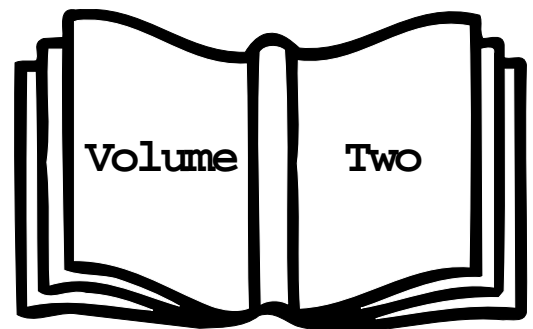


**Kindergarten**

**Classroom**

**Strategies**



*Notes and textbook  
references*

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The learner will recognize, model, and write whole numbers through 30.

# 1

## ***1.01 Develop number sense for whole numbers through 30.***

*Notes and textbook references*

### ***a) Connect model, number word (orally), and number using a variety of representations.***

*The development of number sense includes a recognition of equivalence even when the amounts are represented in different ways.*

#### **A. Show Me**

*Materials:* small objects (connecting cubes, counters, beans, etc.) workmat (workspace such as 9 x 12 construction paper or felt)

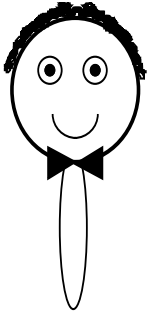
*Instructions:* Ask the children to show the number that you say by putting that many objects on their workspace. For example, “Show me 6 beans.” Expand using directional words such as, “Place 8 beans *near* the edge,” or “Show me 5 beans in *behind* the cup.”

*Variation:* To work on matching numerals to sets, hold up a large numeral card instead of saying the number.

#### **B. Dress Up Numbers**

*Materials:* hats, scarves, dress-up clothes, etc.

*Instructions:* In a small group, let the children each draw a card with a numeral (3 to 9). At his or her turn, the child will put on as many things as the numeral card indicates and tell a story that involves counting that many things.



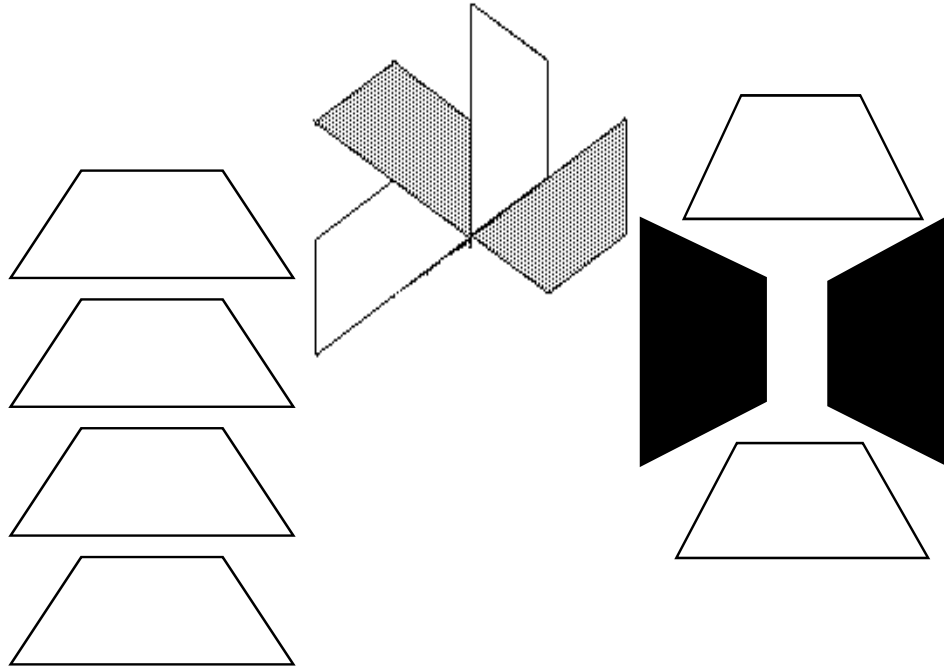
### C. Who Am I?

Have children make “masks” out of paper plates to represent different characters. Use large paper plates and tongue depressor “handles.” Children draw a numeral card (5 to 9) to indicate how many things (features) they should glue or draw on their masks.

### D. Pattern Block Designs

*Materials:* pattern blocks either sorted by shapes (colors) or a variety of shapes in a container

*Instructions:* Working with a partner, have children use a set number of blocks to arrange as many different designs as possible.



Examples of 4

## ***b) Count objects in a set.***

*Notes and textbook references*

### **A. Count With Me**

*Materials:* (optional) balls, jump ropes, rhythm instruments

*Instructions:* Count aloud whenever you get a chance. The children can do the following activities as they count:

jump	bounce a ball
clap	march in place
blink eyes	jump rope
bend from side to side	hop
swing a jump rope like a pendulum	jumping jacks

### **B. How High Can We Go?**

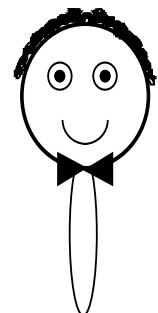
While sitting in a circle, the children count in turn. The object is to see how high the group can count before missing a number. A marker can be placed on a number line to record the last correct number. Repeat and compare the current score with the recorded score. Move the marker forward when the old record is broken.

### **C. In The Dark**

*Materials:* ball

*Instructions:* Children close their eyes. The teacher bounces a ball. Children silently count, listening only to the sound. Call on several children to tell how many bounces they counted. Let the children have a turn bouncing the ball as well.

*Variations:* Bounce the ball on different surfaces (tile, carpet, table, counter, etc.), play a rhythm instrument, make animal sounds, clap hands, drop objects into a can, or ring a bell.



## **D. One-to-One Correspondence**

*Materials:* any material to be estimated (Begin with 10 or less.)

*Instructions:* After the class has estimated the items, the room helper will use the magic stick as a pointer. The helper points to each child with the magic pointer and the class counts aloud.

## **E. Attendance Count**

*Materials:* “magic stick” (any kind of pointer)

*Instructions:* Each morning when it is time to check attendance, have all children stand by their chairs. A room helper will use the magic stick as a pointer. The helper points to each child with the magic pointer and the class counts aloud.

