

Smart Number Moves

Use patterns and parts to make math easier.

GRADE 7 • 7.MP.7

7.MP.7 "Look for and make use of structure."

NAME _____

DATE _____

SEE THE STRUCTURE

When equal groups appear, rewrite a number in helpful parts or factor out a common amount. Solve the smaller pieces, then combine them. Check that your answer fits the situation.

WORKED EXAMPLE

A library puts 13 bookmarks in each of 5 prize bags. How many bookmarks are used?

1. $13 = 10 + 3$

2. $(10 + 3) \times 5 = 10 \times 5 + 3 \times 5$

3. $50 + 15 = 65$

Answer: 65 bookmarks

PRACTICE 5 problems

- 1** A game club packs 9 cards into each of 8 welcome packs. Use a helpful split to find the total cards.

ANSWER _____

- 2** A garden team plants 16 seeds in each of 2 trays. Use structure to find the total seeds.

ANSWER _____

- 3** A student fills 25 photo slots on each of 6 album pages. Use a friendly number to find the total photos.

ANSWER _____

- 4** A podcast has 18 minutes in each of 4 episodes. Split a factor to find the total listening time.

ANSWER _____

- 5** A theater sets 11 chairs in each of 12 rows. Use a split to find the total chairs.

ANSWER _____

APPLY IT Show your work

- 1** Student council sells 17 glow bracelets for \$7 each. Use a nearby multiple to find the money collected.

WORK SPACE

ANSWER _____

- 2** A robotics team buys 14 small batteries at \$6 each and 14 charging clips at \$2 each. Use one expression that groups the equal number of items to find the total cost.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A game gives 29 energy points in each of 12 levels. Find the total points. Explain how you used a nearby number instead of multiplying 29×12 in one step.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A game club packs 9 cards into each of 8 welcome packs. Use a helpful split to find the total cards.	72 cards
2	A garden team plants 16 seeds in each of 2 trays. Use structure to find the total seeds.	32 seeds
3	A student fills 25 photo slots on each of 6 album pages. Use a friendly number to find the total photos.	150 photos
4	A podcast has 18 minutes in each of 4 episodes. Split a factor to find the total listening time.	72 minutes
5	A theater sets 11 chairs in each of 12 rows. Use a split to find the total chairs.	132 chairs

PART 2 • APPLY IT

1. **\$119** Use $20 \times 7 - 3 \times 7$. That is $140 - 21 = 119$.
2. **\$112** Factor out 14: $14 \times (6 + 2) = 14 \times 8 = 112$.

CHALLENGE

348 points; $30 \times 12 - 12 = 360 - 12 = 348$.

Accept any correct split, factoring method, or equivalent equation. For the challenge, require a valid explanation using a nearby number or another clear structural method.