

Early Numeracy Experiences

Support the Development of Multiplicative Reasoning

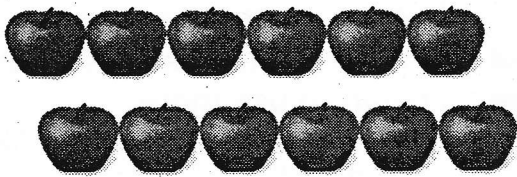
During the primary years, students develop an understanding of part-whole relationships based on addition and subtraction, where the whole is decomposed into two or more parts (e.g., 7 can be 4 and 3 or 5 and 2). Therefore, for many students, initial explorations into multiplication may result in using counting and addition strategies of varying degrees of efficiency to arrive at an answer.

When posed with the following problem, primary students may respond in a variety of ways.

Jonas wants to make 4 bags of apples for his friends. He wants to put 3 apples in each bag. How many apples will Jonas need in total?

Counting Strategies

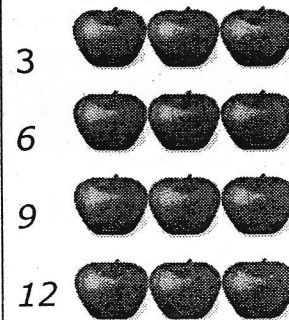
The student counts out apples one-by-one to find the total.



"I counted the apples and I got 12."

Counting Groups

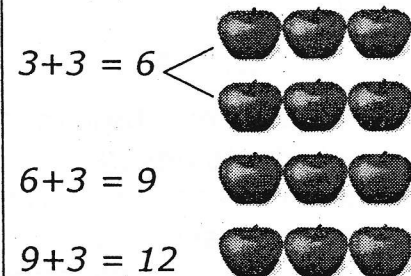
The student counts out apples one-by-one to find the total.



"I put the apples in groups and counted by 3s."

Repeated Addition

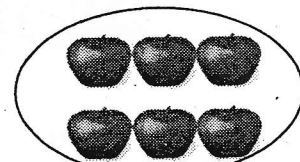
The student counts out apples one-by-one to find the total.



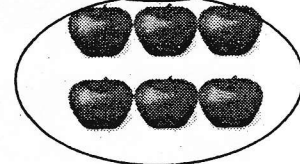
"I added $3+3=6$. Then $6+3=9$ and $9+3=12$."

Doubling

$$3+3 = 6$$



$$6+6 = 12$$



"I added $3+3 = 6$ for two bags. I need four bags, so I added $6+6 = 12$."