Developing Fluency with Multiplication and Division

| Models with concrete materials and counts by 1s	Uses skip-counting forward and backward	Works flexibly with numbers (e.g., uses repeated addition or subtraction, familiar facts, commutative property)
	10 15 5 5 5 5 0 5 10 15	"5 + 5 + 5 = 15 I know 2 × 5 = 10 and one more group of 5 is 15, so 3 × 5 = 15. I know 5 × 3 = 15, so 3 × 5 also equals 15."
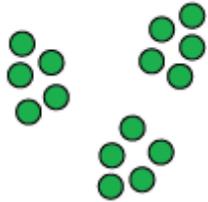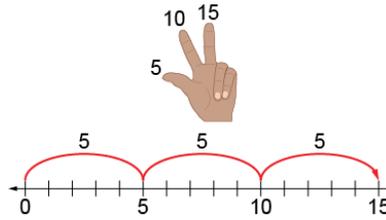
Observations/Documentation

Activity 30 Assessment
Multiplying and Dividing Larger Numbers

Developing Fluency with Multiplication and Division (con't)

Uses distributive property to help with unfamiliar facts	Applies multiplicative thinking to compare quantities (solve ratio problems)	Fluently multiplies and divides
$2 \times 5 = 10$ $5 \times 5 = 25$ $10 + 25 = 35$ "$7 \times 5 = 35$"		"I just know that $7 \times 5 = 35$."
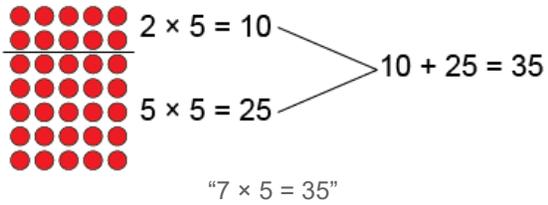
Table within middle column:

Hands	1	2	3	4	5
Ratio	× 5	× 5	× 5	× 5	× 5
Fingers	5	10	15	20	25

"For each hand there are 5 fingers. The ratio of hands to fingers is 1:5. That means I multiply by 5. So, on 2 hands there are 2 × 5, or 10 fingers."

Observations/Documentation