

Community Science Education



This community education course offered by the Curriculum and Early Childhood Department of Boston University is a comprehensive program by which students experience and analyze learning situations outside the school. Field work is used as the course content for deriving and testing appropriate theories and strategies. The methodologies in teaching reading, social studies and science are examined by students and applied directly to their own field placements. Students assume co-workers roles in selected educational agencies including community schools and centers, cultural institutions and hospitals. As students explore and play with these materials they are asked to consider specific science concepts which arise directly from the materials. A discussion then follows attempting to make these concepts more explicit. There is also instruction as to how the very same activities can be done with children, and where further resources can be obtained for this specific activity. The science section of the course is conducted at The Children's Museum Resource Center. Students attend weekly sessions where they explore a variety of household materials in a playful manner.

sessions

1. Drinking Straw Constructions. A house made from drinking straws using paper clips as connectors. The importance of triangular arrangements is discussed.
2. Dyes and Pigments. Vegetable materials are cooked and food colors are used to create interesting effects in water and on paper. Solubility and chromatography are then discussed.
3. Bubble and Soap Film. Bubbles and soap film structures are created using a variety of household materials such as tin cans and plastic containers. Certain geometrical and physical properties of soap film configurations are discussed.
4. Balloons and Inflatable Furniture. Concepts of air pressure and volume are dealt with by playing with several kinds of balloon devices and by making inflatable chairs from trash bags.
5. Chemistry of Cake Baking. Students make up their own recipes and bake a cake. They experiment with baking soda and vinegar to understand how the bicarbonate helps make the cake rise.
6. Visit to Nearby Pond. Part of a session is spent exploring and taking an inventory of a pond near the Museum. On their return students share their observations with the rest of the class.
7. Movement in Air and Water. Currents and the pattern they create are made visible by watching smoke in air, and food color in water. The concept of Reynold's number is discussed. The universality of various patterns is also presented.
8. Starch. The strange properties of starch are considered by mixing it with water and food color. Solubility and absorption are examined as part of the exploration.
9. Dissection of Fish and Chicken. Whole fish and chicken are dissected. External anatomy and internal organs are examined closely. Some students also work with chicken and a cow skeleton.