	RAFT RESPONSE TO GSA PROJECT REQUIREMENTS				
	Select Scout Level:				
	Daisy				
	Brownies				
	Junior				
	Cadette				
	Ambassador				

RAFT RESPONSE TO GSA PROJECT REQUIREMENTS						
Scout Level: Dasiy						
Badge	**Activity Kit/ Idea Sheet Name**	**Kit?**	**Online?**	**Main Topics**	**Description**	**Grade Level(s)**
Money Counts	Produce Stand			Adding and Subtracting Money, Problem Solving, Mathematical Reasoning	This game allows students to practice the mathematical skills involved in making simple purchases.	**Grade Level(s)**
Money Counts	Greedy			Money, Coins, Equivalents, Addition	The goal of the game is to buy any toy you can afford at every chance you get, providing a lot of opportunity to practice counting and adding money.	K - 3rd
Money Counts	Window Shopping			Money, Counting, Adding, Subtracting, Problem-solving	This activity was inspirited by the song "How Much Is That Doggy In The Window". This activity encourages students' understanding of the value of money.	Pre - 2nd
Money Counts	Dollar Daze			Money, Coins, Addition	Students race to collect a dollar in change in this fast-paced game that teaches the value of coins.	K - 3rd

RAFT RESPONSE TO GSA PROJECT REQUIREMENTS						
Scout Level: Dasiy						
Badge	**Activity Kit/ Idea Sheet Name**	**Kit?**	**Online?**	**Main Topics**	**Description**	**Grade Level(s)**
Making Choices	Produce Stand			Adding and Subtracting Money, Problem Solving, Mathematical Reasoning	This game allows students to practice the mathematical skills involved in making simple purchases.	K - 3rd
Making Choices	Greedy			Money, Coins, Equivalents, Addition	The goal of the game is to buy any toy you can afford at every chance you get, providing a lot of opportunity to practice counting and adding money.	K - 3rd
Making Choices	Window Shopping			Money, Counting, Adding, Subtracting, Problem-solving	This activity was inspirited by the song "How Much Is That Doggy In The Window". This activity encourages students' understanding of the value of money.	Pre - 2nd

RAFT RESPONSE TO GSA PROJECT REQUIREMENTS						
Scout Level: Brownies						
Badge	**Activity Kit/ Idea Sheet Name**	**Kit?**	**Online?**	**Main Topics**	**Description**	**Grade Level(s)**
Household Elf	Keeping it Clean is Neat			Chemistry, Physical and Chemical Change, History	Soap is such an everyday part of our lives that we tend to take it for granted. Most students do not know that the basic ingredients needed to make soap are fat (such as lard) and lye (the active ingredient in many drain cleaners). Because students are so familiar with it, teachers can use melt-and-pour soap as a springboard to help students learn about many academic concepts, such as physical properties and phase changes.	K - 8th
Senses	Sensory Finger Mazes			Tactile sense, Observations, Maze	During this activity, young learners develop their tactile sense independent from their visual sense.	Pre - 8th
Senses	Guess What			Senses (touch), Physical Properties, Descriptive Words	A fun way for kids to practice description and communication while learning about physical properties.	Pre - 3rd

Senses	Sound Shakers			Sound, Waves, Senses (hearing)	This activity gives pre-school age children an opportunity to explore sounds by matching up containers that contain a variety of objects. All people learn in different ways. This activity appeals to both auditory and tactile learners. It helps develop gross motor skills and encourages attention to detail.	Pre - 3rd
Senses	What is That Smell			Sense of smell, Matter (Atoms and Molecules), Phases of Matter	The sense of smell helps us distinguish between food and non-food, good food or spoiled food, danger (such as smoke or animal markings) or safety, and so on.	Pre - 8th
Senses	Bed of Nails			Forces, Pressure	The old "Bed-of-Nails" trick is a great attention-getter, but it is really not a trick at all. Rather, it is a demonstration of force distribution and pressure. In this miniature, "safety" version, students can investigate the decrease in pressure on their skin with the increase of contact points.	4th - 8th
Senses	In the Bag			Tactile Sense, Observations, Attributes, touch	Students use their tactile sense and their problem solving skills to find a specific item - without being able to see what they are doing	Pre - 6th

Senses	Preform Sound Tubes			Sound, Waves, Senses (hearing)	This activity gives pre-school age children an opportunity to explore sounds by hearing the different sounds made by small objects. All people learn in different ways. This activity appeals to both auditory and tactile learners. It helps develop gross motor skills and encourages attention to detail.	Pre - 3rd
Senses	Color Mix "Pudding"			Color Mixing, Properties of Materials, Observing and Describing, Vocabulary	Children will create secondary colors by mixing primary colored (safe-to-eat) "pudding" in a reclosable bag.	Pre - 2nd
Senses	Colors of Light	Yes	Yes	Light, Color, Electromagnetic Spectrum	White light is actually a combination of different colors. This easy-to-build spectroscope creates a rainbow pattern (spectrum) by separating incoming light into its component colors. The interesting patterns it displays can be used to identify different sources of light. Experiment with a variety of colored filters and see how the images change!	K - 12th
Senses	Simple Telescope	Yes	Yes	Light, Optics, Refraction, Astronomy	See how convex and concave lenses can be combined to magnify far-away objects.	7th - 12th

Senses	Glove-a-Phone	Yes	Yes	Sound, Vibration, Music, Instruments, Properties of Materials	How can a plastic glove, a straw, and a tube be combined to make a "musical" instrument? Build a Glove-a-Phone to discover one way to accomplish this feat. Once you learn the proper technique, your Glove-a-Phone can be heard a surprisingly long way off! How is the sound produced? Careful observation is needed to answer that question.	K - 8th
Senses	Sound String			Sound, Vibration, Sound Transfer	Students can transmit sound using a simple device constructed from cups and string.	K - 6th
Senses	Pan Pipes			Sound, Waves, Musical Instruments	This quick-to-make instrument produces surprisingly nice tones. Students can actually tune their pipes and even play a tune.	K - 12th
Senses	Tongue Depressor Harmonica	Yes	Yes	Sound, Waves, Musical Instruments	People of all ages love the Kazoo-like sounds that come from this fun-to-make and easy-to-play instrument. The RAFT harmonica uses a rubber band vibrating between tongue depressors to make sound. Changing the length of the rubber band changes the sound. Start your own harmonica band today!	K - 8th

