or use crumpled paper.

the science

1. **Spin your foot and draw at the same time**
It's nearly impossible to do this experiment. Your brain is very good at doing things the same direction, like walking and running.

2. **Ring finger riddle** - The tendons in your hand connect each finger separately except your middle and ring fingers. These tendons are shared, and that's why it's very hard to move those fingers independently.

EXPERIMENTS

3. **Floating Finger Trick** - Since your eyes are separated and not both above your nose in the center of your face, you are looking from an angle. This causes kind of double vision. Also, when your brain sees two different images, it tried to combine them.
4. **Aristotle's Illusion** - Your fingers are used to touching items on the insides of your fingers. When your fingers are crossed, you are touching the item with the outsides of your fingers. This confuses your brain. This was first noted by a Greek philosopher, Aristotle.

FOR MORE INFORMATION

Experiments
https://www.bbc.co.uk/programmes/articles/55Bf7PYTWHDRLBzFQgTXRNV/six-quirky-science-experiments-you-can-do-on-yourself-right-now

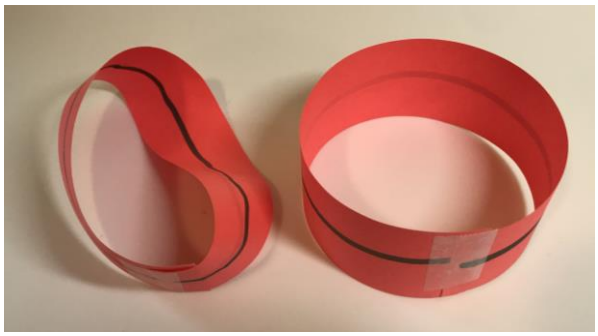
Floating Finger Trick
https://youtu.be/2Z3uIZ__5Ug
https://michaelbach.de/ot/sze-Frankfurter/

Aristotle's Illusion
https://psychologicalscience.blog.gustavus.edu/2020/04/09/a-hands-down-simple-illusion-the-aristotle-illusion/
Baysan, U. and Macpherson, F. (September 2017), "Aristotle's Illusion" in F. Macpherson (ed.), The Illusions Index. Retrieved from https://www.illusionsindex.org/i/aristotle .

MÖBIUS STRIP

FUN EXPERIMENT

15 min experiment



STEM

Mathematics (topology)

MATERIALS (PER SCOUT)

- 2 strips of paper, 14-18 inches long, 2 inches wide
- Clear tape
- Scissors
- Pencil
- Colored pencil or crayon

PROCEDURE

1. Show how to make a loop, draw lines and cut along the lines.

2. Make a normal loop, like an "O" and tape the end together. On the outside, draw a line in the middle of the paper without picking up your pencil until the line joins the beginning. Did your pencil reach the inside of the loop? How many sides does your paper O-loop have?

EXPERIMENTS

3. Make a Möbius strip, a loop with one twist. Take the ends of the strip together and twist one end 180 degrees and tape the ends together. Make sure the tape is completely over the end of the paper. If you have trouble making this – see first reference below. Draw a line down the middle of this strip of paper back to where it started without picking up your pencil. Your pencil went inside and outside the loop of paper. How many sides does this loop have?

4. What happens when you cut along your line around the Möbius strip? Cut along the line. You may have to twist the paper as you cut. You should get one long twisted piece of paper.

5. Do you think this longer paper is Möbius strip? Find out by using a colored pencil to draw around the loop like you did before. How many sides does it have?

6. What if you cut this new long twisted loop? Now you get two interconnected strips!

EXTRA: Try using a 24" x 2" strips of paper and see what happens when 1, 2, or more twists are placed in the loop.

SAFETY

CAUTION: Care when using scissors. Make sure the tape holds well and the paper doesn't easily tear.
COVID-19: If scissors are shared, disinfect between use.

the science

The Möbius strip was discovered in 1858 by August Möbius, a German mathematician studying geometric surfaces. The discovery kickstarted the study of topology. Topologists study the properties of an object when it is rotated, stretched or twisted. The Möbius strip is a one-sided object.

The O-loop has one side with a line marked on it and one side that does not have a line – it's a two-sided object. The Möbius strip has only one side with a line marked on it – it is a one-sided object. Cutting the Möbius strip produces a loop with many twists. Cutting along this new loop produces two intertwined twisted loops.

