

Mr. Bond's Science Guys
In-School Field Trips 45 minute Classroom Workshops

MakeScienceFun@MrBondScienceGuy.com
615-573-2702
MrBondScienceGuy.com/in-school-field-trips

Kindergarten

K- PS1 Solids and Liquids

Kids work in teams to sort multiple substances into liquids and solids. They compare and contrast the properties of different substances. Then make a Non-Newtonian Fluid! Slime!

K- LS1 Five Senses

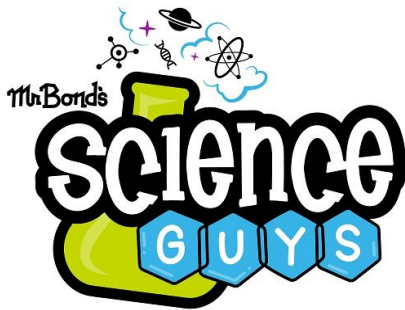
Kids learn about the 5 senses with mini microscopes, our sound F/X machine and the option to make their own cotton candy

K- ESS3 Worms/Decomposers!

Decomposition is the process by which organic substances are broken down into simpler matter. Learn about worms, their environment and how they improve the soil by helping to decompose food and plant matter. We talk about erosion, types of soil and pollution.

K- ETS1 Engineering Design Process

Kids build structures with squares and triangles using the steps that engineers follow to solve problems. Kids do hands-on experimenting with shapes and analyzing structures using spaghetti and marshmallows! 1. Ideate > 2. Implement > 3. Test (Cycled)



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First Grade

1- PS4 Properties of Light

Kids learn about reflection, absorption, and refraction. Kids work as a team to create a Lasers Maze! Kids compare objects that are transparent, opaque, iridescent and translucent.

1- LS2 Plants, Soils and WORMS!

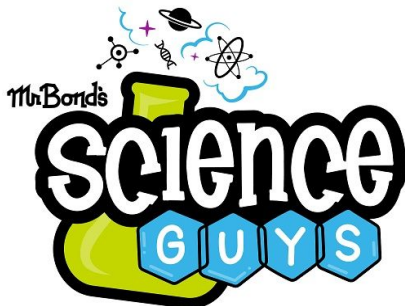
Learn the parts, functions and life cycle of plants (roots, stems, leaves, flowers, fruits) (taking in water and air, producing food, making new plants). Kids learn about different types of soil, erosion, and pollution and how WORMS help soil and our environment. Start an activity for teachers to finish during the week to observe how environmental changes cause plants to respond in different ways.

1- ESS1 Earth's Place in the Universe

Using our huge Hoberman sphere we recreate the earth's motion as it spins through space. We see how day and night occur, how long a year is, and what causes the seasons. Gravity Well. This workshop includes kids making their own bouncy planet.

1- ETS1 Scientific and Engineering Practices

Observe, Question, Form Possible Answers, Test, Record Results, Conclude! Explains how scientists correctly arrive at new knowledge and update their previous knowledge. The Science Guys use Skittles to ask testable questions and formulate a hypothesis!



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Second Grade

2- PS2 & PS3 FUNdamental Forces

Kids compare different forces such as friction, magnetism, wind, pressure, and centrifugal force. We create heat through friction and analyze the effects of push and pull on objects. The hands-on activity is straw rockets!

2-PSCI.PS2 Laws of Motion

The Laws of Motion workshop explores magnetism, gravity, inertia, forces of nature, electricity and centrifugal force. The kids make their own bouncy ball to keep. We explore Isaac Newton's Second Law of Motion - $F=MA$.

2- PS4 Sound

We wow participants with our sound machine experiments, explaining why volunteers sound like chipmunks, Darth Vader or robots. We also include hands-on experiments with a giant slinky that demonstrates vibration, pitch and sounds waves.

2.ESS2.1 & 2.ESS2.2 Erosion

Using our sealed climate chambers, kids reconstruct the effects of wind and water on land formations. We record the results of soil erosion and the effects of climate on different soils.

2- LS1 & LS2 Owl Pellets

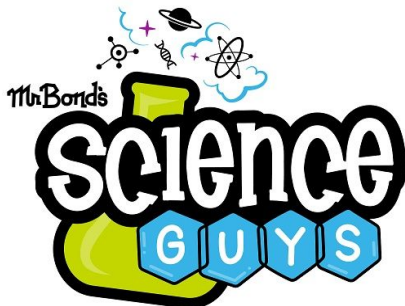
Kids learn about the owl's physical features that allow it to excel in its environment. They dissect owl pellets, carefully separating the bones and matching them against anatomical charts to recreate the bone structure of their prey. We learn about the owls' place in the food chain.