Senses	Straw Oboes	Yes		Sound, Vibrations, Musical Instruments	Players of these little noisemakers will never forget that sound is vibrations! Not only do you hear the sound (and annoy everyone around you), but you also feel the vibrations in your lips.	K - 8th
Senses	Match the Sounds			Sound, Waves, Senses (hearing)	This activity gives pre-school and primary school age children an opportunity to explore sounds by investigating sounds made by small objects. It helps develop observation skills and encourages attention to detail.	Pre - 3rd
Senses	Straw Noisemakers			Sound, Vibrations, Musical Instruments	Create a simple reed wind instrument using a straw. Add a second wider straw to make a "trombone" type slide so the pitch of the sound can be changed.	K - 8th
Senses	Hand Chimes			Sound, Waves, Musical Instruments	Investigate sound, music, and instruments or just enjoy the pleasing sounds of these simple hand chimes.	Pre - 8th
Senses	Cap Maracas	Yes		Sound, Instruments, Rhythm	Explore rhythms using these simple maracas in an activity that appeals to both auditory and kinesthetic learners.	Pre - 3rd
Senses	Balloonіacs			Sound, Hearing, Vibrations, Waves	Take these balloons for a spin to create fun sounds and great science investigations!	K - 8th

Senses	Rubber Trumpet			Sound, Vibrations, Waves, Instruments	Players of these little noisemakers will never forget that sound is vibrations! Not only do you hear the sound (and annoy everyone around you), but you also feel the vibrations in your lips.	K - 6th
Senses	Back in the Groove	Yes		Sound, Waves, History of Technology, Phonograph, record	This is a great activity for investigating sound. It might just be a history lesson about records for your students; and you can tell them, "No, this will not work with CDs."	2nd - 12th
Senses	Drop in a Little Bucket	Yes		Sound, Waves, Amplification	Could you hear a piece of paper if it was dropped into a cup? How small would the paper need to be for you to not hear it anymore? This quick and simple activity produces some amazing results!	K - 8th
Senses	Finger-Phone	Yes		Sound, Vibration, Music, Instruments	Create a musical instrument in minutes to explore the science of sound production!	K - 8th
Senses	Buzz Off	Yes	Yes	Sound, Waves, Forces and Motion	Give this little noisemaker a whirl to learn about the effects of air passing over a taut rubber band. As it vibrates, the rubber band can generate a surprising range of deep rumbling tones. How can the pitch be changed? Experiment to find the answer!	K - 8th

Senses	VHS Shamisen			Sound, Vibrations, Musical Instruments	Create this quick string instrument out of a scrap VHS tape and pluck to hear the sounds of Asia.	K - 8th
Senses	2-Tubaphones			Sound, Vibration, Musical Instruments	Make an instrument with an adjustable pitch to explore the science of sound waves and the art of music!	2nd - 8th
Senses	RAFTy Rainsticks			Sound, Environments, Cultures	Several different cultures use rainsticks in traditional ceremonies intended to, not surprisingly, make it rain. Authentic rainsticks made from different types of cactus plants or bamboo can be purchased, but you can also have your students make one with easily found materials.	Pre - 8th
Senses	I've Got Rhythm			Sound, Instruments, Rhythm	This activity gives pre-school age children an opportunity to explore rhythms using castanets, or clackers played with the hands. All people learn in different ways. This activity appeals to both auditory and tactile learners.	Pre - 6th
Senses	I Can Hear Your Heartbeat	Yes		Sound, Anatomy, Circulatory System	This simplified monaural stethoscope will allow students to hear the "lub-dub" of their heart a-pumpin' blood.	4th - 8th

Senses	Cheese Please			Mixtures, Biochemistry, Properties	The necessity for food preservation was just the beginning for this dairy staple.	4th - 8th
Senses	Tube Maracas			Sound, Instruments, Rhythm	This activity gives young learners an opportunity to explore rhythms using very simple, maraca-style, "shaker" instruments. All people learn in different ways. This activity appeals to both auditory and tactile learners.	Pre - 3rd
Senses	Floppy Spirit Drum			Sound, Celebrations, Instruments	Create these wonderful spirit drums to celebrate Chinese New Year and then use all year long.	K - 8th
Senses	Slick and Tactile Letters	Yes		Letter Recognition, Phonics, Primary Spelling	Students can trace these slick letters with their fingertips to reinforce letter shapes and sounds, blends, and even for spelling.	Pre - 1st
Senses	Black Box	Yes		Scientific Method, Logic, Data Collection, Analysis	Students shake, rattle, and roll these "Black Boxes" to try to determine the insides... but no peeking. Ever!!	4th - 12th

Dancer	VHS Tape Ribbon Wands			Creative Expression, Motor Skills	Offer a unique, fun and spectacular way of exploring movement and encouraging gross motor skill development in early learners. Students can use their imagination and creativity to discover the infinite possibilities with their ribbon apparatus as well as their own bodies.	Pre - 3rd
Dancer	Sound Shakers			Sound, Waves, Senses (hearing)	This activity gives pre-school age children an opportunity to explore sounds by matching up containers that contain a variety of objects. All people learn in different ways. This activity appeals to both auditory and tactile learners. It helps develop gross motor skills and encourages attention to detail.	Pre - 3rd
Dancer	Preform sound tubes			Sound, Waves, Senses (hearing)	This activity gives pre-school age children an opportunity to explore sounds by hearing the different sounds made by small objects. All people learn in different ways. This activity appeals to both auditory and tactile learners. It helps develop gross motor skills and encourages attention to detail.	Pre - 3rd