### ***c) Read and write numerals.***

#### **A. Count On Me**

Children become aware of “numberness” by discussing how many you have of something.

one: head, chin, stomach

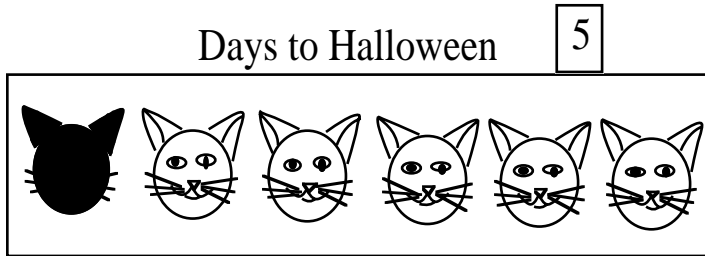
two: hands, knees, feet, legs, arms, ears

*Follow-up:* **All About Two** (this is a possible art activity for a bulletin board display.)

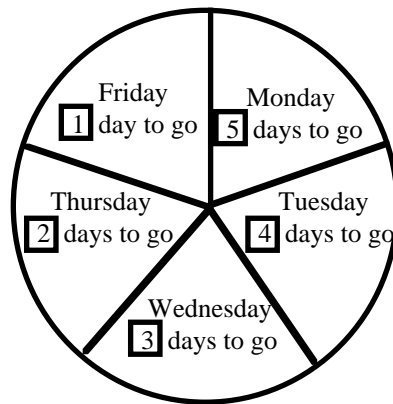
*Instructions:* As you and the children are counting objects be sure to point to, touch, or move the objects. This will model a way to become better at one-to-one correspondence.

- i. Count how many objects are in a container.
- ii. Count the days in a week/month and months in a year.
- iii. Count dots in dominos.

- iv. Count to verify an estimate (such as steps to the door).
- v. Count all the windows/doors/tables, etc. in the classroom
- vi. Make charts or paper chains to count down to holidays, Friday, a field trip, etc. The room helper colors a cat each day. Then the class counts both colored and uncolored cats separately and writes the number in a box. Children can also color their own sheets. Write a title on the sheet before you duplicate. (See Blackline Master I - 1)
- vii. Count how many you hear: claps, taps, beats of a drum, rings of a bell, etc.



- viii. Use the countdown clock. Count the number of days until the weekend.



- ix. Children practice counting and one-to-one correspondence when estimating and graphing activities are carried out. Have children survey a certain number of people.
- x. Be aware of everyday situations that involve counting strategies and use them.

## B. Storytime

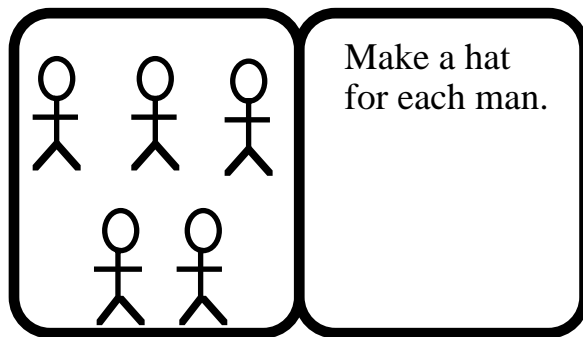
*Materials:* flannelboard; stories and fingerplays

*Instructions:* As children retell stories and fingerplays, they use flannel pieces. Children will put or remove pieces one at a time as the story is told. Here are some suggestions of stories and fingerplays that may be used: The Three Bears, The Three Little Pigs, “Five Little Monkeys,” “Five Little Ducks,” “Five Little Pumpkins,” “Five Little Speckled Frogs.” *Note:* In the story The Three Bears, the bears can be matched to bowls, chairs, and beds.

## C. Counting Pictures

*Materials:* laminated picture boards (see Blackline Master I - 2) ; playdough

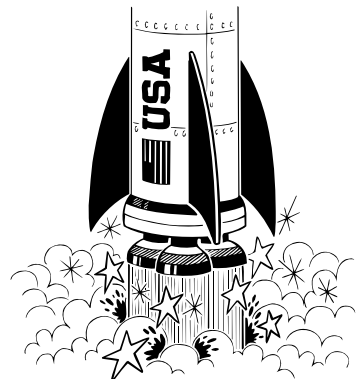
*Instructions:* The child uses the playdough to make objects as directed on the picture board.



## D. Blast-off!

*Materials:* Connecting cubes or linking cubes

*Instructions:* Have children use a specified number of cubes to build a spaceship. (You may wish to limit the number to 10 or less.) Count the number of cubes on the spaceship both forward and backward. (example: “1,2,3,4,5” and “5,4,3,2,1, Blast-off!”). Repeat the activity using a different number of cubes.





## E. My Handful

*Notes and textbook references*

*Materials:* collection of small objects (junk boxes)

*Instructions:* Children will take one handful from a collection and count. Make charts to display this information. Children may like to do this activity several times, using the same objects to see whether they can increase the amount they are able to hold.

I can hold ____		
Sue	10	
John	12	
Mary	9	
buttons		

I can hold ____		
Sue	15	
John	20	
Mary	13	
beads		

## F. Line Them Up

*Materials:* containers (small bowls, baskets, cups, nests) - 10 for each pair of children; small objects (marbles, walnuts, connecting cubes) to be placed in the containers

*Instructions:* Give each pair of children 10 cups and a collection of materials. Ask children to count and place objects in the cups to make collections from 1 - 9, with one cup left to represent zero. After placing the containers in order from 0 marbles to 9 marbles, for example, one child turns away while the other child changes the order of two cups. The first child tries to find the cups that are in the wrong place by dumping and counting the items. The child puts the cups back in the correct order, then switches roles with the partner.

Variation: Let one child take away a cup and close the gap. The partner tries to figure out what is missing.

## **G. Counting Song Books**

*Materials:* paper; pens; crayons; stapler

*Instructions:* Have the children create books illustrating number songs. (Suggestions: “Five Little Speckled Frogs,” “Five Little Monkeys,” “Five Little Ducks”)

Variations: Make other kinds of number books. They may be in the shape of the numerals. They may focus on objects that the children identify, such as “How Many Groups of Three Are in Our Room?”

## **H. Musical Bears**

*Materials:* teddy bear counters ( or any collection of objects); a paper bag for every child; music; dot cards (see Blackline Masters I - 3, I - 4 and I - 5)

*Instructions:* The teacher fills each bag with a different number of teddy bear counters (from 1 to 10 counters). Each child chooses a bag and sits in a circle on the floor. While the music is playing, the children pass the bags around until the music stops. When the music stops, everyone counts the bears in the bag. The teacher holds up a dot card and counts the dots. All children who have bags with that number of bears, empty their bags into the center of the circle. Play continues until all bags have been emptied into the center of the circle.