FOR MORE INFORMATION

Experiments
https://www.physics.wisc.edu/ingersollmuseum/wp-content/uploads/sites/10/2020/04/Mobius-Strip-Activity-2-pages.pdf
History and Cool Escher video of Möbius strip with red ants https://www.smithsonianmag.com/science-nature/mathematical-madness-mobius-strips-and-other-one-sided-objects-180970394/

EXPERIMENTS

BALLOON BLOW-UP EXPERIMENT

STEM

Science (chemical reactions) Mathematics (measurements, volume)

WEBELOS/AOL ELECTIVE

Adventures in Science

Requirement 3G

ALL: FUN SCIENCE ACTIVITY

15 min: setup and experiment

Adventures in Science can partially fulfil a requirement for the Down and Dirty, Out of this World and Swing! Nova awards

5 min: setup

15-20 min: experiment

MATERIALS (PER SCOUT)

- Balloon (round)
- 1 Tablespoon Baking Soda
- Funnel
- ¾ cup Vinegar
- 2-liter Water (empty)

SHARED

- Bucket filled with water
- Tray with raised edges to hold bucket
- Measuring cup
- Measuring spoon

PROCEDURE

1. Add 1 Tablespoon of baking soda to the unfilled balloon through a funnel. Important: Either wash and dry funnel before next step or use a separate funnel.
2. Pour ¾ cup of vinegar to the water bottle using the funnel.
3. Attach the balloon to the top of the water bottle, being careful to not let any of the baking soda slip in until you are ready. What will happen when you lift the balloon?
4. Quickly tip the vinegar so it mixes in with the baking soda.
5. Watch as your balloon blows up.
6. Pinch then end of the balloon and carefully remove from the bottle.
7. Measure the amount of gas produced. Start with a bucket filled with water up to the very top. It should be placed in a dry tray. Push the balloon carefully under the water, without putting your fingers, hands, or arm into the water.
8. Pick up the bucket carefully off the tray without spilling.
9. Pour the water into the measuring cup.

EXPERIMENTS

EXTRA: Change the amount of baking soda or vinegar. Use the scientific method to predict what happens, observe and measure the results.

SAFETY

CAUTION: Cover tables in case of spillage. Be careful transferring baking soda and vinegar. Best to do the bucket measurement outside or with a container under the bucket to catch the spilling water. If a smaller bottle is used, adjust ingredients (2 teaspoons baking soda to 1/3 cup vinegar).
COVID-19: do the experiment individually. It is possible to share the bucket and tray to measure the volume produced, if one person uses the measuring cup for the group.

the science

When baking soda (a base) and vinegar (an acid) mix, they form carbon dioxide, a gas. The gas expands to fill the container and continues to expand as the reaction proceeds to fill up the balloon.

The balloon volume produced would be easy to measure if it was a sphere. You could then just measure the diameter of the balloon and calculate the volume. Archimedes discovered a way to measure the volume of an irregular shaped object, by submerging it in water.

FOR MORE INFORMATION

Experiments

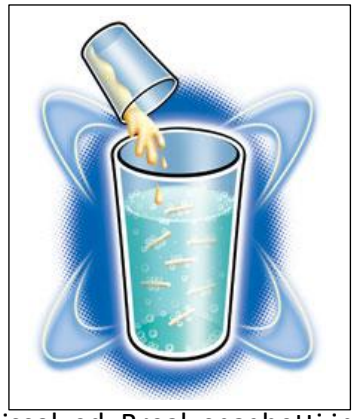
https://coolscienceexperimentshq.com/balloon-blow-up-science-experiment/
http://www.couponsaregreat.net/science-experiments-kids-blow-balloon-vinegar-baking-soda/

Use a plastic baggie: https://theappliciousteacher.com/fun-and-easy-science-in-classroom-gues/

SWIMMING SPAGHETTI

Make spaghetti do tricks with this fun and fizzy experiment.

What You Need:



- uncooked spaghetti
- 1 cup of water
- 2 teaspoons of baking soda
- 5 teaspoons of vinegar
- tall clear glass

What You Do:

Put water and baking soda in the glass. Stir until the baking soda is dissolved. Break spaghetti into 1-inch pieces. Put about 6 pieces in the glass. They will sink to the bottom. Add vinegar to the mixture in the glass. Observe what happens to the pieces of spaghetti. Add more vinegar as the action starts to slow down.

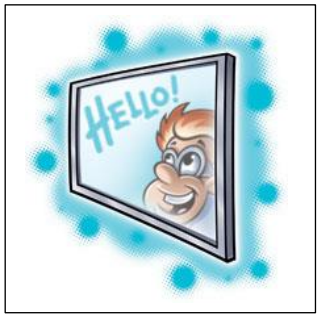
EXPERIMENTS

What's Going On:

When baking soda and vinegar are mixed together, a chemical reaction occurs. It produces a gas called carbon dioxide, which forms lots of bubbles on top of the mixture and smaller bubbles at the bottom of the glass. These little bubbles stick to the spaghetti and make it float to the surface, just as you do when you sit on a swimming pool noodle! When the spaghetti reaches the surface, the bubbles pop and the spaghetti sinks to the bottom. (BOYS LIFE MAGAZINE)

WRITE A SECRET MESSAGE

Write an invisible message on a mirror using a soapy solution and a cotton swab. The secret message will appear only in a foggy room.



