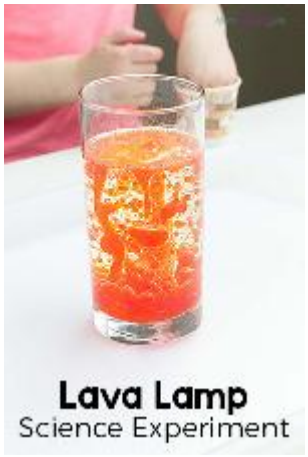
Note: Centers can pick any activity from the component given below, one activity per day. On each day children must be given a 30 min break in between the curriculum. Centers can plan the schedule accordingly. Refer to sample schedule given under Summer Camp Guidelines.

XPLORE SCIENCE:

Activity	Description	Materials Needed
Dry Ice Bubble	**Dry Ice Bubble Experiment:** 1. Pour water in a glass. 2. Drop dry ice into the water. 3. Fumes come up. 4. Now pour few drops of dish wash soap on the water. 5. Now soap bubbles come in as big bubbles. 6. The bubbles are a mixture of carbon-di-oxide and water.	1. Dry ice 2. Warm water in a glass 3. Liquid soap
Invisible Glass Trick	**Invisible Glass Trick:** 1. Pour vegetable oil in the big container. 2. Insert the small glass into the oil. 3. You will not be able to see the small glass and it becomes invisible. When light travels through the glass and then the oil , the speed of the light slows down and on reflection, makes the glass looks invisible.	1. A big pyrex glass container 2. A small pyrex glass. 3. Vegetable oil.

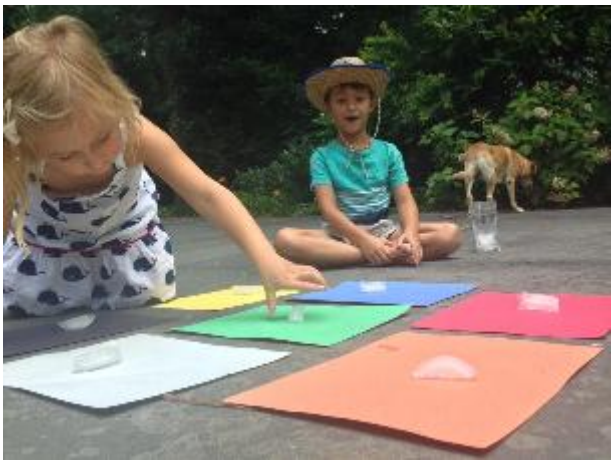
	This slowing down process of light and reflection through certain objects is known as the index of refraction. **Teachers reference:** http://mocomi.com/invisible-glass-trick/	
Lava Lamp	1. Pour water in a glass. 2. Pour few drops of food colouring. 3. Pour cooking oil in the water. 4. Put salt on the water. 5. The bubbles start coming and lava lamp is created.  	1.Water 2. Glass 3.Food colouring 4. Salt
Invisible Licorice	**Invisible Licorice:** Did the candy melt or disappear? Your students might think it's magic, but it's really all about perspective and science. **You'll Need:** Licorice, or other long, straight candy (alternative: a pencil or straw) Tall, skinny drinking glass Cooking oil, such as vegetable or olive oil	

	How To: 1. Pour some oil into the glass. 2. Put the candy stick into the glass. At the surface of the oil, does the candy look as if it has been cut in half? 3. Lean the candy stick against the side of the glass. (If the licorice doesn't lay flat against the side, make a bend near the bottom of the stick to help hold it in place.) 4. Look at the side of the glass, and slowly turn it. Does the licorice get wider and narrower? Can you make it disappear? **What's happening:** You've probably noticed how light bends in a glass of water. This is what makes things inside a glass of water look so distorted and strange. Oil bends light even more than water does. In fact, it can bend the light so much that, if you hold the glass the right way, a piece of candy nestled against the side of the glass is completely hidden from your eyes. 	
Gumdrop Structure	**The Challenge:** Using 10 gumdrops and 20 toothpicks, design a structure that can hold the weight of a large textbook. **The Big Ideas**	• 10 gumdrops • 20 toothpicks • 1 ruler • Disposable surface on	

	1. Triangles are strong. 2. Large bases support more weight. • Provide students with step-by-step directions on how to build a gumdrop structure. • Introduce the importance of shapes when building structures • Have students predict which shape they think will do the best. • Introduce the challenge, explain how the houses will be tested (show the book), and then have them begin. No additional talk or help! Failure is an option! Encourage students to rebuild. • Once the students are done building the structure. It can be tested by placed a large textbook on top. • Refer sample images below.  	which to work; small paper plate, or paper towels (optional, but sugar from the gumdrops gets a little messy.)
Mini Pumpkin Volcano	1. Teachers can cut out the stem area and make a small opening on top of the mini pumpkin. 2. Keep the opening aside and teachers can remove out some seeds from inside the pumpkin.	1. Mini pumpkins 2. Baking Soda 3. Vinegar