*Variation:* Use numerical cards rather than dot cards.

## **I. Simon Says**

Play “Simon Says” giving a specific number of times an action is to be done. For example: Simon says, “Hop 4 times.”

Simon says, “Pat your knees 1 time.”

Simon says, “Leap 3 times”

“Touch your toes 5 times”

Remind children to stand still unless commanded to move by Simon.

## **J. Mother, May I?**

Children line up at the starting line. “Mother faces the group at the finish line. Calling on one child at a time, “Mother” gives a command for moving forward using two baby steps (walking heel to toe), three kindergarten steps (regular walking steps), or four giant steps (largest stride possible.) The object

of the game is to be the first to reach “Mother.” Before each action the child must first say, “Mother, may I?” “Mother” replies, “Yes, you may.” Then the child performs the action. Any child who moves before permission is given must return to the starting line.

*Variation:* Change the way children walk to animal movements. Example: rabbit hops, deer leaps, high-stepping horse steps, etc.

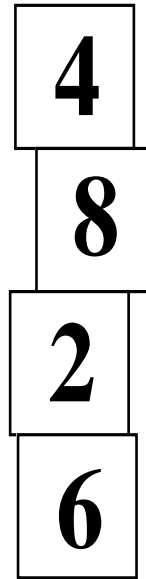
*Notes and textbook references*

## ***d) Compare and order sets and numbers.***

### **A. Tippy Towers**

*Materials:* blocks of different shapes labeled 1 - 9

*Instructions:* Spread out the blocks on the floor so that numerals are visible. Say a number and ask a child to begin the tower with that block. Continue naming numbers and calling on different children to add blocks until the tower tips over. To play independently, the children take turns naming a numeral while their partner adds that block to the tower.



(Note that the numeral “names” the block rather than indicates “how many.”)

*For example, directions for this tower might have been:*

- A. Start with block 6*
- B. Put block 2 on top of block 6.*
- C. Add block 8 on top of block 2.*
- D. Place block 4 on the top.*

*Notes and textbook references*

*Clear guidelines about appropriate ways to use manipulatives are important for children.*

## **B. Secret Numeral**

*Materials:* sandpaper numeral cards; blindfold

*Instructions:* Before playing this game be sure that the children have had a chance to become familiar with the sandpaper numeral cards. Model the activity for the whole class before children begin the activity independently. The children work in pairs. One child wears the blindfold and a partner selects a numeral card. The blindfolded child is to read the numerals by touch. Roles are then switched.

*Variations:* Write a numeral on the blindfolded child's back. Ask the child to identify the numeral. Use plastic numerals rather than the sandpaper numeral cards.

## **C. Medley of Numeral Activities**

*Playdough or Yarn Numbers*

*Materials:* laminated numeral cards (see Blackline Master I - 19); playdough; numerals traced on cards, glue and heavy yarn.

*Instructions:* The children make playdough numerals directly on top of the cards. Trace numerals with glue and then add yarn. Trim ends.

*Chalkboard Numbers*

*Materials:* chalkboards, chalk, numeral cards

*Instructions:* The child picks a numeral card, writes that numeral on the chalkboard and says the name. The children may also draw that many dots beside the numeral.

*Sand/Salt Trays*

*Materials:* trays or small boxes filled with sand or salt

*Instructions:* Have children practice tracing numerals in sand/salt. They may also work with a partner - one child names a numeral and the other child traces it. The children switch roles.

## D. Number Stories I



*Notes and textbook references*

*Materials:* set of storyboards (see Blackline Masters I - 6 through I - 11 for examples) for each pair of children; plastic animals or plastic counters; small numeral cards 0 - 9

*Instructions:* Children work as partners, selecting a storyboard and numeral card from their materials. After placing the correct number of counters on the board, the children tell a story about the scene. Partners take turns checking each other's counting ability as they listen.

## E. Match Up

*Materials:* Large numeral cards 1 -10 (see Blackline Master I - 19), 55 connecting cubes

*Instructions:* Mix up the numeral cards and spread them out in front of the children. Call on one child to locate a specific numeral and count out that many connecting cubes to place on the card. Note: Vary cards according to children's strengths. Children can work with partners and check each other.

## F. Detective

*Materials:* boxes or cups labeled 6, 7, 8, 9; 30 buttons, jewels, connecting cubes, etc.

*Instructions:* Put buttons in each cup according to the label. When the children aren't looking, secretly take a button from one cup and hide it in your pocket. Ask a child to count the buttons in one cup to see if one is missing. After counting, ask whether the number matches the label on the box. Repeat with each cup until you come to the incomplete set. Show the missing button. Let the child add it to the set and then recount. After children understand this activity, they can play in pairs. One child can take a button and the other child is to find the incomplete set. Then they can switch roles.

## G. Roll and Build

*Materials:* Legos, Tinker Toys, Lincoln Logs or other manipulatives; die

*Instructions:* Children work in cooperative groups of three or four. The object of the game is to work cooperatively to build a structure. The children take turns rolling the die, counting out that many building pieces, and adding them to the group structure. Either set a time limit for play or establish a set number of turns per player.

When the game ends, discuss the project. Which strategies were most helpful in building the structure? What problems did your group have? What could you do differently next time? Are there things the group should decide before beginning to play?

*Variation:* Children work together to build a structure. The children take turns rolling the die and removing that number of pieces from the structure. Play ends when all the pieces have been returned to the container. Discuss whether group strategies changed when playing this variation.



## H. Teacher's Helper

*Materials:* Post-it notes, 3 x 5 cards, charts

*Instructions:* Have students help with “inventory” of items in the classroom. How many desks in each row, or group; how many girls are wearing shoes with buckles; how many boys are wearing blue shirts? All of these involve counting and recording. Each day a different student can take the inventory, and record and display the results.

## **I. Calendar Math**

Materials: calendar blackline (see Blackline Master I - 28), pencils, crayons

Instructions: Using a blank calendar students can record the date for each day and keep their own schedule. Different colors can be used to show contrasts for different weeks or seasons.

## **J. Number of the Week**

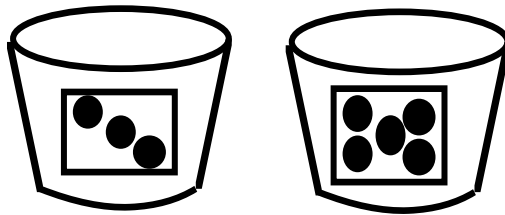
Materials: paper, pencils or crayons

Instructions: The class or teacher chooses a number of the week and each student records on a sheet the number and a picture of what s/he counted that matched that number. e.g. 5 is the number, students writes 5 and draws five chairs. The next day the student writes 5 and records (draws) 5 of some other object.

