

## What Can Parents Do?

### Science in the Home

It has been often said that parents are a child's first teacher; therefore we play an important role in how our children think about science. When we show enthusiasm for and excitement about their interest in science, we encourage their love of the subject and their desire to learn more.

### Everything is a Lesson

Many people assume that all the science that a child needs to learn is taught in school, but the fact is, very little science is taught in elementary school. Because scientific knowledge builds on itself, it is important that our children begin learning as soon as possible, at home. And for those parents wondering, "No", you do not have to be a chemist or a rocket scientist to help your child learn science. Having a positive attitude about science and willingness to experience the world with your child is very important.

For those parents who do not have a lot of time due to work and multiple responsibilities, a trip to the supermarket or the laundry or on the way to the school bus can all provide opportunities to "teach science". Children can be introduced to science in their surroundings and encouraged to observe what goes on around them through every day activities such as:

- Watching the moon as it appears to change shape during a month and recording the changes.
- Watching a butterfly or bee go from plant to plant.
- Watching a drooping plant come alive after it gets watered.
- Watching a plane take off.
- Looking at the little bubbles that are in a bottle of soda.
- Watching the breath come out of your mouth on a cold day.

Learning to observe objects carefully is an important step in the scientific process. It is one of the ways we come up with answers to the many questions about our world.

Every day is filled with many opportunities to learn science. Something as simple as a small cut on your child's finger can become a lesson in science. If it becomes red and infected, you can teach your child that it is important to wash the cut and to keep it clean, and cover it with a band aid to keep dirt from entering the cut. After a few days when a scab is formed over the opening of the cut, you can explain that it is the body's way of helping to heal the cut. Another example is: if your child has a cough, you can teach that disease can spread from person to person; or that it is important to cover your mouth when you cough so that you do not spread germs to other people.

**There are no stupid questions:** Children should be encouraged to ask questions.

*A friend once asked Isidor I. Rabi, a Nobel Prize winner in physics, "Why did you become a scientist, rather than a doctor or lawyer or businessman, like the other immigrant kids in your neighborhood?" Rabi responded: "My mother made me a scientist without ever intending it. Every other Jewish mother in Brooklyn would ask her child after school: "So? Did you learn anything today?" But not my mother. She always asked me a different question. "Izzy," she would say, "did you ask a good question today?" That difference--asking good questions-- made me become a scientist!"*



It doesn't matter if we don't have all the answers. No one does. Children do not need long, complicated answers. However, when children ask questions, it offers an opportunity for us and our children to explore the answers together. Also, there are many ways to find answers- the library, the dictionary, books, the internet-are all ways to find answers.

## Discuss and Listen

Children should be encouraged to talk to parents about their thoughts and ideas and parents should listen to their explanations. When you listen to we listen to our children, it helps them build confidence and skills, not only in science but also in idea building, and expressing their thoughts. It helps our children, and we the parents to figure out what our children knows.

In a nutshell, you can help your child learn science by:

- ❖ Having a **positive attitude** about science
- ❖ **Encouraging** your child's curiosity, interest in and questions about science
- ❖ **Talking** to and **sharing** ideas with your child about science
- ❖ **Listening** to your child's thoughts and ideas



**It's important to repeat:** Almost any situation can be used as an opportunity to teach science. For example, you can speak to your child and have him/her begin to observe the things around him/her when you're walking to school or the bus, or when you're driving in your car (the clouds or the sun, the insects and birds); when you're shopping in the supermarket (why do leafy vegetables wilt, the frost build-up in the frozen food compartment, etc...?); or while doing the laundry (the churning of the machine); or cooking dinner (what makes the steam?).

## Science in the Community

The community provides many opportunities to learn and explore the world of science. Below are some examples of some of the science oriented community based organizations also known as Informal Science Institutes.

### ZooMiami

A trip to the zoo can be fun as well as educational. The zoo offers an opportunity to learn about the natural world and the different types of animals, their behavior, and their environment. Inquire about the petting zoo where children are allowed to touch and feed the animals.



❖ **Guessing Game** - helps your child understand structure and function of animals:

- “Why do you think seals have flippers?” (They use them to swim through the water).
- “Why do you think turtles have hard shells?” (It protects them from their enemies).
- “Why do you think the ibis had a long narrow beak?” (They use their long beaks to dig in the dirt for food).
- “Why do you think apes have long dangling arms? (Their arms help them swing through trees).

- ▶ **Compare and contrast** - helps your child understand relationships. Have them compare sizes, shapes, feet, ears, feathers, claws, or scales of different animals.
  - “Does the house cat and the jaguar alike? How are they alike? How are they different?”
  - Does a chimpanzee look like a gorilla? How are the alike? How are they different?
  - How is the female lion different from the male lion?”



- ▶ **Tips to make your visit more fun:**

- Talk to your child about the zoo before you get there. (What do you think you'll see there?)
- Don't try to see everything in one visit. Zoos are large places, and children, particularly small ones can become overwhelmed and tired. Also, it makes anticipating the second trip very exciting.
- Try to visit zoos at off times or hours. Very early on a Saturday may have less people than later in the day. Holidays may have more people. This gives the child a chance to see the animals without being blocked by crowds.

