

**\*\*Note this is the version that was given Fall 2020**

**ASSENT**

**“We want to see what you know about some different things like patterns and counting. I might make a recording of what we do so I can look at it later. Will you answer some questions and play some games with me?”**

# Early Patterning Assessment (EPA)

Rittle-Johnson, B., Douglas, A., Zippert, E., Özel, S. & Tang, J. (2020) *Early Patterning Assessment*. Available from B. Rittle-Johnson, Vanderbilt University, Nashville, TN 37203.

Link to Open Lab Assessment of EPA 2020 - online:

<https://open-lab.online/invite/EarlyPatterningAssessmentOnline/>

# Repeating Patterns

## DEMO ITEM

### Identify Repeating Pattern

“Look at this pattern. [sweeping gesture from the left to the right of the pattern] This is a repeating pattern because it has a part that repeats [point to the part that repeats]. See the part inside the black box. That is the part that repeats and makes this a pattern.

“Now it’s your turn.”

Demo



1-4.

## 1-4. Identify Pattern

“Help me decide if these are patterns.

Practice item: “Is this a pattern?” [while pointing to row of red and yellow boxes]

If correct: “That’s right! This *is* not a pattern because there is no part that repeats.”

If incorrect: “That’s not quite right. This is *not* a pattern because there is no part that repeats.”

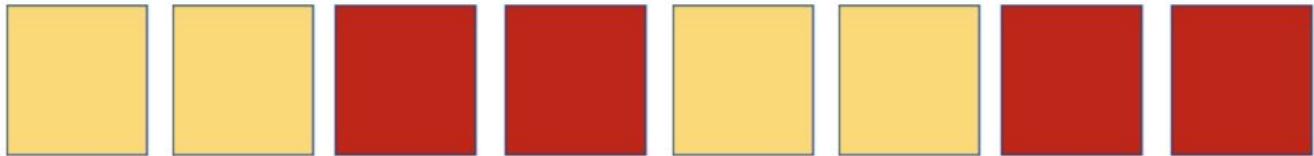
Test items: only showing one at a time, ask “Is this a pattern?” [while gesturing across the whole pattern]

If child doesn’t respond or looks confused say “Please tell me yes or no if you think this is a pattern”

Practice



1.



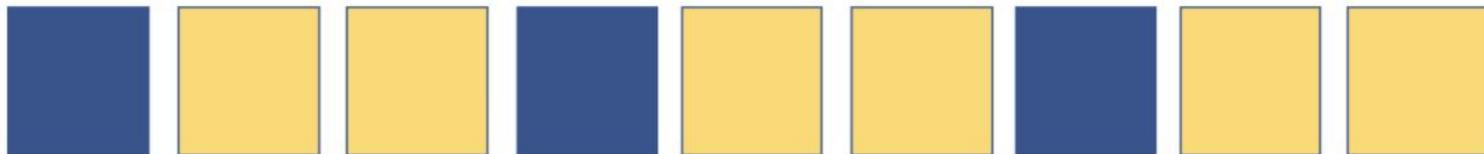
2.



3.



4.



## PRACTICE ITEM - Missing AB

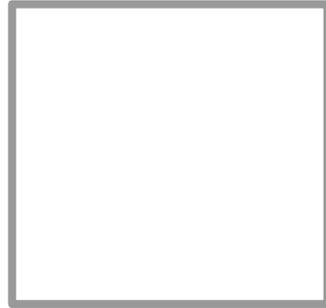
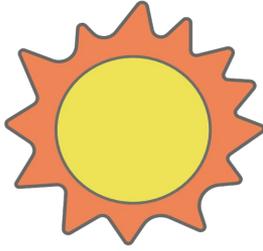
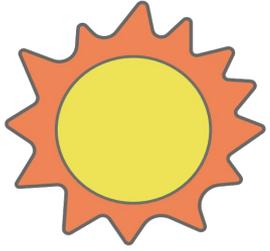
“What is missing in the pattern? [Gesture to the box on the right of the pattern] Use one of these [Gesture to the response option pictures].

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

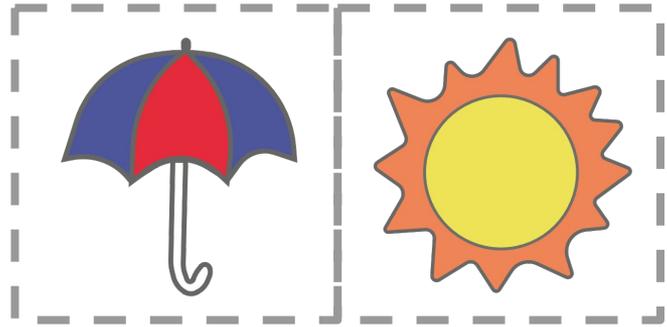
If correct: “That's right! The sun is missing because this repeating pattern goes: sun, umbrella, sun, umbrella, sun, umbrella” [point to each item in the pattern as you name them]

If incorrect: “That's not quite right, [remove their answer and place the sun in the blank] the sun is missing because this repeating pattern goes: sun, umbrella, sun, umbrella, sun, umbrella” [point to each item in the pattern as you name them]

Practice



Practice



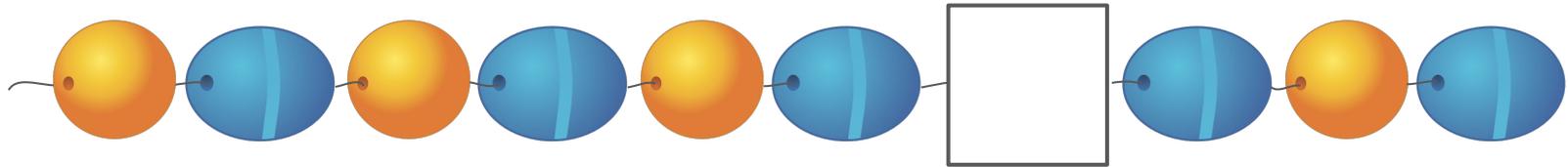
5.

## 5. Missing Item AB

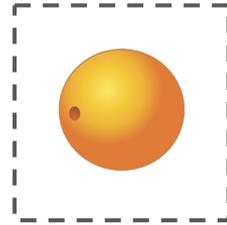
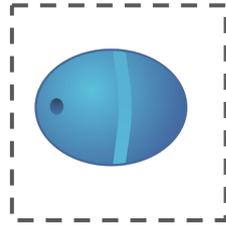
“What is missing in the pattern?” [sweeping gesture across the pattern] “Use one of these beads” [gesture to the response options]

If child looks confused or unsure say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

5.



5.



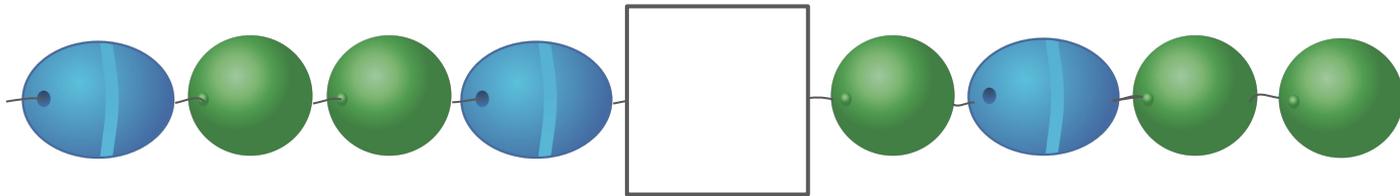
6.

## 6. Missing Item ABB

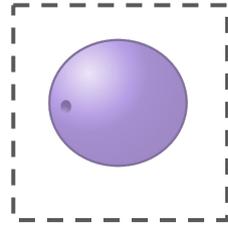
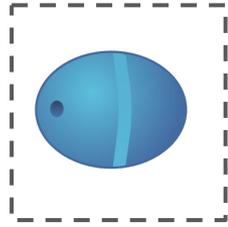
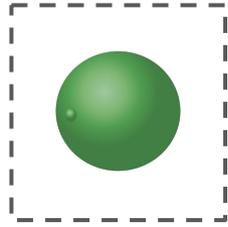
“What is missing in the pattern? [sweeping gesture across the pattern] “Use one of these beads” [gesture to the response options]

If child looks confused or unsure say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

6.