What You Need:

- liquid dishwashing detergent
- cup of water
- a few cotton swabs
- hand mirror or bathroom mirror

What You Do:

Place a few drops of dishwashing detergent into the cup of water. stir to mix well. This is your secret message "ink". Dip a cotton swab into the soapy solution. Write a short message on the mirror. When the liquid dries, the message will be invisible. (If not, use a little less of the solution.)

When you take a hot shower or bath, do not get the mirror wet, but get the mirror close enough to the steam from the water so that it gets fogged up. Close the door so the steam stays in the bathroom. Observe what happens. Can you read the message?
More fun: Write a message and wait until someone else takes a shower or bath. See how quickly they discover your secret.

What's Going On :
The steam on the mirror is made up of water molecules. These tiny drops of water stick together on the mirror because of a force called surface tension. The liquid dishwashing detergent breaks the surface tension of the water. Wherever there is detergent, the water molecules are unable to form into droplets. The words written with the soapy solution stand out clearly against the foggy background of the mirror.

FISH IN A BOWL: MAKE A MOVIE

Fool your eyes with this experiment. Using a homemade thaumatrope (THAW-muh-troap), you can combine two pictures into a single image by quickly flipping the pictures back and forth.

What You Need:

- small piece of cardboard, about 2 inches by 3 inches
- sharpened pencil or pen to make holes in cardboard
- two pieces of string tape
- two small pieces of paper

EXPERIMENTS

What You Do:
Cut out a small piece of cardboard and punch holes in each corner. On both sides, write a small "X" in the center of the cardboard.

Cut out two pieces of white paper that are a little smaller than the cardboard piece. Make sure the holes will not be covered up when the paper is placed over the cardboard.

On one piece of paper, draw a fish. On the other, draw a fishbowl. Be sure to draw the fishbowl larger than the fish.

Tape the picture of the fish on one side of the cardboard, so that the fish is directly over the "X".

Tape the fishbowl on the other making sure the bowl is centered on the "X".

Thread one piece of string through the two holes on one side. Thread the other piece of string through the two holes on the other side.

Twist the strings together on each side. Pull the strings as though you are trying to stretch a rubber band. This will make the cardboard twirl. Watch the pictures. Does it look like your fish is in the fishbowl?
More fun: Draw a picture of a bird and a birdcage or anything else you can imagine!

What's Going On:
Your eye sees the image of the fish for a short time after it is gone. By that time, the picture of the fishbowl is in sight, and you seem to see both pictures at once. The same thing happens at the movies. If you look at a piece of movie film, you'll see that it is a series of pictures separated by black spaces. These pictures with black spaces in between are flashed on the screen so fast that your eye cannot see the individual pictures or the black spaces.

EXPERIMENTS

MAKE A LAVA LAMP

Here's an easy yet amazing way to make your own "lava lamp'.

What You Need:

- cooking oil, such as vegetable oil
- cold water (no ice)
- salt water glass
- food coloring
-

What You Do:

Fill the glass about three-quarters full of cold water. Stir in a few drops of food coloring. Can you guess what will happen when you add oil to the water? Will they mix together or separate? Which will be on top? Add some cooking oil until you have about a half-inch layer of oil on top of the water. Wait until the oil and water have separated into two layers before the next step. Sprinkle salt on top of the oil. Keep adding salt to see what happens.

What's Going On:

The oil is lighter than water, so it floats. The salt is heavier than both the oil and the water, so it sinks. As the salt passes through the oil layer, it picks up blobs of oil, which cling to the grains of salt temporarily and sink to the bottom of the glass. Then the oil breaks free from the salt and floats to the top.

FUN WITH PAPER CLIPS

See how many paper clips it takes to make a full glass of water overflow.

What You Need:

- clear plastic cup
- 100 small metal paper clips
-

What You Do:

Fill the cup to the top with water.
Guess how many paper clips it will take to make the water overflow. Write down your guess.
Carefully drop one paper clip at a time into the cup. Count how many it takes to make the water overflow.
Was your guess close?

EXPERIMENTS

Look at the cup from the side. The water is bulging upward like a balloon!
More fun: Fill the sink or a dish with water. Carefully lay a small piece of paper on top of the water. See how many paper clips you can put on top of the paper before it sinks. Try using different sizes of paper.

What's Going On:
Drops of water stick to each other. That is why the surface of the water bulged when you added the paper clips. Scientists call this surface tension. The surface tension of the water is what held up the floating paper until the weight of the paper clips became too heavy.

