

# SPECTRUM OF SCIENCE

## 2009 Science Workshops

	<b>Title</b>	<b>Workshop Fees</b> <b>\$275 min</b>	<b>Descriptions</b>
1	Animal Tracks	\$7 take home \$4 provide wax & molds	Learn to identify animals by their tracks!! Create your own tracks ~ has this animal been discovered yet?
2	Ants	\$7 take home \$4 provide materials	Life in the liter... What's under there and what does it look like?
3	Archeological Dig	\$8 take home	Take a step back in time and discover while you uncover bones and more!
4	Balance	\$4 take home	Ever feel "off balance"? Try this lab!
5	Balance - Tops	\$6 take home \$3 no take home	Learn about balance and find the center of gravity! Don't fall down!
6	Benham's Discs	\$7 take home \$3 no take home	Black & White? Take a spin and colors will appear!
7	Blueprints on fabric	\$8 take home	Create your own permanent shadow!
8	Bridges	\$3 no take home	Build it & will it stand under pressure?
9	Bubbleology	\$6 take home \$3 no take home	The study of bubbles. What do the colors tells us? Can you create a square bubble? How do you not pop yours?
10	Build It Challenge - No Motor	\$5 take home	A challenge: find out how high & how strong & more! Where will it go? What will it do?
11	Chemical Eruptions	\$4 no take home	Chemistry in action! Mix variety of chemicals and watch it go! ....
12	Chemical Reactions - Bubbles	\$4 no take home	Can you float, bob or wiggle? "I think it did the hip hop!"
13	Chemical Rockets	\$5 take home \$4 no take home \$3 provide materials	UP, Up , UP ~ How high will it go? Launch your own rocket!
14	Color - Rainbow Stew	\$5 take home	Color mixing & build your own rainbow! Best for Kindergarten - 2nd grade.
15	Creative Clay	\$5 take home	Make your clay! No heat or cooking. Just simple fun and lots of building!

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16	Dissect a Shark	\$12 no take home	Investigate the exterior features & innards of a shark! Children become medical examiners as they work on preserved specimens!
17	Dissect a Squid	\$6 no take home \$4 provide materials	Investigate the exterior features & innards of a squid! Children become medical examiners as they work on frozen specimens!
18	Dissection a Flower	\$5 take home	What is inside? How do bees pollinate a flower? Where does honey come from?
19	Electrical Circuit - Motors Or Buzzers	\$8 take home \$4 no take home	Simple electrical circuits with motion or lots of noise!! What is the difference between an open & a closed circuit? Build your own and find out! (facility select project)
20	Electrical Circuit - W/Light	\$6 take home \$4 no take home	Simple electrical circuits will light up this lab!! What is the difference between an open & a closed circuit? Build your own and light it up!
21	Explosion Of Color	\$5 take home	Add color & "me" and watch us move & groove!!
22	Flight - Cross Wing	\$6 take home \$3 no take home	Take flight & throw it!! What design is best? Weight or no? Bend or straight .. Put your hypothesis to the test!!
23	Flight - Lift (Newton's Law)	\$5 take home \$3 provide & cut materials	Take flight & toss!! This works best inside and can grow or shrink! Great for high heat days or those raining days!
24	Float a boat	\$6 take home	What is a boat & how does it float? Weight, balance & more!!
25	Food Pyramid/Chain	\$5 take home	Who eats whom and why!! Carnivore, herbivore, omnivore or ????? Yummy Yummy in my tummy! (no real food)
26	Geology - Rock Classification	\$5 take home	Hard rock Earth!
27	Geology Gemstones (Includes A Real Gemstone)	\$8 take home	Diamonds are a Best Friend! OR perhaps sapphires are your favorite! Study & create a crystal structure!
28	Hermit Crabs	\$6 take home	These can easily travel in your pocket!

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29	Horses - Wooden Model	\$6 take home	A wooden model, for the youngers who are enthralled by horses!
30	Hydroponics- Solid Water	\$6 take home	Great chemistry and technology in action!
31	Komodo Dragons	\$7 take home \$4 provide materials	Explore this endangered species & build a model habitat.
32	Machine - Lever & Tweezers	\$5 take home	Simple Machines are significant - explore the dynamics of levers & tweezers! Lift, squeeze, toss & more!!
33	Machines - Pulley	\$7 take home \$3 provide material & build	Simple Machines are significant - explore the dynamics of pulleys! Hard to get a piano to the roof!
34	Machines - Screw & Incline Plane	\$7 take home \$3 no take home	Simple Machines are significant - explore the dynamics of screws & incline plans! How well can you go up? How fast can you go down?
35	Machines - Square Wheels	\$7 take home \$3 no take home	Simple Machines are significant - explore the dynamics of wheels & make a great car! Can it travel?
36	Machines - Wheel & Axel Cart	\$7 take home \$3 no take home	Simple Machines are significant - explore the dynamics of wheels! OK, here we go!
37	Machines - Gears	\$8 take home	Simple Machines are significant - explore the dynamics of gears! Move it more!!
38	Machines - Solar Power Vehicles (2 Hour Lab)	pricey; call for quote	Cars of the future! Total solar power runs these cars!
39	Machines - Solar Whirley	pricey; call for quote	A dynamic revolving study of solar power!
40	Magnets - Buzzing	\$8 take home	Magnets really can make noise! Is this from space?
41	Magnets - Levitating	\$5 take home	Make your magnets float without support!
42	Magnets - Maze	\$5 take home	Move magnets through a maze you design!
43	Magnets - Test Kit	\$5 take home	Test properties of magnetism in this fun lab!
44	Magnets - Treasure Hunt	\$6 take home	Have a treasure hunt & find it with a magnetic "dowser"!
45	Magnification	\$5 take home	Enlarge that tiny object & see it well!