## **K. Counting Pots**

*Materials:* margarine containers with dot labels; counting objects

*Instructions:* Have the child count the dots on the label and then



count out either the same, fewer, or more objects to put in the pot. The child should be able to tell whether the amount in the cup is the same, more, or less than what is represented on the label.



## L. Right Hand - Left Hand

*Materials:* beans or other counting objects, 2 egg cartons, recording sheet (see Blackline Master I - 12)

*Instructions:* Place one egg carton above another as indicated. The child takes a handful of beans with the right hand. Starting at the bottom right side up in the egg carton, place one bean in each cup until all beans are in the cup. Repeat with the left hand, putting the beans in the egg carton cups on the left. Which hand held more- right or left? Record by coloring the correct hand on the recording sheet. If the amounts were equal, color both hands. Repeat a second time and record. Were your results the same?

## M. Snap To See

*Materials:* two clear plastic bags, two colors of connecting cubes (Put loose cubes in bags, one color per bag.)

*Instructions:* Display bags of cubes. Ask children to tell which bag has more (or less). To verify their response, take cubes out of bags and snap together. Compare towers to see which has more.

*Variation:* This activity could be repeated using other objects in the bags. The objects could be paired to check.

## N. Spill The Seeds

*Materials:* two types of seeds (sunflower seeds, pumpkin seeds, lima beans, kidney beans, etc.) and a can, box, or cup for each pair of children

*Instructions:* Put three sunflower seeds and eight pumpkin seeds into a cup. Shake and spill the seeds where everyone can see. Ask, "Are there more sunflower seeds or more pumpkin seeds?" Repeat this activity, gradually decreasing the difference between the sets of seeds. If the children are not sure which is more, encourage them to check by matching one to one. Once the children understand the activity, give each pair of children nine of each kind of seed in a cup. One child places some of the seeds in the cup, then shakes and spills the seeds. The other child tells whether there are more sunflower seeds or pumpkin seeds. Then the children switch roles.

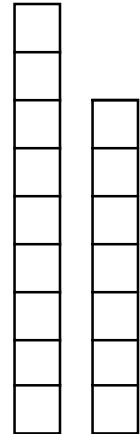
## O. Stack It!

*Materials:* Connecting cubes or other connecting cubes

*Instructions:* Give children a variety of directions requiring them to use the concepts of more or less.

- Build a stack that is 1 more than 3.
- Build a stack that is 2 more than 4.
- Build a stack that is 1 less than 5.
- Build a stack that is 2 less than 7.

If children are unable to do this, break it down into steps. Build a stack of three. Now build a stack that is one more than three right beside the first one. What number did you make? Which stack is more, four or three?



*Notes and textbook references*

## P. Ten In The Hand

*Materials:* pebbles, corn or beans (or any collection of small items of similar size), recording sheet (see Blackline Master I - 37), glue (optional)

*Instructions:* Children predict how many times they can pick up exactly 10 objects in five turns. Students pick up a handful and count. They record whether the handful was less than 10, more than 10, or exactly 10 by drawing or gluing one bean (kernel of corn, pebble, etc.) in the correct column on the recording sheet. Repeat four more times.

	○○ ○ ○○ Less than 10	○○ ○○ ○ ○ ○○ ○○ 10	○○ ○○ ○○ ○ ○ ○ ○○ ○○ ○○ More than 10
1			
2			
3			
4			
5			

*Extension:* Make a group graph to show results of what happened most often

## ***e) Use ordinals (1st - 10th).***

### **A. Teddy Bears Line Up**

*Materials:* a set of teddy bear counters for each child (red, yellow, orange, green, blue)

*Instructions:* Ask children to line up teddy bears in a specific order. For example, “Put a green bear *first*, a yellow bear *second*, ...” When the bears are in line, ask questions which focus on the ordinal positions of the bears, such as, “Which bear is *second*? What *place* is an orange bear in? Can you pick up the *eighth* bear?” After you have done this activity a few times, let a child give directions and ask questions.

### **B. Which Dwarf?**

*Materials:* paper; crayons; numeral cards

*Instructions:* Read or tell the story Snow White and the Seven Dwarfs.

Assign each child one dwarf to draw and color. Help them to label their pictures. Tell the children that the dwarfs are going to line up to go for a walk with Snow White. Place the numeral cards in order in a line where everyone can see them. Ask seven children to place their dwarfs in certain positions in line. For example, “Justin, will you please put Sneezy in the *third* place line.” Continue until all seven dwarfs are in line. Then ask question to focus on the ordinal position of each dwarf, for example, “Which dwarf is *fifth* in line? Which dwarf is *last*? Which dwarf is behind the *third* dwarf? Which place in line is Doc?”

*Variation:* This activity could be done with many different sets of pictures or objects or with the children themselves standing in line. Ask children to get in line so that they are fourth or second, etc.

### **C. Dramatizations**

*Instructions:* Have children act out favorite finger plays. Put ten chairs in a row, then tell different children which seat to take. For example, “Tonya, will you be the fourth Jack-o-Lantern?”

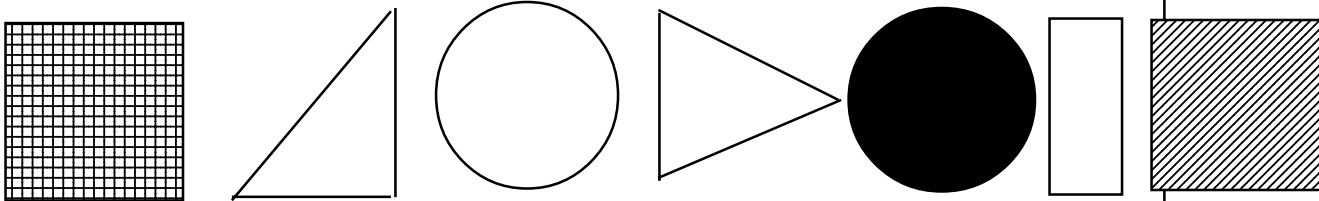
## D. Decorate!

*Instructions:* Draw ten outlines of trees (or surprise boxes) on the board. Give directions to the children to decorate them. “Jeremiah, put three stars on the first tree.” “Li, put two bells on the third tree.”

*Variation:* To increase student participation, give each student a recording sheet with a scenes to decorate or embellish. (See Blackline Masters I - 8 through I - 11 and I - 32)

**E.** Children take part in acting out finger plays and poems which use ordinal numbers. For example, “Five Little Squirrels” or “Ten Little Jack-O-Lanterns”. Who is first? Which student is fifth?

