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## Easy science investigatory project titles

Making slime is a fun project to do at home or school — and it takes just a few everyday ingredients to pull it off. We've got some recipes inside. By Alia Hoyt! you've already made slime at home, take the next step and try making kinetic sand. It's fun, easy, educational and even therapeutic. By Alia Hoyt There are plenty of possible ideas when it comes to easy science projects, and the key to a good project is selecting one that is fun and educational as well as easy. Many core science concepts can be demonstrated with everyday objects and materials; the following are some examples that tie these concepts to everyday life. 1. Chemistry: Do Teeth Whiteners Really Work? This project has results that are fairly simple to document with a few volunteer test subjects, a digital camera, and several different brands of teeth whitening strips. Take a before picture of each volunteer's teeth before starting. Allow at least a few weeks to document the results from each volunteer using a different teeth whitener; get a shot of the difference at least every other day and record each date for each subject. Gather 4 different soil samples of the same volume from different areas, and place each in an airtight container. Add a small amount of water to each sample and seal it tightly. Store them in an area with plenty of sunlight, and observe the different types of microorganisms that grow and develop over the next 10 to 14 days. Draw diagrams and describe what is different about each soil sample from each area. The conclusion in a science project summarizes the results of the experiment and either contradicts or supports the original hypothesis. It is a simple and straightforward answer to the question posed by the experiment. This section is clear, concise and informative. A conclusion should summarize the results of the science project and provide the key facts in a succinct explanation. This section must explain how the results of the project relate to the original hypothesis. The conclusion should evaluate the procedure and state any factors that led to success. This section suggests changes or adjustments required for the effectiveness of further or more in-depth study. Question: Why Do a Science Fair Project? You may be doing a science fair project because it's an assignment. You may get the opportunity to do a project by choice. Either way, it may motivate you to know how doing a project can benefit you. Answer: Discovering Something Amazing! You'll learn something from doing a project, plus it's usually a lot of fun. You may find something new doing your own project, plus you'll learn from other people. Real research is done for science fairs, sometimes resulting in important inventions and discoveries. Even if your project isn't earth-shattering, you'll almost certainly learn something you didn't know before you started. Developing Skills! You'll become better at science, plus you'll gain or practice several other skills. You may become more familiar with the library, learn to use a camera or word processing program, master a mathematical analysis, get public speaking practice, etc. Some of these skills may be intimidating to learn. When you're working on a science fair project, it's easy to get help, plus no one expects perfection. The benefits of the project go way beyond learning science. You'll become more confident, more mature, more disciplined, and more skilled. Cash & Prizes! The science fair project you do for your science class may get you an 'A' and maybe a pretty ribbon, but if you can take that project to a higher level (such as a regional or state competition, in the U.S.), then success could be measured in terms of a cash prize, recognition, scholarship, educational opportunities, and offers of employment. You just need a great project. Even if you don't win, the experience is nice to put on your college application. Science fair projects are a great way to learn about the scientific method, experimentation, and science concepts. However, it can be difficult to know where to start when you need a project idea. Sometimes you already have a great idea but have problems with the project or questions about the report, judging, display, or presentation. Here are some resources to give you the help you need. How to Find an Original Science Fair Project Idea Acids, Bases & pH Project Ideas Archaeology Science Fair Project Ideas Astronomy Project Ideas Biology Science Fair Project Ideas Chemistry How-To Guide Chemistry Science Project Ideas Crystal Science Project Ideas Designing a Winning Project Easy Science Fair Project Ideas Dry Ice Science Fair Project Ideas Engineering Science Fair Project Ideas Fire, Candles & Combustion Project Ideas Finding a Science Fair Topic Green Chemistry Project Ideas Home Product Testing Projects Food & Cooking Chemistry Project Ideas Physics Project Ideas Plant & Soil Chemistry Project Ideas Plastics & Polymers Project Ideas Pollution Science Fair Project Ideas Salt & Sugar Project Ideas Sports Science Fair Project Ideas Quick Look at Projects by Educational Level Elementary School Projects