**EduTOOLBOX – Pre-K Science Experiment Lesson Plan**

|  |  |
| --- | --- |
| **Lesson Title:** | Static Electricity |
| **Lesson Objective:** | Students will explore static charge and electricity by observing and discussing what happens when rubbing balloons on a variety of objects. |
| **Aligned Standard(s):**  **(TN-ELDS)** | PK.ETS1.01a Use senses to gather, explore, and interpret information.  PK.ETS.1.01b With modeling, prompting, and support, record and organize data using graphs, charts, science journals, etc., to communicate conclusions regarding experiments and explorations.  PK.ETS.1.01c Make predictions based on observations and prior explorations. |
| **Assessment Method:** | Teachers will document student learning using photos, videos, and anecdotal notes. |

|  |  |
| --- | --- |
| **Intentional Vocabulary:** | Static Electricity – *static electricity happens when electrons from one item move onto another (in this case a balloon). The movement of electrons give the balloon a negative charge that makes it attract or repel objects, similar to a magnet.* |
| **Materials Needed:** | Blown up balloons (one per child)  An assortment of items to try and move with static electricity (such as bits of paper,  salt, paper clips, beads, ribbon, fabric, Legos, etc)  science journals |

|  |  |  |
| --- | --- | --- |
| **Lesson Procedures and Questioning** | | |
| **Lesson Section** | **Detailed Procedure** | **Questioning Sequence** |
| **Introduction:** | Display the blown-up balloon and assortment of items to the students. Remind students that scientists make predictions before experimenting. Guide students through the questioning sequence and ask them to write and draw their predictions in their science journal. | * What materials do you think we will use today? * I’m wondering if there is a way that I can connect the balloons to these items. How can I hold these items together? * What do you predict will happen if I rub the balloon on the ribbon, salt, fabric, etc) |
| **Exploration:** | Encourage children to rub their balloon on their head to “charge” it up with static  electricity. Then let them experiment by holding the balloon close to (but not  touching) different items. See what will react to the static charge.  Explain the vocabulary words to students throughout their explorations. | * What is happening when you rub your balloon on the objects? * Which object holds the strongest to your balloon? Why do you think it was so strong? * Which object doesn’t hold on to your balloon? Why do you think it didn’t hold? * How do you think we could make the hold stronger? |
| **Closing:** | Lead a discussion to reflect on student learning. Explain that these materials will be at the science/exploration area during center time.  Encourage students to draw and write their observations in their science journals, reflecting on their predictions and experiment results. | * Were your predictions about what would happen correct? * Have you ever experienced static electricity outside of our classroom? What happened? * What do you think would happen if we put water on our balloon? * I noticed that the static electricity charge held the balloon and the paper together. What are some other ways we can hold two items together? |

|  |  |
| --- | --- |
| **Extending the Learning:** | Place the materials in the science/exploration area allowing students to explore independently. |
| **Considerations for Learning:**  *possible challenges, management issues, and safety considerations* | *Remind students of safety rules for science experiments before beginning the lesson. Remind students that nothing should ever go in their mouth or ears unless specifically instructed to do so. Students may be tempted to play volleyball with bouncy blown-up balloons. Prepare students for this by stating the expectations for using the balloons in the activity. You could allow students to take their balloons outside before or after the experiment to let them explore with throwing and chasing their balloons. Remind students that balloons can easily be popped and will make a loud noise if they pop. They need to avoid sharp objects.* |