**F.** When shown a row of objects, child will name (or identify) which ones are in given ordinal positions. *When using ordinal numbers, always identify where the sequence begins (i.e. tell what is first in line).*



“Which block is second in line?”

“Which block is fifth?”

**G.** Ask children to identify the ordinal position of objects (characters) in pictures.

**H.** Make a line of children and ask who is in different ordinal positions. Have some students sit down or change places in line. “Now who is in fifth place?” Many children who are able to identify ordinal position when shown sequences have difficulty applying the concept. Have child get into line in order to be the third (or seventh, etc.) student.

**I.** Place students on stairs and identify who is on the first step, second step, and so on. Is this the same if children are in line? When could the first person in line be at the top of the stairs? bottom of the stairs?

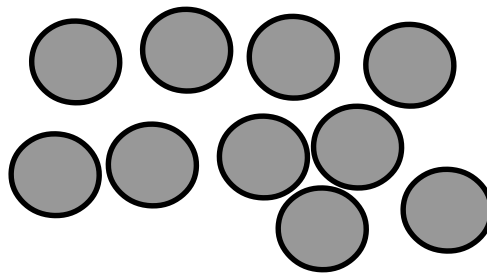
*Notes and textbook references*

**J.** Children listen to teacher directions to place Unifix cubes in the correct position. For example, given a red, blue, yellow, green, and white cube, the children are directed as follows: “The yellow cube is first, the green cube is fourth, the red cube is third, and the white cube is fifth. What position is the blue cube?” Repeat with different directions. *Extension:* Have children draw and color the cubes to record.

## ***f) Estimate quantities fewer than or equal to 10.***

### **A. Ten Dots**

*Materials:* Ten Black Dots by Donald Crews; crayons; paper; dot stickers



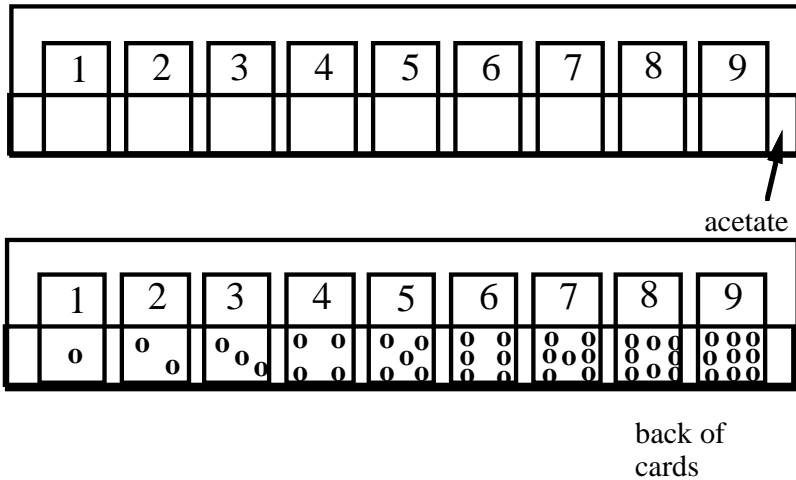
*Instructions:* Read Ten Black Dots aloud to the students. They will like the pictures which are made out of the black dots on each page. Have children predict what number of dots will be shown on the next page as you read. Point out that each consecutive page has more than one dot. Flip to different pages and ask what number of dots is one less than or one more than this number? Have children choose a number and make a picture using dot stickers and crayons. When finished, ask them to find someone else whose picture has one more than or one less than the number of dots on their picture. Have each child dictate a sentence on the picture. These might be collected and made into a class book for display.

### **B. Mystery Numbers**

*Materials:* “movable” number line for each child in the group (Make this with 2 sentence strips or a clear acetate strip taped to a sentence strip or poster board.); numeral cards 1 - 9 (see Blackline Master I - 19) ( put dots and numerals on the back for children who need them); Make cards with higher

numbers later in the year.

*Instructions:* Children will use their individual number lines to follow directions. Give directions such as the following, “I am thinking of a mystery number one more than six and one less than eight. Show me the number.” When students are successful, let them give mystery numbers to each other. If a child cannot show you the correct number, move to a more concrete level activity giving counters to count out six and add one more or count out eight and take one away.



### C. More and Less

*Materials:* a set of blocks (any collection of objects will do)

*Instructions:* The teacher distributes sets of objects to two children. One set contains one more than the other set. The teacher questions the whole class after counting the number in each child’s set: Who has more? Who has less? Guide the children to discover “one more than” and “one less than” concepts.

*Variation:* Have children work with a partner. One partner becomes the “teacher.” The “teacher” shows the partner a set of blocks. The partner must follow the “teacher’s” directions and make a set that is either one more than or one less than the “teacher’s” set.

## D. Roll of the Die

*Materials:* one die; a collection of objects for each pair of children

*Instructions:* Group children into pairs. Ask children to take turns rolling the die and making sets that are one more or one less than the number rolled. The child who rolled that number must tell his partner what he/she did. For example, "I rolled a two. I made a set of three seashells. Three is one more than two." As a follow-up, children could identify sets in books or magazines that show one more or one less than the number they rolled.

## E. Number Combinations

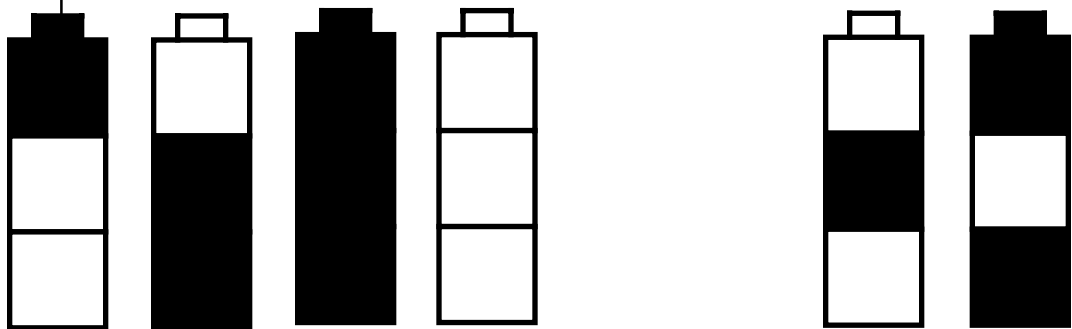
*Materials:* Connecting cubes (in two colors); matching crayons; recording sheets (see Blackline Masters I -13 through I - 19)

*Instructions:* This activity may be done over an extended period of time for each number from three to nine. This is a more traditional activity with opportunities for children to begin recording in a structured manner. The activity may be explored long before children begin to write number sentences.