6.



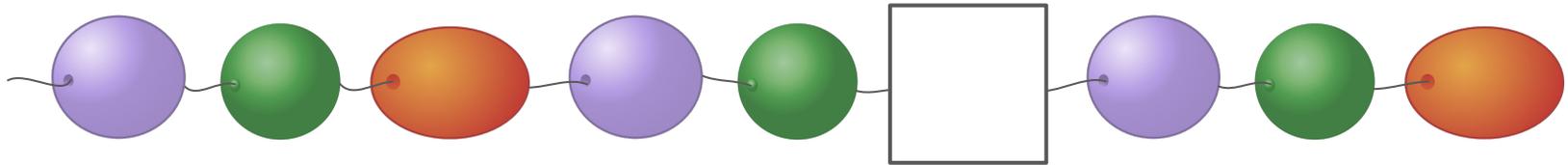
7.

## 7. Missing Items ABC

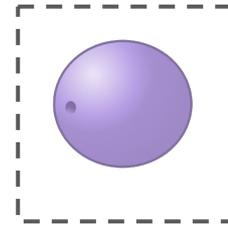
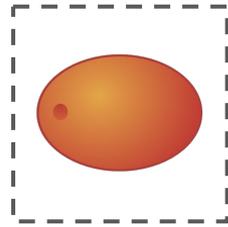
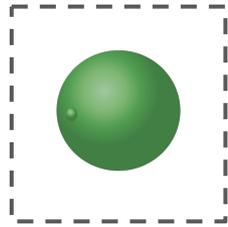
“What is missing in the pattern? [sweeping gesture across the pattern] “Use one of these beads” [gesture to the response options]

If child looks confused or unsure say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

7.



7.



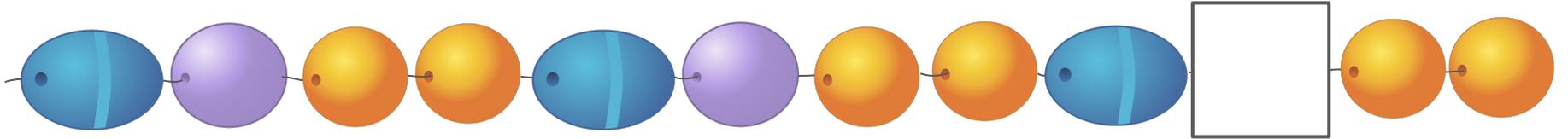
8.

## 8. - Missing item ABCC

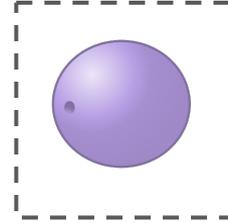
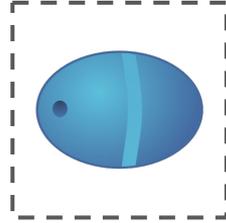
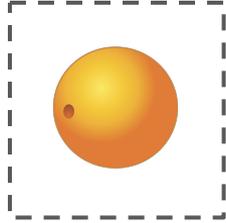
“What is missing in the pattern? [sweeping gesture across the pattern] “Use one of these beads” [gesture to the response options]

If child looks confused or unsure say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

8.



8.



9.

**9. Extend AB item:**

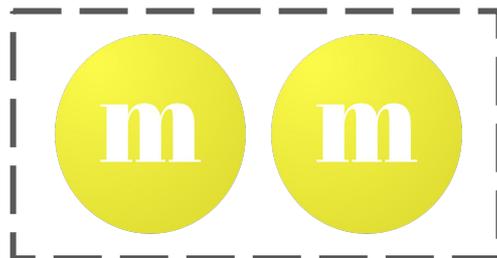
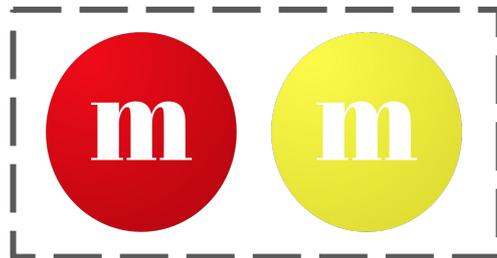
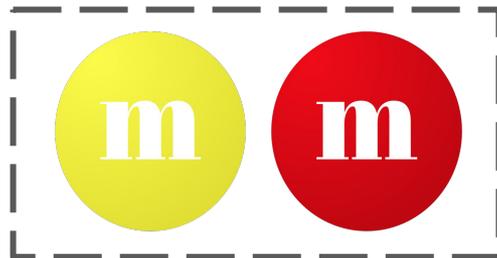
Extend: “What comes next in the pattern?” [Gesture to the circles on the right of the pattern]. “Use one of these groups of M&M’s” [gesture to the response options]

If child doesn’t respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

9.



9.



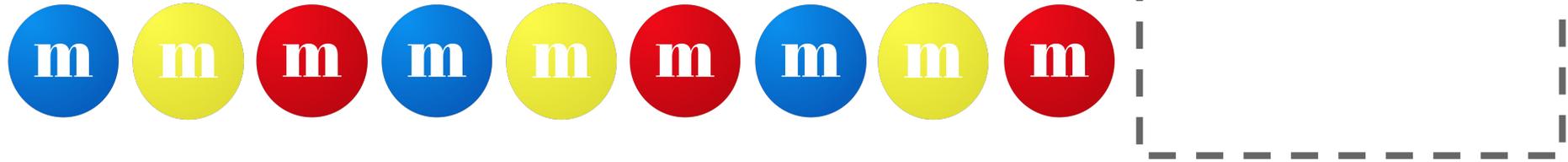
10.

**10. Extend ABC item:**

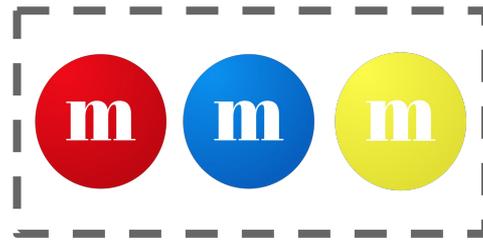
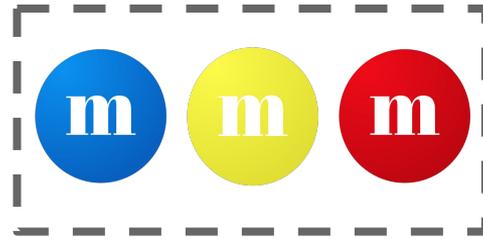
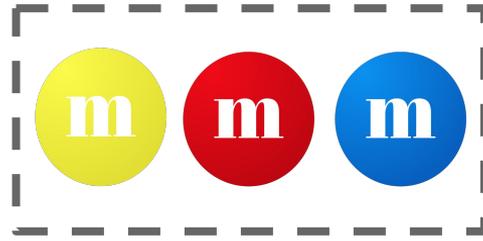
Extend: “What comes next in the pattern?” [Gesture to the circles on the right of the pattern]. “Use one of these groups of M&M’s” [gesture to the response options]

If child doesn’t respond or looks confused say “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

10.



10.