Elementary School - Physical Science Project Ideas Middle School Projects High School Projects College Projects 10th Grade Science Fair Projects 9th Grade Science Fair Projects 8th Grade Science Fair Projects 7th Grade Science Fair Projects 6th Grade Science Fair Projects 5th Grade Science Fair Projects 4th Grade Science Fair Projects 3rd Grade Science Fair Projects Kindergarten Science Fair Projects Preschool Science Fair Projects What Is a Science Fair Project? Doing Your Science Fair Project Science Project Safety and Ethics Guidelines Acid Rain Project Body Temperature Experiment Bubble Life & Temperature Caffeine and Typing Speed Carbon Monoxide Experiment Earthquake Projects Effects of Acids & Bases on Apple Browning Head Lice Projects Make Liquid Magnets Snow Projects Sample Science Fair Poster How to Do a Bibliography for a Science Fair Project Making a Science Fair Project Display Writing a Science Project Report Why Do a Science Fair Project? The Five Types of Science Projects The Scientific Method How many times have you seen a science demonstration or watched a cool video and wished you could do something similar? While having a science lab certainly expands the type of projects you can do, there are many entertaining and fascinating projects you can do using everyday materials found in your own home or classroom. The projects listed here are grouped according to subject, so no matter what you're interested in, you'll find an exciting activity. You'll find projects for every age and skill level, generally intended for the home or a basic school lab. To understand the basics of chemical reactions, start with the classic baking soda volcano or get a little more advanced and make your own hydrogen gas. Next, learn the basics of crystallography with our collection of crystal-related experiments. For younger students, our bubble-related experiments are simple, safe, and lots of fun. But if you're looking to turn up the heat, explore our collection of fire and smoke experiments. Because everyone knows science is more fun when you can eat it, try some of our chemistry experiments involving food. And finally, our weather-related experiments are perfect for amateur meteorologists any time of the year. While science projects may be done simply because they are fun and raise interest in a subject, you can use them as the basis for experiments. An experiment is a part of the scientific method. The scientific method, in turn, is a step-by-step process used to ask and answer questions about the natural world. To apply the scientific method, follow these steps: Make observations: Whether you're aware of it or not, you always know something about a subject before you perform a project or experiment with it. Sometimes observations take the form of background research. Sometimes they are qualities of a subject you notice. It's a good idea to keep a notebook to record your experiences before a project. Make notes of anything of interest to you. Propose a hypothesis: Think of a hypothesis in the form of cause and effect. If you take an action, what do you think the effect will be? For the projects in this list, think what might happen if you change the amounts of ingredients or substitute one material for another. Design and perform an experiment: An experiment is a way to test a hypothesis. Example: Do all brands of paper towels pick up the same amount of water? An experiment might be to measure the amount of liquid picked up by different paper towels and see if it's the same. Accept or reject the hypothesis: If your hypothesis was that all brands of paper towels are equal, yet your data indicates they picked up different volumes of water, you would reject the hypothesis. Rejecting a hypothesis doesn't mean the science was bad. On the contrary, you can tell more from a rejected hypothesis than an accepted one. Propose a new hypothesis: If you rejected your hypothesis, you can form a new one to test. In other cases, your initial experiment might raise other questions to explore. Whether you conduct projects in your kitchen or in a formal laboratory, keep safety first and foremost in your mind. Always read the instructions and warning labels on chemicals, even common kitchen and cleaning products. In particular, note whether there are restrictions about which chemicals can be stored together and what hazards are associated with the ingredients. Note whether or not a product is toxic or poses a hazard if it is inhaled, ingested, or touches skin. Prepare for an accident before one happens. Know the location of the fire extinguisher and how to use it. Know what to do if you break glassware, accidentally injure yourself, or spill a chemical. Dress appropriately for science. Some projects in this list require no special protective gear. Others are best performed with safety goggles, gloves, a lab coat (or old shirt), long pants, and covered shoes. Don't eat or drink around your projects. Many science projects involve materials you don't want to ingest. Also, if you're snacking, you're distracted. Keep your focus on your project. Don't play mad scientist. Young children may think chemistry is about mixing together chemicals and seeing