Lesson 18 Mental strategies for multiplication and division

DOUBLE AND HALVE TO MULTIPLY

1. Start with 25 × 16.
2. Double 25 to make **50** and halve 16 to make **8**.
3. Now work out 50 × 8.
4. 50 × 8 = **400**.

WARM-UP

On each ruled line write the calculation and name the mental strategy you used.

1. Set out 18 × 15 and name its strategy
2. Set out 6 × 99 and name its strategy
3. Set out 144 ÷ 8 and name its strategy

18 × 15: _____

6 × 99: _____

144 ÷ 8: _____

PRACTICE

1. In the board game, a player scores **45** points on each of **18** turns.

   $45 \times 18 = ?$

2. The card game gives **5** points for each of **98** cards collected.

   $5 \times 98 = ?$

3. A puzzle game awards **35** points for each of **12** levels completed.

   $35 \times 12 = ?$

4. The dice game divides **168** points equally among **7** players.

   $168 \div 7 = ?$

ALWAYS, SOMETIMES, NEVER

Always, sometimes or never true? Write A, S or N.

a. Doubling one factor and halving the other keeps the product the same. ☐

b. Halving three times works for every division by 8. ☐

c. Compensating by adding 1 to 99 works only for numbers near 100. ☐

d. Partitioning into tens and units changes the answer. ☐

NUMBER