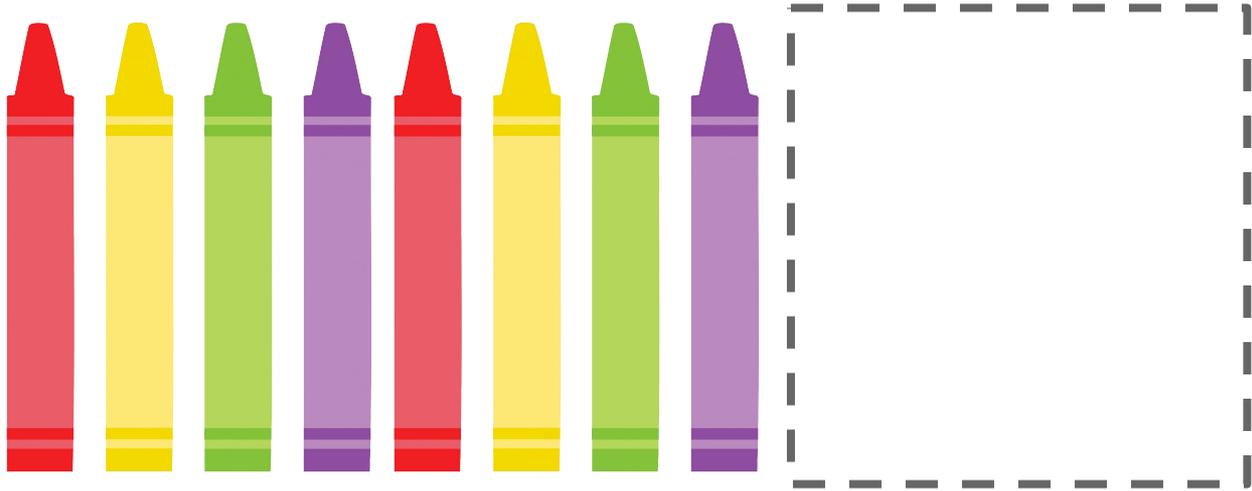


11.

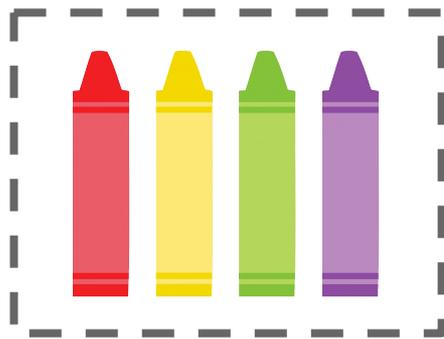
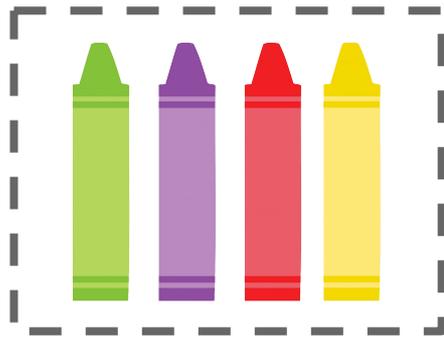
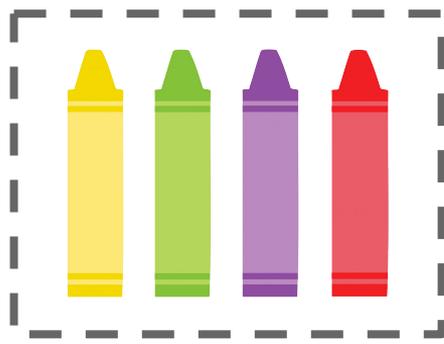
## 11. Extend ABCD

ABCD item: “What comes next in the pattern?” [Gesture to the right of the pattern]. “Use one of these groups of crayons” [gesture to the response options]

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]



11.



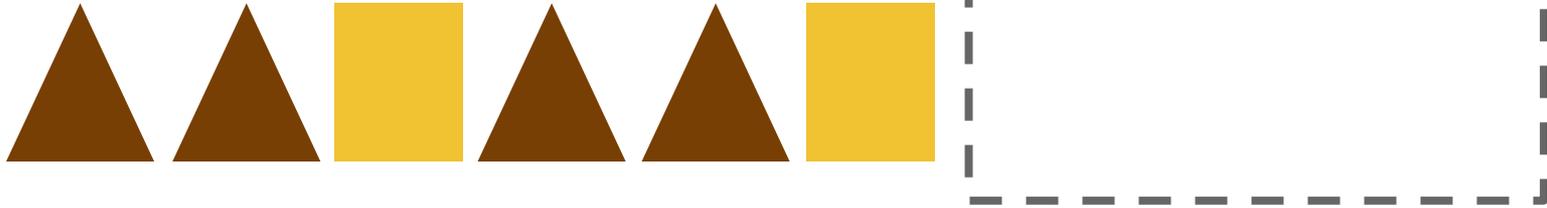
12.

**12. Extend AAB item:**

“What comes next in the pattern?” [Gesture to the right of the pattern]. “Use one of these groups of shapes” [gesture to the response options]

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

12.



12.



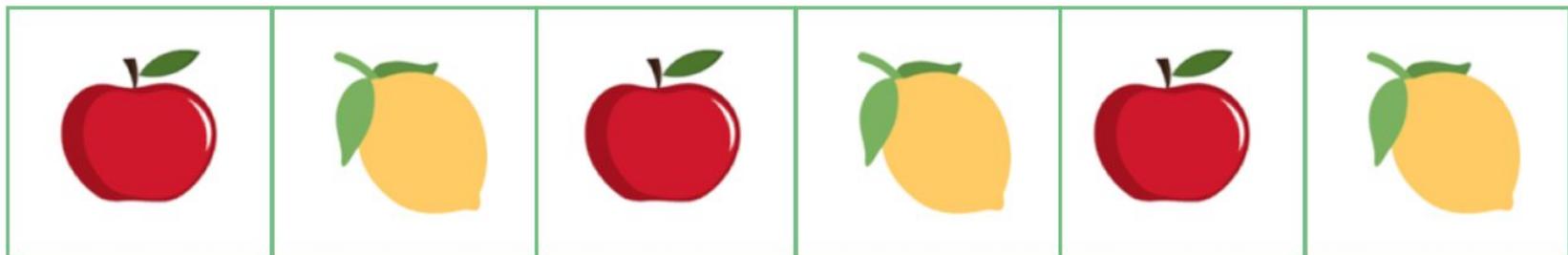
13.

**13. Abstract AB:**

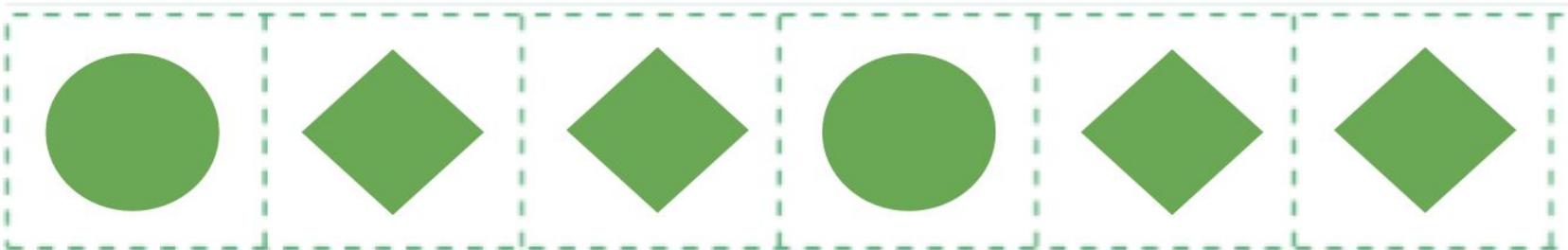
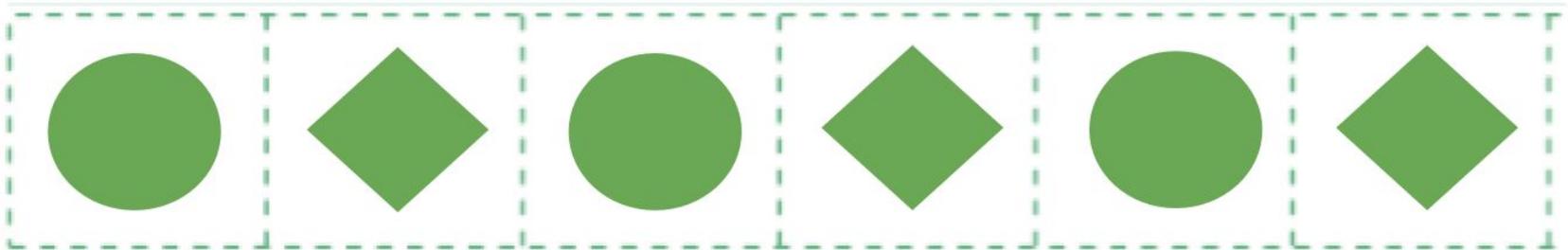
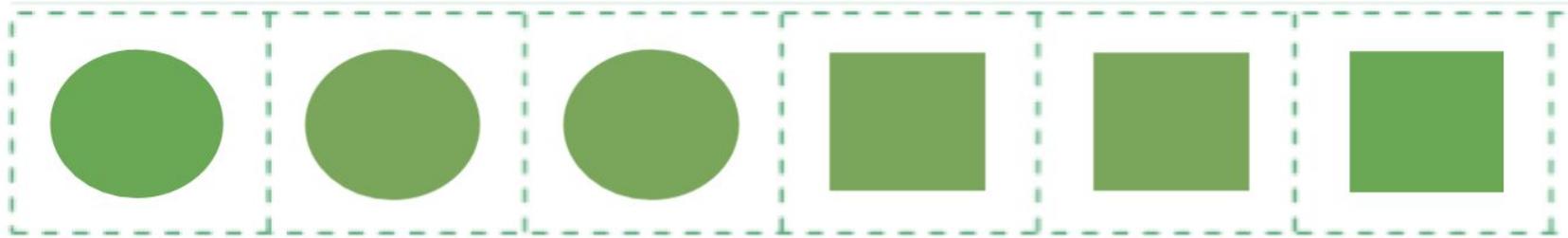
“I made a pattern with these pictures. [Gesture to model pattern.] “Which of these patterns below is the same kind of pattern as the one I made, but with different pictures?” [Gesture to each pattern separately]

