## CONCEPT

BACKGROUND An understanding of place value is essential to the development of number sense. To achieve this goal, children need a variety of learning experiences that solidify their knowledge of our base-ten system. These activities provide needed concept development and practice in a hands-on format.

## Number Chart Puzzles

MATERIALS Blank hundreds charts, pencils, scissors, overhead of the blank hundreds chart, overhead pens.
DIRECTIONS Using the overhead of the blank hundreds chart, model for children how to fill in the numbers $1-25$. Then ask, "What number is next? Where will 40 be?" Point to a blank spot and ask, "What number belongs here?" Through questions such as these, help your children see the patterns of the numbers.
Give blank charts to children and have them complete the chart. Next, have them cut along lines to make four puzzle parts from the chart. Tell children, "Mix up the pieces. See if you can put them back together into the correct order." This may be difficult, especially for those children who are unfamiliar with number patterns and place value. Have children mix up their own puzzle pieces and switch with a partner. Partners then try to put the puzzle together.
To challenge some children, you may want to have them begin with a number other than 1 or 0 . Try having children begin numbering their charts with 17 or any other number. Many children often memorize specific number patterns, beginning with 0 or 1 . Having them begin with a different number forces them to think carefully about what they are doing.

## Number Line Rounding

Number line, post-it notes or parent-made number cards
Create a generic number line (adding machine paper tape is great for making number lines). The number line might show only the numbers 1 and 100 or any other set of numbers. Children use estimation strategies to place number cards onto the number line. (Sample number line below.)


Attach the number line to the chalkboard or bulletin board. Either premake number cards or have children write numbers on post-it notes from a predetermined set of numbers, depending on your grade level. If you use number cards, then decide how to fasten the cards to the number line.
Children look at the number cards/ post-it notes and see if they can
determine where the numbers would "fall" on the number line. Have children tape, tack, or post the numbers where they should be. All of the numbers need to have a place on the number line. If children disagree on a particular position, move the card / post-it to the correct location.
This activity also helps reinforce the concept of rounding. Children can look at the number line and determine what number would be closest to their number.

## Base Ten Riddles

MATERIALS Parent-made riddles, base ten blocks
DIRECTIONS Create a variety of riddles that children can answer using base ten blocks. Some examples of riddles are:
$\checkmark$ I have 27 ones and 4 tens. Who am I?
$\checkmark$ If you put 3 more tens with me, I would be 115 . Who am I?
$\checkmark$ I have 17 ones. I am between 40 and 50 . Who am I?
Each group of two to four children will need a set of base ten blocks. Take out a base ten riddle card (or make them up as you go along, based upon the concept being taught/reinforced/practiced). Read each riddle aloud to the children. Children try to figure out the answer to the riddles using the base ten blocks.

## Buddy Check

MATERIALS
Individual chalkboards or whiteboards, appropriate markers (chalk or dry erase markers), digit cards (0-9)
DIRECTIONS Show the children how to make their own gameboards using individual chalkboards or whiteboards. The parent will also need to make a set of digit cards. You can make digit cards from $3^{\prime \prime} \times 5^{\prime \prime}$ note cards, with one numeral from $0-9$ on each card. The parent has control of the digit cards.
The parent decides which game children are going to play based on their needs. For example, some of the games are listed below.

- Place Value: Largest Number, Smallest Number

- Addition: Greatest Sum, Smallest Sum;

Multiplication: Greatest Product, Smallest Product;
Subtraction: What's the Difference?


- Fractions: Fraction Products (smallest, greatest)


Tell the children which version of the game to play and provide an example so that all children understand the goal. Over time, after the games have been played, children begin to recognize the mathematical terms (i.e. sum, product) so that it will not be necessary to provide examples. Shuffle the number cards, showing one card at a time to the players. (Do NOT replace cards you have drawn back into the card pile.) Each child writes the number in one of the spaces on the game board. The parent then calls out, "buddy check." Each child looks over to see if his/her classmates have written the number in one of the spaces. Players MUST write down a number each time one is drawn. The peer pressure from the "buddy check" keeps all the children honest. Show another card, and the steps continue. For some of the games, draw an extra number, so children have the choice of trashing one number.
The game objective determines the winner of each game. Children can keep track of their own progress because there can be more than one "winner." When announcing the final answer, the child MUST correctly say the number(s) written within the boxes aloud. For example, if the answer is 5,720, the child must say, "five-thousand seven-hundred twenty."

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Hundred Chart handout, next page...
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |  |  |
| 4 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |  |  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 |  |  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 |  |  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 |  |  |
| 01 | 82 | 83 | 84 | 85 | 86 | 87 | 88 |  |  |
|  |  | 93 |  | 95 | 96 |  |  |  |  |

# HUNDRED CHART 

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