SHARPIE SOLUBILITY EXPERIMENT

Materials

- Sharpie markers
- 3 small plastic cups labeled water, vinegar and alcohol
- 3 coffee filters
- white vinegar
- rubbing alcohol
- water
- scout lab sheet

Place scouts in small groups or partners with the above materials needed to carry out their experiment.

Procedure
Draw several circles in the center of 3 coffee filters. Fold the coffee filters in half twice.

EXPERIMENTS

Ask scouts to consider the questions, “Are Sharpie pens really permanent?” and write a hypothesis on their lab sheet. Next, scouts make predictions about what will happen to the ink after the coffee filters are placed in each liquid.

Gently place the folded coffee filters in each cup and observe any changes for about 10-15 minutes.

RAIN CLOUD SCIENCE EXPERIMENT

Materials

- Mason Jar or clear cup
- Food Coloring
- Shaving Cream (Foam not Gel)
- Pipettes
- Water

Step 1: Prep for experiment

- Mix blue food coloring with a small amount of water
- Fill wide mouth jar or clear glass nearly to the top with water

Step 2: Create Cloud

- Add shaving cream on top of the water to create a “fluffy cloud”
- Let the shaving cream settle for a couple of minutes

Step 3: Add food coloring

- Invite your scout to add slowly add food coloring “rain” to the “cloud” using the pipettes
- Continue to add drops of “rain” into the cloud

Step 4: Watch and talk!

- Observe what happens!
- After a couple of minutes, you will see the “rain” coming out of the cloud into the water
- Ask what they see
- Verbalize what you see
- Invite your scout to record their observations on the same piece of paper that their predictions were written on.

EXPERIMENTS

- Observations can be through pictures and/or words!
- Explain to your scout the science behind the experiment

JUMPING POPCORN

Materials

- Mason jars
- Alka-seltzer tablets
- Popcorn kernels
- Baking Soda
- Vinegar
- Oil
- Stop watch

Directions

- Fill each jar half-way with your liquid of choice. Use water, oil, or vinegar.
- Cover the bottom of each jar with a layer of popcorn kernels.
- Add the reactant to the jar and observe.
- You may need to stir the popcorn kernels up a bit to get them to start jumping.
- Time how long each set of kernels continues to bounce.
- The longest-lasting jar has the longest reaction time.

HOW TO MAKE AN EGGSHELL DISAPPEAR

The eggshell dissolves because eggshells contain calcium carbonate, the main ingredient in many antacid tablets. This dissolves in the acidic vinegar to produce calcium ions (which stay dissolved in the vinegar) and carbon dioxide gas. The carbon dioxide produces the bubbles that you will see while the egg is

dissolving. Now that you know the science behind this cool activity, below is everything your scouts need to give this fun science experiment a try!

Disappearing Egg Activity

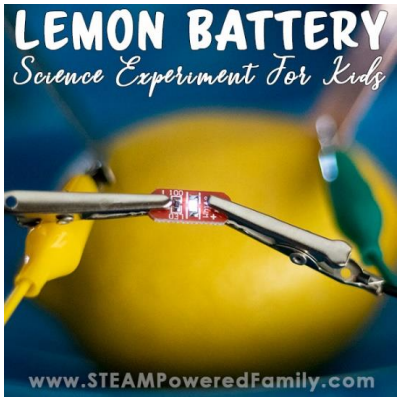
Materials

- 16-ounce mason jar with lid and ring
- white vinegar
- fresh egg
-

Directions

1. Gently place the egg into the mason jar.
2. Fill with vinegar leaving 1/2" space at the top. It is important to leave room at the top of the jar or it might burst from the carbon dioxide gas produced by the reaction.
3. Loosely cover the jar with the lid and ring. Again, make sure it is not too tight so that the gas can escape the jar.
4. Let sit for about two days. Remove from jar and rinse off in water. Enjoy your shell-less egg!

LEMON BATTERY SCIENCE EXPERIMENT



Materials

- Lemons! (***Insider tip****, you need at least 4 to create enough energy, but why not grab extras and experiment?)*
- Copper plates
- Zinc plates
- Alligator clips with wires (2 per cell, so minimum 8 if you are creating a 4-cell battery)
- LED light bulbs
- Multimeter
- Knife
-

Lemon Battery Science Experiment

The first step is to roll the lemons. Just like you would if you were about to eat or juice them. This releases the juices inside and we want our lemons as juicy as possible.

EXPERIMENTS

Start with one lemon and make a small cut through the peel on either end. It is very important that you place these far enough apart that the electrodes don't touch.
Insert a copper plate on one side and a zinc plate on the other side.

Now using your multimeter test your energy levels. We have energy!

