What BCPS Parents Need to Know About…

THINKING ALGEBRAICALLY

Did you know that your child has been doing algebra since kindergarten? Below are some concepts that your child will be taught that promote algebraic thinking.

Patterns

When something happens over and over, we say there is a pattern. Patterns are all around us – in music, art, science, math, and everyday living. Young children begin to identify patterns in the world around them. They begin hearing patterns in language and music as well as making patterns with their bodies by playing such games as Simon Says. With many experiences, young children will see that patterns are predictable and can go on forever.

Skip Counting

Skip counting means that you skip a number, or several numbers, as you count. If you are counting by 2s, you would count 2, 4, 6, 8, etc. If you are skip counting by 7s, you would count 7, 14, 21, 28, etc.

Patterns can be both numeric (using numbers) and non-numeric. The core of the pattern is what is repeated, and the element is each part of the pattern. In the following pattern - %, #, #, &, %, #, #, &, etc. – the core is %, #, #, &, and there are three different elements: %, #, &

Functions

A function table lists pairs of numbers and how they relate to each other when a specific action is taken. The action is called the rule of the table. For any input, there is only one possible output. Here is an example of a function table:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

Equations

An equation is a number sentence that shows that two amounts are equal (the same). An equation must be balanced. There must be the same amount on each side of the number sentence. To show that each side is the same, an equal sign (=) is used.
How You Can Help Your Child at Home

To help your child understand patterns, consider the following:

- When your child is eating cereal that has different colors or shapes, help your child create a pattern — 2 green, 4 red, 2 green, 4 red, etc. The core is 2 green, 4 red; and the different elements are the red and green cereal. You might also use the following elements — star, moon, clover — to make the core of 1 star, 2 moons, 4 clovers.

- Have your child rename the same pattern using letters (1 knife, 2 forks, 4 spoons; 1 knife, 2 forks, 4 spoons …or A, B B, C C C C; A, B B, C C C C…)

- When taking a walk around the block, discuss with your child interesting arrangements of objects or patterns that appear in the environment. Encourage your child to point out what he or she is noticing.

- On your walk, help your child make his or her own pattern — walk, walk, hop, clap; walk, walk, hop, clap, etc.

- Help your child find patterns around the house — in wallpaper or in the fabric of clothes or furniture.

To help your child understand the concept of skip counting, try the following:

- When older children are learning about money, they learn that 1 nickel equals 5 pennies. They can then skip count a group of 5 nickels (5, 10, 15, 20, 25) to equal a quarter. Or they could skip count 10 dimes to equal $1.00. This exercise is also a great way to reinforce the concept of an equation.

To help your child understand how to use a function table:

- Talk with your child about using a function table, cover the numbers in the output column, and have the child “fill in the blank.”

To help your child understand about equations, try the following:

- Have your child use objects around the house to form equations: 4 red blocks + 2 blue blocks + 1 green block = 7 blocks; or 2 cans of peas + 3 cans of soup = 5 cans in all.

- Use money to represent equations: 5¢ + 10¢ = 25¢.