LESSON MAKER PRO

Spot the Pattern

Use repeated changes to predict and explain.

GRADE 8 · 8.MP.8

8.MP.8 "Look for and express regularity in repeated reasoning."

NAME _____ DATE _____

TRACK THE CHANGE

When the same amount is added each time, use the starting amount + rate * number of repeats. Check by listing a few steps and making sure the change stays the same.

WORKED EXAMPLE

At a game club, Jordan has 7 points at the start and earns 6 points per round. How many points does Jordan have after 5 rounds?

1. Start with 7 points.
2. Find points earned: 6 * 5 = 30.
3. Add the start: 7 + 30 = 37.

Answer: 37 points

PRACTICE 5 problems

1 A music app charges $8 to join and $3 per downloaded album. What is the cost for 4 albums? Show a check.

ANSWER _____

2 A school's recycling crew collects 12 kg on Monday. Each new day, it collects 8 kg more than the day before. How many kilograms does it collect on Thursday? Show the repeated change.

ANSWER _____

3 A gaming account starts with 14 coins and earns 11 coins per quest. Let x be the number of quests. Write a rule for y, the total number of coins.

ANSWER _____

4 A video creator begins with 1 follower and gains 13 followers for each post. How many followers does the creator have after 8 posts? Show a check.

ANSWER _____

5 A bike-share ride costs $2 to unlock and $4 for each 10-minute block. What is the cost for 3 blocks? Show repeated addition or an equation.

ANSWER _____

APPLY IT Show your work

1 At a school festival, a photo booth charges $11 to reserve and $8 for each printed strip. Nia's group wants 9 strips. What is the total cost? Use a rule or repeated addition, then check.

WORK SPACE

ANSWER _____

2 A school club sells 21 buttons in week 1, 31 in week 2, and 41 in week 3. If the pattern continues, how many buttons will it sell in week 8? Explain how you checked.

WORK SPACE

ANSWER _____

CHALLENGE One step up

At a school esports event, Team A begins with 18 points and gains 4 points each round. Team B begins with 2 points and gains 8 points each round. After how many rounds will their scores match? Explain how the repeated changes close the gap.

WORK SPACE AND ANSWER

ANSWER KEY

Spot the Pattern

GRADE 8 · 8.MP.8

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A music app charges $8 to join and $3 per downloaded album. What is the cost for 4 albums? Show a check.	**$20**
2	A school's recycling crew collects 12 kg on Monday. Each new day, it collects 8 kg more than the day before. How many kilograms does it collect on Thursday? Show the repeated change.	**36 kg**
3	A gaming account starts with 14 coins and earns 11 coins per quest. Let x be the number of quests. Write a rule for y, the total number of coins.	**y = 11x + 14**
4	A video creator begins with 1 follower and gains 13 followers for each post. How many followers does the creator have after 8 posts? Show a check.	**105 followers**
5	A bike-share ride costs $2 to unlock and $4 for each 10-minute block. What is the cost for 3 blocks? Show repeated addition or an equation.	**$14**

PART 2 · APPLY IT

1. **$83** Add the reservation cost to the cost of 9 strips: 11 + 8 * 9 = 83. Repeated addition of 8 nine times gives 72, confirming the total.
2. **91 buttons** The sales increase by 10 buttons each week. From week 1 to week 8 there are 7 increases, so 21 + 10 * 7 = 91.

CHALLENGE

After 4 rounds, both teams have 34 points. Team A starts 16 points ahead, and Team B closes the gap by 4 points each round.

Accept tables, repeated addition, or equations that show a starting value and constant change. For the challenge, require the 16-point starting gap and the 4-point closing rate per round, or equivalent reasoning.