

Pattern Power

Use number structure to solve real situations.

GRADE 6 • 6.MP.7

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

NAME _____

DATE _____

SPOT THE STRUCTURE

When a situation has equal groups, look for a structure that makes the multiplication easier. You can break a factor into parts or use a nearby fact, then combine or adjust the results. Check whether your answer is reasonable by estimating.

WORKED EXAMPLE

A volunteer packs 8 bags with 13 snacks in each bag. How many snacks are packed?

1. Break 13 into $10 + 3$.
2. Multiply: $8 \times 10 = 80$ and $8 \times 3 = 24$.
3. Add: $80 + 24 = 104$.

Answer: 104 snacks

PRACTICE 6 problems

- 1** The art club puts 19 photos on each of 6 display boards. Use a nearby fact or break apart a number. How many photos are on the boards?

ANSWER _____

- 2** A player earns 15 coins for each of 7 completed quests. Show a helpful structure. How many coins does the player earn?

ANSWER _____

- 3** A school event has 9 tables with 12 name tags at each table. Break apart a factor or use a nearby fact. How many name tags are there?

ANSWER _____

- 4** The science club prepares 14 packets with 6 seed samples in each packet. Use structure to find the total number of samples.

ANSWER _____

- 5** A fundraiser sells 25 bundles with 4 raffle tickets in each bundle. Use a pattern or friendly fact. How many tickets are sold?

ANSWER _____

- 6** A student practices guitar for 18 minutes on each of 11 days. Use structure to find the total practice time.

ANSWER _____

APPLY IT Show your work

- 1** The school esports club earns \$16 from each of 9 snack bundles. The club spends \$27 on signs for its event. Use structure to find how much money the club has left.

WORK SPACE

ANSWER _____

- 2** At a school concert, there are 21 rows with 7 seats in each row. Use a nearby fact to find the total number of seats.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

At a community game night, an organizer fills 18 prize bags with 17 game tokens in each bag and sets aside 26 extra tokens. How many tokens are there altogether? Explain a structure you used.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	The art club puts 19 photos on each of 6 display boards. Use a nearby fact or break apart a number. How many photos are on the boards?	114 photos
2	A player earns 15 coins for each of 7 completed quests. Show a helpful structure. How many coins does the player earn?	105 coins
3	A school event has 9 tables with 12 name tags at each table. Break apart a factor or use a nearby fact. How many name tags are there?	108 name tags
4	The science club prepares 14 packets with 6 seed samples in each packet. Use structure to find the total number of samples.	84 seed samples
5	A fundraiser sells 25 bundles with 4 raffle tickets in each bundle. Use a pattern or friendly fact. How many tickets are sold?	100 raffle tickets
6	A student practices guitar for 18 minutes on each of 11 days. Use structure to find the total practice time.	198 minutes

PART 2 • APPLY IT

1. **\$117** Find the earnings with $16 \times 9 = 144$, using $16 \times (10 - 1)$. Then subtract 27: $144 - 27 = 117$.
2. **147 seats** Use $21 \times 7 = (20 + 1) \times 7$. Add 140 and 7 to get 147.

CHALLENGE

332 tokens; $18 \times 17 = 18 \times (15 + 2) = 270 + 36 = 306$, and $306 + 26 = 332$.

Accept any correct strategy that uses a nearby fact, breaking apart a factor, or another clear number structure. For the challenge, accept equivalent explanations and require the total of 332 tokens.