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Direct Instruction or Hands-on Learning? Children Need Both!

Children need both instruction from their teachers and activities in which they learn through exploration, experimentation, and discovery. These approaches work best in different situations and for different kinds of learning. These examples from a prekindergarten class show how teachers plan for both adult- and child-guided experiences and ways they support children's learning during both.

Group Time

Mr. Castañeda reads *Pete the Cat and His Four Groovy Buttons* to the children. When he's done reading he asks, "Why do you think Pete's buttons came off?" and "What could Pete do to keep his buttons on?" The children talk about their ideas.

Then Mr. Castañeda tells the group, "There are bowls with buttons in several learning centers. I'll show you something to do in the movement center with two hoops and a bowl of buttons. You can also do a counting activity with Ms. Page in the manipulatives center with buttons of different shapes. Now, let's go to the planning board and you can choose which learning center you want to go to first."

Movement Center*

Mr. Castañeda explains to the children who have chosen this center, "Each of you will have a turn to take some buttons out of the bowl—however many fit in your hand. We'll place the hoops on the floor and then toss the buttons into the hoops, one at a time." Mr. Castañeda continues, "You probably won't land all your buttons in a hoop each time. When you don't, shrug your shoulders and say, 'Oh, well.' Then you can count how many buttons landed in the hoop and how many landed outside the hoop."

As the game progresses, some children just say how many buttons are inside and outside of the hoop without counting them. Mr. Castañeda knows that these children have mastered *subitizing*—perceiving the quantity of a group of objects without counting them—with a small number of items. Some children count on their own, touching each button as they count. Some children ask Mr. Castañeda to help them count. He gives each child only as much assistance as she needs.

Manipulatives Center*

Ms. Page invites Joshua, Bansari, and Anas to do a counting activity with the buttons. She says, "Reach into the bowl and take a handful of buttons. Then let's talk about them." The children lay their buttons out on the table. They talk about the buttons' colors, sizes, and numbers of holes. They notice that there are three shapes: round, square, and shapes that are neither round nor square. Ms. Page suggests, "Let's figure out how many of each type of button you each have."

On a large sheet of paper laid flat on the table, Ms. Page draws a chart with four rows and five columns. In the first column she labels the rows with the children's names, Joshua, Bansari, and Anas. She labels the next three columns Round, Square, and Other. The last column heading reads, "How many buttons?" (See the figure.) "Now, in the row with your name, lay your round buttons in the column labeled Round, your square buttons in the Square column, and the other buttons in the Other Shape column. We'll count how many you have of each shape, and then we'll count how many total buttons you each have."

Joshua counts his buttons, one column at a time: "Four round, three square, and two others." As he counts, he records each numeral in the last column, and with Ms. Page's help he adds operation signs to form part of an equation: 4 + 3 + 2. He then counts all the button symbols across his columns. "I have nine buttons!" he exclaims. Ms. Page adds "= 9" in Joshua's last column. "You added 4 and 3 and 2, and got a total of 9 buttons." She points to the last column and says, "*Four plus three plus two equals 9* is called an equation, Joshua. We created a math equation."

Bansari asks Ms. Page to help her count the buttons and write the equation for her. "I have eight buttons," Bansari says. "That's one less than I have," says Joshua.

Anas counts his buttons by pointing to each one, and he asks Ms. Page to write the equation for him. Anas begins by counting the round buttons. "Yes, you have four round

buttons, Anas," Ms. Page says. "I'm writing the numeral that represents four." Ms. Page writes the rest of the equation as Anas counts the buttons in the two other columns, helping him see the relationship between the *numbers* and their symbolic representations, the *numerals*. Anas then counts the button symbols on the chart. "I have 11 buttons total," he says. "Yes, you do," Ms. Page says, "and I will add that to our equation." She writes "= 11" in Anas's row on the chart.

The children continue to talk about how many of each type of button each child has, how many more one child has than another of each type, and so on.

Literacy Center

Rachel and Blessie are looking at *Pete the Cat and His Four Groovy Buttons,* repeating parts they recall Mr. Castañeda reading earlier. Rachel calls to Ms. Page, "What is this word? It starts with a *g*." When Ms. Page is close enough to see, she says, "That word is *groovy.* Remember when Mr. Castañeda read the story he told us that Pete the Cat said, 'My buttons, my buttons, my four groovy buttons'? Rachel says, "That's right! Groovy!" and continues to look at the book with Blessie. Ms. Page makes a note to invite Rachel and the other children, during transitions and at other times, to think of more words that begin with *g*.

Writing Center

Tony draws a picture of himself and Pete the Cat. He asks Mr. Castañeda to help him write his name. The teacher leaves the movement center and joins Tony. Tony says, "I want to write my name—my *real* name. It's Antonio. I know it starts with an A. What are the other letters?" Tony and Mr. Castañeda use the alphabet strip hanging on the wall to pick out the letters. With Mr. Castañeda's help, Tony matches the letters with the sounds that are the same as the sounds in his name—A-N-T-O-N-I-O.

Dramatic Play Center

Blessie moves on to this center, where she and Keisha make a plan to create the Button Store. They pick buttons out of the bowls and set them on shelves—largest buttons on the left, smallest buttons on the right. Then they arrange the buttons by shape: round, square, and other shapes. After some discussion about the best prices for the buttons (and consultation with Ms. Page), they take slips of paper from a pad in a basket and make price tags for the buttons—from 25¢ for the smallest to $2.00 for the largest. The girls continue to play in their roles as shopkeepers and add more items to the shelves. They rename the store "Buttons and Things" as they add ribbons, yarn, and other items from around the room.

*The activities in the movement and manipulatives centers are based on the subitizing game (described on p. 56) and use of symbols activity (described on p. 89) in *The Young Child and Mathematics*, 2nd ed., by Juanita V. Copley (Washington, DC: NAEYC; Reston, VA: NCTM), 2009.