**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 |
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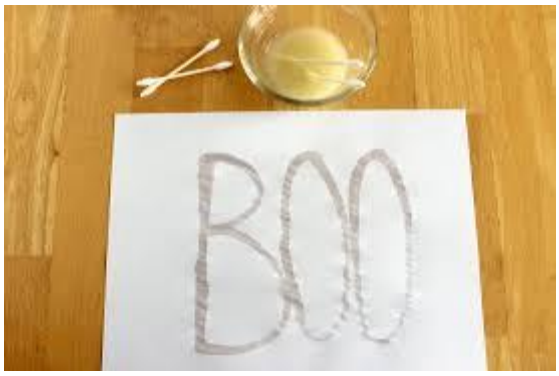
| Invisible Ink Experiment | Invisible ink experiment :<br>Steps:<br>• Squeeze some lemon juice into the bowl and add a few drops of water.<br>• Mix the water and lemon juice with the spoon.<br>• Dip the cotton bud into the mixture and write a message onto the white paper.<br>• Wait for the juice to dry so it becomes completely invisible.<br>When you are ready to read your secret message or show it to someone else, heat the paper by holding it close to a light bulb.<br>  <br>**What's happening?** | 1. Lemon juice<br>2. Water<br>3. Paper<br>4. Cotton bud<br>5. Light bulb |

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| | Lemon juice is an organic substance that oxidizes and turns brown when heated. Diluting the lemon juice in water makes it very hard to notice when you apply it the paper, no one will be aware of its presence until it is heated and the secret message is revealed. Other substances which work in the same way include orange juice, honey, milk, onion juice, vinegar and wine. Invisible ink can also be made using chemical reactions or by viewing certain liquids under ultraviolet (UV) light.<br><br>Encourage students to try this activity by themselves | |
| Mirror Challenge | 1. Provide A4 sheet for all students.<br>2. Ask the student to draw a simple picture using a crayon.<br>3. Stand a mirror vertically against the table they are using.<br>4. Place the paper against the glass horizontally so; they can see the picture in the mirror.<br>5. Now use a pencil and try drawing over the shape only looking in the mirror as you go.<br><br>This is lateral reflection in action! Give turn to each of the students!<br><br>Please watch the video of the experiment. | 1. A4 sheet for each student<br>2. Medium size mirror<br>3. Pencil |
| Egg Bubbles | **Egg Bubbles**<br>1. Place the egg carefully into the glass or jar.<br>2. Carefully pour hot water into the glass or jar | 1.Egg<br>2.Glass jar<br>3.Magnifying glass |

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| | until it is nearly full.<br><br>3. Leave the glass or jar on a table or flat surface and watch the egg closely for a few minutes (the glass may become hot so be careful).<br><br>4. Use your magnifying glass to closely examine what is happening.<br><br>**Note:** Teacher shall be very careful while using the hot water.<br><br>**What's happening?**<br><br>After surrounding the egg with hot water you will notice tiny bubbles forming on the egg shell which eventually bubble their way to the surface.<br><br>An egg contains a small air pocket at its larger end between the shell and egg white. When the air trapped inside this small pocket begins to heat up it expands and tries to find a way out of the shell, but how does it escape?<br><br>They're too small to see under normal conditions but with the help of a magnifying glass you can see that egg shells contain thousands of small holes called pores (human skin has pores too).<br><br>The pores allow air to pass through the shell, making it look like the egg is breathing as the air expands and is forced through the shell. | 4.Hot water |
| Gravity Free Water | 1. Use a transparent glass which has a flat circular rim. Fill the glass right to the top with water.<br>2. Put the cardboard over the mouth of the glass, | 1. Water<br>2. Glass<br>3. Cardboard |

