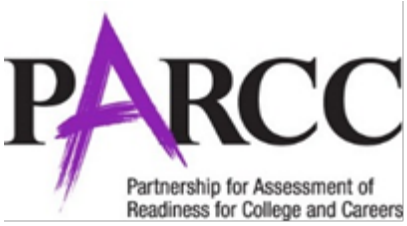



# Math
# Released Item 2016

## Grade 3

## Number Pattern
## VF558613

# Prompt

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

Enter your answer and your explanation in the space provided.

# Rubric

Task is worth a total of 3 points.

| Number Pattern | |
|---|---|
| **Score** | **Description** |
| **3** | Student response includes the following 3 elements.<br><br>• **Reasoning component** = 1 point<br>  o The student describes how to find the number that Martin used to create the pattern.<br>• **Reasoning component** = 1 point<br>  o The student explains how multiplication can be used to create the pattern.<br>• **Reasoning component** = 1 point<br>  o The student explains why 55 cannot be in the pattern.<br><br>Sample Student Response:<br><br>"Martin is adding 6 to the prior number to form the pattern" or the student may show computation for at least 3 repetitions indicating that the difference between members of the pattern is 6, such as: "12-6=6, 18-12=6, 24-18=6. He is adding 6 each time" or show that 6 is the common addend for at least 3 repetitions, such as: "6+6=12, 12+6=18, 18+6=24" or extend the pattern with at least 3 repetitions beyond the numbers provided, such as: "6 12 18 24 30 36 42 48 54 60."<br><br>"The pattern can be used by multiplying by 6. The first number is equal to 6x1, the second number is equal to 6x2, the third number is equal to 6x3, etc."<br><br>"55 cannot be included in the pattern because it is not a multiple of 6." OR "55 is an odd number and the pattern is all even numbers."<br><br>**Note**:<br>• A variety of explanations are valid. If the student makes a computation mistake in the first 2 elements, the point can be awarded if the explanation is sound. |
| **2** | Student response includes 2 of the above elements. |
| **1** | Student response includes 1 of the above elements. |
| **0** | Student response is incorrect or irrelevant. |

# Anchor Set
# A1 – A8

With Annotations

# A1

Score Point 3

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

the patern starts with six right so,I know six plus six equals twelve and then add six to twelve which gives me the sum of eighteen if I add six to eighteen which is going to give me the sum of twenty four add six to twenty four which equals thirty add six to thirty which is thirty six.So the number is six.this is equal with multiplication beacause six times one is six,and six times two is twelve, and six times three is eighteen,and six times four is twenty four,and six times five is thirty,and six times six is thirty six.thats what multiplication has to do with this.No 55 can not be include with this patern because its not a multiple of six

**Annotation**

## Anchor Paper 1

## Score Point 3

This response receives full credit. It includes each of the three required elements.