2- ETS1 Simple Machines

Kids learn the properties of the six simple machines - levers, pulleys, screws, ramps, wedges, wheels, and axles. We identify the value of various simple machines in everyday situations. We see how they allow us to solve problems and complete tasks more easily

2.ETS1.4 Structures 1

Learn about the differences between a square and a triangle! With a Structures Challenge What makes a strong structure? Build the strongest tallest structure you can using only Marshmallows and toothpicks! Can your design stand up? Or can it hold a balloon on the top?"



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Third Grade

3- PS1 States of Matter

We learn about changing states, molecules, boiling points, freezing points, dissolving, evaporation, condensation, sublimation of dry ice and lots of other “ations”! May include making a fire extinguisher, using a lie detector, making water disappear. Kids assess physical properties of matter such as temperature, volume, mass, color, and texture. All the kids make their own Sprite using dry ice.

3- PS2, PS3 Magnets

Learning about Magnetism with several experiments about attracting and repelling. Kids discuss the Earth as a magnet, poles, and visualizing magnetic fields with iron filings. We use magnets to solve problems and make a coin disappear!

3- PS3 Electric Circuits

Kids develop a hands-on understanding of circuits and electrical components with light bulbs, spin fans, and by turning motors on and off. They create parallel circuits, series circuits and learn about the effect of resistance.

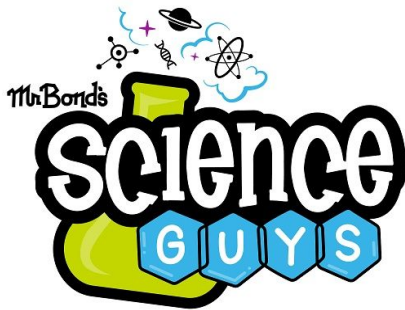
3- ESS2 Weather

Kids make rain, learn about rainbows, the water cycle, blow out tornadoes and explore lightning!

3- ETS1 Sinking Ships

Kids learn about how the engineering process can solve the problems of everyday life. Kids design a boat that can carry a designated load, across a body of water.

3.LS4 Biomes Kids identify different kinds of biomes then speculate where in the world they exist using a 20' x 12' Dymaxion map. Kids see desert, Arctic region, rainforests and more. Requires a room (lobby, cafeteria, gym) or an additional 15 mins added to each session if moved from classroom to classroom. Only available for 1 Science Guy time and max 25 kids per classroom.



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Fourth Grade

4- PS3 $F=ma$

Participate in a demonstration and use our results to understand the relationship between the speed of an object and the energy or force of an object. Every student gets to make a bouncy ball to keep.

4- PS4 Lasers & Waves, Light & Rainbows

The science of light and color spectrum. Using special glasses to understand rainbows and light. We see how waves are different based on amplitude, wavelength, and direction. Students explore how wave packets can transmit, store and display information in modern devices all around us.

4- LS2 Fossils

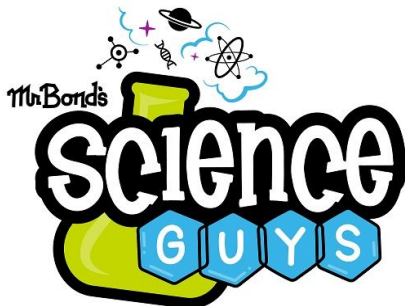
Learning about how fossils are created, kids study numerous fossils, rocks, and minerals. With examples of plant and animal fossils, kids consider the environment at the time that the organism lived. Each student will make their own T-Rex tooth to keep!

4-ESS1 Earth in Space

Using our huge Hoberman sphere we recreate the earth's motion as it spins through space. We see how day and night happen, how long a year is, and what causes the seasons. This workshop includes learning about the moon's orbit, its phases and the vacuum of space!

4- ETS1 Structures

Learning about the strength of shapes. Triangles vs Squares. With specific constraints and limited supplies, kids build and test various bridge designs and determine which is the strongest.



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Fifth Grade

5- PS1 Lava Lamps Miscibility

What happens when you mix immiscible materials? Make a Colorful Lava Lamp with 3 ingredients while learning about Miscibility and Density! Using Liquid Nitrogen, we consider phase changes, physical properties of matter and instantly freeze roses!

5- LS3 DNA

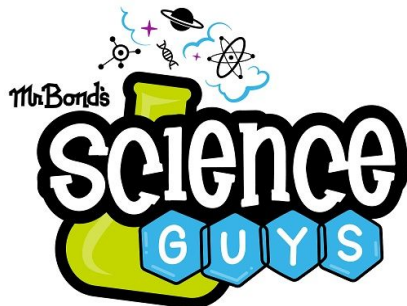
Learning about deoxyribonucleic acid, students collect DNA, create their own DNA strand model, and explore what DNA means to all living things.

5- ESS1 Space: Planets, Moon, Sun, Earth

Kids learn about the motion of the sun, earth, moon. Kids explore gravity of the earth, circular motion, and oppositional forces. We consider the earth like a magnet. We learn about rocket propulsion, and kids make their own planet to keep.