what happens or that biology involves testing the reactions of animals to different situations. This is not science. Good science is like good cooking. Start by following a protocol to the letter. Once you understand the basic principles, you can expand your experiment in new directions following the principles of the scientific method. From each project, you'll find links to explore many other science activities. Use these projects as a starting point to ignite interest in science and learn more about a subject. But, don't feel like you need written instructions to continue your exploration of science! You can apply the scientific method to ask and answer any question or explore solutions to any problem. When faced with a question, ask yourself if you can predict an answer and test whether or not it is valid. When you have a problem, use science to logically explore the cause and effect of any action you might take. Before you know it, you'll be a scientist. There are many science projects you can do using common household materials. Sigrid Gombert / Getty Images The best part about science projects is actually doing them, but seeing them is pretty cool too. This is a photo gallery of science projects so you can see what to expect from projects. I've included links to instructions for doing these projects yourself or buying kits online. Slime is easy and fun to make. Pamela Moore / Getty Images Science kits you can buy produce slime ranging in color from greenish slime to glow-in-the-dark. When you make your own slime, you usually combine borax and glue. If you use translucent blue or clear glue, you can get translucent slime. If you use white glue, you will get opaque slime. Vary the proportions of glue and borax to get different levels of sliminess. You usually can get a nice alum crystal overnight (shown here). If you let the crystal grow for a day or more, you can get larger crystals. Christian Ude, Creative Commons License Alum is an ingredient you can find on the spice aisle of any grocery store. If you mix alum with water, you can grow impressive crystals. Because it is so safe, alum is the chemical found in many commercial crystal growing kits. The 'white diamonds' in the Smithsonian Crystal Growing Kits are made from alum. This is good to know because it means you can get a refill for those kits at any store or if you have the chemical but have lost the instructions, you can use the do-it-yourself instructions. Firebreathing can be accomplished using a non-toxic, less-flammable fuel than the ones used by traditional firebreathers. Corn starch is the fuel being used for this firebreathing. Anne Helmenstine You can learn how to breathe fire using a common kitchen ingredient. This is a fire chemistry project, so adult supervision is required. Combine household chemicals for a fun science project that makes polymer balls. Willyan Wagner / EyeEm / Getty Images Making polymer bouncy balls is a great project for anyone with an interest in chemistry, though kids probably get more out of the finished product than adults. Or maybe not... they are pretty fun. You can make polymer balls yourself using common household ingredients. You can also purchase kits that allow you to make balls in neon and glowing colors. The molds that come with the kits can be re-used to shape balls you make using your own ingredients. The volcano has been filled with water, vinegar, and a little detergent. Adding baking soda causes it to erupt. Anne Helmenstine A chemical volcano is another great classic chemistry project. The two main differences between making a baking soda and vinegar volcano yourself and using a kit are cost (practically free for the kitchen volcano; kits are inexpensive but still cost a bit more) and color (get richly-colored lava in a kit, which is harder to duplicate with a homemade volcano). No matter how you make it, a volcano is a fun project, great for kids of all ages. If you look closely, you can see the monoclinic shape of the sugar crystals that comprise this rock candy. Anne Helmenstine Rock candy is made from crystallized sugar. You can make it yourself or use a kit. Making it yourself is a more economical method, since all you need is sugar and water. However, if you don't have a stick to grow the rock candy, you might want the kit. Remember that rock candy is food, so make certain your glassware is clean and don't use potentially toxic materials (rocks, fishing weights) in your container. Sodium silicate is the 'secret' ingredient in Magic Rocks that allows you to grow an underwater crystal garden while you watch. Anne and Todd Helmenstine You can make your own Magic Rocks or you can purchase them. Making your own is a relatively advanced project, plus Magic Rocks are inexpensive, so although I'm usually a do-it-yourself type, this is one case where I'd recommend buying the project rather than gathering all the materials yourself. You can make your own geode using plaster of paris, alum, and food coloring. Anne Helmenstine You can make your own geode using alum from your kitchen and either an eggshell or else plaster of paris to make the 'rock' for the geode or you can use a crystal geode kit. There isn't a