Now it is time to start adding more cells (lemons) to our battery. Repeat the above steps on a second lemon. Once you are finished use an alligator clip to connect the zinc plate on the first lemon to the copper plate on the second lemon.

Test your energy level with 2 cells (you will test by touching the copper plate on the first lemon and zinc on the second). Remember you are completing the circuit.

Now repeat the steps to add a third and fourth cell. At 4 cells we are now registering more energy than 2 AA batteries, which we tested in our Potato Cell experiment**.**

WALKING WATER EXPERIMENT

Materials

- 6 small transparent jars or cups
- Paper towels / kitchen roll
- Liquid watercolor / food coloring
- Water
-

STEP 1: Get your supplies ready

- Before beginning this walking, water science experiment make sure that you have all the supplies that you will need to hand. For this experiment it is handy to have all the supplies set up on one tray so that it is easy for the kids to independently get what they need. Setting the experiment up on a tray means that it can easily be transported if you need to move it overnight too.

STEP 2: Prepare the jars with colored water

- Once you have all your supplies to hand the first thing that you will need to do is prepare the jars.
- Once the jars are about three quarters full add a few drops of liquid watercolor (or food coloring). You will need to add red, blue and yellow coloring to the jars (see image below).

STEP 3: Place the jars in a circle

- You will now have 3 jars full of colored water and 3 empty jars. Place all the jars into a circle and alternate them so you have a jar with colored water and then an empty one.

STEP 4: Predict what will happen

- Before you add the paper towels to the colored water to complete the walking water experiment you might want to take a few minutes to predict what might happen. Tell your scout that you will be adding paper towels to the colored water and ask them what they think will happen? This is a great time to talk about color mixing and for scouts to think about what will happen when the primary colors combine.

STEP 5: Add paper towels

- We are nearly at the exciting part of this water science project! Take 6 paper towels. Fold each paper towel in half and then in half again so you have created a long strip. Then dip each paper towel strip into one of the colors and the connecting empty jar.

STEP 6: Watch the colored water walk along the paper towels to create a rainbow!

FLOAT A NEEDLE

Is it possible to float a needle on water? You can if you know how to use surface tension.

Materials

- A bowl or pan
- Water
- A small piece of paper, about 1 1/2 inches (4 cm) square
- A sewing needle
- (Laundry detergent - for part 2 of experiment)

Directions

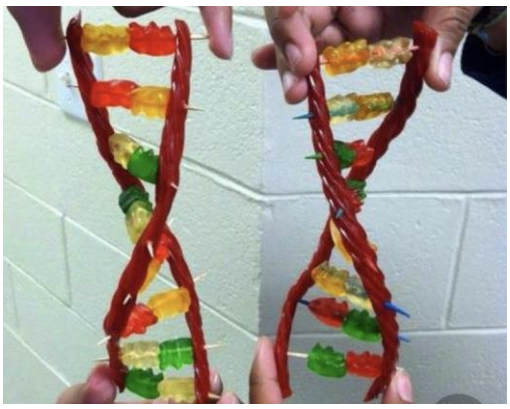
1. Fill the bowl or pan with water.
2. Float the piece of paper on the water
3. Put the needle in the middle of the paper
4. Carefully push the edges of the paper down into the water. As the paper gets wet, it will sink and leave the needle floating.

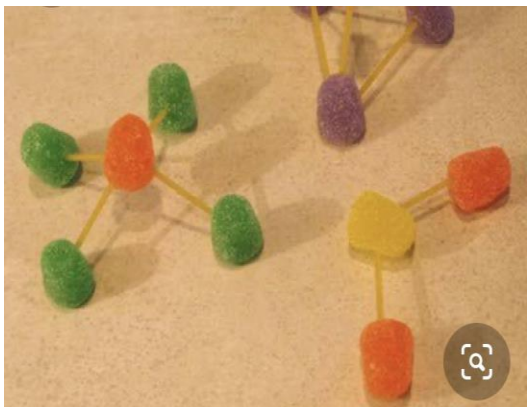
Surface tension makes it possible to float the needle on water. The molecules on the surface of water stick close enough together that, under the right conditions, they can make something float that would not ordinarily do so.

How can you break the surface tension and make your floating needle sink? Just add 1 drop of laundry detergent. Even 1 drop breaks the surface tension of the water. The water molecules spread apart, and the needle sinks to the bottom.

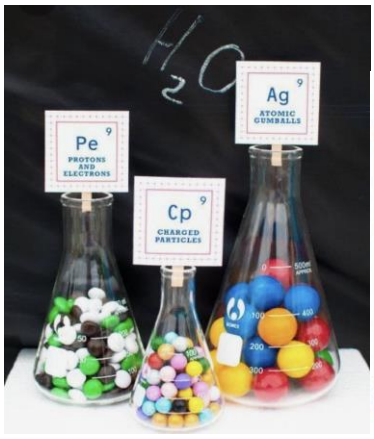
Another experiment to try: Try floating a toothpick.