5- ETS1 Aerodynamics

Students learn what is involved to send a rocket to the moon, how it overcomes Earth's gravitational pull and how it fights through the atmosphere. Building and launching rockets, indoor. Learning about Aerodynamics and what it takes to get a rocket into the air. We use an electromagnetic ring tosser to imagine how rockets could be launched into deep space from the moon



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Sixth Grade

6- PS3 Electroplating

Following scientific procedures for reproducible results, we use electrochemical potential to turn a quarter into a penny! Covers topics for Electricity, Chemistry and Chemical Reactions standards. Plus, our fantastic demonstration of heat transfer through chemical reactions!

6- PS3 Batteries

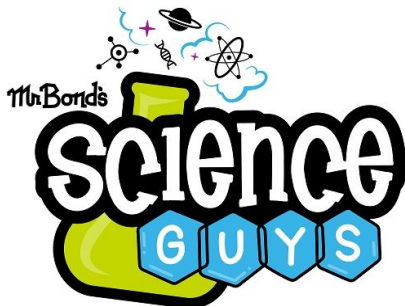
Students will be challenged to create a battery using various household items such as lemons!

6- PS3 Kinetic and Potential Energy

We use the ping pong pulverizer and thermal reactions to demonstrate energy transfer. Students build a catapult (spool racer) that stores energy -- its source of power -- in the elasticity of a rubber band.

6- PS3 Thermal Energy

We look at exothermic and endothermic reactions with our molecule mashers, elephant toothpaste. Students conduct an experiment in warm water to see how hot and cold water interact and energy is transferred. Kids measure the various interactions and determine if they are exothermic or endothermic changes.



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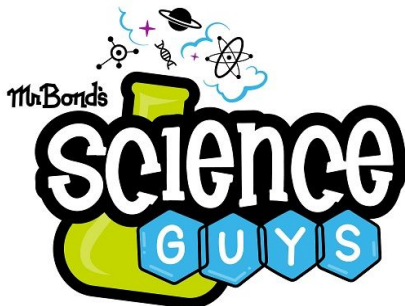
Seventh Grade

7.PS1.1,5 Periodic Table

Using a floor map of the Periodic Table, kids learn about some of the key elements; Carbon, Oxygen, Hydrogen, etc. While learning about some of the most important elements, kids also identify the main element in dozens of everyday household objects. We separate metals/metalloids and nonmetals. Kids use physical and chemical properties to determine which group various substances fall into.

7.PS1. 1,2,3,4

Molecule Structures: Colored marshmallows are used to represent the atoms carbon, oxygen and hydrogen. Kids learn about the bonds that each element is capable of and physically build possible combinations. Then we see which ones occur actually in the world around us (CO₂, H₂O, CH₄...)



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Eighth Grade

8- PS2 Energy - Electricity, Magnetism, Electromagnetism

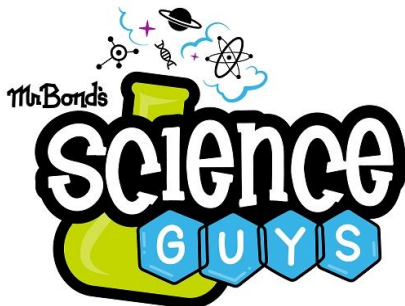
We use electricity to produce magnetic fields; use magnets to produce electricity; and see how these two forces are facets of the larger force, electromagnetic radiation.

8-PS4.1 Making Waves

We explore how waves are used in everyday technology. We split light into its visible wavelengths, then amplify light with surprising results. This helps to understand waves based on refraction, reflection, transmission, and absorption. A giant slinky is involved to represent the basic properties of waves including frequency, amplitude, wavelength, and speed.

8.PS2. 2,3,4: Motion and Stability

Students design, build, weigh and test various kinds of straw rockets. They launch at different angles and with different propulsion to determine the effects of mass, gravity, and thermodynamic design. They analyze which designs are most efficient to achieve various results.



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How To Book a Field Trip

1. Pick 1-3 dates for workshops. (Book 2 get 3rd on Free)
2. Choose one workshop theme per visit. \$6/child
3. [Contact us](#) with the theme(s), date(s), number of classes and approximate number of children.

Schedule Example

One Science Guy

9:15 – 10:00 Campbell (rm. 129)

10:05 – 10:50 Cato (rm. 127)

10:55 – 11:40 Webster (rm. 125)

11:50 – 12:35 Klosterman (rm. 219)

1:10 – 1:55 Hulgán (rm. 217)

2:00 – 2:45 Ortega (rm. 233)

Two Science Guys

8:45-9:30 Science Guy One Mrs. Flippo

8:45-9:30 Science Guy Two Mrs. Smith

9:35-10:20 Science Guy One Mrs. White

9:35-10:20 Science Guy Two Mrs. Young