10 Activities

Science Activity Plans

Preschool

Science Activity Plan

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Color mixing spinning wheel

Materials

- Scissors
- Paint – red, blue and yellow
- Tooth picks
- Thin cardboard
- Pencils
- Circle template

Preparation

- The teachers will cut circle cutouts from the cardboard for children to use.

Procedure

- The teacher will distribute the circle cutouts to the children.
- Each child should get at least 2 of the circles so that they can explore more color combinations.
- The teacher will instruct the children to divide their circles into 4 parts by showing a sample. The circle will have four quadrants to paint on.
- The teacher will provide help as required.
- Using the primary painting colors (red, blue and yellow), the teacher will encourage the children to use two different primary colors to paint. They will paint the same color on opposite sides of the circle, so that the two colors will alternate around the circle.
- For example, children can paint blue and red colors in opposite quadrants of the circle.
- Once the paint dries off, the teacher can assist the children in making a tiny hole at the center of the circle using the toothpick.
- Once this is done, encourage the children to spin their circles or spinners and they will be amazed to see a blended new color – in this case a shade of purple.
- The same spinner can be used to make another combination by painting another two colors on the opposite side of the circle.
- With every child having at least 2 circles, they will be able to explore all 3 combinations of colors – red and yellow, yellow and blue, blue and red.

Germinating seeds

Materials

- Bean seeds
- Paper towel
- Plastic zip lock bag
- Tape
- Bottle of water

Procedure

- The teacher will need to soak the bean seeds overnight in water before doing this experiment in the class. This will help the seeds to germinate better.
- During the experiment, the teacher will drain out the water and keep the seeds.
- The teacher will then provide each child with a zip lock bag and a piece of paper towel.
- The teacher will take a bottle and go around and sprinkle some water onto the paper towel of each child so that the paper towels are damp. Alternatively, you can let the children do this under your supervision.
- Instruct the children to fold the damp paper towel and put it in the zip lock bag.
- Now provide the children with at least 5 to 6 seeds and show them how to place it at one side of the bag pressed against the paper towel.
- The teacher will help the children to tightly close the bag and tape it to the window facing the sun.
- The teacher will need to make sure that the seeds are visible to children and are not on the opposite side of the window.
- Explain to the children that the water on the paper towel and the sun will help the seed germinate and grow.
- The children can come back the next few days and observe the sprouting of the seeds.
- Let the children observe the sprouting during the next week. After a few days, they will be able to see some leaves sprouting out from the seed.
- After sprouting, let the children know that the seeds are ready to be planted in soil to grow.

Will it melt in the sun?

Materials

- Muffin tin
- Chart paper
- Pen
- Ice
- Rock
- Butter
- Cheese
- Marble
- Quarter
- Chocolate
- Crayons
- Bar of soap

Procedure

- The teacher will take a muffin tray and place the above listed items in it.
- Then the teacher will show this tray to children and introduce different items to them.
- The teacher will take a chart paper and list these items there and leave space next to it to note the children's predictions – can add two columns, "Will melt" and "Will not melt".
- The teacher will ask the children to think about whether each of these items will or will not melt in the sun.
- The teacher will record their responses in the chart paper and take the children out into the sun.
- The teacher will place the muffin tin in the sun for 10 minutes, encouraging the children to keep observing the tray.
- After about 10 minutes, items like chocolate, butter and ice should have melted.
- The teacher can put on the timer for another 15 minutes and make the children observe what happens next.
- After around 25-30 minutes, other items like crayons and cheese may begin to melt as well.
- Coming back to class, the teacher will review the predicted chart filled before the experiment and check if the children's predications were correct.
- The teacher will explain that things have different melting points. Some things will melt faster than others, and some will not melt because the sun is not hot enough.

What dissolves in water?

Materials

- Five types of powder – sugar, salt, gelatine, flour, pepper
- 5 clear jars or glass
- Water
- Stirrers

Procedure

- The teacher will begin by gathering all the children in the class and tell them that they will be doing an important experiment, and that they should observe every step.
- The teacher will begin by filling up the glass/jars with water.
- The teacher will then add one tablespoon of each material to each jar and ask the children to observe carefully what happens.
- The teacher can then add 1 cup of warm water to each glass/jar.
- The teacher will provide opportunities to children to be able to stir the mixture.
- The teacher will ask the children to observe each jar for next 60 seconds after they stir.
- The teacher asks, “Which materials have dissolved completely in the water?”

Does it sink or float?