	3. Place the mini pumpkin on the tray. 4. Add a few spoons of baking soda into pumpkin. 5. Then add a few drops of dish wash solution and lastly a few drops of food coloring (optional), the food color will make the eruption look colorful. 6. Now give a bowl of vinegar and an eye dropper to the students. 7. Assist the students to drop the vinegar into the pumpkin using the eye droppers/baster. 8. Students can now see a mini pumpkin volcano. 9. The process can be repeated with more vinegar and more baking soda. 10. Reference image below.  	4. Dish soap 5. Food coloring {optional} 6. Spoon, baster, and/or measure cup 7. Tray to catch the mess!
Making a Steam Boat	1. Teachers can drill a hole in a use and throw soda bottle at the bottom and insert a three- four inch straw into it, such that an inch of the straw is inside the bottle and rest remains out. Apply fevikwik or fevibond or hot glue around the edges of the straw to seal the edges. 2. This can be kept ready a day before by the teacher.	1. Baking soda 2. White vinegar 3. Soda bottles 4. Straws 5. Sharpeez (optional) for

	3. On the day of the experiment, turn the bottle sideways and fill it with 1 cup of vinegar by taking children's help in closing the end of the straw. 4. The students can drop a few spoons of baking soda inside the bottle. Ensure that the bottle is kept sideways while all this is done. 5. Give the bottle one quick shake, and place it quickly into the bathtub/baby pool. 6. And it's off !  	decorating the boat 6. Baby pool or bathtub
Melting Rates	**Note to teachers:** Different colors have different heat absorbing capacities. Black has the greatest heat absorbing capacity, which results in ice melting quicker than on white, which reflects the most light. 1. Place different coloured foam sheets under the sun and put an ice cube on each sheet.	• Ice cubes • Different coloured foam sheets

	2. Students will observe that different colours have different rates of heat absorption and this results in the different melting rates of the ice cubes placed on the sheets. 	
Make Water Float	1. Fill the glass with as much water as you'd like. 2. Fill the glass again about half the glass. 3. Put a card or paper on top of it and press down firmly, while rotating the cup until it's upside down. 4. Now slowly remove the hand, leaving the piece of paper in place. 5. If this doesn't work for you right away, try a larger piece of paper, or less water and watch as the water stays in place inside the glass. 	1. A small glass of water 2. A sink or bathtub 3. An index card or piece of construction paper large enough to cover the opening of the glass

Colourful Sugar Water Density Tower	1. Fill the cups with 200ml of hot tap water. Use your method of choice to color the water. Give a different color for each cup, for example, blue, green, yellow, and red. 2. Add 2 level tablespoons (26 g or 3 sugar cubes) of granulated sugar to the first cup, 4 to the second cup, 6 to the third cup and 8 tablespoons to the fourth cup. 3. Be sure to label each color with the amount of added sugar. For example: • Blue = 2 tablespoons • Yellow = 4 tablespoons • Red = 6 tablespoons • Green = 8 tablespoons 4. Use a separate spoon to stir each cup and stir until the sugar is *completely* dissolved. It's crucial that all of the sugar be dissolved in each cup. Use separate spoons so you don't dilute one density with another. 5. It's likely, however, that you'll reach the **saturation point** of sugar in a cup of water by the second or third cup. You'll stir and stir but there seems to always be some sugar remaining un dissolved in the cup. 6. If required you can move to a **super**saturated solution to dissolve all the sugar and this means heating the water. Place a cup in a microwave oven for 20 seconds to warm the water. Stir the warmer water. Continue warming and stirring in stages until all of the sugar is dissolved in all of the cups. (Optional)	1. Cups/Glasses - 4 or more 2. Sugar 3. Water 4. Food Color - 4 or more colours 5. Pippette/Baster/eye dropper 6. spoons/stirrers

7. Start with the cup containing the most dissolved sugar (green water in the example). Using a pipette, dropper, or a turkey baster, add the bottom layer of colored sugar water to the jumbo test tube. Keep the sides of the test tube dry by placing the baster well down into the center of the tube before gently squeezing it.

NOTE: If you have only one pipette or baster, be sure to rinse and dry it between each color change so one solution doesn't mix with another.

8. Using a new pipette, carefully add the next density layer (red in the example) onto the surface of the first. The best technique is to keep the tip of the pipette against the wall of the test tube and a little **above** the surface of the rising sugar water. Slide the pipette up the wall as the level rises, too.

9. At first, the colors may seem to mix a little no matter how careful you are. Then, as more of the second color fills the test tube, a separation will appear. The less dense solution is floating on top of the more dense solution.

10. Use a new pipette to continue with the next color the same way. Grab a fourth pipette to finish with the least dense color until you have stacked all of them on top of each other in the tube. Admire your work and look for more colors in the tube than you had at the start.