If child doesn't respond or looks confused say: “Choose one of these” [point to 3 response options] “to show me which is the same kind of pattern as the one I made” [point to blank box]

13.



13.



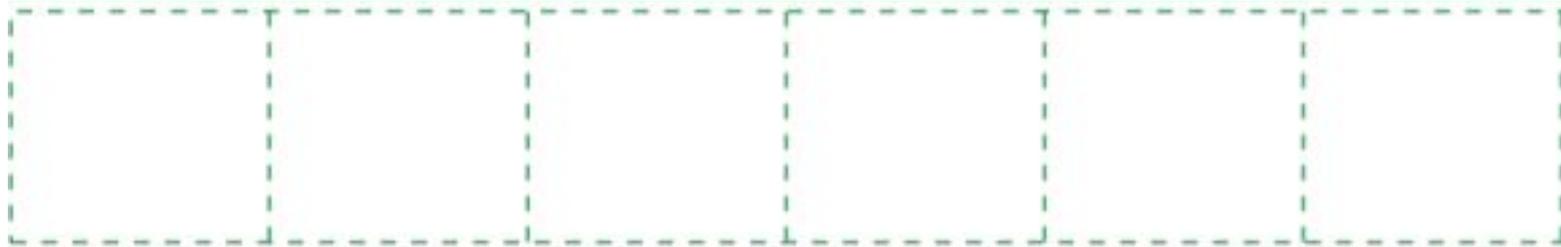
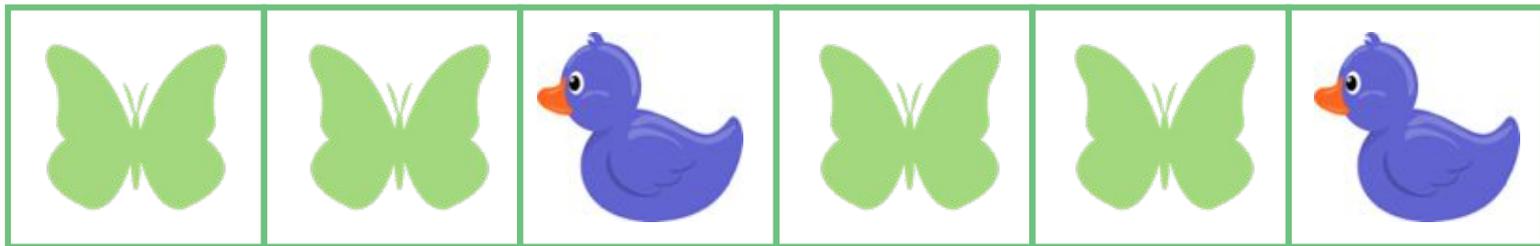
14.

#### 14. Abstract AAB item

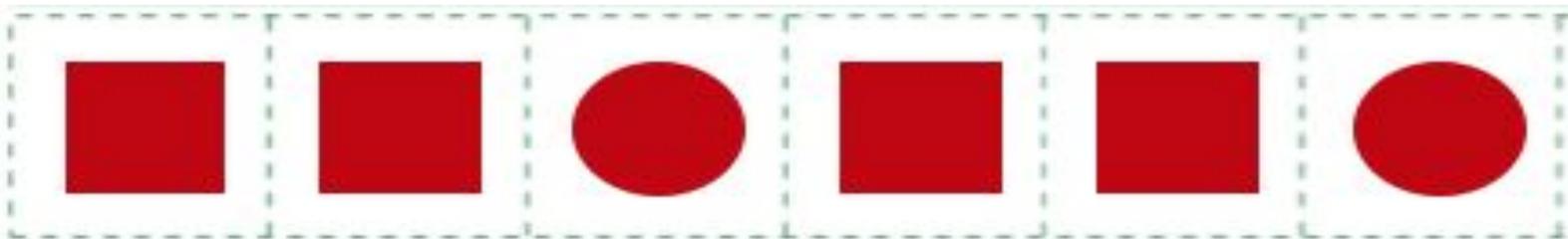
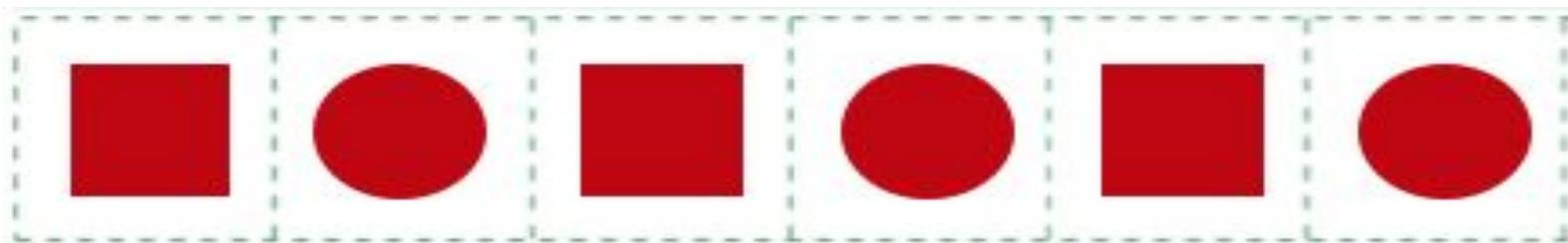
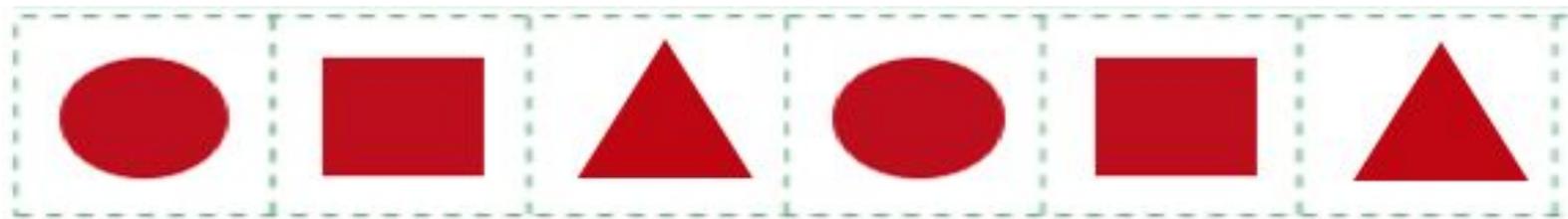
“I made a pattern with these pictures. [Gesture to model pattern.] “Which of these patterns below is the same kind of pattern as the one I made, but with different pictures?” [Gesture to each pattern separately]

If child doesn't respond or looks confused say: “Choose one of these” [point to 3 response options] “to show me which is the same kind of pattern as the one I made” [point to blank box]

14.



