

# PATTERNS, STRATEGIES & NUMBER SENSE

**Grades: PreK – 1**

**Lab Time: 1 to 1 1/2 hours**

## **Description**

Students explore sorting, patterning, counting and geometry at more than ten specially-designed hands on stations in this unique lab. Children engage in the language of mathematics, use analytical thinking, and expand their problem-solving skills and spatial sense in this highly interactive experience.

## **ILLINOIS Learning Goals**

### State Goal 8

*8.B.1* Solve problems involving pattern identification and completion of patterns.

### State Goal 9

*9.B.1b* Sort, classify and compare similar objects.

*9.B.1c* Identify lines of symmetry in simple figures and construct symmetrical figures using various concrete materials.

## **NCTM Standards**

### #2 Algebra – Part 1

Understand patterns, relations, and functions

- sort, classify and order objects by size, number, and other properties
- recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns and translate from one representation to another
- analyze how both repeating and growing patterns are generated

### #3 Geometry – Part 2

Specify locations and describe special relationships using coordinate geometry and other representational systems

- describe, name, and interpret relative positions in space and apply ideas about relative position
- find and name locations with simple relationships such as “near to” ...

### #5 Data Analysis and Probability – Part 1

Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them

- sort and classify objects according to their attributes and organize data about the objects

### #6 Problem Solving

- build new mathematical knowledge through problem solving
- solve problems that arise in mathematics and in other contexts
- apply and adapt a variety of appropriate strategies to solve problems
- monitor and reflect on the process of mathematical problem solving

#### #7 Reasoning & Proof – Part 4

- select and use various types of reasoning and methods of proof

#### #8 Communication

- organize and consolidate their mathematical thinking through communication
- communicate their mathematical thinking coherently and clearly to peers, teachers, and others
- analyze and evaluate the mathematical thinking and strategies of others
- use the language of mathematics to express mathematical ideas precisely

#### #9 Connections

- recognize and use connections among mathematical ideas
- understand how mathematical ideas interconnect and build on one another to produce a coherent whole
- recognize and apply mathematics in contexts outside of mathematics