Materials

- 3 glasses
- 6 cups of water
- 1/2 cup of salt
- 1/2 cup of sugar
- Cherry tomatoes (or grapes, eggs)

Procedure

- The teacher will fill each of the 3 glasses with 2 cups of tap water.
- The 1st glass will have only water
- The teacher will add 1/2 cup salt into the 2nd glass and stir until it completely dissolves.
- The teacher will add 1/2 cup sugar into the 3rd glass and stir until it completely dissolves.
- The teacher will ask the children to observe the 3 glasses of water: 1st is tap water, 2nd is salt water and 3rd is sugar water.
- The teacher will have children drop the tomatoes (or grape, eggs) into the glasses one at a time and see if it sinks or floats.

Points of discussion

- The cherry tomatoes will float in salt and sugar water because the salt and sugar dissolved in the water makes it denser.
- Objects float better in denser fluids because the force of buoyancy is greater. The tomatoes will float best in salt water, better in sugar water, and will not float in tap water.

Water absorption

Materials

- Sugar cubes
- Plate
- Water
- Food coloring
- Aluminium foil
- Cling film
- Tissue paper
- Paper towel

Procedure

- The teacher will add a few drops of food coloring to some water and pour it onto the plate.
- The teacher will add a stack of sugar cubes and encourage the children to observe what happens.
- The colored water will move up the stack of cubes and slowly make them collapse.
- The teacher will then add an aluminium foil on top of one sugar cube and then stack some more on top. The teacher will then ask the children to observe if the water stops reaching to the top of the cubes?
- The teacher will repeat the same with cling film, tissue paper and paper towel and encourage the children to observe which one works best?

Points of discussion

- The water is absorbed by the sugar cubes as you can see by the color rising up through the cubes.
- The tissue paper absorbed the water easily and let it reach the cubes above. This is because tissue paper is porous and allows water to pass through it.
- The foil and cling film prevent water from passing through it.

Balance the bears

Materials

- Teddy bear counters
- Small paper cups
- Popsicle sticks

Procedure

- The teacher will gather the children around her and instruct them that they are going to build a bridge that can hold 20 bears.
- The teacher will show them materials – paper cups, popsicle sticks and teddy bears.
- Explain to the children they will be using the cups and popsicle sticks to build a bridge.
- The teacher can place the 3 cups in a triangle shape and connect it with popsicle sticks and say this is one type of bridge.
- The teacher can invite a pair of students to come forward and place the 20 bears on the bridge to see if it can support all the bears.
- If the bears fall off, the teacher should ask the children for ideas on how to support the 20 bears on the bridge.

Explore weighing scale

Materials

- Weighing scale
- Toy animals
- Popsicle sticks
- Crayons

Procedure

- The teacher will gather all the children around and show them the weighing scale.
- The teacher will use the toy animals and say we will use each of these animals and weigh their weight using different materials.
- The teacher will place an elephant on one side of the weighing scale and ask the children to make predictions about how many sticks and crayons would equal the weight of the elephant.
- The teacher will use combination of different animals with different resources to weigh using the scale.

Day or night?

Materials

- 2 hoola hoops
- Day activity and night activity pictures

Procedure

- The teacher will use 2 hoola hoops for this activity.
- The teacher will lay two hoola hoops on the ground in such a way that they overlap each other in between like a Venn diagram.
- One hoola hoop represents day, the other one night. The overlapping common area represents both day and night.
- The teacher will show different activities on cards, such as breakfast, dinner, sleeping, brushing teeth, bathing and going to school.
- During the activity the teacher will invite children to settle down in a circle around the hoola hoops.
- The teacher will pick up one activity card at a time and show it to the children, and ask them what they see.
- The teacher can discuss the activity and ask children if they do the activity.
- Then the teacher will ask the children when do we do this activity? The card will be placed in the day, night or the common day and night area of the hoola hoops.
- The teacher will place the common activity cards in the overlapping area. For example, brushing teeth will be in the common area (day and night) because we brush our teeth both in the morning and before bedtime.

Experimenting with the wind

Materials

- Table fan
- Construction paper
- A table
- Crayons
- Feathers
- Q-tip
- Coin
- Clothespin
- Marker

Procedure

- The teacher will cut out colored construction paper into rectangular strips.
- The teacher will tape one end of each strip to the top of a table so that paper hangs down.
- The teacher will tape various objects to the end of these paper strips to serve as weights.
- The objects may be a crayon, feather, Q- tip, coin, clothespin and marker.
- The teacher will leave one strip empty without any weight attached to it.
- Once the setup is ready, the teacher will gather the children and introduce the activity to them.
- The teacher will use a small table fan to create wind and position it in such a way that it blows gently over the strips of paper.
- The teacher will ask the children to observe what happens to each strip as they come in contact with the wind.
- The teacher will guide them to observe which strips are too heavy for the wind to move them, and which objects are lighter so the wind easily moves them.
- The speed of the fan can be adjusted, so that the children can observe again.