SNACK IDEAS





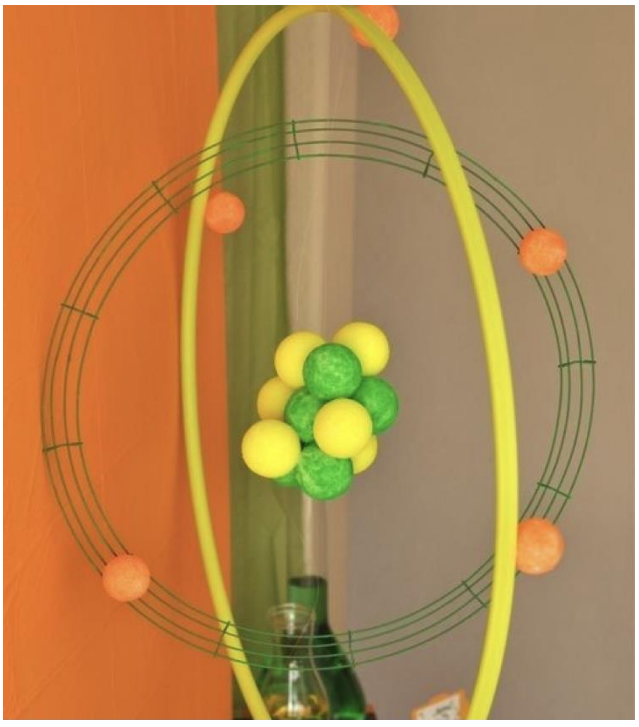

H2O


Pe 9
PROTONS AND ELECTRONS
Cp 9
CHARGED PARTICLES
Ag 9
ATOMIC GUMBALLS

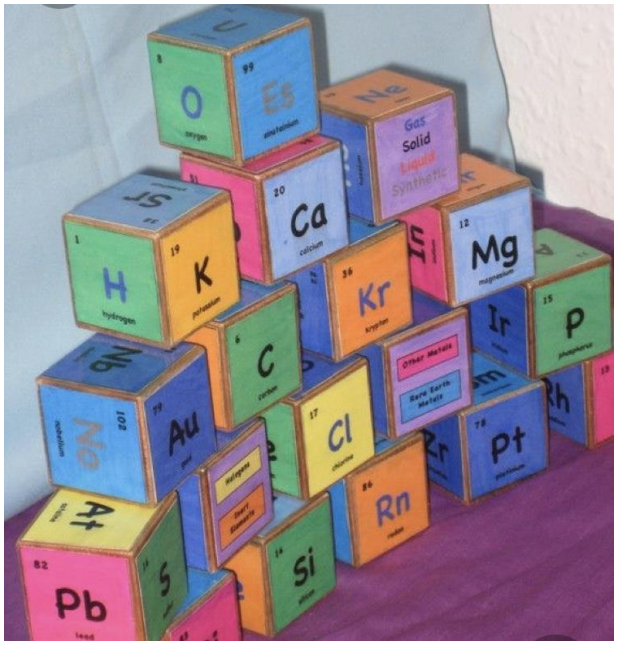

ATOMS

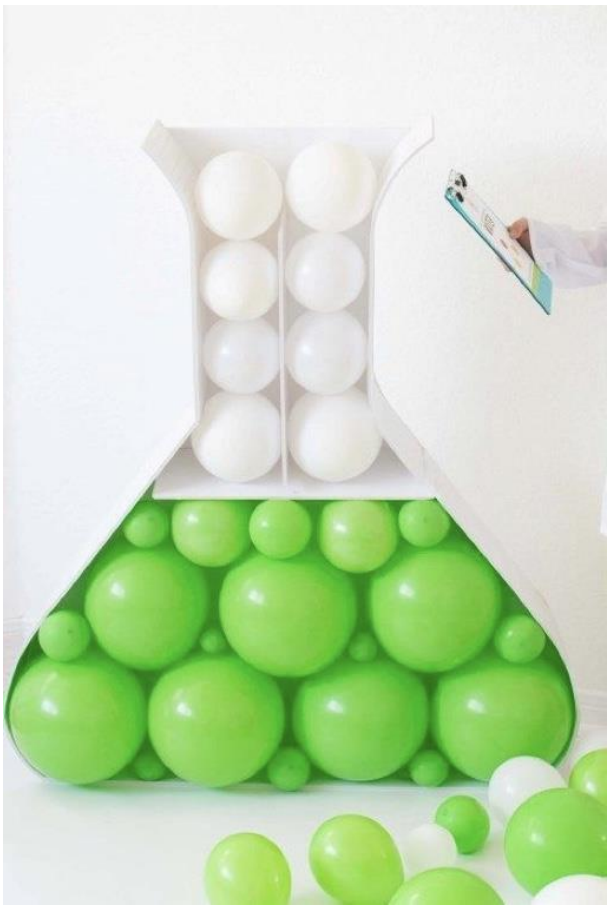
SNACK IDEAS

