

# A Letter to Families About the Discovery Area

Dear Families,

Young children have many questions about the world around them. They ask, “Where did the puddle go?” “What do worms eat?” “How can I make my truck go faster?” “Do fish go to sleep?”

In our classroom, the Discovery area is a place where children explore and investigate to answer their questions. They observe, experiment, measure, solve problems, take things apart, and handle the materials and living things we put out. They predict what will happen as a result of their actions.

In the Discovery area children do what scientists do. They ask questions, plan and conduct investigations, gather information, construct explanations, and communicate findings. They also learn important scientific concepts as they study plants, animals, magnets, properties of materials, light, shadows, how things work, rainbows, the human body, our senses, how things move and change, and more. In addition to learning about science content, they learn how to solve problems together and how to communicate with others.

## What You Can Do at Home

Young children are curious and love to investigate. You don’t need to be an expert to help your child learn about science. Science is all around us, from making bubbles in the bathtub to boiling water on the stove. Your enthusiasm and positive attitude about science will be contagious. Get rid of the habit of wondering out loud (“I wonder how an ant can carry that big piece of food”; “I wonder why your shadow is sometimes small and sometimes big.”).

The questions you ask and comments you make when your child is exploring can extend his or her scientific thinking. Here are some examples:

“What do you think will happen when...?”

“I wonder why...”

“How do you think we can find out...?”

Look for opportunities to support your child’s scientific thinking during everyday activities: playing with toys, taking a bath, helping to make dinner, playing in the backyard, or going on an outing. Remember, you don’t need to know all of the answers! It is a good sign if your child is curious, wants to investigate everything, asks lots of questions, and wants more answers. We encourage you to visit our Discovery area with your child.

# What Children Learn in the Discovery Area

The Discovery area offers many opportunities to promote children's learning. Here are some examples:

## Literacy

Support your child's **vocabulary and language** development by talking with them about their discoveries. Use every opportunity to introduce new vocabulary as they touch, taste, hear, smell and look at inanimate objects and living things. Encourage them to describe what they are doing.

Help your child gain **knowledge of print** by recording their experiences and discoveries on charts.

Strengthen their understanding of **books and other texts** by using books to find out information.

Help your child explore **literacy as a source of enjoyment** by reading aloud stories related to discovery topics.

## Mathematics

Strengthen your child's understanding of **number concepts** by guiding them in counting objects such as leaves, seeds, rocks, and shells. Help them understand one-to-one correspondence, for example, by having them plant one seed in each container or feed each rabbit one carrot. Encourage them to compare quantities, "Do you have more small rocks or more big rocks?" Introduce estimation to help them gain a sense of numbers, "Do you think four more shells will make the scale balance?"

Help your children discover **patterns and relationships** as they observe the life cycle changes of a butterfly. Encourage them to find patterns in natural items found on a walk such as the scalloped edges of a leaf or ridges on a pinecone. Have your children create patterns with items or line up rocks from the smallest to the largest.

Support **measurement** skills by providing tools such as measuring cups, timers, measuring spoons, tape measures, and balance scales for your child to use in their explorations.

Promote your child's understanding of **geometry** by providing many three-dimensional shapes for your child to handle. Ask probing questions as they explore whether a ball will roll down a ramp more easily than a plastic egg of the same weight. To help your child understand spatial relationships, describe how the gerbil runs around the cage, hides in the bedding, or scampers out of the cage.

## Science

Guide your child's use of **process skills** as they make discoveries. Help them learn how to observe, collect information, make predications, and then experiment.

Teach your child about **life science** by discussing how plants and animals live, grow, and move. Help them develop an understanding of the differences between living and nonliving things. Lead them to discover more about

their own body by looking at their fingerprints under a magnifying glass or by listening to their heart with a stethoscope.

Introduce concepts about **physical sciences** by playing with balls, ramps, pulleys, and magnets. Ask questions to stimulate thinking about how and why things move.

Introduce concepts about **Earth and the environment** by including rocks, shells, and other natural items into their play.

### **Social Studies**

Encourage your child to learn about **space and geography** by using positional words while they are making discoveries. "You're letting the ball roll *through* the paper towel tube."

Teach your child about **people and how they live** by helping them work cooperatively to solve problems and by involving them in developing safety rules for the house.

### **The Arts**

Encourage your child to explore the **visual arts** by mixing colors and feeling textures. Talk about the beauty of nature: the patterns in the leaves or the design on a butterfly's wing. Provide drawing supplies and materials for sculptures so they can represent their discoveries.

### **Technology**

Enhance your child's **awareness of technology** by relating their experiences to the world around them.

Introduce the **basic operations and concepts** of technology by providing broken toys or small appliances for your child to take apart and manipulate. Select a software program so your child can learn more about living creatures.

# How the Discovery Area Promotes Development and Learning

## Social-emotional

Children learn to work together as they explore, make discoveries, and solve problems. They take care of living things such as classroom pets and plants, and they learn classroom rules for using materials safely and responsibly.

## Physical

Children develop fine-motor skills when they use eyedroppers to squeeze colored water onto wax paper or pick up dead insects with tweezers. They develop dexterity and eye-hand coordination as they turn gears, take apart a broken toy, and pick up paper clips with a magnet. When they measure ingredients to make play dough and then squeeze, roll, stretch, and cut it, children practice many different fine-motor skills. They strengthen their gross-motor skills as they pull the rope on a pulley, create shadows on the wall with their bodies, or run in place before checking their pulses.

## Language and Literacy

When children make discoveries, they are eager to share their excitement with others. They want to talk about their investigations, ask questions, and share experiences. They use new words to describe how things look, touch, taste, smell, and sound. Using books and other texts, children find out about topics that interest them.

## Cognitive

Children use process skills when they observe and ask questions about the world around them. They watch plants and animals with great curiosity and make predictions about how they change, move, and react to different conditions. Children organize information by classifying, comparing, measuring, counting, and graphing objects. They represent their findings by drawing, writing, and creating models.

# Basic Materials for Exploring Science

## Life Science

- Animal housing (cages, aquariums, bug catchers, and ant farms)
- Nontoxic plants
- Seeds, bulbs, and planting supplies
- Pets
- Stethoscope
- X-rays of bones or teeth donated by families, doctors, dentists, or veterinarians
- Collections (leaves, twigs, shells, bones, feathers, pinecones)

## Physical Science

- Magnets of all shapes and sizes
- Collection of metallic and nonmetallic items
- Prisms or “sun catchers”
- “discovery bottles” filled with different liquids and floating objects
- Broken toys or small appliances to take apart
- Balls of various sizes, densities, weights, and surface materials
- Mirrors of different shapes and sizes
- Lenses
- Kaleidoscopes
- Flashlights
- Plastic and cardboard tubes of various lengths and diameters
- Thermometers
- Pulleys, gears, wheels
- Boxes of various shapes and sizes

## Earth Science

- Soil
- Rocks
- Funnels, sieves, pitchers, colanders
- Water
- Clear plastic tubing
- Straws
- shells