I'm not a bot

What you'll need:WaterA clear plastic bottleVegetable oilFood coloringAlka-Seltzer (or other tablets that fizz)Instructions:Pour water into the plastic bottle until it is around one quarter full (you might want to use a funnel when filling the bottle so you don't spill anything).Pour in vegetable oil until the bottle is nearly full.Wait until the oil and water have separated.Add around a dozen drops of food coloring to the bottle (choose any color you like).Watch as the food coloring falls through the oil and mixes with the water.Cut an Alka-Seltzer tablet into smaller pieces (around 5 or 6) and drop one of them into the bottle, things should start getting a little crazy, just like a real lava lamp!When the bubbling stops, add another piece of Alka-Seltzer and enjoy the show!What's happening?If you've tried our oil and water experiment you'll know that the two don't mix very well. The oil and water you added to the bottle separate from each other, with oil on top because it has a lower density than water. The food coloring falls through the oil and mixes with the water at the bottom. The piece of Alka-Seltzer tablet you drop in after releases small bubbles of carbon dioxide gas that rise to the top and take some of the colored water along for the ride. The gas escapes when it reaches the top and the colored water falls back down. The reason Alka-Seltzer fizzes in such a way is because it contains citric acid and baking soda (sodium bicarbonate), the two react with water to form sodium citrate and carbon dioxide gas (those are the bubbles that carry the colored water to the top of the bottle).Adding more Alka-Seltzer to the bottle keeps the reaction going so you can enjoy your funky lava lamp for longer. If you want to show someone later you can simply screw on a bottle cap and add more Alka-Seltzer when you need to. When you've finished all your Alka-Seltzer, you can take the experiment a step further by tightly screwing on a bottle cap and tipping the bottle back and forth, what happens then? Have you ever made a DIY lava lamp? We love to explore science with common household items. A homemade lava lamp, that explores density is one of our favorite science experiments for kids. Pin You can also experiment with salt with this lava lamp instead of using Alka Seltzer tablets! Watch the video: Water Bottles, Mason Jars, or Plastic Cups Food Coloring Baby Oil or Cooking Oil Water Alka Seltzer Tablets (generic is fine) Lava Lamp Tip: Set up this experiment on a plastic tray or dollar store cookie sheet to minimize the mess. Dollar stores also have nice little mason jar-like jars you can use too. Science in a jar is quite fun, so we picked up six of them the last time we were there!STEP 1: Gather your ingredients! We started with one cup and then made a rainbow of lava lamps. STEP 2: Fill your cup or jar(s) about 2/3 of the way with oil. You can experiment with more and less and see which one gives the best results. Make sure to keep track of your results. See below for more tips on experimentation and using the scientific method. Pin STEP 3: Next, you want to fill your jar(s) the rest of the way with water. These steps are great for helping your kids practice fine motor skills and learn about approximate measurements. Make sure to observe what happens to the oil and water in your jars as you add each ingredient. STEP 4: Add drops of food coloring to your oil and water and watch what happens. However, you dont want to mix the colors into the liquids. Its ok if you do, but I love how the coming chemical reaction looks if you dont mix them! Pin STEP 5: Now its time for the grand finale of this lava lamp experiment! Drop an Alka Seltzer tablet or its generic equivalent into each cup or jar. Make sure to watch closely as the magic happens! When the lava lamp chemical reaction slows down, add another tablet. What do you think will happen? How is the colored water moving up through the oil? Ask plenty of questions to get your kids thinking! Pin Pin Quite a few things are going on here with both physics and chemistry! First, remember liquid is one of three states of matter. It flows, pours, and takes the shape of the container you put it in. However, liquids have different viscosity or thicknesses. Does the oil pour differently than the water? What do you notice about the food coloring drops you added to the oil/water? Think about the viscosity of other liquids you use. Why dont all liquids mix? Did you notice the oil and water separated? Thats because water is heavier than oil. Making a density tower is another great way to observe how not all liquids share the same density. Liquids are made up of different numbers of atoms and molecules. In some liquids, these atoms and molecules are packed together more tightly, resulting in a denser liquid. Learn more about density here. Now for the chemical reaction! When the two substances combine (Alka seltzer tablet and water), they create carbon dioxide, all the bubbling you see. These bubbles carry the colored water to the top of the oil, where they pop, and the water then falls back down. Want to turn this lava lamp into a cool lava lamp science project? Check out these helpful resources below. By changing the waters temperature, you can observe and measure how it affects the behavior of the bubbles of carbon dioxide. Sample Hypothesis: If the temperature of the water used in a homemade lava lamp increases, then the movement of the colored gas bubbles will become faster and more vigorous because heat affects the density and buoyancy of the liquids involved. Independent Variable: The temperature of the water used in the lava lamp. Dependent Variable: The speed and movement pattern of the colored gas bubbles in the lava lamp. Controlled Variables are Also check out Check out all our density experiments and Alka Seltzer experiments, including Density Tower: Fill a glass with layers of different liquids to observe how they stack according to density. Magic Milk Experiment: Add drops of food coloring to milk, then touch the surface with a soapy cotton swab. Colors swirl as the soap breaks surface tension. Floating Egg: Add salt to water until an egg floats. Compare this with an egg in plain water. Rainbow Density Experiment: Dissolve different amounts of sugar in water dyed with food coloring, then carefully layer them in a cup. Cartesian Diver: Place a small air-filled object in a sealed bottle of water. Squeeze the bottle to make it sink and release to make it rise. Dancing Raisins: Place raisins in soda and watch them rise and sink due to carbonation bubbles.Pin Pin Pin Pin Pin Pin If youre looking to grab all of our printable science projects in one convenient place plus exclusive worksheets and bonuses like a STEAM Project pack, our Science Project Pack is what you need! Over 300+ Pages! 