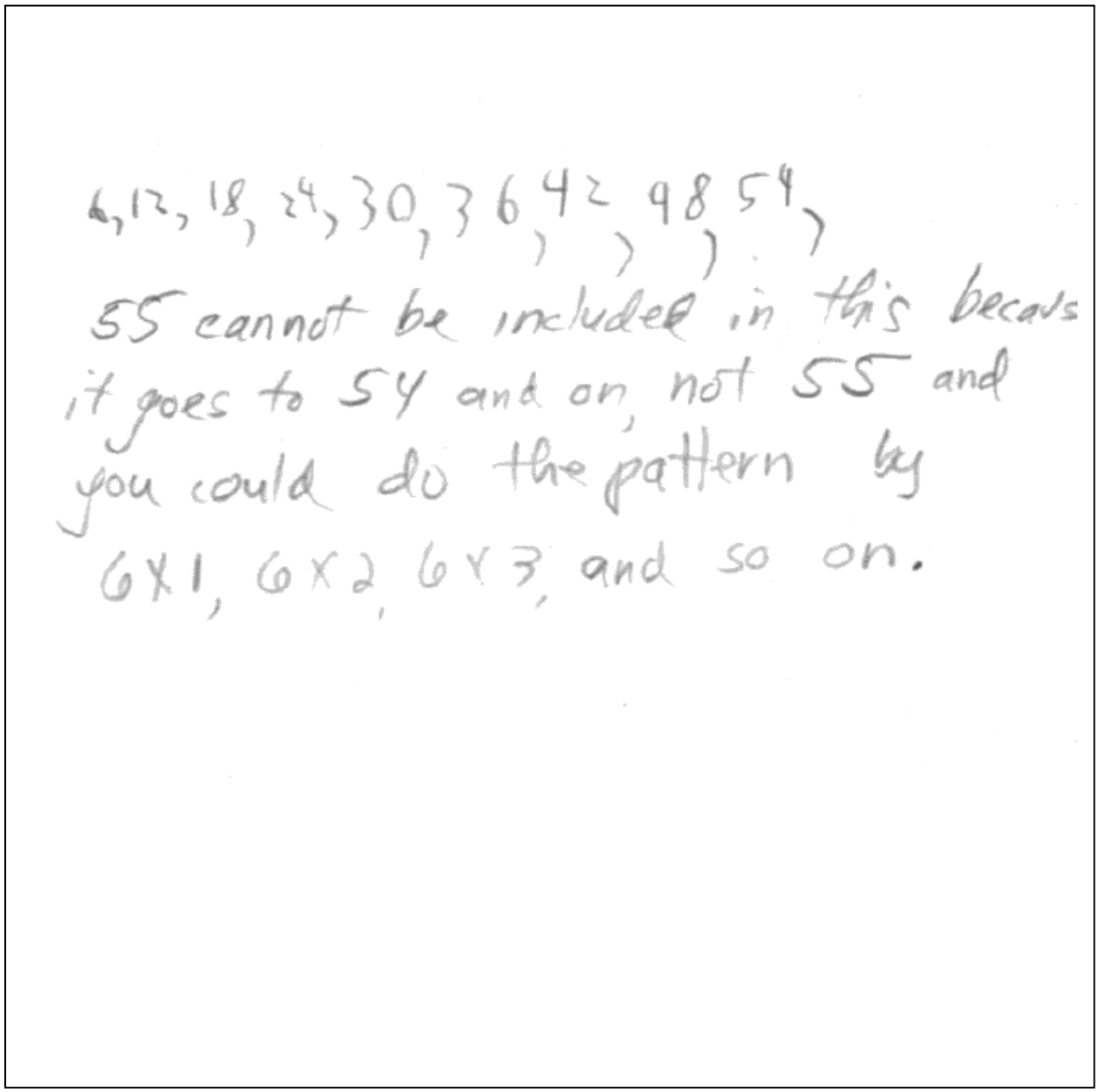
- The student correctly explains that the pattern can be formed by adding 6 (the patern starts with six right so,i know six plus six equals twelve and then add six to twelve which gives me the sum of eighteen if I add six to eighteen which is going to give me the sum of twenty four add six to twenty four which equals thirty add six to thirty which is thirty six. So the number is six).

- The student correctly explains how multiplication can be used to create the pattern (this is equal with multiplication beacause six times one is six,and six times two is twelve, and six times three is eighteen,and six times four is twenty four,and six times five is thirty,and six times six is thirty six).

- The student correctly indicates why 55 is not in the pattern (no 55 can not be include with this patern because its not a multiple of six).

# A2

Score Point 3



**Annotation**

## Anchor Paper 2

## Score Point 3

This response receives full credit. It includes each of the three required elements.

- The student correctly explains the pattern by extending it with at least 3 repetitions (6, 12, 18, 24, 30, 36, 42, 48, 54).
- The student correctly explains how multiplication can create the pattern with work of at least three repetitions (you could do the pattern by 6x1, 6x2, 6x3, and so on).
- The student correctly indicates 55 is not in the pattern (55 cannot be included in this because it goes to 54 and on, not 55).

# A3

Score Point 2

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

Becuse $6+6=12$ and $12+6=18$ that is how you see that every time that Martin skip counts he is skipping 6 numbers each time,so the pattern would go like this... 6,12,18,24,30,36,42,48,... 55 could not be included in this answer becuse if you are skip counting by sixes you could never get to 55.

**Annotation**

## Anchor Paper 3

### Score Point 2

This response receives partial credit. It includes two of the three required elements.

- The student correctly explains the pattern (Becuse 6+6=12 and 12+6=18 . . . every time that Martin skip counts he is skipping 6 numbers each time, so the pattern would go like this . . . 6, 12, 18,24,30,36,42, 48 . . .).

- The student correctly indicates 55 is not in the pattern (55 could not be included in this answer because if you are skip counting by sixes you could never get to 55).