Dancer	Glove-a-Phone	Yes	Yes	Sound, Vibration, Music, Instruments, Properties of Materials	How can a plastic glove, a straw, and a tube be combined to make a "musical" instrument? Build a Glove-a-Phone to discover one way to accomplish this feat. Once you learn the proper technique, your Glove-a-Phone can be heard a surprisingly long way off! How is the sound produced? Careful observation is needed to answer that question.	K - 8th
Dancer	Sound String			Sound, Vibration, Sound Transfer	Students can transmit sound using a simple device constructed from cups and string.	K - 6th
Dancer	Pan Pipes			Sound, Waves, Musical Instruments	This quick-to-make instrument produces surprisingly nice tones. Students can actually tune their pipes and even play a tune.	K - 12th
Dancer	Tongue Depressor Harmonica	Yes	Yes	Sound, Waves, Musical Instruments	People of all ages love the Kazoo-like sounds that come from this fun-to-make and easy-to-play instrument. The RAFT harmonica uses a rubber band vibrating between tongue depressors to make sound. Changing the length of the rubber band changes the sound. Start your own harmonica band today!	K - 8th

Dancer	Straw Oboes	Yes		Sound, Vibrations, Musical Instruments	Players of these little noisemakers will never forget that sound is vibrations! Not only do you hear the sound (and annoy everyone around you), but you also feel the vibrations in your lips.	K - 8th
Dancer	Straw Noisemakers			Sound, Vibrations, Musical Instruments	Create a simple reed wind instrument using a straw. Add a second wider straw to make a "trombone" type slide so the pitch of the sound can be changed.	K - 8th
Dancer	Hand Chimes			Sound, Waves, Musical Instruments	Investigate sound, music, and instruments or just enjoy the pleasing sounds of these simple hand chimes.	Pre - 8th
Dancer	Cap Maracas	Yes		Sound, Instruments, Rhythm	Explore rhythms using these simple maracas in an activity that appeals to both auditory and kinesthetic learners.	Pre - 3rd
Dancer	Finger-Phone	Yes		Sound, Vibration, Music, Instruments	Create a musical instrument in minutes to explore the science of sound production!	K - 8th
Dancer	VHS Shamisen			Sound, Vibrations, Musical Instruments	Create this quick string instrument out of a scrap VHS tape and pluck to hear the sounds of Asia.	K - 8th

Dancer	2-Tubaphones			Sound, Vibration, Musical Instruments	Make an instrument with an adjustable pitch to explore the science of sound waves and the art of music!	2nd - 8th
Dancer	RAFTy Rainsticks			Sound, Environments, Cultures	Several different cultures use rainsticks in traditional ceremonies intended to, not surprisingly, make it rain. Authentic rainsticks made from different types of cactus plants or bamboo can be purchased, but you can also have your students make one with easily found materials.	Pre - 8th
Dancer	Tube Maracas			Sound, Instruments, Rhythm	This activity gives young learners an opportunity to explore rhythms using very simple, maraca-style, "shaker" instruments. All people learn in different ways. This activity appeals to both auditory and tactile learners.	Pre - 3rd
Dancer	Floppy Spirit Drum			Sound, Celebrations, Instruments	Create these wonderful spirit drums to celebrate Chinese New Year and then use all year long.	K - 8th
My Best Self	I Can Hear Your Heartbeat	Yes		Sound, Anatomy, Circulatory System	This simplified monaural stethoscope will allow students to hear the "lub-dub" of their heart a-pumpin' blood.	4th - 8th
My Best Self	Smoking Bottle			Health, Biology, Ethics, smoke	In this demonstration students see first hand evidence of some of the poisonous substances they would expose themselves to if they smoked a cigarette.	5th - 12th

My Best Self	Money You Will Save			Health, Money, Economics	Smoking is not cheap. Students discover the financial costs of smoking in this "shop with your savings" activity.	4th - 12th
My Best Self	Gasping for Air			Lung structure & Function, Asthma, Health	Use straws to demonstrate how an asthma attack can affect a person's breathing.	4th - 12th
My Best Self	Munchy Match	Yes		Healthy Choices, Sorting & Classifying, Body Structures and Systems, smoking	This twist on the classic game of match will help students identify and sort healthy foods from unhealthy choices.	Pre - 8th
My Best Self	More Time on Earth			Health, Statistics	While nothing in the game of life is guaranteed, making good choices, like not smoking, can make big differences. More Time on Earth shows players how not smoking will increase their chances of living longer.	4th - 12th
My Family Story	Envelope Book	Yes		Journaling, Memorabilia, Specimens	These fun, creative, and easy-to-make books will hold students' writings & treasures.	1st - 10th
Home Scientist	Overnight Crystals			Crystalline Solids, Solutions, Phases of Matter	Grow crystals overnight in this fun activity that can be used to teach solutions, phases of matter, solids, and crystal systems.	4th - 12th

Home Scientist	Static Merry-go-round	Yes	Yes	Static Electricity, Experimental Variables, Momentum, Electrically Charged vs. Uncharged	This unique adaptation of the world's first electric motor lets students create spinning motion using only hand-generated static electric charges.	4th - 12th
Home Scientist	Fog Rings				With a fog ring launcher students can explore waves, energy, extreme weather and how sound waves travel through the air.	3rd - 12th
Home Scientist	Hot Goes Up			Energy, Heat, Density	Convection is a method of energy transfer that occurs in fluids. In this activity, students use preform tubes to experiment with hot and cold water, observing what happens when fluids of different temperatures (densities) meet.	K - 12th
Home Scientist	Solar Cone Cooker	Yes		Solar heating, Radiant energy	Explore heating and "cooking" with sunlight using an easy to make mini solar cooker.	3rd - 12th
Home Scientist	Still Water			Water Cycle, Solar Energy	Demonstrate a mini water cycle and the power of solar energy by building a simple still to "purify" water that has been "contaminated" with food coloring.	3rd - 12th

Home Scientist	Leaf Mixture Chromatography	Yes	Yes	Chromatography, Mixtures, Photosynthesis, Pigments, Properties of Materials, Solutions	Photosynthesis is the process by which green plants combine carbon dioxide, water, and solar energy to create sugars for support and for food, releasing oxygen as a by-product. This activity reveals the pigments in leaves that enable plants to harness the Sun's energy, and gives students valuable hands-on experience using a common laboratory technique.	3rd - 12th
Home Scientist	Strawberry DNA Illustrated	Yes	Yes	Biology, Molecules, Cell Structure, Genetics, Scientific Tools, Lab Procedures	Use ordinary dish soap, salt, and isopropyl alcohol to extract DNA from strawberries. Just follow the illustrated guide. No special skills or equipment required.	4th - 12th
Home Scientist	Fizzy Rockets	Yes	Yes	Air pressure, Chemical reactions, Forces, Momentum, Motion, Newton's laws	These rockets enable students to use design thinking and are effective demonstrations of Newton's laws of motion. The liftoff power of the rocket is produced by a common acid/base chemical reaction that creates carbon dioxide gas; making this activity an ideal tool for teaching students about chemical reactions and how pressure can do work on objects.	4th - 12th

