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Georgia Tech

CSI: MATHEMATICS
Curriculum Support Information
A mathematics resource for parents, teachers, and students

GEORGIA DEPARTMENT OF EDUCATION
Kathy Cox, State Superintendent of Schools

Further investigations:

Hide-n-Seek Coins. Take a few of the same type of coin and place some of them facing up and some of them facing down under a piece of paper. Let your child gently rub over the coins with a pencil until the outline of the coins can be seen. Ask him to identify the type of coin and then to tell you the amount that was under the paper. Extend this activity by asking your child to identify a fair trade for what is under the paper i.e. if your child rubbed 2 nickels under the paper the trade could be 10 pennies or a dime.

Rub-a-Dub, 10 in a Tub. To help your child understand place value, practice making tens. Place 18 beans, buttons, or any small objects in a container. Use a clean Popsicle stick or tongue depressor to represent a boat. Place the small items in a pile and let your child grab a small amount (over ½) of the items. Have your child estimate (guess) how many are in his hand without counting. Next, place items on the stick until it is filled up with 10 items. This is called a "10 stick" or "a ten". Place the remaining items next to the stick. When the boat is full, let your child count the remaining items that could not be placed on the boat. Finally, you and your child can chant, "Rub-a-Dub, ten in the tub and 6 were left behind". The boat can then sail away and the game can start over again. Challenge: increase the number of items up to 30 and provide additional "boats."

Terminology:

Counting strategy: a plan that uses the counting sequence by counting on from an initial quantity.

Doubles plus one: a strategy using a known fact that is close to what is needed to determine the exact fact that is needed. For example, to add 6 and 7 without remembering the fact, a child might say, "The answer is 13 because 6 and 6 is 12, and 7 is one more than 6, so I need to add one more to 12."

Place value: the place that the digit has in a number determines its value. For example, 23 has the digit 2 in the tens place and the digit 3 in the ones place which is 2 tens and 3 ones. The value of the 2 is 20 and the value of the 3 is 3.

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Understanding Operations

Students will:
- Understand and use addition and subtraction in everyday situations
- Compose and decompose numbers up to 10
- Understand base ten as a foundation for place value
- Use informal strategies for sharing quantities fairly between two to five people
- Use money (coins and bills) as a context for collecting, exchanging, and operating on quantities less than 30

Classroom Cases:
Teacher will read questions to all non-readers.

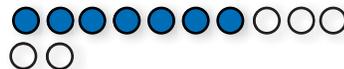**1.** Decompose 8 in several ways.

Case Closed - Evidence:
2+6,   5+2+1,   4+4,   5+3

2. There are 12 cookies in a pack and Jose ate some of the cookies. Now only 7 cookies are left. How many cookies did Jose eat? Model how you could solve this problem.

Case Closed - Evidence:
Possible solutions to show that Jose ate 5 cookies:

missing number (balancing)

or

take away

or

separating (decomposing)

or

counting on

3. Chimère wants to buy an eraser that costs $0.20 (20 cents). Does she have enough money to buy an eraser? Why or why not.

5¢   5¢   5¢   1¢   1¢

Case Closed - Evidence:
No, Chimère only has 17 cents; she is 3 cents short.

Clues:
One of the best ways to help your child with this unit is to guide his understanding of how numbers are created. When your child is composing numbers, he is building or combining values to create the number. In other words, he starts with the parts and ends up with the whole. For example, 3+3, 1+5, and 3+2+1 are all representations of 6.

When your child is decomposing numbers, she is breaking apart or separating the values to create the different number combinations or sets that can be formed from the original number. In other words, she starts with the whole and ends up with the parts. For example, 9 can be represented as 6+3, 4+5, and 3+2+4.

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