The response does not provide an explanation for using multiplication to create the same pattern.

# A4

Score Point 2

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

you can multiplie $6 \times 2 = 12$
$6 \times 3 = 18$ $6 \times 4 = 24$
$6 \times 5 = 30$ $6 \times 6 = 36$ you can not have 55 in this number pattern because all the numbers will be even if you keep going $6 \times 7 = 42$
$6 \times 8 = 48$ $6 \times 9 = 54$

**Annotation**

## Anchor Paper 4

## Score Point 2

This response receives partial credit. It includes two of the three required elements.

- The student correctly shows how multiplication can be used to create the pattern through at least 3 repetitions (you can multiplie 6 x 2 = 12 6 x 3 = 18 6 x 4 = 24 6 x 5 = 30 6 x 6 = 36).

- The student correctly indicates 55 is not in the pattern (you can not have 55 in this number pattern because all the numbers will be even if you keep going 6 x 7 = 42 6 x 8 = 48 6 x 9 = 54).

The response does not describe how Martin created the pattern by adding the same number each time.

# A5

Score Point 1

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

Martin skiped counted by the number 6 I know the pateran shows the number 6 and adds up by 6

**Annotation**

## Anchor Paper 5

### Score Point 1

This response receives partial credit. It includes one of the three required elements.

- The student correctly explains the addition pattern (Martin skiped counted by the number 6. I know the pateran shows the number 6 and adds up by 6).

The response does not explain how multiplication can create the pattern or indicate why 55 is not included in the pattern.

# A6

Score Point 1

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

No beacuse all the numbers in the pattern are even numbers and 55 is a odd number.

**Annotation**

## Anchor Paper 6

### Score Point 1

This response receives partial credit. It includes one of the three required elements.

- The student correctly indicates why 55 is not in the pattern (No because all the numbers in the pattern are even numbers and 55 is a odd number).

The response does not explain the addition pattern or the multiplication pattern.

Note: Even though not all even numbers will fit in the pattern, all of the numbers that do fit will be even numbers.

# A7

Score Point 0

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

48 i added 12 to 36

**Annotation**

## Anchor Paper 7

## Score Point 0

This response receives no credit. It includes none of the required elements.

The response shows addition work that does not correctly explain the pattern (48 i added 12 to 36).

# A8

Score Point 0

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, . . .

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

it is a pattern 6 12 is not 3036

**Annotation**

## Anchor Paper 8

### Score Point 0

This response receives no credit. It includes none of the required elements.

The response copies information already in the prompt (it is a patrn 6 12 18 24 30 36). Please compare with Anchor Paper 3 which extends the pattern.

# Practice Set
# P101 - P105

No Annotations Included

# P101

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

no 55 can not be used in the pattern because the pattern is multiples of 6 and if you multiply anything with six you wont get to 55.

# P102

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

$6 \times 1 = 6 \;\; 6 \times 2 = 12$
$6 \times 3 = 18 \;\; 6 \times 4 = 24$
$6 \times 5 \times 30 \;\; 6 \times 6 = 36$
$6 \times 7 = 42 \;\; 6 \times 8 = 48$
$6 \times 9 = 56 \;\; 6 \times 10 = 60$

# P103

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

Martin added 6 each time. You can multiply 6 times another number. 55 can not be included because 55 is not a factor of 6.

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, ...

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

I do not now mabe mabe not?

$6 + 12 = 18$

$18 - 24 = \square 34$

$34 - 4 = 30$

$30 + 36 = 66$

$40 - 4 = 36$

Martin bought packages of juice boxes. He created the number pattern shown to find the total number of juice boxes he has.

6, 12, 18, 24, 30, 36, . . .

Martin says that he created the pattern by adding the same number each time.

Describe how to find the number that Martin used to create the pattern. Then explain how you can use multiplication to create the same pattern.

Can 55 be included in this pattern? Explain why or why not.

+ 6

$6 \times 1 = 6$
$6 \times 2 = 12$
$6 \times 3 = 18$
$6 \times 4 = 24$
$6 \times 5 = 30$
$6 \times 6 = 36$

$9 \times 6 = 54$

$9 \times 6 = 55$
NOT RIGHT

## Practice Set

| Paper | Score |
|---|---|
| P101 | 2 |
| P102 | 1 |
| P103 | 2 |
| P104 | 0 |
| P105 | 3 |