significant difference between a totally homemade geode and one from a kit, so deciding between the two is mainly about price and convenience. Fake snow or insta-snow is made from sodium polyacrylate, a water-absorbing polymer. Anne Helmenstine It's pretty easy to locate insta-snow online or in stores, but you can also make your own. Charge a plastic comb with static electricity from your hair and use it to bend a stream of water. Anne Helmenstine All you need is a comb and some water to try this fun science project. Epsom salt is magnesium sulfate. It's easy to grow Epsom salt crystals. The crystals typically resemble shards or spikes. Initially the crystals are clear, though they whiten over time. Anne Helmenstine Growing Epsom salt crystals is an easy crystal growing project that you can do at home. These chalk chromatography examples were made using chalk with ink and food coloring. Anne Helmenstine Use chalk and rubbing alcohol to separate the colors in ink or food coloring. It's a quick and easy project that demonstrates the principles of chromatography. Bubble Print. Anne Helmenstine You can make bubble prints to learn about how bubbles are shaped and how pigments combine to make different colors. Plus, they just make interesting artwork! Borax crystal snowflakes are fun and easy to make. Anne Helmenstine Borax crystal snowflakes are among the easiest and quickest crystals to grow. If you set up your crystals before you go to bed, you'll have sparkling snowflakes in the morning! You can hang the crystals in a sunny window or use them to decorate for the winter holidays. You can make your own lava lamp using safe household ingredients. Anne Helmenstine This lava lamp uses safe ingredients. A chemical reaction is used to make the bubbles, not heat, so while this lava lamp doesn't bubble indefinitely, you can recharge the bottle again and again. If you use scented shaving cream, you can make holiday-scented gifts. It's easy to find peppermint-scented shaving cream for the winter holidays. Try a floral scent for Valentine's Day. Anne Helmenstine Making marbled paper is a fun way to study the actions of surfactants. In addition to making pretty-colored wrapping paper, you have the option of making your paper scented. If you soak a raw egg in vinegar, its shell will dissolve and the egg will gel. Sami Sarkis / Getty Images You can bounce a 'rubber' egg like a ball. You can rubberize chicken bones by soaking them in vinegar, too. Make the rainbow by pouring the most dense liquid on the bottom and the least dense liquid on top. In this case, the solution with the most sugar goes on the bottom. Anne Helmenstine You probably know you can make a density column using liquids of different densities that won't mix. Did you know you can layer different densities of sugar water to make a rainbow-colored column? It's an easy way to make layers, plus it's non-toxic. This is an easy project. You'll get all wet, but as long as you use diet cola you won't get sticky. Just drop a roll of mentos all at once into a 2-liter bottle of diet cola. Anne Helmenstine The Mentos and diet soda fountain is a well-known fun project, but you can get a similar effect using other rolled candies (such as Lifesavers) and any soda. It's easy to make glowing gelatin. Just substitute tonic water for water in the recipe. You can cut it into shapes if you like. Ultraviolet light makes it glow, like from a black light. Anne Helmenstine The glowing gelatin recipe is very easy. Of course, you don't have to cut your food into shapes to play with it, but it somehow seemed more fun. I highly recommend the person stirring the ice cream wear insulated gloves, rather than risk a burn from an accidental nitrogen splash. Nicolas George When you make liquid nitrogen ice cream the nitrogen boils off harmlessly into the air rather than becoming an ingredient in the recipe. Nitrogen is used to cool your ice cream so that you don't have to wait around for a freezer or ice cream maker. This festive punch has a glowing hand and gives off lots of fog. It tastes great, too. Anne Helmenstine This punch recipe is great for several reasons. 1. It produces fog, it's bubbly, it glows, and it tastes yummy. You could put a simple candle inside your Halloween jack-o-lantern, but filling it with green fire is much more fun! Anne Helmenstine With a little understanding of chemistry, you could fill your pumpkin with fire of any color, but the cool fire just seems extra-spooky. This Lichtenberg figure was made by shooting a beam of electrons (~2.2 million volts) through an insulator. The pattern is illuminated by blue LEDs. Bert Hickman, Wikipedia Commons What you need in order to make your own Lichtenberg figure is a source of static electricity, a material that is an electrical insulator, and a means of revealing the pattern the electricity makes as it makes it way through the insulator. Light can display a pattern made in a clear substance. Photocopier toner can be used to reveal the pattern on an opaque surface. It's easy to make violet fire. Just ignite a mixture of salt substitute and methanol. Anne Helmenstine Potassium salts can be burned to make purple fire. Probably the easiest