Home Scientist	Solar Collector	Yes	Yes	Solar Heating, Radiant Energy, Apparent Motion of Sun, Reflectivity	The Sun provides a daily source of free and non-polluting energy that can be collected and converted. Concentrate sunlight using a reflective collector and explore heating and "cooking" foods and other materials.	3rd - 12th
Home Scientist	Let It Glow	Yes		Chemical Reactions, Energy, Properties of Matter	Students love anything that glows! Use light-sticks (a.k.a. - glowsticks) to illustrate how chemical reactions can produce light and how temperature can affect reactions!	3rd - 12th
Making Games	File Folder Games			Information Classification, Memorization, Facts, game	Folder games are quick to create, inexpensive, and easy to store. They provide an engaging, developmentally appropriate way to practice skills. Games can be customized to teach any subject and feature seasonal themes.	Pre - 8th
Painting	Colorful Sun Painting	Yes		Solar Energy, Color Mixing & Primary Pigments	Expose this wonderful paint to water and the sun. "Sun- masked" paint fades and "sun-exposed" areas become dark, creating wonderful sun-imprinted images.	K - 8th
Painting	Magnet Painting			Color mixing, Eye -hand coordination, Properties of magnets	This activity provides an engaging opportunity to be creative while investigating the magnetic properties of various materials. Children will create new colors as they move the magnetic items through the paint.	Pre - 3rd

Painting	Freaky Fractals	Yes	Yes	Fractals, Patterns, Exponents, Exponential Growth, Decalcomania	A fractal is an amazing geometric pattern which, when viewed closely, shows itself to be constructed of ever-smaller parts similar to the original. Fractal patterns are everywhere: trees, shells, leaves, ferns, flowers, vegetables, rivers, coastlines, mountains, geologic faults, planetary orbits, circulatory systems, music, clouds, weather, and even lightning bolts!	K - 12th
Painting	Paintable Cover Books			Artistic Expression, Written Communication	These soft cover notebooks have the added feature of covers that look like paint canvases.	K - 12th
Painting	Foam Dowel Brushes	Yes		Painting, Art, Creative use of Materials	Young artists will enjoy building and using these economical art brushes.	Pre - 3rd
Snacks	Shake Your Butter	Yes		Biochemistry, Mixtures, Chemical Changes	No need for a huge churn to observe wonderful and tasty changes.	K - 8th
Snacks	Cheese Please			Mixtures, Biochemistry, Properties	The necessity for food preservation was just the beginning for this dairy staple.	4th - 8th
Bugs	Bug Pooter	Yes		Arthropods, Observation, Classification, Insects	Create a pooter, or "bug vac" to gently collect and study small creepy crawlies.	K - 10th

Bugs	Folded Flutter-bys	Yes		Art, Butterflies, Shapes, squares, diagonals, butterfly	Children will develop finger dexterity and eye-hand co-ordination as they create brightly colored butterflies to hang from a string or mobile. Reinforce the concept of the diagonal while accordion folding a square from corner to diagonal corner.	Pre - 4th
Money Manager	Taxi	Yes		Multiplication facts, Adding money, Counting by 10s	Move 42 spaces in 1 turn?! No problem for a fast-moving Taxi. Zoom around the game board over and over to collect TAXI FARE cards and win the game!	2nd - 8th
Money Manager	Greedy!			Money, Coins, Equivalents, Addition	The goal of the game is to buy any toy you can afford at every chance you get, providing a lot of opportunity to practice counting and adding money.	K - 3rd
Money Manager	Dollar Daze			Money, Coins, Addition	Students race to collect a dollar in change in this fast-paced game that teaches the value of coins.	K - 3rd
Money Manager	Money, Coins, Addition			Money, Coins, Addition	Players collect spare change from the "bank" and buy "toys" in this money game.	K - 3rd
Money Manager	Cents and Sensibility			Money, Coins, Equivalents, Addition	There are many different combinations of coins that add up to any particular amount. This game illustrates this concept of coin equivalents in a fun game challenge.	K - 3rd

Money Manager	Produce Stand			Adding and Subtracting Money, Problem Solving, Mathematical Reasoning	This game allows students to practice the mathematical skills involved in making simple purchases.	K - 3rd

RAFT RESPONSE TO GSA PROJECT REQUIREMENTS						
Scout Level: Junior						
Badge	**Activity Kit/ Idea Sheet Name**	**Kit?**	**Online?**	**Main Topics**	**Description**	**Grade Level(s)**
Camper	Solar Cone Cooker	Yes		Solar heating, Radiant energy	Explore heating and "cooking" with sunlight using an easy to make mini solar cooker.	3rd - 12th
Camper	Auto Sunshade Solar Collector	Yes		Solar Heating, Radiant Energy, Sunlight Absorption	Explore heating with sunlight using a solar collector that is easy to make and store.	3rd - 12th
Camper	Binder Cover Solar Collector	Yes		Solar Heating, Radiant Energy	Explore heating with sunlight using an easy to make and store solar collector.	3rd - 12th
Camper	Camp or Bust!			Journaling, Bookmaking, Observing	A journal for day or overnight camp	K - 8th
Gardener	Newspaper Planting Pots			Botany, Plants, Recycling, Resources	No need to buy pots to run plant investigations in the classroom! Use these simple pots made from newspapers. The best part is that the pots can go right into the ground with the seedlings when the time comes... no need to transplant.	K - 6th