14.



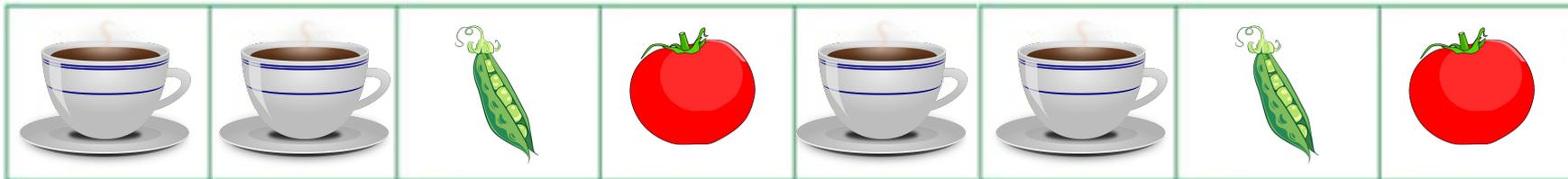
15.

### 15. Abstract AABC Item

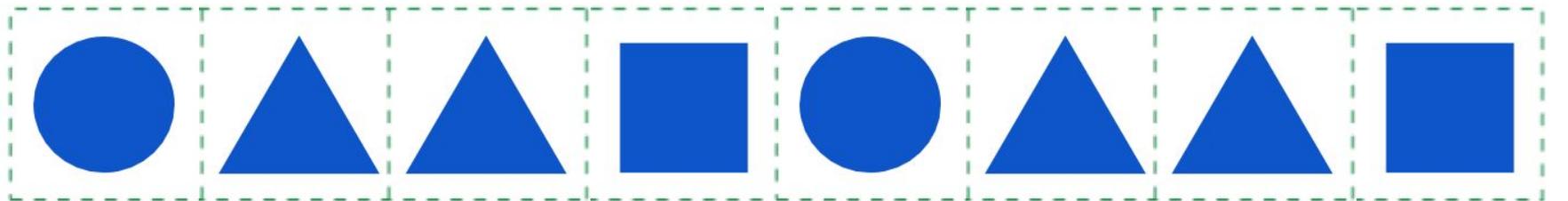
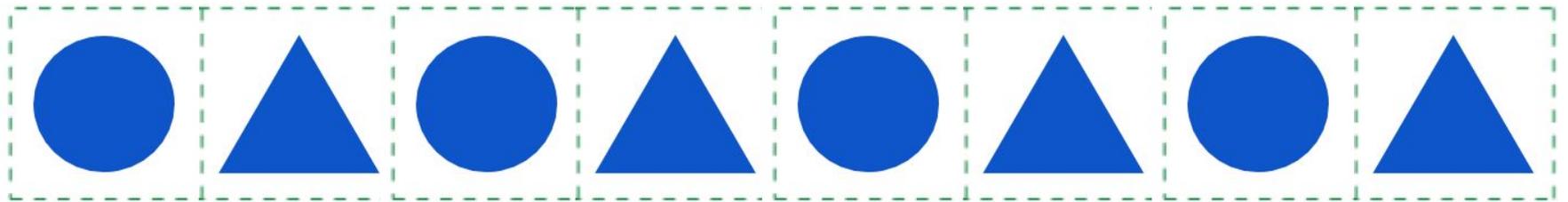
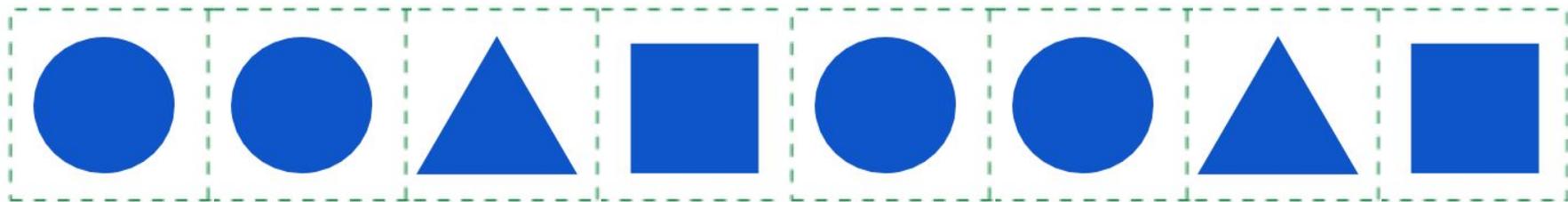
“I made a pattern with these pictures. [Gesture to model pattern.] “Which of these patterns below is the same kind of pattern as the one I made, but with different pictures?” [Gesture to each pattern separately]

If child doesn't respond or looks confused say: “Choose one of these” [point to 3 response options] “to show me which is the same kind of pattern as the one I made” [point to blank box]

15.



15.



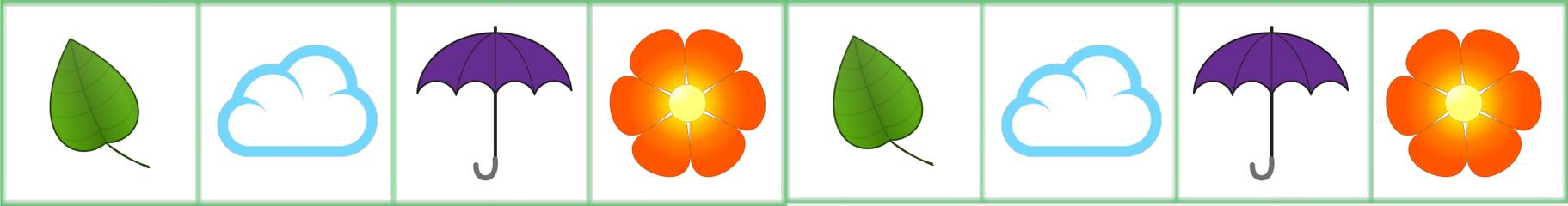
16.

**16. Abstract ABCD item:**

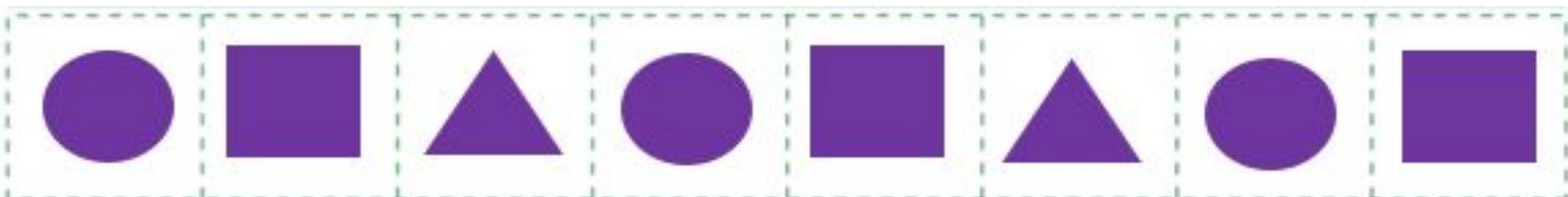
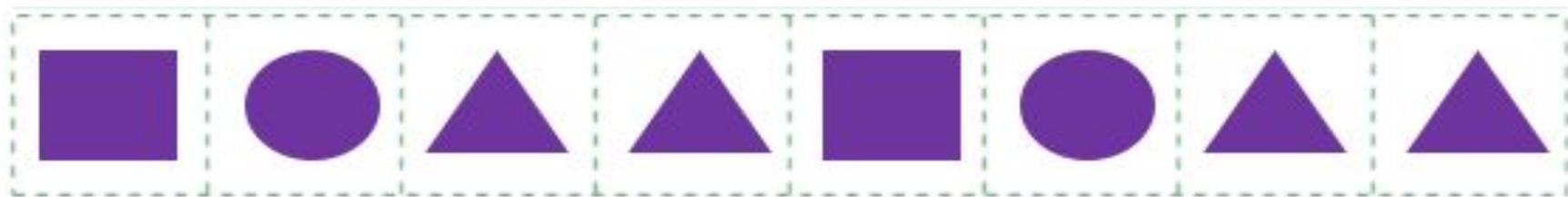
“I made a pattern with these pictures. [Gesture to model pattern.] “Which of these patterns below is the same kind of pattern as the one I made, but with different pictures?” [Gesture to each pattern separately]

If child doesn't respond or looks confused say: “Choose one of these” [point to 3 response options] “to show me which is the same kind of pattern as the one I made” [point to blank box]

16.