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46	Marble Rollercoaster (1.5 to 2 Hour Lab)	\$9 take home	Work on the physics & thrill of amusement parks!
47	Marine - - Echinoderms	\$7 take home \$3 provide materials	Study this spiny slimy creature of the ocean!
48	Marine - - Echolocation/Dolphins	\$6 take home \$3 provide cans	Dolphins are significant in the underwater world - a fun way to investigate how they communicate!
49	Marine - - Jellies	\$4 take home	Very fragile creature that inhabit most of the oceans of the world; study how they move and eat!
50	Marine - - Pelagic Fish	\$8 take home	Fish travel the oceans - learn about these voyagers!
51	Marine - - Shell Boards	\$5 take home	Shell animals are beautiful and abundant! Lots to see & feel!
52	Marine - Aquarium	\$6 take home	Ocean zones are significant in today's marine environment & and oceans are the least explored areas on this planet! This lab includes a take home aquarium model.
53	Marine - Shark - Identification - 3 D Models	\$10 take home \$3 provide material	A close look at three species of sharks & a fun way to distinguish between them!
54	Marine - Sunlight Zone Fish	\$6 take home	The oceans are divided into several zones. Who lives within the area lit by the sun? How does this area survive? Make a bright & shiny model & a basic plan of the zones!
55	Marine - Midnight Zone	\$6 take home \$3 provide material	Ocean zones are significant in today's marine environment & and oceans are the least explored areas on this planet! This lab goes deep, where no man has gone before! Crazy creatures abound!
56	Marine - Ocean cores	\$6 take home \$3 provide material	How do we get oil out in the oceans? What is down there?
57	Marine - Pier Pressure	\$6 take home \$3 provide material	Build a pier model & study of the animals that live on the piers of the boardwalks!
58	Marine - Sunlight Zone	\$6 take home \$3 provide material	Ocean zones are significant in today's marine environment & and oceans are the least explored areas on this planet! The take home is a basic plan of the zones!

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59	Metamorphosis - Butterflies	\$6 take home \$3 provide material	Animals grow differently - learn the different stages and how a caterpillar becomes a butterfly!
60	Metamorphosis - Comparison Complete vs. Incomplete	\$6 take home \$3 provide material	Animals grow differently at different stages in life. This lab compares different stages on a variety of creatures.
61	Metamorphosis - Dragonfly	\$6 take home \$3 provide material	Dragonflies are fun & this lab shows children this wonderful creature!
62	Metamorphosis - Frog	\$6 take home \$3 provide material	Make a detailed life cycle of the fussy frog!
63	Moving Molecules	\$6 take home \$3 provide material	This is chemistry & comparison of a variety of liquids! Take home a real science tool!
64	Mystery Powders	\$6 take home \$4 no take home	Chemistry fascinates! Lots to explore and test here! Hypothesize, test & conclude!
65	Observation Lab 30 Minutes	\$1 no take home	Critical observation for all levels! A challenge to find out what is what!
66	Observation Lab w/slime	\$6 take home	Critical observation for all levels! A challenge to find out what is what! This lab has a take home portion!
67	Olfactory ~ The Nose Knows	\$6 take home	Sense the senses! Take home a special sense kit & fool your family!
68	Optical Illusions & Amorphic Art	\$6 take home	What you see is not always there! Great lab for all ages!
69	Plant Germinators	\$5 take home	Plant biology is fun and visible too!
70	Power Of Paper	\$3 no take home	Is that piece of paper really strong? How much can it hold! Become an architect as you design & build!
71	Scientifically, Morph someone	\$7 take home \$3 provide color copies	How do movies do that? Make a total change of appearance! Laugh & keep changing!
72	Slime - Bouncable	\$4 take home	Bouncing chemistry!
73	Slime - Clear	\$5 take home	Ooey & gooey & slippery & slimy & chemistry that keeps on going!
74	Slime - Gak	\$4 take home	More and more chemistry - same but not the same!