Gardener	The Germinator	Yes	Yes	Botany, Plant Growth, Scientific Method	Create a reusable germinator that gives students an unobstructed view of sprouting seeds. Graph data, test environmental variables, or simply "enjoy the magic" as the seeds transform into growing plants!	K - 8th
Gardener	Jewel House			Solar heating, Radiant energy, Plant growth	This quick to assemble greenhouse can help sprout seeds and grow small plants. A greenhouse traps warmed air but does not demonstrate the "Greenhouse Effect"!	2nd - 8th
Gardener	Napkin Nursery			Germination, Plant growth	Germinate seeds in these inexpensive and easily made containers.	2nd - 8th
Gardener	Seed Ease			Craft, Plants, Recycling	The cover of a bulk CD container is easy to make into a decorative flower-pot. Use them for plant growth activities, or decorate them to give as functional, seasonal gifts.	K - 8th
Jeweler	Binary Birthday Bracelets	Yes		Binary Numbers, Place Value, Exponents, Number Bases	Learning about binary numbers (Base 2) incorporates number sense, exponents, and the conversion of numbers between different bases. Binary numbers are essential to the functioning of common digital electronic devices but are usually well hidden!	4th - 12th
Jeweler	Rebutton Up	Yes		Holidays & Observances, Symbolism	Get new life out of unwanted or out-of-date advertising buttons with this quick and simple activity!	K - 8th

Jeweler	Grow it and Wear it!	Yes		Life Science, Ecology, Botany	Celebrate Earth Day or spring by sprouting and wearing a seedling!	K - 8th
Detective	Fingerprint Detective			Life Science, Genetics, Forensic Science	Using a simple ink stamp pad, students can solve a classroom mystery by exploring how each person has unique fingerprints.	4th - 12th
Detective	Strawberry DNA Illustrated	Yes	Yes	Biology, Molecules, Cell Structure, Genetics, Scientific Tools, Lab Procedures	Use ordinary dish soap, salt, and isopropyl alcohol to extract DNA from strawberries. Just follow the illustrated guide. No special skills or equipment required.	4th - 12th
Detective	Who's the Daddy?	Yes	Yes	Biology, Biotechnology, DNA, Forensics, Genetics, Inherited traits	DNA fingerprinting is often seen in today's media. This simplified model helps students visualize the analysis process, understand the underlying concepts and applications of DNA fingerprinting, and develop collaboration skills as young scientists.	7th - 12th
Musician	Sound Shakers	Yes		Sound, Waves, Senses (hearing)	This activity gives pre-school age children an opportunity to explore sounds by matching up containers that contain a variety of objects. All people learn in different ways. This activity appeals to both auditory and tactile learners. It helps develop gross motor skills and encourages attention to detail.	Pre - 3rd

Musician	Preform Sound Tubes			Sound, Waves, Senses (hearing)	This activity gives pre-school age children an opportunity to explore sounds by hearing the different sounds made by small objects. All people learn in different ways. This activity appeals to both auditory and tactile learners. It helps develop gross motor skills and encourages attention to detail.	Pre - 3rd
Musician	Glove-a-Phone	Yes	Yes	Sound, Vibration, Music, Instruments, Properties of Materials	How can a plastic glove, a straw, and a tube be combined to make a "musical" instrument? Build a Glove-a-Phone to discover one way to accomplish this feat. Once you learn the proper technique, your Glove-a-Phone can be heard a surprisingly long way off! How is the sound produced? Careful observation is needed to answer that question.	K - 8th
Musician	Sound String			Sound, Vibration, Sound Transfer	Students can transmit sound using a simple device constructed from cups and string.	K - 6th
Musician	Pan Pipes			Sound, Waves, Musical Instruments	This quick-to-make instrument produces surprisingly nice tones. Students can actually tune their pipes and even play a tune.	K - 12th

Musician	Tongue Depressor Harmonica	Yes	Yes	Sound, Waves, Musical Instruments	People of all ages love the Kazoo-like sounds that come from this fun-to-make and easy-to-play instrument. The RAFT harmonica uses a rubber band vibrating between tongue depressors to make sound. Changing the length of the rubber band changes the sound. Start your own harmonica band today!	K - 8th
Musician	Straw Oboes	Yes		Sound, Vibrations, Musical Instruments	Players of these little noisemakers will never forget that sound is vibrations! Not only do you hear the sound (and annoy everyone around you), but you also feel the vibrations in your lips.	K - 8th
Musician	Straw Noisemakers			Sound, Vibrations, Musical Instruments	Create a simple reed wind instrument using a straw. Add a second wider straw to make a "trombone" type slide so the pitch of the sound can be changed.	K - 8th
Musician	Hand Chimes			Sound, Waves, Musical Instruments	Investigate sound, music, and instruments or just enjoy the pleasing sounds of these simple hand chimes.	Pre - 8th
Musician	Cap Maracas	Yes		Sound, Instruments, Rhythm	Explore rhythms using these simple maracas in an activity that appeals to both auditory and kinesthetic learners.	Pre - 3rd

Musician	Rubber Trumpet			Sound, Vibrations, Waves, Instruments	Players of these little noisemakers will never forget that sound is vibrations! Not only do you hear the sound (and annoy everyone around you), but you also feel the vibrations in your lips.	K - 6th
Musician	Back in the Groove	Yes		Sound, Waves, History of Technology, Phonograph, record	This is a great activity for investigating sound. It might just be a history lesson about records for your students; and you can tell them, "No, this will not work with CDs."	2nd - 12th
Musician	Finger-Phone	Yes		Sound, Vibration, Music, Instruments	Create a musical instrument in minutes to explore the science of sound production!	K - 8th
Musician	VHS Shamisen			Sound, Vibrations, Musical Instruments	Create this quick string instrument out of a scrap VHS tape and pluck to hear the sounds of Asia.	K - 8th
Musician	2-Tubaphones			Sound, Vibration, Musical Instruments	Make an instrument with an adjustable pitch to explore the science of sound waves and the art of music!	2nd - 8th

Musician	RAFTy Rainsticks			Sound, Environments, Cultures	Several different cultures use rainsticks in traditional ceremonies intended to, not surprisingly, make it rain. Authentic rainsticks made from different types of cactus plants or bamboo can be purchased, but you can also have your students make one with easily found materials.	Pre - 8th
Musician	I've Got Rhythm			Sound, Instruments, Rhythm	This activity gives pre-school age children an opportunity to explore rhythms using castanets, or clackers played with the hands. All people learn in different ways. This activity appeals to both auditory and tactile learners.	Pre - 6th
Musician	Tube Maracas			Sound, Instruments, Rhythm	This activity gives young learners an opportunity to explore rhythms using very simple, maraca-style, "shaker" instruments. All people learn in different ways. This activity appeals to both auditory and tactile learners.	Pre - 3rd
Musician	Floppy Spirit Drum			Sound, Celebrations, Instruments	Create these wonderful spirit drums to celebrate Chinese New Year and then use all year long.	K - 8th