16.



**\*\* 2 MIN BREAK: stand up with the child and do some stretches, play a short game of simon says, or any quick body movement activity before moving on to repeating patterns**

# **Growing Patterns**

Demo.

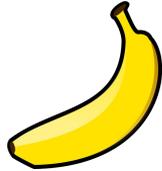
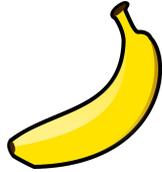
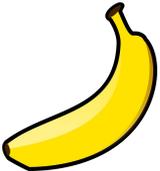
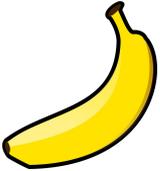
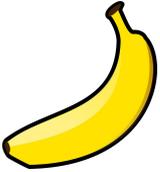
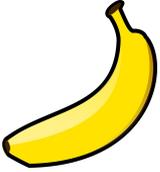
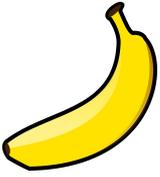
## DEMO ITEM

### Identify Pattern

“Look at this pattern. [sweeping gesture from the left bottom to the right bottom of the pattern] This is a growing pattern because it changes the same amount each time [point to each individual line of bananas]. This pattern is getting smaller, but you will also see some patterns that get bigger.

“Now it's your turn.”

Demo.



Practice.

## **PRACTICE ITEM: Identify Pattern**

“Is this a growing pattern?” [sweeping gesture from the left bottom to the right bottom of the pattern]

If child doesn't respond or looks confused say: “Just give me your best guess”

Practice.



## Identify Pattern (would become items 21-26)

“Help me decide if these are patterns.

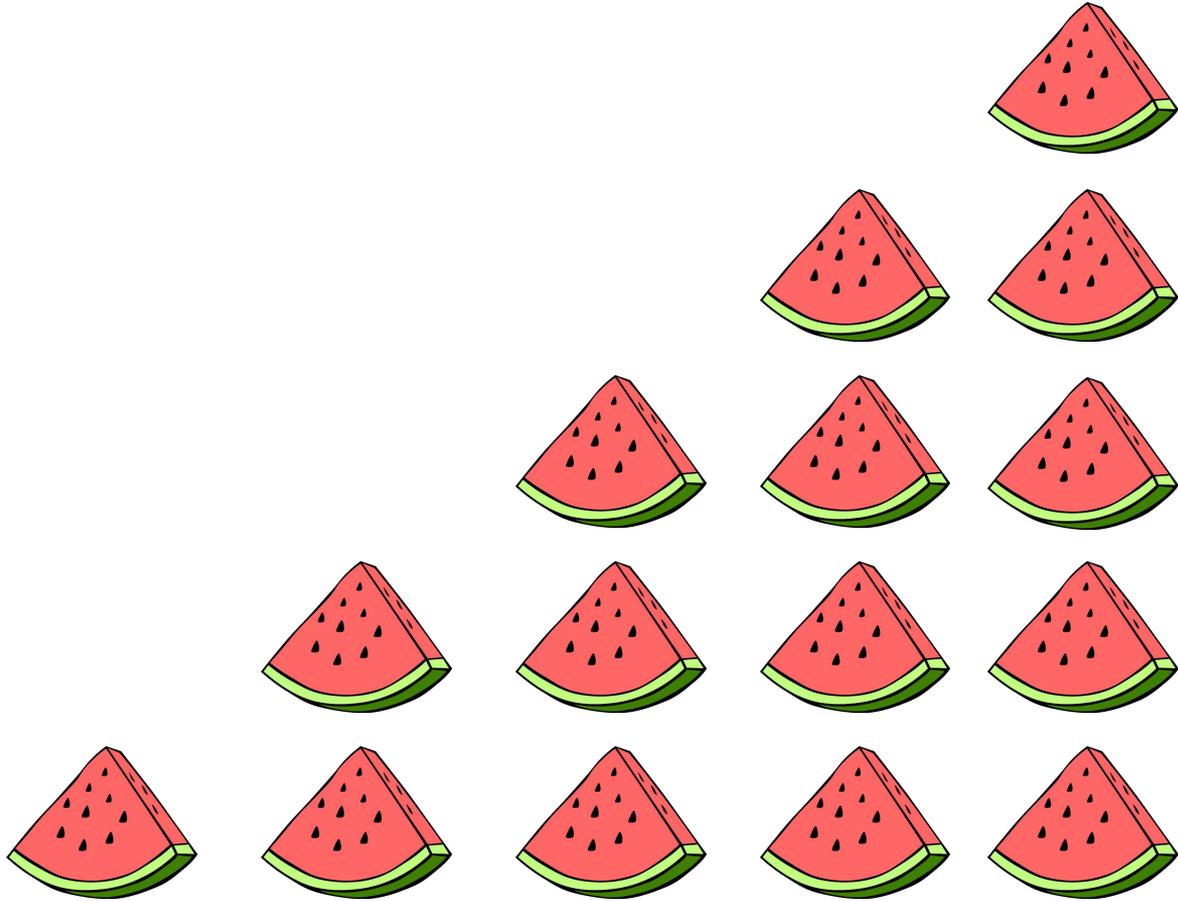
If correct on practice: “That’s right! This *is not* a pattern because it does not change the same amount each time.”

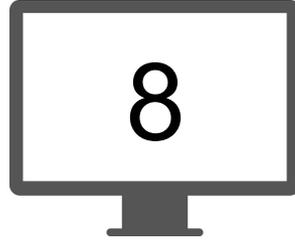
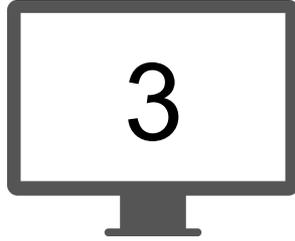
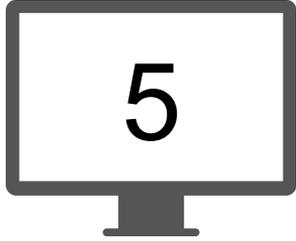
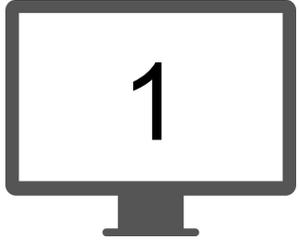
If incorrect on practice: “That’s not quite right. This is *not* a pattern because it does not change the same amount each time.”

