

Alabama Journal of Mathematics Activities

Strategies for Math Around the House

BY C.J. DAANE, AND PATRICIA K. LOWRY

Introduction

With the winter months approaching, children will be around the house more. Parents can support mathematical concepts (that teachers have instilled since the beginning of the school year), specifically related to algebra, with a variety of activities pertaining to the home. The National Council of Teachers of Mathematics recommends viewing algebra as a strand in the curriculum from pre-kindergarten on (NCTM, 2000).

In the document prepared by the National Council of Teachers of Mathematics, Principles and Standards for School Mathematics (NCTM, 2000), the algebra standard is summarized as follows: “Instructional programs from pre-kindergarten through grade 12 should enable all students to – understand patterns, relations, and functions; represent and analyze mathematical situations and structures using algebraic symbols; use mathematical models to represent and understand quantitative relationships; and analyze change in various contexts” (p. 37).

According to the Alabama Course of Study: Mathematics, Alabama Department of Education, 2003), “the algebra strand includes more than solving for an unknown in an equation” (p. 3). In the early grades, students are duplicating patterns and sorting objects by characteristics. Parents can assist the teachers by helping students build a solid foundation of early understanding and

experience as a preparation for more-sophisticated work in algebra in the middle grades and high school. For example, experiences with patterns can build to an understanding of the idea of function. Early experiences with classifying and ordering objects are natural and interesting for young children. Also, experiences with numbers and their properties lay a foundation for later work with symbols. Students can begin to form elementary ideas about mathematical modeling.

Specifically, in kindergarten, mathematical concepts related to algebra include – replicating patterns using concrete objects by sorting objects by characteristics (i.e., color, size, shape) and describing characteristics of patterns and/or objects (ADE, p. 11). In first grade, the concepts include – creating repeating patterns by describing characteristics of patterns, extending patterns, and identifying patterns in the environment (ADE, p. 14). In second grade, the concepts include – creating patterns that grow and describe change over time in observable terms (ADE, p. 18). In third grade, the concepts include – completing a given geometric pattern (ADE, p. 23).

Strategies for Math Around the House

- (1) Small Collectibles – Parents can use small objects for sorting, classifying, seriating, and comparing activities.
 - (a) Give the child a handful of beads. Sort and then group the beads by color.
 - (b) Give the child several rocks. Classify the rocks by light, dark, smooth, rough, large, small, etc.
 - (c) Give the child a small cup of seashells. Count the number of shells in the cup.
 - (d) Give the child a handful of colorful feathers. Sort the feathers by color. Sort the feathers by length. Compare the length of each feather by color groups.

Other possible collectibles are bottle caps, marbles, tiles, pennies, etc. Colorful washcloths can be used as surfaces for sorting activities. The non-smooth texture will help prevent objects from rolling to the floor.

- (2) Snack Time – When snacks are given to the child, use an empty egg carton as a container for counting (disinfect first).
 - (a) Ask how many raisins, grapes, etc., the child wants for snack. Place one snack (raisin or grape) per cup.

Count the snacks into the egg carton cups – one to one correspondence.

- (b) Cut the carton in half (to make six sections) or in thirds (to make four sections) for use with younger children. Fractions can also be developed with older children.
- (c) Count backwards - a way to play with subtraction – as the snacks are eaten one piece at a time.

These activities should be fun for the child. It is not a good idea to force the child to complete activities in order to eat or enjoy the snack.

- (3) Table Opportunities – Setting the table or sorting the silverware are simple tasks full of math opportunities.
 - (a) Ask questions like . . . “How many people are here for dinner?” “How many plates, forks, and spoons will we need for dinner?”
 - (b) Allow the child to create a pattern for setting plates, cups, and silverware on the table. This will draw on sequencing and ordering skills.
 - (c) Put away the silverware in the proper area. This allows for sorting and matching the forks and spoons.
- (4) Fun with Water – Playing with a variety of containers, funnels, and measuring cups in water is a great way to enjoy math.
 - (a) Count how many cups of water it takes to fill a large bucket or container.
 - (b) See how long it takes a funnel to empty the water from a container.
 - (c) Cut bath sponges into geometric shapes. Identify the shapes as you wash.

These activities can take place at bath time for younger children. A large sink filled with water can be used for older children to complete the activities.

- (5) Laundry Games – Children can help sort the laundry.
 - (a) Find the matching socks. Put each pair of matching socks in one group or stack.
 - (b) Check to make sure all socks – both mates - are in the wash. Count how many pairs of socks are in the laundry.
 - (c) Sort dark clothes from white clothes.

- (d) Sort shirts from pants, towels from sheets, etc.
 - (e) Make comparisons – Ask questions like . . . “Is Dad’s shirt larger or smaller than your shirt?” “Does Dad have a large foot?” “Who has the most shirts in the wash?” “Who has the most pants in the wash?” “Are there more dark clothes or white clothes that need to be washed?”
- (6) Calendar Events – Children of all ages want to know how many more days until a special family event, birthday, or holiday. They even want to know how many days of school are left until the holidays or until summer vacation.
- (a) Hang a simple calendar on the refrigerator or near your child’s bed. Begin with today’s date and count the number of days until the special event.
 - (b) Track the days with the child. Cross off each day before bed time. Count the remaining number of days.
 - (c) Make a homemade calendar together. Ask questions like . . . “How many months will be on the calendar?” “How many days are in each week?” “What day is at the beginning of the week (on the calendar)?” “What day comes at the end of the week (on the calendar)?”

References

- [1] Alabama Department of Education (2003). Alabama Course of Study: Mathematics, Montgomery, AL.
- [2] National Council of Teachers of Mathematics (2000). Principles and Standards for School Mathematics, Reston, VA.

Department of Curriculum and Instruction
313 Ramona Wood Hall
Jacksonville State University
700 Pelham Road North
Jacksonville, AL 36265
(256) 782-5767
plowry@jsu.edu