Entertainment Technology	Roller Coaster Math	Yes	Yes	Velocity & Speed, Slope, Rates, Ratios, Algebraic Formulas, Roller Coasters	What does math have to do with thrilling roller coaster rides? How high does a coaster need to be to successfully navigate through a loop and on to the end of the track? How is the speed of the coaster related to the height of the coaster's starting position?	6th - 12th
Animal Habitats	Owl Pellet Dissection			Life Science, Ecology, Anatomy, bird	Owls regurgitate (spit out) a pellet made of the indigestible parts of the animals they eat. Studying the bones in the pellet will indicate which animals the owl ate.	3rd - 12th
Animal Habitats	Baby, It's Cold Outside			Environments, Habitats, Adaptations	This diorama helps students visualize life and ecology in an arctic environment.	K - 6th
Animal Habitats	Ocean in a Box			Oceanography, Environments, Ecology	Our oceans have an entire world of aquatic life and provide a home to thousands of species. Life on Earth depends on healthy oceans and learning about the variety of animals and plants that coexist in oceans can help students appreciate this vast resource on our planet.	K - 6th

Animal Habitats	Some Like It Hot			Environments, Habitats, Aadaptations	In this activity, students create a desert diorama and populate it with plants and animals adapted to environments with little water.	K - 6th
Playing the Past	VHS Shamisen			Sound, Vibrations, Musical Instruments	Create this quick string instrument out of a scrap VHS tape and pluck to hear the sounds of Asia.	K - 8th
Playing the Past	Kumihimo	Yes	Yes	Braiding, Patterns, Japanese Art	This simplified version of an ancient braiding technique ties together art, history, and mathematical patterns in a fun activity suitable for all ages.	K - 7th
Playing the Past	Konane			Logic and Critical thinking; Mathematical Reasoning; Traditions and Cultures	Games are wonderful ways to motivate students; they enjoy themselves and do not always realize that they are getting practice with skills like critical thinking and logic. This ancient island game, similar to checkers, is easy to learn, and fun to play for people of all ages.	3rd - 8th
Playing the Past	Chicken Tender Mummies			Dehydration, Ancient Cultures, Egypt	Model the Egyptian mummification and burial process using a chicken tender to represent the "recently deceased". This activity provides an opportunity to practice observation and measurement skills.	4th - 8th

Playing the Past	Senet	Yes		Ancient Egypt, Strategy Games, Critical Thinking, Cultures & Traditions	Play like an Egyptian! Played by royals and commoners alike, this popular strategy game from Ancient Egypt was enjoyed for over 3,000 years! Simple and fun to play!	3rd - 8th
Playing the Past	Mancala	Yes		Logic and Critical thinking; Mathematical Reasoning; Traditions and Cultures, game	People from around the world play games of strategy. Most popular games, like Mancala, have roots going back hundreds of years. Using these games in the classroom is not only enjoyable for students, but also teaches logic, mathematical reasoning, and problem solving skills.	3rd - 8th
Playing the Past	Abacus Variations	Yes		Math, Place Value, Historical Math Tools, Addition	This easily created version of an abacus can teach place value and show how different cultures calculate. Abaci can even be based on math systems other than base 10!	1st - 8th
Playing the Past	Prism Heddle Loom			Patterns, Symmetry, Traditional Culture	This simple loom encodes patterns into a prism-shaped piece of cardstock.	4th - 8th
Playing the Past	Candles from Palm Wax			Physical and Chemical Changes, Chemical Reactions, Life in the Past, candle	While normally only used to create molded candles, palm wax granules can be easily melted in hot water and used to make small dipped candles in a few minutes.	4th - 8th

Playing the Past	Faux Fishing Rods	Yes		Creative Thinking, Artistic Expression, Magnetism, Fish	In this activity, creative thinking and artistic expression combine with magnetism to create a cool teaching tool.	3rd - 12th
Playing the Past	Light My Fire			Physical and Chemical Changes, Chemical Reactions, Life in the Past	Teachers have used candle-making activities in the classroom for years as a fun, art activity. However, candles can be used as an integral part of the academic curriculum. Candles are a wonderful interdisciplinary activity combining science and social science content, as well as increasing observation and comparing skills.	4th - 8th
Playing the Past	Gaming Sticks	Yes		Addition, Probability, American and California History, game	Games are wonderful ways to motivate students; they enjoy themselves and do not always realize that they are getting practice with basic skills, like addition and probability. Playing Native American Stick Dice also connects mathematics to culture and the social sciences.	K - 8th
Playing the Past	Zen Rock Garden			Patterns, Design, Comparative Religions	Students can use this miniature version of a Zen rock garden to investigate patterns while exploring properties of matter... and just maybe do a little philosophizing in the process.	4th - 8th

Playing the Past	Slide Rule			Estimation, Multiplication, Historic Math Tools, Logarithms	These math tools of the past allowed mathematicians and scientists to calculate faster and easier, without batteries! Students of today's electronic calculator age can hone their estimation skills while using these simplified replicas.	4th - 12th
Flowers	Bouquet of Flowers			Crafts, Flowers	In this easy art project, students can design and make their own flower bouquets.	K - 3rd
Flowers	Preserving the Petals			Botany, Taxonomy, Observations	Press and dry flowers in a couple of minutes with this microwave plant press.	K - 8th
Flowers	Water Lilies			Visual Art, Botany	Using pleated shade scraps, students can create wonderful flowers that can be used on posters, as pins, or in a variety of creative projects.	2nd - 8th
Flowers	Paper Sunflowers			Paper Creations, Geometry, Botany	Each sunflower is made from 3 yellow punched circles. The center is a black circle punched from black paper, cardstock, or a file folder.	K - 3rd
Flowers	Grow it and Wear it!	Yes		Life Science, Ecology, Botany	Celebrate Earth Day or spring by sprouting and wearing a seedling!	K - 8th