Test items: only showing one at a time, ask “Is this a pattern?” [while gesturing across the whole pattern]

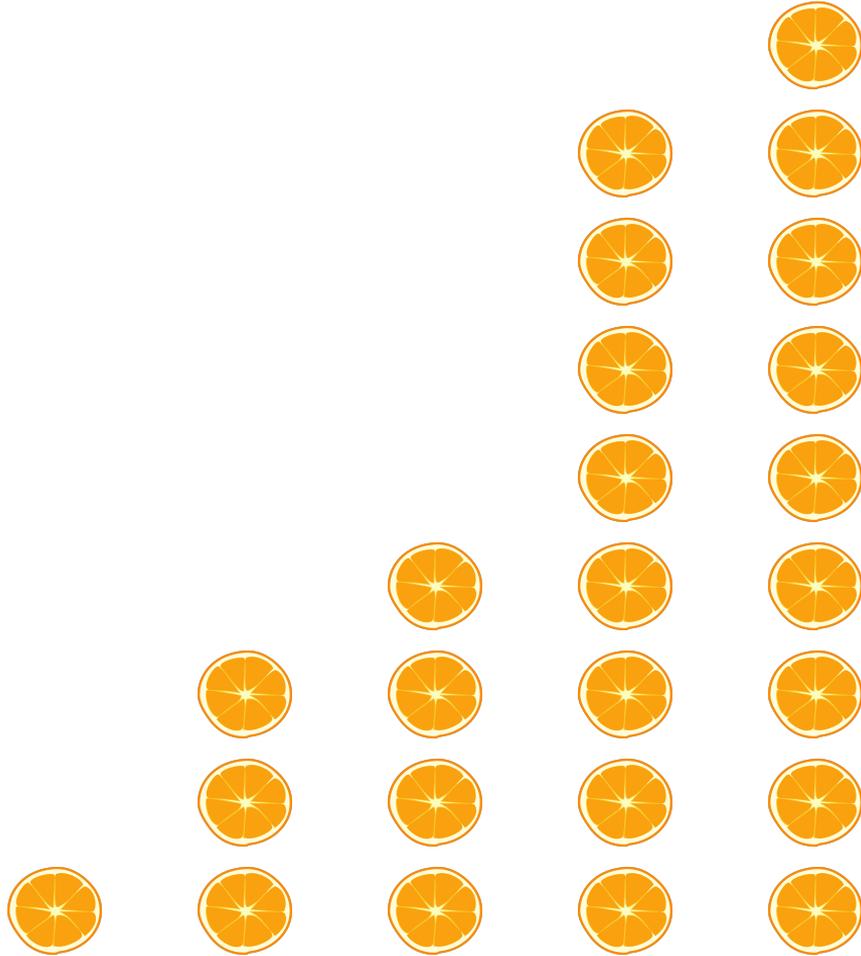
If child doesn’t respond or looks confused say “Please tell me yes or no if you think this is a pattern”

21.

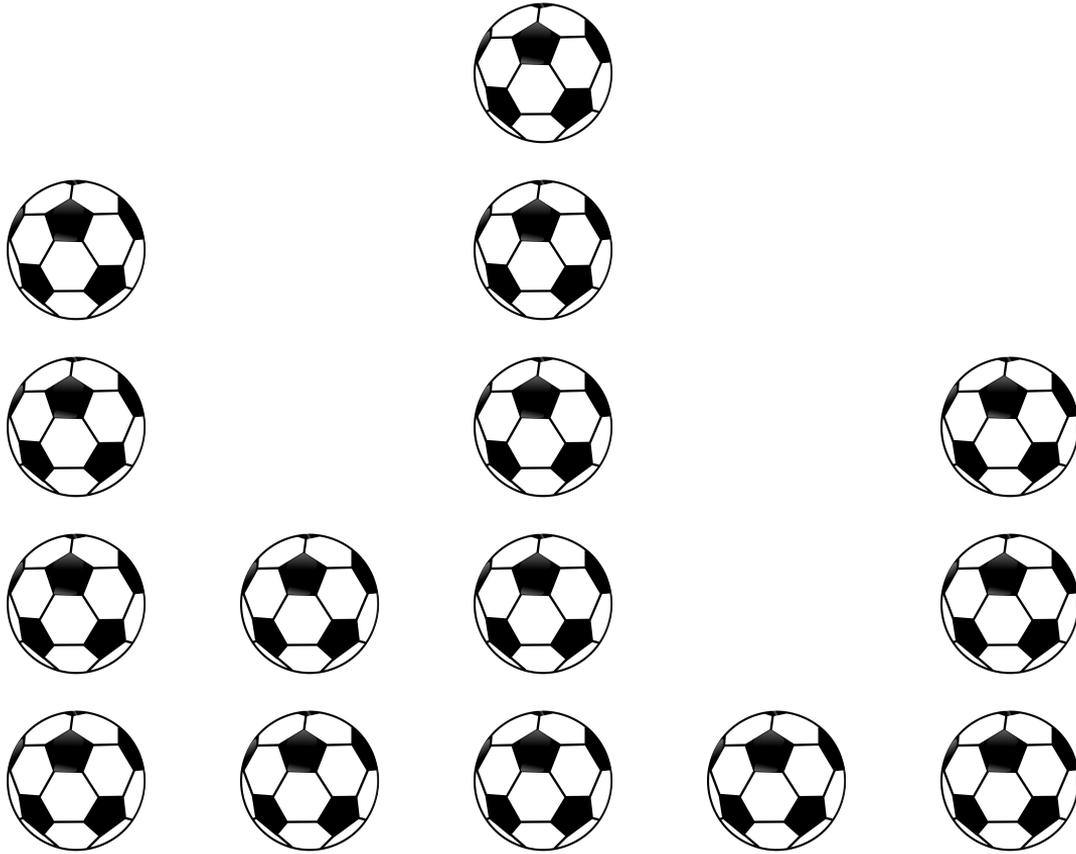


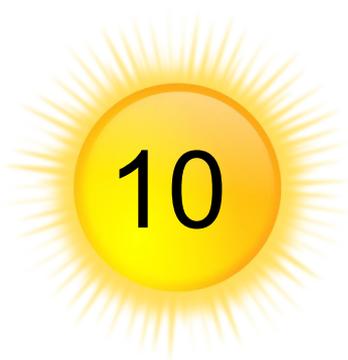


23.



24.





**10**

**7**

**6**

**4**

**1**

Practice.

## PRACTICE ITEM

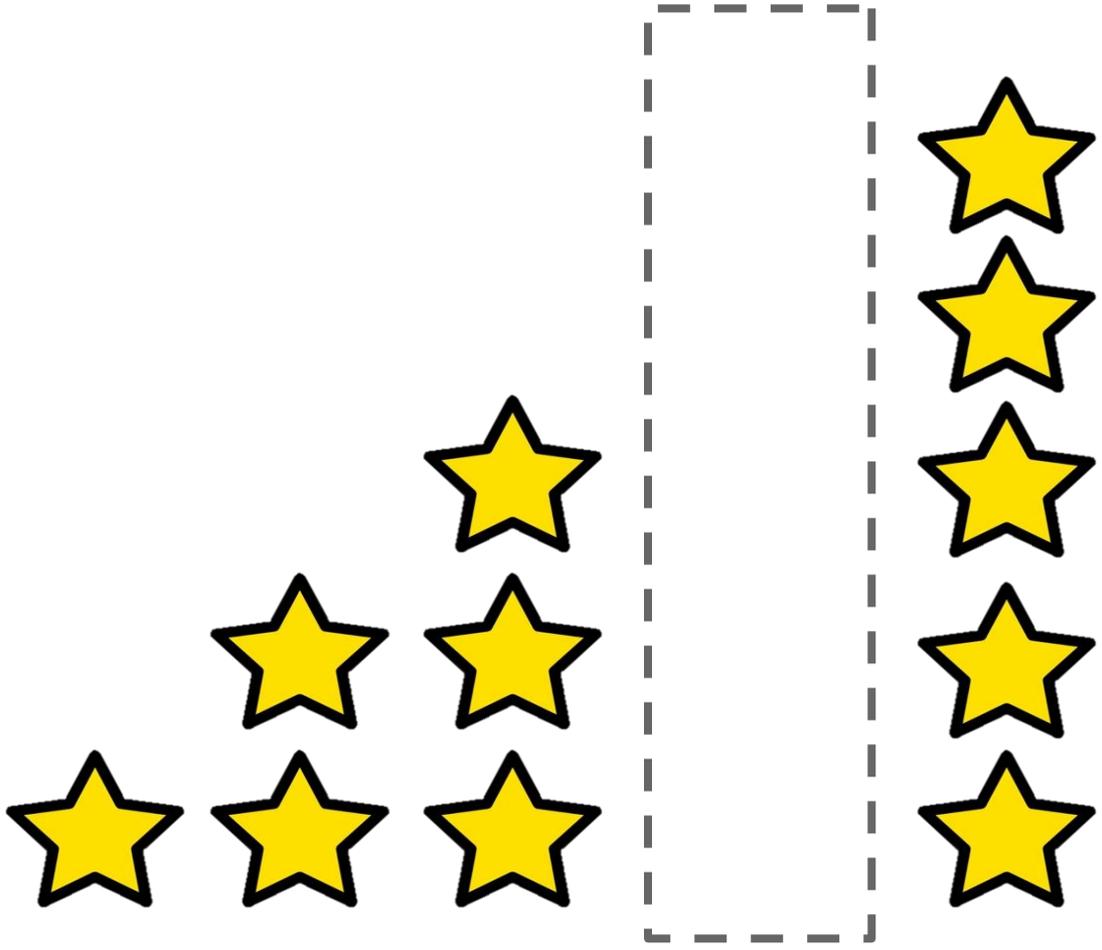
“Find the missing group of stars [gesture to the response options] that goes in this pattern [sweeping gesture from the left bottom to the right bottom of the pattern]”.