- ▶ **Plan follow-up activities:**

- If your child especially liked the tigers, take him/her to the library and get books on tigers. Have him/her draw pictures of tigers or write a story about tigers.

### **Miami Science Museum and Planetarium**

Museums can be found in most communities and there are many different types of museums. There are science and technology museums, natural history museums, and children museums. If possible, you should look for museums that offer hands-on opportunities, special science classes, and that have omni theaters. You will find all of these features at Miami Museum of Science. You can use your public library, the yellow pages, or the internet to find other museums that are located close to you and to find out about special events or exhibits.



\*Use the same tips given for the zoo visit with your museum visit.

There are approximately 1,000 planetariums in the United States that offer many exciting activities and exhibits for children. The Miami Museum of Science has a planetarium attached to it. At the planetarium you can do things like see the sky clearly, see the rings of Saturn, and step on a special scale and see how much you would weigh on the moon or on Mars.



### **Miami Seaquarium**

Aquariums offer a chance to see different kinds of creatures from the ocean. The Miami Seaquarium is a marine-life entertainment park with eight different marine animal shows and presentations offered daily. Your child can see killer whales, dolphins, manatees, sea lions, and endangered sea turtles. In addition to their educational programs

during the year, they conduct an educational summer camp every summer. They also have a “**Swim with Our Dolphin Program.**” Call before you go and find out when they are feeding the animals. Ask about the schedule for the seal and dolphin shows.

### **Jungle Island (formally Parrot Jungle Island)**

Jungle Island is a theme park that offers animal stage shows, one-of-a-kind aviaries, plant nurseries, jungle trails, a petting farm and educational exhibits. In addition to other activities and programs, Jungle Island features an open-air arena, an Everglades Habitat, and a serpentarium with a huge collection of reptiles and amphibians, including an extremely rare albino alligator and a 21-foot crocodile.

### **Monkey Jungle**

Monkey jungle is a unique park that is built so that people walk through a wired walk-way while the primates swing from trees and interact with each other unbothered by what’s going on around them. Their theme is, “Where Humans Are Caged and monkeys run wild.” It has an Amazonian Rain Forest that has hawks, raccoons, and yellow rat snakes, in addition to monkeys. Call to get the feeding schedule before you go.

### **Fairchild Tropical Botanic Garden**

Fairchild Tropical Botanic Garden has a large assortment of plants from all over the world. It offers a wide variety of community and outreach programs in environmental education, conservation, and horticulture. Fairchild works closely with the schools in South Florida, both public and private. Two of its programs are the **LEAF ("Let's Explore at Fairchild") program** which is a weekly series of Saturday nature adventures in the Garden for 8- to 12-year-old children and **The Fairchild Challenge** is for middle and high school students.

### **Deering Estate**

The Deering Estate at Cutler is a park and educational facility that has programs for children and adults. They have experienced Naturalists and Guides gives tours and programs to any grade level or interest. The park offers daily natural area tours through the park’s protected habitats. For example, the Park’s offshore island of Chicken Key, a restored bird rookery, can be visited via scheduled canoe tours. The park is made up of endangered pine rockland habitat, (among the largest blocks of this ecosystems remaining in the United States), as well as coastal tropical hardwood rockland hammocks, mangrove forests, salt marshes, a coastal dune island and the submerged resources of Biscayne Bay.

### **Farms**

A visit to a farm is a fun way to teach science to your child. Some public parks have tiny farms with small farm animals that allow children to touch and feed the animals. Some offer pony rides for a small fee. **Amelia Earhart Park** in Hialeah is an example of this type of park. Also, there are private petting farms that are set up for the purpose of enabling children to learn about farm animals through touch and play under the supervision of adults. You can find out about other such farms through your public library, your local park service, 4-H Clubs, and the internet. A visit to a farm gives the child an opportunity to learn the difference between a cow, a heifer, and a calf; milk a cow; see farm equipment, sit on a tractor, and find out how tractors work. If you visit a farm that grows crops, the child gets to see how vegetables grow, how they look before they end up in the supermarket, and ask questions about the different ways plants grow.

### **Nature Hikes**

Many communities have parks, forests, wooded or nature areas where you can go for walks.



Sometimes there is a guide that will take you out on a trail and gives information about the plant and animal life in the area as you walk. If this type of area is not available to you, take your child for a walk around the neighborhood and help him/her collect rocks, identify leaves, observe spiders, bees and ants, try to identify the different types of butterflies and birds, and talk about the different trees, plants, and flowers that you all see.

### **Science Camps**

There are many organizations that run camps during the year. Organizations such as National Audubon Society, U.S. Space Camp, and the National Wildlife Federation operate camps for children who love ecology, nature, or space science.

### **Other Community Resources**

Check to see if field trips can be arranged through your child's school, your child or community group to places such as botanical gardens, weather stations, hospital laboratories, sewage treatment plants, newspaper plants, or radio and television stations.

### **Library or bookstores**

The library is a very good source of information on any and all areas of science. Available are books, videos, tapes, and DVDs that can be borrowed if your child is interested in exploring different areas of science. Your child can learn about science from "non-science" books, such as fiction, biographies, autobiographies, and history books, too.

Many bookstores today have reading areas or corners with sofas, chairs, or pillows that your child can use to sit and read quietly. If you need help selecting books for your child, speak to the librarian or bookstore personnel.