

Pattern Detectives

Find the rule and keep each pattern going.

GRADE 2 • 2.PFA.1.b

2.PFA.1.b "Analyze a repeating or increasing pattern and generalize the change to extend the pattern using objects, pictures, and numbers."

NAME _____

DATE _____

SPOT THE CHANGE

Look for what repeats or how the numbers change. Some number patterns add the same amount each time. Other number patterns change by a different amount each time, so check every jump.

WORKED EXAMPLE

A toy train has 20, 25, 30, 35, ____ cars. How many cars come next?

1. 20 to 25 is 5 more.
2. 25 to 30 is 5 more.
3. 30 to 35 is 5 more.
4. $35 + 5 = 40$.

Answer: 40 cars

PRACTICE 5 problems

- 1** A snack tray repeats: apple, banana, apple, banana, _____. What comes next?

ANSWER _____

- 2** Mia lines up 7, 9, 11 toy cars. How many toy cars are in the next group?

ANSWER _____

- 3** A robot flashes yellow, green, yellow, green, _____. What color comes next?

ANSWER _____

- 4** A puppy earns 2, 4, 6, 8 treats on four days. How many treats does the puppy earn on the next day?

ANSWER _____

- 5** A train has 8, 10, 12 passengers at three stops. How many passengers are at the next stop?

ANSWER _____

APPLY IT Show your work

- 1** At each game round, Jada gets 2 tickets, then 6 tickets, then 10 tickets, then 14 tickets. If the pattern continues, how many tickets does she get next?

WORK SPACE

ANSWER _____

- 2** In a video game, Leo earns 1 star on level 1, 3 stars on level 2, 6 stars on level 3, and 10 stars on level 4. How many stars will he earn on level 5 if the pattern continues?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A garden has 4, 6, 9, 13, ____ flowers in its rows. How many flowers are in the next row? Explain how the number changes.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A snack tray repeats: apple, banana, apple, banana, _____. What comes next?	banana
2	Mia lines up 7, 9, 11 toy cars. How many toy cars are in the next group?	13 toy cars
3	A robot flashes yellow, green, yellow, green, _____. What color comes next?	green
4	A puppy earns 2, 4, 6, 8 treats on four days. How many treats does the puppy earn on the next day?	10 treats
5	A train has 8, 10, 12 passengers at three stops. How many passengers are at the next stop?	14 passengers

PART 2 • APPLY IT

1. **18 tickets** The number of tickets goes up by 4 each round. Add 4 to 14.
2. **15 stars** The pattern adds 2, then 3, then 4. Add 5 to 10.

CHALLENGE

18 flowers. The changes are +2, +3, and +4, so the next change is +5.

Accept number-only answers when the quantity is clear. For the challenge, accept explanations that show the student noticed the changes increase by 1 each time.