potassium salt to obtain is potassium chloride, which is used as a salt substitute. This soap sculpture actually resulted from a small piece of ivory soap. My microwave literally fell when I nuked an entire bar. Anne Helmenstine Aside from being an incredible simple yet entertaining project, microwaving ivory soap will make your kitchen smell soapy clean. Copper Sulfate Crystals. Stephanb, wikipedia.org You can order copper sulfate to grow copper sulfate crystals from a chemical supplier or you can find it in products used to control algae in pools and aquaria. One way to make green eggs is using food coloring, but you can also turn an egg white green using cabbage juice. Steve Cicero, Getty Images While it may not look particularly appetizing, green eggs are edible. The natural color that you add to the egg starts out red or purple, so you get to see a pH indicator in action as the slightly alkaline egg white reacts with the coloring to turn it green. Blue Daisy, Frances Twitty, Getty Images You can use the same trick used by florists to color flowers. Learn about transpiration and capillary action while making something pretty! What do you get when you drop Mentos candies into tonic water that is lit with a black light? Glow-in-the-dark fountain! Anne Helmenstine The glowing Mentos fountain is just as easy to achieve as the regular mentos and soda fountain. The 'secret' is using tonic water instead of any other soda. A black light causes the quinine in the tonic water to fluoresce bright blue. Squeeze citrus oil onto a flame for a bright flash of fire. Anne Helmenstine Making your own citrus mini-flamethrower is very easy, plus it's one of the safer projects you can do that involves fire. This is what you get when you drop a piece of dry ice into bubble solution. Anne Helmenstine Nothing could be easier than making dry ice bubbles. The bubbles are cloudy and cold and last a long time. If you coat a container of water and dry ice with bubble solution you will get a bubble that sort of resembles a crystal ball. Anne Helmenstine The bubble produced by dry ice resembles a swirling cloudy crystal ball. You can make colored chalk yourself. Jeffrey Hamilton, Getty Images Making colored chalk is an easy project that is suitable for kids as well as adults. Salt and vinegar crystals are non-toxic and easy to grow. You can color the crystals with food coloring if you wish. Anne Helmenstine Salt and vinegar crystals are among the easiest crystals to grow yourself. This is a crystal of chrome alum, also known as chromium alum. The crystal displays the characteristic purple color and octohedral shape. Ra'ike, Wikipedia Commons Isn't this crystal stunning? It is also one of the easiest crystals that you can grow yourself. Epsom salt crystals needles grow in a matter of hours. You can grow clear or colored crystals. Anne Helmenstine Epsom salt or magnesium sulfate is a common household chemical used for laundry, baths, and medicinal purposes. Growing epsom salt crystal needles is one of the quickest crystal projects. It's safe and easy to make your own natural Easter egg dyes from common foods and flowers. Steve Cole, Getty Images Learn how to make natural non-toxic Easter egg dyes. All you need is water, pepper, and a drop of detergent to perform the pepper trick. Anne Helmenstine The pepper and water science magic trick is especially popular with kids. Pour water into a shallow dish, light a match in the center of the dish and cover it with a glass. The water will be drawn into the glass. Anne Helmenstine The match and water science magic trick is easy to perform and only requires everyday household ingredients. This homemade smoke bomb is easy to make and only requires two ingredients. Anne Helmenstine You can make a smoke bomb yourself quickly, easily, and safely. You can make a colorful many-layered density column using common household liquids. Anne Helmenstine This density column is easy to make using common household materials. Red cabbage juice can be used to test the pH of common household chemicals. From left to right, the colors result from lemon juice, natural red cabbage juice, ammonia, and laundry detergent. Anne Helmenstine It's very easy to make your own red cabbage pH indicator, which you can use to test the pH of common household products or other chemicals. These pH paper test strips were made using paper coffee filters that had been cut up into strips and dipped in red cabbage juice. The strips can be used to test the pH of common household chemicals. Anne Helmenstine pH paper test strips are surprisingly easy and inexpensive to make. Using cabbage juice and coffee filters, you can detect pH changes over a very wide pH range (2 to 11). Squeezing and releasing the bottle changes the size of the air bubble inside the ketchup packet. This alters the density of the packet, causing it to sink or float. Anne Helmenstine The ketchup packet diver is a fun trick that can be used to illustrate density, buoyancy, and some of the principles of liquids and gases. These are shapes made from handmade paper which was crafted by recycling old paper. Anne Helmenstine Making recycled paper is a great project for kids or anyone with a