THEME RELATED IDEAS



THEME RELATED IDEAS





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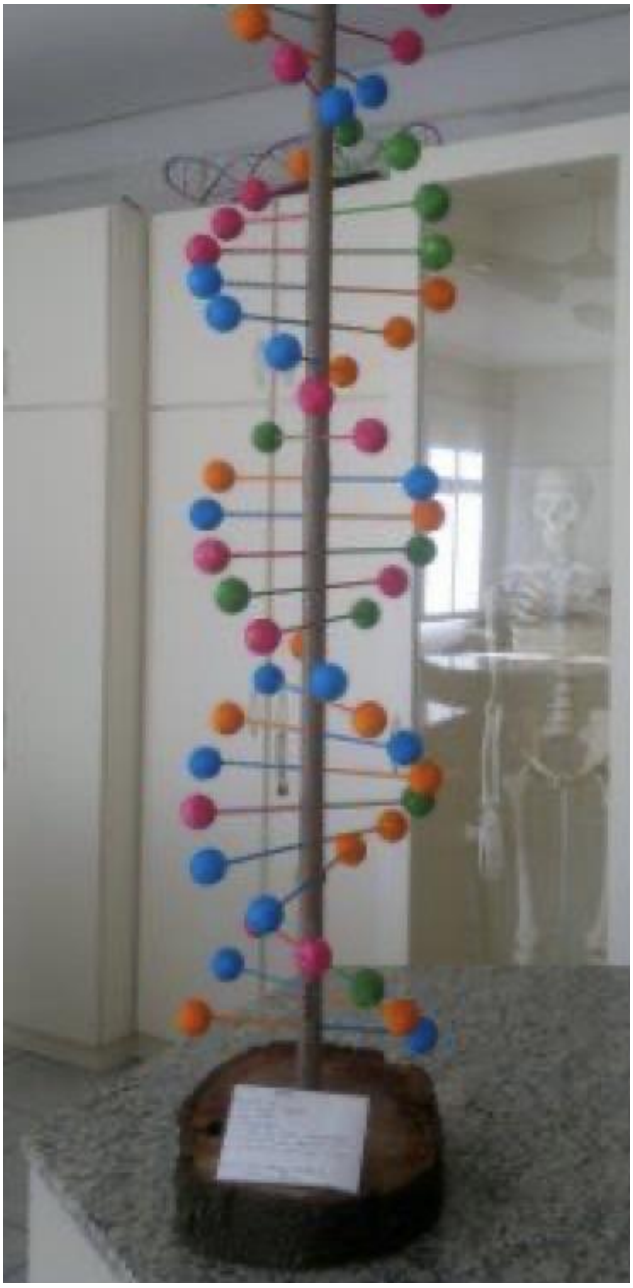

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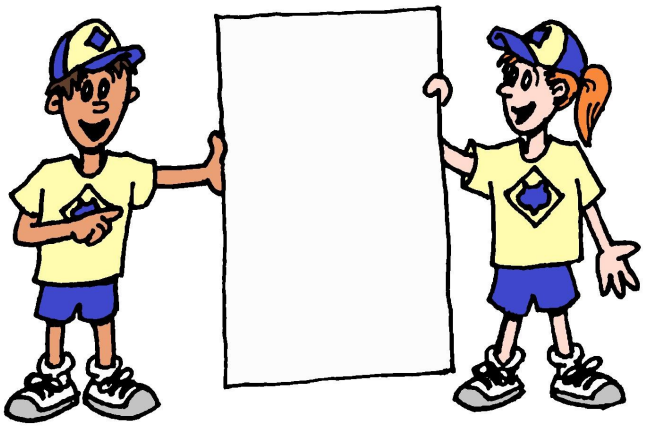