For the first numbers you will do a lot of modeling. Once children understand the process of recording, they can work independently. For each number the children need to go through three levels: concrete exploration, pictorial recording, and symbolic recording. *If children are not ready for the symbolic level, do not push them! Allow as much time as children need for exploring with materials in the concrete or pictorial stages. Children will indicate by their interest when they are making sense of the way in which the combinations are recorded.*

*Beginning Level:*

Cut out connecting cubes in two colors. Demonstrate how to make combinations of three. Challenge the children to find as many as they can.

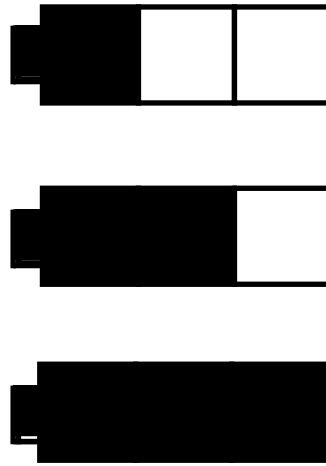
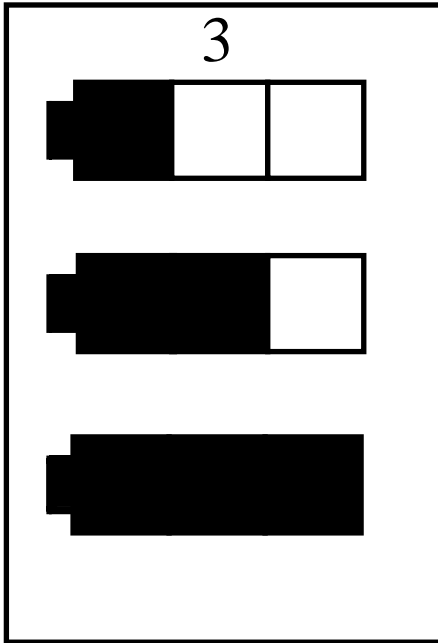


Notice that some children will group the colors together while others will develop all of the patterns. Later, when children begin to record the addition that they have modeled, the correct number sentences for the two examples at the left could be  $1 + 1 + 1 = 3$  or  $2 + 1 = 3$  or  $1 + 2 = 3$ .

*Notes and textbook references*

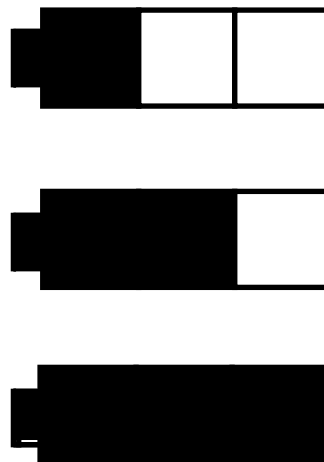
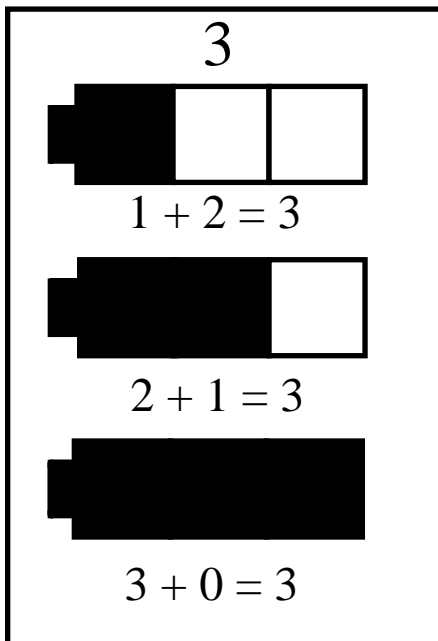
*Concrete and pictorial records:*

Have children repeat the beginning level activity, adding the recording sheet to show each of the combinations by coloring the pictures of the cubes. Be sure children actually build before recording.

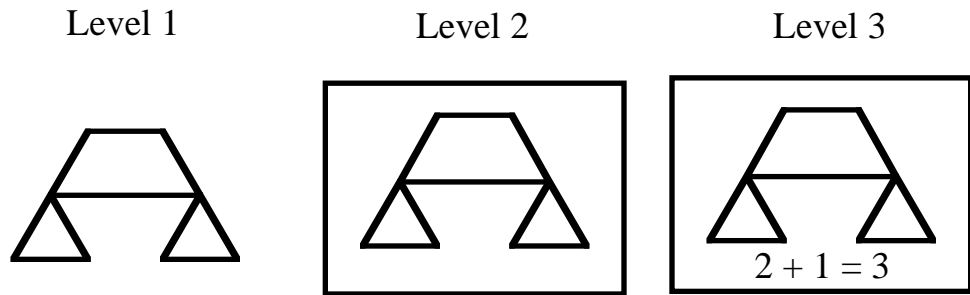


Color to record what has been built.

Concrete and pictorial combined:



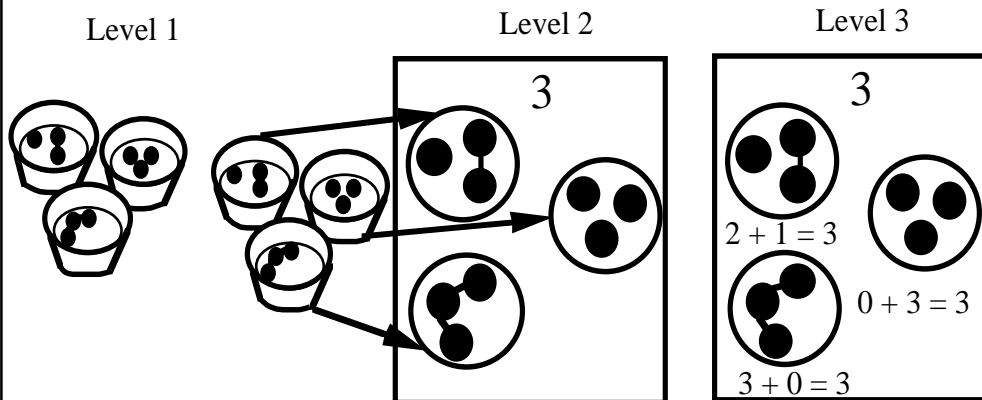
Concrete, pictorial, and symbolic combined:  
Have those children who are ready add symbols to their recording sheets.