creative streak. You can decorate the paper or even embed seeds in it to make gifts you can plant. Flubber is a non-sticky and non-toxic type of slime. Anne Helmenstine Flubber is an interesting type of slime you can make. It can be made in any color (or flavor) and is safe to eat. This salt crystal geode was made using salt, water, food coloring and an egg shell. Anne Helmenstine A salt crystal geode is extremely simple to make and uses common household ingredients. Homemade firecrackers are easy and inexpensive to make. Anne Helmenstine It's easy, inexpensive, and fun to make your own firecrackers. This is a good introductory fireworks project. Glowing Alum Crystals These easy-to-grow alum crystals glow, thanks to the addition of a little fluorescent dye to the crystal growing solution. Anne Helmenstine The glowing version of alum crystals is as easy to grow as the original version of these crystals. You can supercool hot ice or sodium acetate so that it will remain a liquid below its melting point. You can trigger crystallization on command, forming sculptures as the liquid solidifies. The reaction is exothermic so heat is generated by the hot ice. Anne Helmenstine You can make your own sodium acetate or hot ice and then cause it to crystallize from a liquid into ice while you watch. The solidification generates heat, so to the casual observer it's as if you're turning water into hot ice. If you blow out a candle, you can relight it from a distance with another flame. Anne Helmenstine This is an easy science trick you can do with any candle. Try it! This spooky Halloween pumpkin glows in the dark. The jack-o-lantern face is formed by the areas that aren't coated with phosphorescent paint. Anne Helmenstine This is a jack-o-lantern that will light up your Halloween without any use of knives or fire (or you could make a carved jack-o-lantern glow, too). The glowing effect is easy to achieve. You can make this non-sticky, edible slime from two easy-to-find ingredients. It can be used as ectoplasm for Halloween costumes, haunted houses, and Halloween parties. Anne Helmenstine It only takes a few minutes to make your own ectoplasm. You can make a glowing fake neon sign using plastic tubing and a black light. Anne Helmenstine This is an easy glow in the dark project that uses the fluorescence of common materials to produce a brightly glowing sign. All you need to do to make a colored fire pinecone is sprinkle the pinecone with a non-toxic colorant. Anne Helmenstine It only takes a few seconds to turn a regular pinecone into a pinecone that will burn with a multi-colored flame. Learn how to do it. You can produce a flame cool enough to hold in your hand. Anne Helmenstine You can make your own handheld fireball using common household materials. This is a crystal of potassium alum or potash alum. Food coloring was added to these crystals, which are clear when the alum is pure. Anne Helmenstine This crystal easily grows to a nice size overnight. You can tint the solution to make a simulated ruby. This crystal geode was made by growing green-tinted ammonium phosphate crystals overnight in a plaster geode. Anne Helmenstine Grow this easy simulated emerald crystal geode overnight. This single crystal of ammonium phosphate grew overnight. The green-tinted crystal resembles an emerald. Ammonium phosphate is the chemical most commonly found in crystal growing kits. Anne Helmenstine This simulated emerald crystal is nontoxic and will grow overnight. These are cubic crystals of table salt or sodium chloride. The salt crystals were produced by evaporating a salt solution on a black plate. The crystals are 3-mm across. Björn Appel Table salt crystals are extremely simple to grow. One way you can grow them is to simply allow a saturated salt solution to evaporate on a plate. Here's how to make the salt solution. Grow borax crystals over a pipecleaner shaped like a heart to create sparkling borax crystal hearts. Anne Helmenstine Borax crystal hearts only take a few hours to grow. All you need is borax, a pipecleaner and hot water. Here's what to do. Make a chemical crystal garden using salt, ammonia and laundry bluing on pieces of sponge, brick or charcoal. Anne Helmenstine This chemical crystal garden is easy to grow. You can grow crystals without the bluing, but the delicate coral shapes really need this ingredient, which you can find online if it isn't sold at a store near you. Grow magical-looking salt crystals from household chemicals. This salt crystal garden is a classic crystal growing project. Anne Helmenstine The salt crystal garden is easy to grow. All you need is a cardboard tube and some common household chemicals. Tonic water, which contains quinine, was used to impart a blue glow to this carnation. Anne and Todd Helmenstine Make a real flower glow in the dark. There are several ways you can achieve the glowing effect. Make a flower glow! The melting ice science experiment looks like an ice suncatcher!. Anne Helmenstine Learn about freezing point depression, melting, erosion and more with this safe, non-toxic science project. It's perfect for kids, even young ones... try it

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