Simple Meals	Solar Cone Cooker	Yes		Solar heating, Radiant energy	Explore heating and "cooking" with sunlight using an easy to make mini solar cooker.	3rd - 12th
Simple Meals	Auto Sunshade Solar Collector	Yes		Solar Heating, Radiant Energy, Sunlight Absorption	Explore heating with sunlight using a solar collector that is easy to make and store.	3rd - 12th
Simple Meals	Binder Cover Solar Collector	Yes		Solar Heating, Radiant Energy	Explore heating with sunlight using an easy to make and store solar collector.	3rd - 12th
Drawing	Animated Flip Books	Yes		Eye, Persistence of Vision, Animation	This fun activity will give students the opportunity to create basic animations that can help them understand how motion pictures and the human eye work.	2nd - 8th

RAFT RESPONSE TO GSA PROJECT REQUIREMENTS						
Scout Level: Cadette						
Badge	**Activity Kit/ Idea Sheet Name**	**Kit?**	**Online?**	**Main Topics**	**Description**	**Grade Level(s)**
Wood Worker	Nail Puzzle			Balance, Center of Mass, Forces	Students can investigate cause and effect, center of mass, balance, and stable equilibrium while they solve this fascinating, scientific puzzle!	K - 12th
Wood Worker	Craft Stick Catapults			Motion & Forces, Design Challenges, History of technology, Catapult	Challenge students to become medieval engineers by designing a device that will effectively launch a safe projectile. The number of possible designs is infinite!	4th - 12th
Book Artist	Simple Book			Bookmaking, Written Communication, Artistic Expression	No glue, tape, or staples are needed to make this simple "one-cut" multi page book created from a single sheet of paper.	1st - 8th
Book Artist	Envelope Book	Yes		Journaling, Memorabilia, Specimens	These fun, creative, and easy-to-make books will hold students' writings & treasures.	1st - 10th
Book Artist	Zig Zag Book			Creative Expression, Following Directions, Fractions	This versatile easy-to-fold mini book can display one picture or a series of scenes that tell a story or create a remembrance of an event or a person.	K - 12th
Book Artist	Peek-a-Books	Yes		Books, Writing, Art Objects	These quick-to-make, tiny books can hold artifacts or secrets in their hidden pages.	K - 8th

Book Artist	Autograph Book			Friendship, Bookmaking	Create an autograph book to share with friends	K - 8th
Book Artist	Quick Stitched Books			Artistic Expression, Written Communication	This book design makes good use of continuous feed paper leftover from dot-matrix printer days. The books are quick to make, can have any number of pages, and feature a front cover that opens completely so that the book lays flat.	K - 8th
Book Artist	Paintable Cover Books			Artistic Expression, Written Communication	These soft cover notebooks have the added feature of covers that look like paint canvases.	K - 12th
Book Artist	To Infinity and Beyond			Journaling, Psychology, Personal Growth	A journal for goal setting and looking to the future	K - 8th
Book Artist	Animated Flip Books	Yes		Eye, Persistence of Vision, Animation	This fun activity will give students the opportunity to create basic animations that can help them understand how motion pictures and the human eye work.	2nd - 8th
Special Agent	Fingerprint Detective			Life Science, Genetics, Forensic Science	Using a simple ink stamp pad, students can solve a classroom mystery by exploring how each person has unique fingerprints.	4th - 12th
Eating for Beauty	Digestive System Surprise			Biology, Digestive System, Measurements	Combine measuring with learning about digestion in this activity as each student creates a paper model equal to the total length of his or her own digestive system.	4th - 8th

Eating for Beauty	Trimming the Fat			Biology, Organic Macromolecules, Lipids	Students test unknown samples for presence of oils or fats, which are types of lipids, in this simple, but effective, activity.	5th - 12th
Eating for Beauty	Munchy Match			Healthy Choices, Sorting & Classifying, Body Structures and Systems, smoking	This twist on the classic game of match will help students identify and sort healthy foods from unhealthy choices.	Pre - 8th
Night Owl	Moon Mobile	Yes		Moon phases	Create a mobile with the 4 points and the 4 intervals known as the phases of the Moon.	3rd - 8th
Trees	3D Tree	Yes		3-dimensional art, Traditions, Ecosystems	A bit of cutting and stapling will produce wonderful, little trees that stand up on their own. Decorate the tree for a great winter holiday project, or create several trees of various sizes to make a tabletop scene.	K - 8th
Trees	Forest Ranger Measuring Tape			Geometry, Pi, Diameter, Circumference	Measuring the diameter of a tree without cutting it down can be a bit tough. Rangers apply Pi to make these useful measuring devices.	4th - 8th

Room Makeover	Puzzling Frames			Measurement, Artistic Perception, Creative Expression	Students will enjoy creating a frame for a photograph or for their own artwork. These frames can be created in a variety of sizes and shapes, and the ease of using craft sticks and puzzle pieces makes this project appeal to students of varying ages and abilities.	Pre - 6th
Room Makeover	Glitter Frames and Cards			Artistic Perception, Creative Expression, Greeting Cards	Create unique, eye-catching frames and greeting cards.	K - 8th
Room Makeover	File Folder Frames			Artistic Perception, Creative Expression	Creating frames from file folders is an easy and inexpensive way to add the finishing touch to a photograph or piece of student artwork. File folders come in a wide variety of colors, which makes them an excellent option for creating seasonal gifts.	K - 8th
Room Makeover	Repousse Ornaments			Art Techniques, Decorative Arts, Art History	Create attractive ornaments in your classroom using common household products and/or recycled materials.	K - 8th
Room Makeover	Faux Stained Glass	Yes	Yes	Art Techniques, Decorative Arts, Art History	Student artists of all ability levels can use this flexible technique to create dramatic effects. Their creations will "shine from within", adding a unique dimension to cards, bookmarks and other decorative objects.	K - 12th