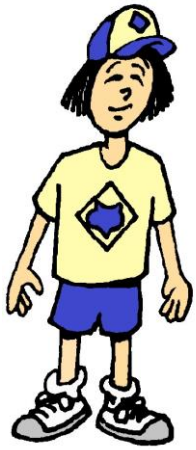

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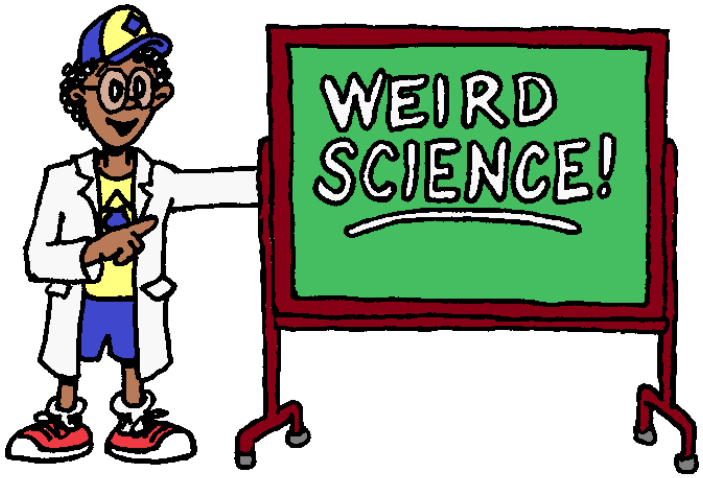

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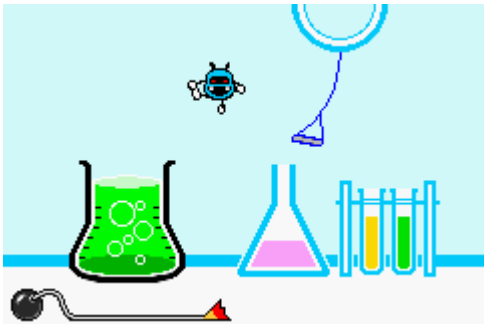

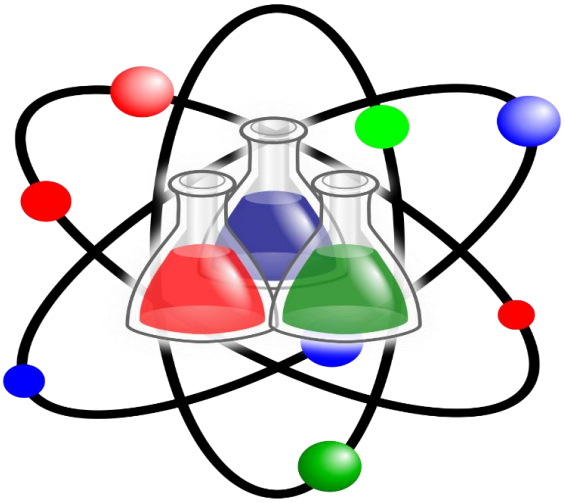

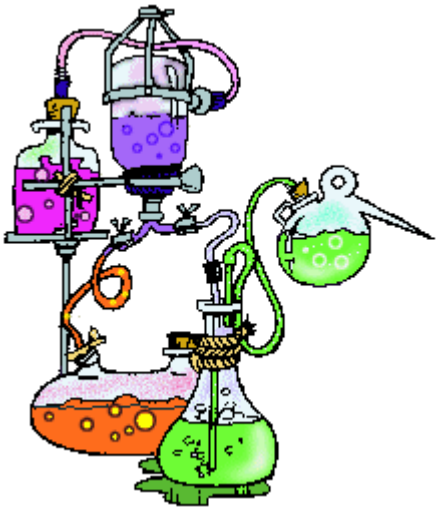

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UPCOMING THEMES

Dear Day Camp Directors, Program Directors and Day Camp Volunteers!

We would like to take this opportunity to say "thank you" for your dedication to Cub Scout Day Camp! The work that you do is important to the success of each of our cub scouts Day Camp experience.

Each year, the Camp School Resource Book Team gathers information to put together a Resource Book full of ideas for Camp/Program Directors to use in their Day Camp. The book is full of great ideas shared by others that will help in planning and implementing your day camp, helping to make it full of fun and adventure!

We would like your help in making the Resource Book an even better resource for all to use. ***How can you help?*** We are looking for activities, crafts and other ideas that are appropriate to be used at Day Camp. Anything that you would like to share with others that you think will help make their Day Camps fun, exciting and memorable for their Cub Scouts.

Here are upcoming themes for Day Camp:

2022 – Frontier Days
2023 – Off to the Races

Here are a few ideas we received:

Outdoor Adventure
Americana

Our Resource Book editor is Toni Welch and she would love to have you share material with her. You can contact her at bufalost2@gmail.com. You can start sending her material now so that she has a head start!

THEME SELECTION!

We are in the process of selecting themes for 2024 and beyond and would like your theme ideas! What themes have you used in your day camps that have been fun and exciting for your campers? Let us know so we can make sure we have some great camp themes for all to enjoy! You can send your ideas to Toni at bufalost2@gmail.com.

Questions, comments, ideas? We would love you to share them with us. Please contact Toni Welch at bufalost2@gmail.com. Wishing you all an awesome Day Camp!

Resource Book Team