

## Building on Children's Curiosity: Talking with Children to Support Science Thinking

Even from birth we can develop children's abstract thinking, the basis for science concepts by:

- Following your child's lead, their interests
- Giving children time to figure things out
- Putting words to what they are looking at or playing with, adding descriptions
- Encouraging persistence and problem solving
- Using words for science concepts



### Science Concepts

#### General Science Content

**Life science**—living things and their characteristics

**Physical science**—knowledge of physical properties of objects and materials (heavy, light, float, sink)

**Earth and space science**—knowledge of earth's environment, solar system, seasons, weather

**Tools**—Knowing names of tools and what they do, using tools and technology to perform tasks and investigate. A tool is a device or utensil that helps in accomplishing a task.

#### Science Process Skills

When we give children the chance to practice the skills listed below, we are helping to develop basic scientific thinking.

- **Observing**—using senses to observe and explore materials and world around him/her
- **Asking** questions—wondering
- **Describing** objects, what is happening, what they are doing
- **Predicting** what might happen
- **Experimenting**—planning and engaging in “what if” investigations
- **Gathering** information from investigations
- **Recording** what happens during these investigations
- **Concluding**—connecting and interpreting the information collected
- **Communicating** and sharing ideas using science language and ideas

## Building on Children's Curiosity: Talking with Children to Support Math Thinking

Even from birth we can develop children's abstract thinking, the basis for math concepts by:

- Following your child's lead, their interests
- Giving children time to figure things out
- Putting words to what they are looking at or playing with, adding descriptions
- Encouraging persistence and problem solving
- Using words for math concepts



### Math Concepts

#### Math Content

**Numbers and Operations**—counting, connects numerals with number, cardinal (1,2,3) and ordinal (1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)

**Patterns, Relationships, Functions**—notices and makes repeating patterns, sorts by characteristics (size, color, shape), matching items

**Geometry and Spatial Relationships**—recognizes and names shapes, two and three-dimensional (circle, sphere), spatial relationships (above, below, between, behind, etc.)

**Comparison and Measurement**—compares such as more, less, measures both standard and non-standard— inches, pounds, and handful

**Time and Sequence**—developing concept of time especially daily routines, putting events in order

#### Math Process

**Problem Solving**—estimating, guessing, tries different possibilities, is persistent, flexible thinking

**Representation**—uses pictures and graphs to show math concepts

**Communication**—uses math words

**Making connections**—applies math to different situations, such as when figuring out when something is fair or not