

Thank you for participating in the **Molecules in Motion** Workshop. We hope that you will join us again. To help you continue the fun at home, we have put together some simple science activities that you and your family can do together. Like the workshop, these activities are aligned with New York State Learning Standards and will help your child to grasp important physical science concepts being taught in school. Please visit our website to find out which standards these activities meet and to access additional resources. Have fun exploring the world of science!



## Activity #1 Swirling Colors in Salt Water

### Materials

newspaper	thermos of warm water
three clear plastic cups per person	refrigerated water
Measuring spoons	food coloring
salt (Kosher is best)	paper and pencil



Lay out newspaper in an area that can get wet. Place the cups, paper and pencil on the table. Ask your child to draw the cups on the paper. If your child can write, have your child label each cup, hot, cold and plain. If your child cannot write have them draw the cup for hot water in red and cold water in blue. Choose any color for the plain water cup. Have your child measure two rounded tablespoons into two of the cups. The third cup will not have any salt added to it. Heat up water, so that it is very warm, but not boiling. At the same time refrigerate a glass of water until it is cold. Carefully pour the warm water into a cup with salt. Have your child stir until dissolved. Pour cold water into the other cup with salt and stir. Add cold water to the last cup.

When the water is still in each cup, ask your child to add one drop of food coloring to the hot water solution. Observe and draw how the color moves through the salt water. Repeat this process with the cold salt water solution and with the plain water. Did the color molecules move differently or the same? How does the movement of molecules in salt water compare and contrast with the experiment at the Museum using only fresh water?

# Molecules in Motion

## Take-Home Family Activities

### Words to Remember:

Atoms: the smallest portion into which an element can be divided and still retain its properties

Liquid: matter that flows and takes on the shape of its surroundings; molecules are close together and move slowly

Molecule: smallest unit of an element or compound which is made of two or more atoms bonded together

### NYS Learning Standards:

Elementary Science/ The Physical Setting 3.1: Observe and describe properties of materials, using appropriate tools.

Elementary Science/ The Physical Setting 3.2a: Matter exists in three states: solid, liquid, gas.

Elementary Science/The Physical Setting 3.2b: Temperature can affect the state of matter of a substance.

Elementary Science/The Physical Setting 3.1e: The material an objective is made up of determines some specific properties of the object.

### Books:

Hauser, Jill Frankel 1997. Super Science Concoctions, 50 Mysterious Mixtures for Fabulous Fun. Williamson Publishing, Charlotte, VT.

Kerrod, Robin and S.A. Holgate, 2002. The Way Science Works: Discovering the secrets of science with exciting, accessible experiments. DK Publishing, NY, NY.

Johnson, Mary, 1988. Chemistry Experiments, Safe Experiments to do at home. Usborne Publishing, London, England.

Robson, P. and M. Seller. 1994. Encyclopedia of Science Projects. Shooting Star Press, NY, NY