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75	Slime - Non-Newtonian Liquids	\$4 take home	Dr. Seuss, this lab should be done outside!
76	Slime - Phosphorescent	\$4 take home	Glow in the dark? Why? See it!
77	Slime - Rainbow Stew	\$4 take home	Composition of colors!
78	Slime Comparison	\$7 take home	For those who are truly curious and want to try everything! Chemistry involves creating and keep testing!
79	Snakes	\$6 take home \$3 provide material	Slithering & sneaky creatures!
80	Sound Lab	\$6 take home \$3 no take home	How to hear!
81	Space - 3 Stage Rocket Model	\$7 take home	Build a large three stage model rocket & recognize its parts!
82	Space - Asteroid Lander	\$5 take home	Build a lander & visit an asteroid!! Float, bounce, sink or stand?
83	Space - Blue Moons	\$5 take home	Discuss the "blue moons" & create a model as you learn about this unusual event & when the next will occur!
84	Space - Extraterrestrials Life In Outer Space	\$5 take home	Is there life "out there"? What could it possible look like? What does it need to survive?
85	Space - Hubble telescope	\$5 take home	Build a model of the Hubble telescope (recycled materials) & learn its functions.
86	Space - International Space Station	\$5 take home	Exploring space from space! Make a model & decide what it should include!
87	Space - Layers Of The Sun	\$5 take home	Learn the dynamics of the sun & how explosions on the sun affect life on earth!
88	Space - Lunar Lander	\$5 take home	Can you land on the moon? Using recycled materials create a lunar lander & be sure it is exploring worthy!
89	Space - Mercury Messenger	\$5 take home	Messenger is traveling several million miles from Earth! Why? Build a basic recycled model & understand the future of space knowledge!

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90	Space - Moon Scapes	\$5 take home	Walk on the moon! Create your very own diorama of the moon's surface! Is there a footprint there?
91	Space - Pneumatic Rockets	\$5 take home	Shoot off your rocket! Can you hit the target? Try again & again!
92	Space - Saturn' Rings	\$7 take home \$3 provide base & draw circles	The rings of Saturn are significant in the development of this planet! Do they hide information? Make a simple model and learn their names!
93	Space - Saturn's Moons	\$5 take home	Saturn has many moons! Locate them and model this unusual planet!
94	Space - Seeds In Space	\$8 take home - with lab rack \$5 no lab rack	In conjunction with NASA project STS-86; includes a take home custom lab rack.
95	Space - Total Solar Eclipse	\$5 take home	Spectrum of Science unique project to demonstrate this phenomenal event!
96	Space - Uranus	\$5 take home	Explore 7th planet from sun - third largest - lots to learn! Model to build!
97	Space -Constellations	\$5 take home	Search the dark skies for far off figures!
98	Spectroscopes	\$4 take home	Split light into colors! Great astronomy project!
99	Spiders	\$5 take home	"Itsy bitsy spider..." Count the legs & body parts of this model!
100	Spiders - Tarantulas	\$5 take home	Build a very fuzzy model for the terrifying tarantula!
101	Splat Boards	\$4 take home	Go Splat! (Messy & very popular!)
102	Splat eggs	\$4 take home	An "eggxating" challenge! (Does use raw eggs)
103	Spy Writing	\$4 take home	This is top secret & classified!
104	Starch Comparison	\$6 take home \$4 no take home	Kitchen chemistry - find the starch! (no eating)
105	States Of Matter	\$4 take home	Liquid, solid, gas & plasma! How are they different and which does not exist here on earth? Build a model and watch 1 go!

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106	Static Electricity	\$4 take home	Shocking experience! Use electricity to separate chemicals! (No, it does not hurt!)
107	Sting Ray Model	\$7 take home \$3 provide material & cut	Another marine creature - one that glides quietly & smoothly through the waves!
108	Tangible Thermals	\$5 take home	This lab will heat up and change right before your eyes!!
109	Telediscopes & Kaleidoscopes	\$6 take home \$3 provide tennis ball cans	What is the difference between a telediscope & kaleidoscope? Build your very own and wow your friends!
110	Topographic Maps	\$7 take home \$3 provide material & cut	Find your way! Elevations & depressions included!
111	Towers	\$3 no take home	How high will you go? Square or round? Skinny or fat? Which is best?
112	T-Shirt Science	\$9 take home \$4 provide t-shirts	Design your own science shirt! No more tye dye but watch it run, see it wiggle?
113	Tunnels	\$9 take home \$6 provide material	Can you build it or will it collapse? What do Devil's Slide & the Rock of Gibraltar have in common?
114	Turbulence - Pixie Dust	\$7 take home	Water, water everywhere ... what will it move? What is the best design of a boat? Watch it move and see it glide!
115	Ultra Violet Light Detection	\$7 take home	What is UV light and how can it hurt me? Know when its there and how to find it!
116	Volcanoes - Exploding	\$9 take home \$4 provide material	Explosion will occur! What is the difference between magma and lava? Build a model and watch it bubble & ozz!
117	Volcanoes - Layers Of The Earth	\$9 take home \$4 provide material	No explosion here but lots and discovery and fun! Where is it hotter than the sun here on earth?
118	Worms - Observation	\$5 take home \$3 no take home	Observe a worm.. Does it like cold, warm, dry or wet? Build a wormery and discover one the best tunnel builders!