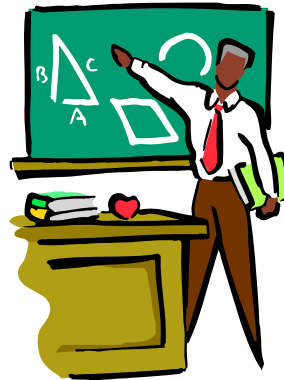
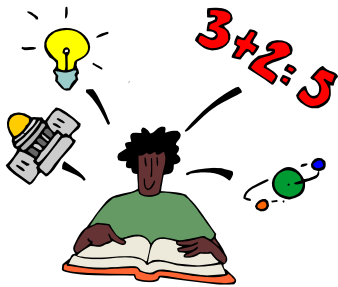


## Help your child discover math in our world!

In the young child's world, mathematics is used everyday with familiar objects in real life situations. In the first few grades, children think in very concrete terms. They enjoy learning numbers, counting things (everything), identifying shapes, collecting and describing their collections, and of course, building things. You can help your child enjoy mathematics by:

- Helping them recognize shapes (circles, squares, triangles) in nature and in things that people build
- Counting things in your daily world—plates on the table, shirts in the laundry, toys as you put them away
- Pointing out patterns—in traffic (truck, car, truck, car)—in the grocery line (cart, person, cart, person)—in nature (bird songs and pine cones)
- Playing the “missing” game—Show your child some candies (pennies, rocks, etc.) in your hand. Let your child count them. Put a few in your pocket. Show your child what is left in your hand. Ask, “How many did I put in my pocket?” Great training for algebra!



For complete information on the Arizona Academic Standards go to [www.ade.az.gov/](http://www.ade.az.gov/)

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Osborn School District  
An Osborn Education

### *Parents' Guide to Grade Level Mathematics Standards*

*Grade 3*

## ***Osborn School District 3rd Grade Standards***

### **Mathematics**

#### **Number and Operation**

##### **Number Sense:**

- Students deepen their understanding of place value in various contexts;
- Extend their understanding of the base ten number system to larger numbers (6 digits)
- Apply base ten understanding by representing numbers in various equivalent forms;
- Develop an understanding of the meanings and uses of fractions
- Solve problems that involve comparing and ordering fractions;
- Learn to represent fractions in different ways.

##### **Numerical Operations:**

- Students understand the meanings of multiplication and division;
- Learn and use basic multiplication facts and efficient procedures;
- Explore the relationship between multiplication and division;
- Develop fluency in multiplication and division facts through 10.

##### **Estimation:**

- Use multiple strategies to make estimations;
- Compare the reasonableness of their estimate to the actual computation;

#### **Data Analysis and Discrete Mathematics**

##### **Data Analysis (Statistics):**

- Students construct and analyze frequency tables, single bar graphs, and single line graphs; and use them to solve problems;
- Interpret information from the displays of data.

**Systematic Listing and Counting:** Students use lists and charts to systematically organize information and determine the outcomes of a given situation.

##### **Vertex-Edge Graphs:**

- Students apply problem solving skills to color complex pictures/maps following specific rules;
- Justify how they know they used the least number of colors;
- Learn that a street map can be represented by a vertex-edge graph and that routes can be represented by paths in graphs.

#### **Patterns, Algebra and Functions**

##### **Patterns:**

- Students understand that logical patterns exist and are a regular occurrence in mathematics;
- Recognize, extend, and generalize numerical sequences with both words and symbols.

**Functions and Relationships:** Students focus on the relationship between two quantities and how different representations are related.

**Algebraic Representations:** Students use a variety of representations to illustrate mathematical situations and relationships.

#### **Geometry and Measurement**

##### **Geometric Properties:**

- Students describe, analyze, compare, and classify two-and three-dimensional shapes;
- Develop mathematical arguments about their relationships.

##### **Transformational Shapes:**

- Students begin to apply their understanding of spatial reasoning;
- Recognize how the positions of two-dimensional figures change in terms of translations, reflections, and rotations.

##### **Measurement:**

- Students form an understanding of perimeter and area;
- Select appropriate units, strategies, and tools to solve problems involving perimeter and area.

#### **Structure and Logic**

##### **Logic, Reasoning, Problem Solving and Proof:**

- Students describe, explain, and justify their solution processes;
- Use numbers, words (including mathematical language), pictures, physical objects, or equations in their explanations as needed;
- Explain or show their work using at least one representation and verify that their answer is reasonable.