Plan the Lesson

Use your visit as a way to enhance and explain the science concepts the children are studying. Gone are the days when teachers could bring any enriching experience to their students. Teachers are required to cover a certain amount of material each school year and are often held accountable through testing. You can be a great help. Teachers and their children will love the opportunity to hear what a real scientist has to say about the topic they are studying.

1. Select 1 hands-on activity and a way to introduce it.

Think about what you'd like students to learn from your presentation. Then search for demonstrations and activities that will help students learn what you intend. Select a demonstration or introductory activity that will capture students' interest and motivate them to want to learn more. Then select an activity that students will do to explore the concept further. When you do a demonstration, students see that you can do science. But when they do an activity, they realize that they can do science too.

2. Have a trial run with a small group of children.

Test the activity you select with 1 or 2 children who are close in age to the students you plan to work with. This is an enlightening experience. Find out if the children understand your directions. Pay attention to questions they ask. Ask them questions and see how they answer them. Monitor how long it takes for them to get their materials ready for an activity. How long does it take for them to do the activity? Do the children know how to use droppers, thermometers, graduated cylinders or other equipment? Practicing with a small group will help you plan how you will lead the activity with a whole class.

3. Structure your lesson into 5 main parts.

Introduction

Start your presentation by capturing students' interest. You could do a demonstration, but you could also tell a story, discuss common observations, or lead a hands-on activity that will leave students wanting to learn more. Conclude your introduction by asking a question that children will investigate and by the end of your lesson be able to answer.

Exploration

This section will likely take up the most time, but will be well worth the investment. When students conduct a hands-on activity they will have a chance to explore the concept presented during the introduction on their own. Actively engaging them will help them better understand and remember the concept. Choose how you want to present the procedure. Will you model and give oral directions for each step? Will you provide a written

procedure that student groups should follow independently as you walk around the room and talk with individual groups?

Discussion
The exploration and discussion parts of your lesson will overlap. When following the procedure, ask students to describe their observations. Students may have questions that you will want to answer as they are asked. Ask questions that will help students focus on what you intend. It is a good idea to write up a list of quality questions in advance. Use your questions to help students develop explanations for their observations. Think about how you will explain what is going on. Make sure your explanations make sense to the students and whenever possible apply concepts to students' experience.

Clean-up
Make a list of what you will want to keep and what should be collected for trash. Review the MSDS and follow disposal guidelines for your area. You may need to bring some supplies back to your lab so that they are disposed of properly.

Closure
When students desks are cleared, they will once again be ready to focus on what you have to say. Have a whole-class discussion that will emphasize the concept taught and make sure students understand the main points from the activity. Review the highlights of the activity and students' observations. Ask the question posed in the introduction. When students answer this question, they should provide evidence from their activity to support their statement. Apply the concept to different situations, particularly common examples from students' daily lives. Finally, thank the students and let them know that you enjoyed sharing your love of science with them.

4. Organize and pack materials

You probably have only 1 class period to present your lesson. In order to fit into this time slot of 30-50 minutes, organize everything so that materials distribution is as efficient as possible. Use zip-closing plastic bags to pack single sets of materials for each group. Use trays to distribute small cups of liquids. If necessary, provide water in squirt bottles and containers to collect waste liquid. If there will be liquid waste and there isn't a sink in the classroom, provide a large enough bucket. Bring paper towels so that you're ready for anything. Having materials organized will keep children focused during your lesson.

Children love science when it's taught in a way that extends their natural curiosity. So get their attention, guide an investigation, and help them see that science answers questions and is something they enjoy doing!