Recording masters can be used over and over. Change colors of cubes or allow students to choose their favorite colors.

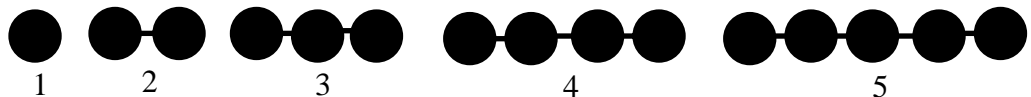
*Variations:*

A. Use two colors of pattern blocks with matching paper pattern blocks that have been precut. Have children record their designs on blank paper.



B. Use two-colored counters or beans, matching crayons, and recording sheet (see Blackline Masters I - 20 through I - 27). Children shake and spill the beans, then record what they spill out. This idea appears in many primary resource books such as Math Their Way by Mary Baretta-Lorton.

C. Use “jewels,”\* matching crayons, small cups, and recording sheet, see Blackline Master I - 29. Children place jewels in cups to get the specified number. They color to record.



\*Jewels are strings of beads cut to specific lengths.



## ***g) Recognize equivalence in sets and numbers 1 - 10.***

### **A. Helpers**

*Materials:* supplies to be distributed: paper, glue, napkins

*Instructions:* Invite the children to distribute materials for class use. Encourage children to figure out how many they need for their group. This activity provides practice with one-to-one correspondence and the children will feel more responsible for their work.

### **B. Match It Up**

*Materials:* chairs; pencils; cups; books; hands and mittens

*Instructions:* Working with a group of children, ask, "Are there enough chairs for everyone?" "How can we find out?" Match children to chairs - one child to one chair. If there is not an exact match, ask, "Which did we have more of, children or chairs?" Repeat this activity on other days with different objects.

#### **Variation:**

*Materials:* (The following list is just to get you started)

toy flowers and vases	plastic eggs and egg cartons
toy cars and garages	straws and milk cartons
bottles and tops	spoons and bowls
shoes and socks	shapes and outlines

*Instructions:* Working independently or with a partner, the child matches the objects one-to-one to determine which is more or less, or if there are the same number of objects.

### **C. Hula Hoop Stories**

*Materials:* hula hoops for children to use in acting out stories

*Instructions:* On the playground (or inside on rainy days) have children make up stories about the children who come to the magic circles (addition) or about comparisons or those who are in the circles and leave (subtractions). Include questions so that there is problem solving along with listening skills. One or more groups could act out each story.

“Once there was a magic circle in which two children stood. They invited two more friends to come into the circle and sing a song. How many children were singing?” or “The magic circle was lonely. It wanted to have seven special friends standing around its edges, but only five children were there. How many more children need to be invited so that there will be seven children holding hands around the magic circle?”

## **D. Under The Water**

*Materials:* pond workmat\* for each child; cup of goldfish crackers (at least 10 crackers) for each child.

**Optional:** Individual chalkboards and chalk, or paper and pencil for recording.

*\*Make a pond workmat by gluing a circle of blue onto a larger sheet of paper. This can be the pond or part of the ocean.*



*Instructions:* Tell the children that they are going to pretend to be large fish or whales. Tell stories about fish swimming out to play and joining friends or getting eaten by the whale. For example: “Three little fish were swimming and two more little fish came to join them. Show me how many fish were swimming in all.”

If your class is ready, this is an excellent game for demonstrating math symbols. For the above story, write  $3 + 2 = 5$ . Talk to your class about what the numbers mean. Let them try writing number sentences for some of the stories you tell.

### E. Going On A Picnic

*Materials:* small plastic food items or counters to represent foods; workmat for each child (see Blackline Master I - 10)

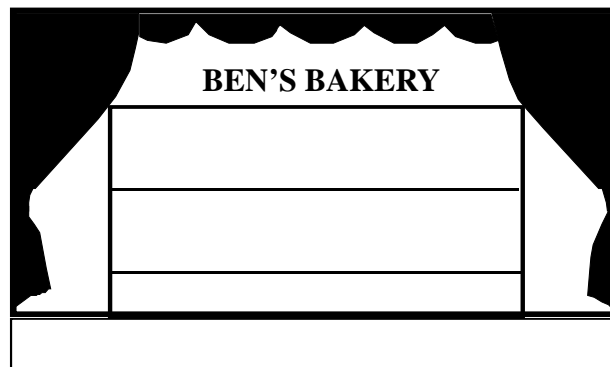
*Instructions:* Children will work in groups of three to tell stories and determine how many items are taken on the picnic. Model the activity.

### F. The Doughnut Shop

*Materials:* ones small paper plate or a “bakery shelves” workmat and one cup of Cheerios for each child; recording materials, if appropriate (see Blackline Master I - 30)

*Instructions:* Tell children a story about the baker filling the shelves with doughnuts. As you tell the story, have children model the baker’s actions. When customers come and doughnuts are sold, children can eat the Cheerios as they remove them.

Early estimation activities should involve groups of items less than ten.



“Mr. Baker brought out some warm doughnuts. He put four on the bottom shelf and three on the top shelf. How many doughnuts did he have on his shelves? When the newspaper boy came in, he bought three doughnuts. Now how many doughnuts are there?”

*Variation:* Use teddy graham crackers or other cereal pastries for the stories. Pastas in various shapes can be used for “non edible” story telling.

## G. The Dinosaur Derby

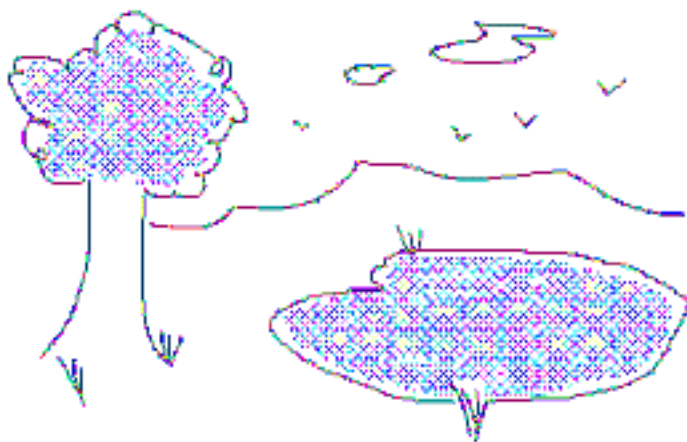
*Materials:* any kind of workmat and dinosaur macaroni or crackers for each child

*Instructions:* Have children work with a partner and tell stories about different kinds of dinosaurs coming to the fair or to a race or a visit with a friend. Be sure to talk about those that leave the fair also (subtraction stories). Children can choose their favorite story to dictate and paste dinosaurs on the picture they draw to accompany the story.

