

Arithmetic Skills and Knowledge

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Counting

Verbal counting*

Equipment: none

Say, "Count for me."

Counting how many*

Equipment: sets of 3, 5, and 9 objects

Say, "Find out how many there are in one of these piles."

Subitizing* (instant set recognition)

Equipment: a display of randomly arranged sets of 0 to 5 objects

Say, "Point to four."

Subitizing (Instant set naming)

Equipment: flash cards, each with a set of randomly arranged dots, 0-6

Say, "Say it fast."

Verbal counting down

Equipment: none

Say, "Count backwards from ten."

Subtracting one*

Equipment: set of objects the child has just counted how many; take one away

Say, "Now how many?"

Counting on

Equipment: set of objects the child has just counted how many; add one on

Say, "Now how many?"

Making sets with verbal cue

Equipment: counters and a container or workspace

Say, "Put three on the paper."

Symbols

Numeral recognition*

Equipment: a display of all the numerals 0 to 9, randomly arranged

Say, "Point to 4."

Numeral naming*

Equipment: flashcards, each with a single numeral 0-9, presented in random order

Say, "What number is this?"

Making sets with a numeral cue

Equipment: counters, a container or workspace, and a numeral

Say, "Put that many in the cup."

Numeral writing

Equipment: writing materials

Say, "Draw a 4."

Concepts

Invariance

Equipment: a fixed number of objects (beyond subitizing level) rearranged visibly in differing ways

Say, "Now how many are there?"

Envisioning* (understanding)

Equipment: a set of objects the child has just counted; hide part of the set

Say, "How many am I hiding?"

Estimation

Equipment: set of object beyond subitizing level; display and then cover immediately

Say, "Guess how many are in here."

** indicates a key assessment item*