90+ classic science activitieswith journal pages, supply lists, set up and process, and science information.NEW! Activity-specific observation pages! Best science practices postersand our original science method process folders for extra alternatives! Be a Collector activities packintroduces kids to the world of making collections through the eyes of a scientist. What will they collect first? Know the Words Science vocabulary packincludes flashcards, crosswords, and word searches that illuminate keywords in the experiments! My science journal writing promptsexplore what it means to be a scientist!! Bonus STEAM Project Pack:Art meets science with doable projects! Bonus Quick Grab Packs for Biology, Earth Science, Chemistry, and Physics Science Fair Project Pack with experiments to try!Pin Do you know how to make a lava lamp? DIY lava lamps are one of our favourite science experiments as they are super simple to make, can be used over and over again, and you can be as creative as you like with them. We've made Minions, reindeer and even snowmen lava lamps! Lava lamps are also a safe, exciting and visual way to introduce chemical reactions and the often tricky concept of density to children (the oil floats beautifully on top of the water). A clear plastic or glass bottle or jar A bottle of vegetable oil Water Alka Seltzer Food colouring (a bright colour is best!) Fill the bottle about a quarter full with water. Top up with vegetable oil to the (near) top. The oil and watershould separate into two layers, water at the bottom and oil on the top. Once the oil and water have separated, add enough food colouring to achieve the colour you want. The colour will mix with the water at the bottom. Pop in half an Alka Seltzer tablet and watch the bubbles form. Add more Alka Seltzer little by little to keep the bubbles rising and falling. Try using effervescent vitamin tablets instead of Alka Seltzer; these are usually a bit cheaper and have the same effect, although they might colour the water slightly. What happens if you use half a tablet? Or two? Once the reaction has finished, try gently tipping the bottle on its side. What do you notice? DIY Lava Lamp Alka seltzer is made of citric acid and sodium bicarbonate, which react with the water toform carbon dioxide gas and sodium citrate. It is the bubbles of carbon dioxidethat carry the coloured waterinto the oil, giving a lava lamp effect. NOTE - Please supervise the use of Alka Seltzer and effervescent vitamin tablets. Water and oil do not mix. This is because water is a polar molecule - its structure means it has a positive charge at one end and a negative charge at the other. Water molecules stick together because the positive end of one water molecule is attracted to the negative end of another. Oil molecule structure is different - it is non-polar, meaning that its charge is more evenly spread out, so the oil is not attracted to water. We call it hydrophobic (water-fearing), as it tries to get as far away from water as possible and does not mix. Oil rests on top of the water rather than underneath because it has a different density to water. Oil and water in a jar showing how they separate How about a pumpkin themed lava lamp for Halloween? These make a great last-minute pumpkin or a fun alternative if you don't fancy carving one this year. Pumpkin DIY lava lamp for Halloween We had a lot of fun making our Minion version of a lava lamp. If I did this again, I'd use blue water at the bottom, as you couldn't see the yellow very well in the oil. Minion Lava Lamp Or how about a Christmas Lava Lamp? Our reindeer and snowman were super cute and a big hit with the kids last year. Snowman and reindeer lava lamps If you enjoyed this activity, you'll love our other experiments for kids. We have hundreds of science-based investigations and activities, with something for all interests and ages. The Royal Institution has an excellent lava lamp and other fab experiments, too! Last Updated on July 4, 2025 by Emma Vanstone Looking for an engaging and educational science activity to do with your students? This DIY Lava Lamp Experiment is perfect for the classroom. Its a hands-on way to explore the principles of density, chemical reactions, and how liquids and gases interact. Plus, your students will love watching their colorful creations come to life. Heres how you can guide them through this fun experiment. Plus, click the button below to grab your free lava lamp experiment worksheet for your students. This experiment is a great way to introduce or reinforce key scientific concepts. Discuss with your students how the different densities of the liquids cause the layering effect. Explain the chemical reaction that occurs when the Alka-Seltzer tablet meets the water, producing carbon dioxide gas that creates the bubbling effect. This is a wonderful example of a real-world chemical reaction thats easy to observe and understand. Watch this video to get step-by-step instructions in a follow-along format. We Are Teachers Clear jars or bottles (one for each student or group) Spoon Water Vegetable oil Food coloring (variety of colors) Glitter (optional, but adds a fun visual element) Alka-Seltzer tablets Start by distributing the materials to each student or group. Have them fill their jars about halfway with water. This will serve as the base for their lava lamps. Now its time to add some color. Have students choose a few drops of food coloring to add to their jars. Mix well. Next, instruct students to pour vegetable oil into their jars until theyre almost full. This is a great opportunity to discuss density with your class. Ask them to observe how the oil floats on top of the water. Explain that this occurs because oil is less dense (lighter) than water, so it naturally stays on top. If you want to add an extra element of fun, let your students sprinkle in some glitter. The glitter will float within the oil, adding a visual sparkle that enhances the effect of the lava lamp. This can also be a good moment to talk about how solids can be suspended in liquids. Finally, give each student or group an Alka-Seltzer tablet and have them break it in half. When they drop the tablet pieces into their jars, theyll see the magic happen! The Alka-Seltzer reacts with the water to create carbon dioxide gas. These gas bubbles carry the colored water and glitter upward through the oil, creating the classic lava lamp effect. As the bubbles reach the top and pop, the water sinks back down, starting the process over again. This DIY Lava Lamp Experiment is not only a fun and visually engaging activity, its also a great lesson on states of matter. Your students will see how density and chemical reactions happen in real time. Whether youre teaching younger students about basic science concepts or older students about more complex principles, this experiment is a versatile tool that can be adapted to various learning levels. If you want to recreate our lava lamp experiment in your classroom, click the button below for a worksheet that walks students through every step and provides experiment questions to get them thinking. This is such a fun science experiment! These Lava Lamp Bottles are easy to put together and great for kids of any age. Lava Lamp Bottles are a fun science project children of all ages can make and experiment with! Get ready to inspire your little scientists with this super cool beginner Chemistry experiment. Your children will want to keep this bubbling hands-on activity going as long as possible. Have Fun! This is a safe and fun science experiment you can do at home or in a classroom. Its a lot of fun if you have a group of children; each child can have their own supplies. What you will need to make yourLava Lamp Science Experimentis in this picture below. However, I have it displayed in list form towards the bottom of the page.Have Fun! affiliate links can be found on this blog at no cost to you. Thislava lamp experimentis super cool and your kids will love exploring the different colored water and oil. Have fun with hands on science projects. Start your experiment by filling each empty bottle about of the way full with oil. Then, fill it the rest of the way with water until it gets to be about 2 inches from the top. Next, add in 4-5 drops of food coloring into each bottle. Kids love doing these few steps. Finally, have your child drop an antacid tablet into each bottle and watch all the bubbles start up and float all around like a lava lamp. These are such fun and easy lava lamp bottles. After the tablets were all dissolved, and the bubbles calmed down, we added another tablet to each of the bottles and repeated the lava effect. The kids loved it and the more bubbles, the better for them. If you want to discuss Chemistry with your kids and need a simple explanation, try this. Oil and Water dont mix because they can not form any chemical bonds together.Alka-Seltzer tablets contain sodium bicarbonate and citric acid so when you mix them with water, they react by producing bubbling carbon dioxide.Add that all together, and you get a fun DIY Lava Lamp. Whats Needed 2 Empty Water Bottles or Gatorade BottlesOil (vegetable or canola)Antacid Tablets, like Alka-SeltzerFood Coloring, 2 colorsWater Directions 1. Fill each empty bottle about of the way full with oil.2. Fill the rest the way with water until about 2 inches from the top.3. Put in 4-5 drops of food coloring into each bottle.4. Drop an antacid tablet into each bottle and watch all the bubbles start up and float all around like a lava lamp.5. After the tablets were all dissolved, and the bubbles calmed down, I added another tablet to the bottles and repeated the lava effect. Kids will be amazed with this DIY Lava Lamp that is really fun and EASY to make! I will show you how to make a lava lamp in just 5 minutes for a truly memorable chemistry experiments for kids. This homemade lava lamp is a funoil and water experimentfor kids from toddler, preschool, pre-k, kindergarten, first grade, 2nd grade, 3rd grade, 4th gradeers, and up! Lots of pictures and ideas for a lava lamp experiment. Simply print lava lamp experiment worksheet pdf and you are ready to play and learn with this really cooldiy lava lamp for kids. I am always eager to find creative, new, and fun things for kids.As part of oursummer bucket listwe decided tomake a lava lamp. It was a really fun summer science activity that was so EASY I knew youd want to knowhow to make a lava lamp for kids. Thislava lamp experiment is so simple and uses everyday materials you probabaly already have on hand! Try this preschool science experiments with parents, teachers, grandparents, planning for Vacation Bible School, working on a science Summer camp, daycare, or planning a science birthday party . This is a MUST TRY science activities for preschoolers, toddlers, kindergartners, grade 1, grade 2, grade 3, grade 4, and up! Plus dont miss our pop rocks and soda experiment, 100 fun kindergarten science experiments, and best slime recipes Start by scrolling to the bottom of the post, under the terms of use, and click on the text link that says >> ____