## H. Number Stories II

*Materials:* sets of storyboards (see Blackline Masters I - 6 through I - 11 for one example); related counters; paper and pencil or chalk; individual chalkboards or small equation cards (for recording)

*Instructions:* The teacher uses storyboards to model combining sets and removing objects from sets while telling number stories. “There were three apples on my apple tree. I picked one and ate it. How many apples are left on my tree?” If your class is ready, you can show them how to record the stories in “math language” ( $3 - 1 = 2$ ). Provide recording materials for the children to use when they are ready. There should be no push for using symbols! Storybooks are great for centers.



*Notes and textbook references*

*A monthly math calendar (found in the Week by Week Essentials) will also give parents ideas for ways to help their children with mathematics.*

## ***1.02 Share equally (divide) between two people; explain solution.***

### **A. Sharing With Friends**

*Materials:* counters, small toys or snacks

*Instructions:* Have pairs of children seated at tables (or in a play area if appropriate) and give them a container of things for them to share equally. Children can model for each other “dealing out” the items, using one to one correspondence matching, or other strategies they determine to decide that each person has a fair share.

*Note:* Materials do not always have to be packaged in even amounts. Children can talk about the “leftover” item.

### **B. More Sharing**

*Materials:* pencils, crayons, copies of Blackline Master I - 36

*Instructions:* Have students color the objects or draw lines to show how two persons could get fair (equal) shares of pieces of fruit. Discuss how to know if the pieces are equal. Is there more than one way to share so that each child has an equal amount?

### **C. What Happened Here?**

*Materials:* picture cards (see Blackline Masters I - 34 and I - 35); connecting cubes or other appropriate manipulatives

*Instructions:* Give children a picture card and have them tell the group a problem that relates to the characters. Children use counters to solve the problem. Note: Magazines are a good source of pictures for this activity.



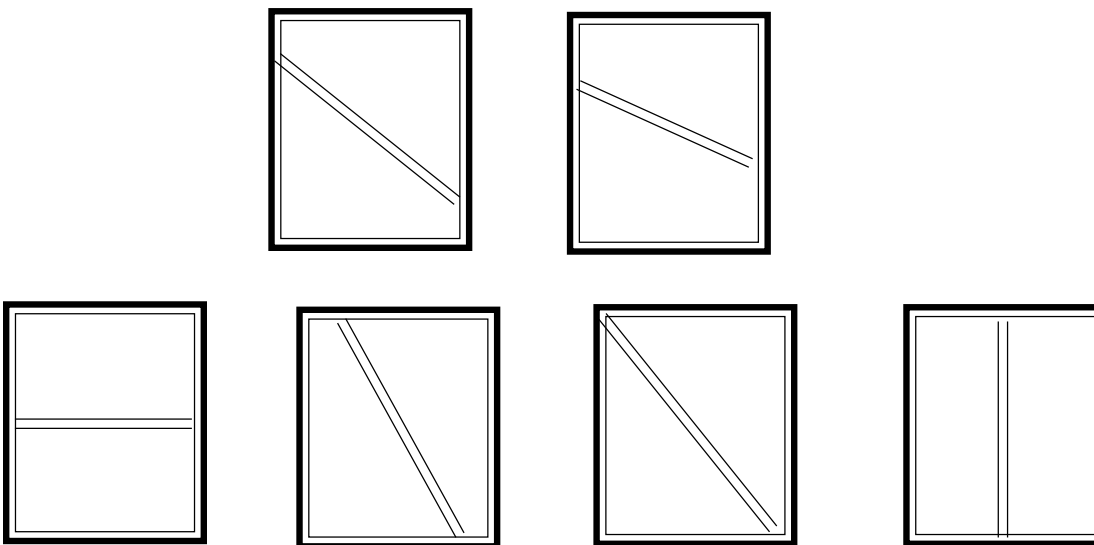
## D. Sandwiches

*Notes and textbook references*

*Materials:* peanut butter; several plastic knives; for each student: a slice of bread, a small paper plate; class graph with title “What’s Your Shape”

*Instructions:* Demonstrate how to spread peanut butter to make a sandwich. Ask children to talk about all the ways you might cut the bread into halves. Have students then make their sandwich and choose how to divide it in half.

Some possibilities:



## ***1.03 Solve problems and share solutions to problems in small groups.***

### **A. Act It Out**

*Materials:* storyboard and related counters for each child . The following books have more patterns for storyboards: Workjobs II, Box It or Bag It, Developing Number Concepts with Unifix Cubes. See Blackline Masters I - 6 through I - 11 and I -32, or you may also create your own.

*Instructions:* Tell number stories and have the children act out the story using their counters. *For Example:* One morning two little fish swam out into the pond to play. Then two more fish joined them. How many fish are playing now? One of the little fish had to go in. How many were still playing? The students may make up their own stories and tell them to a friend. **Note:** Try using goldfish crackers.

### **B. How Many Together?**

*Materials:* 8 to 12 connecting cubes per child (depending upon the children); paper bag per child; recording sheets (see Blackline Master I - 33)

*Instructions:* Children reach into their bag with one hand and grab some connecting cubes. They count and record. Next, they reach into the bag with the other hand and get cubes. They count these and record. They then push both groups together and count, recording the total. **Note:** This activity will be appropriate for many children to do independently in the spring after teacher modelling.

*If you are not familiar with the resource Workjobs II, you may wish to ask your librarian to order it for you.*

## **C. Everyday Problems**

*Materials:* use whatever materials might be helpful (ex., counters, chalkboard, connecting cubes). Encourage the children to suggest appropriate materials.

*Instructions:* Use everyday situations as opportunities for problem solving. Below are a few suggestions to get you started, but don't be limited by these. Also encourage the children to be aware of problem solving opportunities.

*Examples:*

- \* If eight children usually sit at this table, and two are absent today, how many children are sitting here now?
- \* If there are six children at this table and we have five pencils, how many more pencils do we need for every child to have a pencil?
- \* If there are six boys and five girls on the carpet, how many children in all?
- \* We had seven fish in our aquarium and this morning two are dead. How many fish are in the aquarium now?
- \* Our two gerbils had five babies. How many gerbils do we have now?
- \* How many more children chose strawberry ice cream than chocolate ice cream?
- \* Do we have enough string to go across the table? How can we find out?

*Notes and textbook  
references*