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Air Dynamics: Exploring & Engineering Air Streams [Grades PreK-3]

Regents' Center for Early Developmental Education

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Air Dynamics: Exploring & Engineering Air Streams

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MATERIALS NEEDED

- Objects to blow through (plastic straws or other hollow cylinders of different sizes)
- Objects to blow, varying in shape, size, and weight (cotton balls, sponges, cylinders [paper, wooden], blocks [plastic, wooden], cans, popsicle sticks, marbles, balls [round and oblong, solid and hollow], conical shapes (yogurt containers and party hats), film canisters, and full and empty cans of various sizes, (tomato paste, cream soup, pumpkin, and peaches)

PURPOSE OF ACTIVITY

Experimenting with blowing activities allows children the opportunity to develop reasoning. As they act on the different objects by blowing through tubes of various sizes, they make hypotheses (guesses) about what may happen and observe the results. Sometimes the results confirm their predictions. However, frequently objects do not move as easily as children expect and they are surprised. Children are then led to vary their action (for example, blow harder, aim their straw in a different direction) and see what happens. They are stimulated to reorganize their thoughts to make sense of their experiences. In this activity, children can compare the different reactions of objects to the same action of blowing, or the reactions of the same object using different air movement techniques.

Exploration with these materials also lends itself to socio-moral development. By noticing how other children use materials, a child may be stimulated to use materials in new ways. As they play with others, taking turns, sharing the materials, or creating games, they must cooperate, negotiate with peers and adults, and make decisions. Social interaction facilitates language development. Sometimes conflicts arise (over use of materials, turn taking, etc.), and these offer opportunities to develop understanding of self and others.

BEGINNING THE ACTIVITY

One way to begin this activity is to introduce it during group time. The teacher can help to guide children's reasoning by introducing only straws and asking children what materials they think would move by blowing on them through the straws. The children may have many ideas. Accept them all and suggest that they try out their ideas during activity time. Usually seeing new ways of using the materials stimulates children to try new ideas of their own.

After children try different materials, teachers can intervene at appropriate times with comments and questions that encourage reflective thinking, such as, "I wonder if we could figure out a way to make your marble go further?" "Do you think you could blow the popsicle stick all the way across the room?" If children are not directing the air flow so that their object will move, one might ask, "Can you think of a different way to blow on your block so it will move?" The child might decide to change the position of the straw or the position of the object. By testing their ideas to see if they will work, young children reason to make sense of their world.

VARYING THE ACTIVITY

On another day, provide one object to blow (such as a cotton ball), and many instruments with which to blow on it (curly straws, a toy horn, toilet paper tubes, paper towel tubes, etc.). Using this variation, children can compare the effects of the different blowing instruments and create relationships between the characteristics of the blowing instrument and the reaction of the object being blown.