Room Makeover	Stencil Suncatchers			Filters, Color, Light, Art History	Use these instant suncatchers as a springboard for teaching about color, light, filters, art history... or just use them as a wonderful and fun decoration.	K - 8th
Room Makeover	Faux Bamboo			Plants, Models, 3-Dimensional Art	People will do a double take to notice that these bamboo stalks are not the real thing.	K - 8th
Womens Health	Catching Your Breath	Yes		Anatomy, Heath, Lung structure & Function	This quick and simple model may help your students appreciate living with lung disease... and possibly convince them to stay away from smoking.	4th - 12th
Womens Health	Money You Will Save			Health, Money, Economics	Smoking is not cheap. Students discover the financial costs of smoking in this "shop with your savings" activity.	4th - 12th
Womens Health	Munchy Match	Yes		Healthy Choices, Sorting & Classifying, Body Structures and Systems, smoking	This twist on the classic game of match will help students identify and sort healthy foods from unhealthy choices.	Pre - 8th
Womens Health	More Time on Earth			Health, Statistics	While nothing in the game of life is guaranteed, making good choices, like not smoking, can make big differences. More Time on Earth shows players how not smoking will increase their chances of living longer.	4th - 12th

Novelist	Simple Book			Bookmaking, Written Communication, Artistic Expression	No glue, tape, or staples are needed to make this simple "one-cut" multi page book created from a single sheet of paper.	1st - 8th
Novelist	Peek-a-Books	Yes		Books, Writing, Art Objects	These quick-to-make, tiny books can hold artifacts or secrets in their hidden pages.	K - 8th
Novelist	Quick Stitched Books			Artistic Expression, Written Communication	This book design makes good use of continuous feed paper leftover from dot-matrix printer days. The books are quick to make, can have any number of pages, and feature a front cover that opens completely so that the book lays flat.	K - 8th
Novelist	Paintable Cover Books			Artistic Expression, Written Communication	These soft cover notebooks have the added feature of covers that look like paint canvases.	K - 12th
Locavore	Shake Your Butter	Yes		Biochemistry, Mixtures, Chemical Changes	No need for a huge churn to observe wonderful and tasty changes.	K - 8th
Locavore	Cheese Please			Mixtures, Biochemistry, Properties	The necessity for food preservation was just the beginning for this dairy staple.	4th - 8th

Game Visionary	Game Challenge			Games, Randomness, Chance	Kids have great imaginations... and they love games! Extend student learning with this fun activity that can be applied to multiple grade levels and any topic.	Pre - 12th
Senior First Aid	Be Prepared			Natural Hazards, Emergency Preparedness, Community Studies	Evaluate potential natural hazards and develop plans to address the dangers.	4th - 12th
Sky	Auto Sunshade Solar Collector	Yes		Solar Heating, Radiant Energy, Sunlight Absorption	Explore heating with sunlight using a solar collector that is easy to make and store.	3rd - 12th
Sky	Binder Cover Solar Collector	Yes		Solar Heating, Radiant Energy	Explore heating with sunlight using an easy to make and store solar collector.	3rd - 12th
Sky	Ballooning Universe			Astronomy, Cosmology, Expanding Universe	The idea of an expanding universe can be seen with dots on an expanding balloon.	7th - 12th
Sky	Closest Stars			Astronomy, Local Stars, Scale & Structure of Milky Way Galaxy	Students create a 3-dimensional representation of the closest stars in this activity that demonstrates the scale and structure of space and our Milky Way galaxy.	6th - 12th
Sky	Fabric of the Universe			Gravity, Space-time Curvature, Orbits	A piece of stretch fabric and a small ball can illustrate how an object in motion will follow the curvature of space.	3rd - 12th

Sky	Holding the Moon in Your Hand			Moon Phases, Solar System, Reflection	This model demonstrates how the Moon's phases occur as the Moon orbits the Earth.	K - 12th
Sky	Magnets in Space			Magnetism, Gravity, Microgravity	Create a weightless "environment" and see how magnets would react in outer space.	4th - 12th
Sky	Mars Our Next Door Neighbor			Astronomy, Solar System: Mars, Planetary Geography	Everybody loves Mars! These little globes of Mars are fun to make, and they introduce students to some of the main geographic features of the Martian surface.	K - 12th
Sky	Out of this World			Astronomy, Solar System, Constellations	In this dice game, students race to be the first to reach 50 points by matching categories to space objects. Teachers can use the game as a quick reinforcement when a few minutes remain in class. Out of this World also makes a great review for a test or quiz.	4th - 12th
Sky	Race Around the Sun			Planets, Orbits, Patterns	Which inner planet has the shortest year? Learn the answer and more by building a model to show how Mars, Earth, Venus, and Mercury move around the Sun.	3rd - 12th

Sky	Star Distances on a Map			Star Distances, Scale & Proportions Modeling	Choose a location on a map to represent the Sun's location, and then locate points on the map to illustrate the position of nearby stars. Using a local map helps students to grasp the enormous distances involved.	6th - 12th
Sky	Stars on the HR Diagram			Star Properties, Luminosity, Scatter plot	Plot star data to create an HR Diagram and use the diagram to discover information about the relationship between the temperature and brightness of stars.	7th - 12th
Sky	Sun and Planets to Scale			Planets, Solar System, Measurement, Calculation	Create a foldable, pocket-sized scaled portrait of the Sun and planets.	3rd - 12th
Sky	As the Clouds go Bye	Yes		Weather, Clouds, Water Cycle	Make a cloud "mirror" and use to do small scale observations of the clouds and sky.	4th - 8th
Sky	Telescope it out!			Light, Optics, Refraction, Astronomy	Explore (doubly) convex and concave lenses and build a low power telescope!	7th - 12th

RAFT RESPONSE TO GSA PROJECT REQUIREMENTS						
Scout Level: Ambassador						
Badge	**Activity Kit/ Idea Sheet Name**	**Kit?**	**Online?**	**Main Topics**	**Description**	**Grade Level(s)**
Photographer	Image Viewer	Yes		Light, Optics, Refraction	Explore images formed by a pinhole and a lens. See what the eye really "sees" - an inverted image!	3rd - 12th
Ambassador First Aid	Your Room in an Earthquake			Earthquakes, Plate Tectonics, Public Safety	In this modeling activity, students discover earthquake safety measures they can implement in their own bedrooms and homes.	4th - 12th
Water	Still Water			Water Cycle, Solar Energy	Demonstrate a mini water cycle and the power of solar energy by building a simple still to "purify" water that has been "contaminated" with food coloring.	3rd - 12th
Water	Sticky Situation			Density, Properties of Matter, Environmental Science, Pollution	Create an "ocean" oil spill and experiment with various cleanup materials.	4th - 12th