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| | making sure that no air bubbles enter the glass as you hold onto the cardboard.<br>3. Turn the glass upside down over a sink.<br>4. Take away your hand holding the cardboard.<br><br>**What's happening?**<br><br>If all goes to plan then the cardboard and water should stay put. Even though the cup of water is upside down the water stays in place, defying gravity! So why is this happening? With no air inside the glass, the air pressure from outside the glass is greater than the pressure of the water inside the glass. The extra air pressure manages to hold the cardboard in place, keeping you dry and your water where it should be, inside the glass. | |
| Sparkly Explosion | 1. Place 2-3 Tablespoons baking soda in the bottom of the vase.<br>2. Put the vase in the pan.<br>3. Add 6-7 drops of food coloring and 1-2 teaspoons of glitter.<br>4. Quickly pour in about 1/2 cup vinegar. Watch for the sparkles!<br><br>**What's happening?**<br><br>Baking soda is a base and vinegar is an acid and mixing acids and bases makes a reaction. | 1. vase<br>2. baking soda<br>3. vinegar<br>4. food coloring<br>5. blue glitter<br>6. pan/tray to contain the mess |

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| Bouncing Raisins | 1. Begin by half filling your glass or jar with water.<br>2. Then add the vinegar and baking soda to the water.<br>3. The mixture in the glass will begin to fizz.<br>4. Drop the raisins one at a time into the glass.<br>5. The raisins may initially sink to the bottom but eventually they will rise up and then sink, then rise again.<br>6. Children should be able to watch the raisins bounce for up to an hour.<br><br>**What's happening?**<br><br>• When Vinegar reacts with baking soda it creates carbon di oxide bubbles.<br>• Which make the raisins float up once the bubbles settle the raisins drop down again. | 1. a tall clear glass or jar<br>2. water<br>3. vinegar<br>4. baking soda<br>5. eight or more raisins |
| Sunrise Sunset Experiment | 1. Half fill a clear drinking glass with water.<br>2. Shine your flashlight on the glass directly above it.<br>3. The water will look white.<br>4. Now pour 1/2 cup of milk into the glass and mix well.<br>5. Take the glass somewhere dark and shine the | 1. Tall glass<br>2. Flash Light<br>3. Milk<br>4. Water<br>5. Stirrer |

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| | | flashlight from the side of glass through the milk.<br>6. The milk will look yellow, orange or red.<br><br>**What's happening?**<br><br>• Just like a sunset or sunrise, the light is shining through particles.<br>• The atmosphere is full of billions of particles.<br>• When the sun is low in the morning or early evening, it's rays must travel through a thicker layer of atmosphere than at other times of the day.<br>• When sunlight hits these particles, the light bounces off of them and scatters.<br>• Orange and red lights scatter the least, which is why you see these colours in a sunrise or sunset. | |
| | Absorption Experiment | 1. Stick a piece of masking tape lengthwise down the side of your jar.<br>2. Fill it with water.<br>3. Mark the level of water on the tape with your marker.<br>4. Fold one sheet of paper towel in half four times to make a small square.<br>5. Dip the entire paper square into the jar of water.<br>6. Remove the wet paper towel.<br>7. Mark the new water level on the tape.<br>8. Refill the jar with water to the original level.<br>9. Lay three sheets of paper towels on top of each other.<br>10. Fold them in half four times to make a small square. | 1. Masking tape<br>2. Narrow glass jar<br>3. Water<br>4. Paper towels<br>5. Marker |

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| | 11. Dip the paper square into the water.<br>12. Remove the wet paper and mark the water level.<br>13. The water level will have decreased substantially compared to the single sheet of paper towel.<br><br>**What's happening?**<br><br>• Folding the sheets makes them smaller but does not change the way they soak up water.<br>• The thicker the towel, the more it will absorb. | |
| Be a snake charmer | 1. Put a plate on a piece of tissue paper and trace around the plate.<br>2. Cut the circle out and draw a spiral inside the circle.<br>3. Decorate your soon-to-be snake, drawing the eyes in the middle of the tissue paper.<br>4. Cut along the spiral.<br>5. Rub a plastic ruler hard against a woolen scarf for 30 seconds.<br>6. Immediately touch the head of the snake with the ruler.<br>7. Slowly raise your ruler and you should see your snake rise with your ruler and uncoil.<br><br>**What's happening?**<br><br>• Because the buildup of static electricity from the woollen scarf and the ruler transfers to the tissue paper, which is enough to lift it up because the tissue paper is so light. | 1. Plate<br>2. Tissue paper<br>3. Pencil<br>4. Scissors<br>5. Ruler<br>6. Woolen scarf |