If child is confused say: “Choose one of these [gesture to response items] to show me what goes in the box”  
[point to blank box]

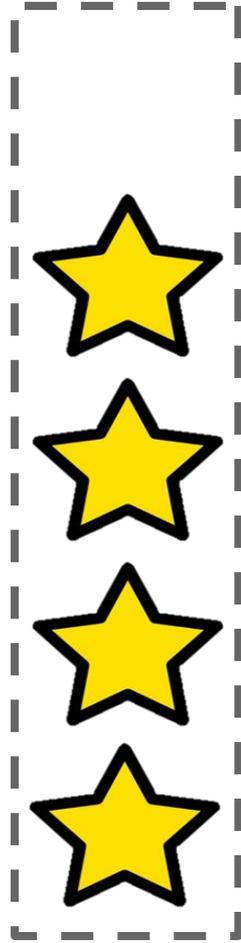
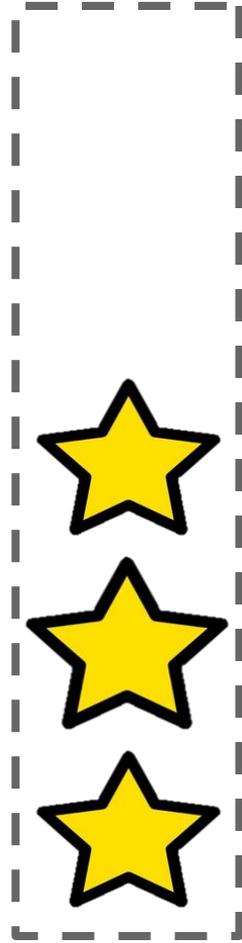
**If correct:** “That’s right! The group of 4 stars goes here because this growing pattern goes 1 star, 2 stars, 3 stars, 4 stars, 5 stars.” [point to each line of stars as you say them] This pattern is getting bigger, but you will also see some patterns that get smaller.

**If incorrect:** “That’s not quite right. The group of 4 stars [point to correct answer] goes here because this growing pattern goes 1 star, 2 stars, 3 stars, 4 stars, 5 stars.” [point to each line of stars as you say them]. This pattern is getting bigger, but you will also see some patterns that get smaller.

Practice.



Practice.



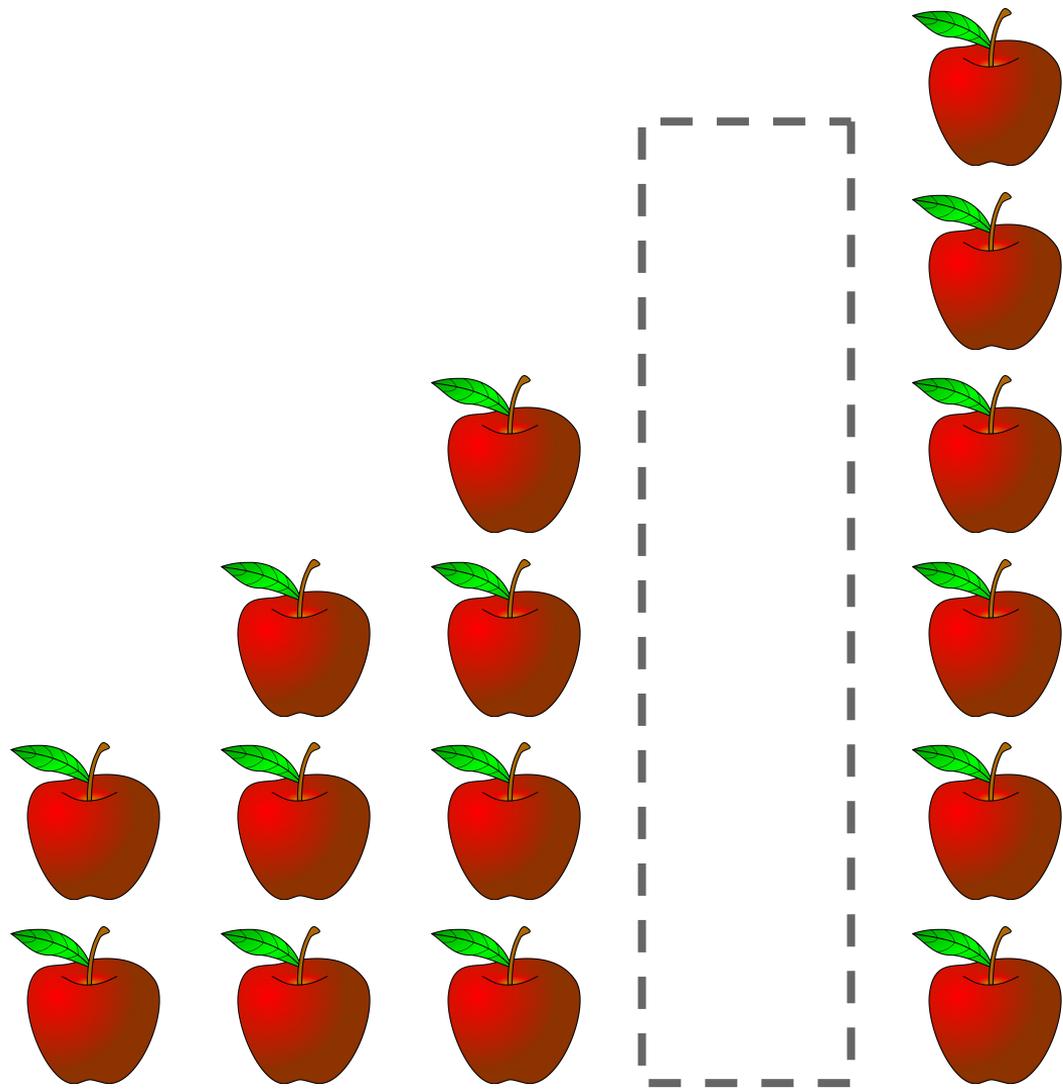
## 27. Missing Add 1 with objects

Missing: “Find the missing group of apples [gesture to the response options] that goes in this pattern [sweeping gesture across the pattern from left to right at the bottom]”.

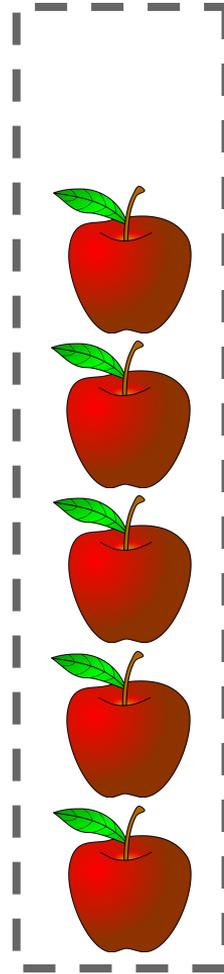
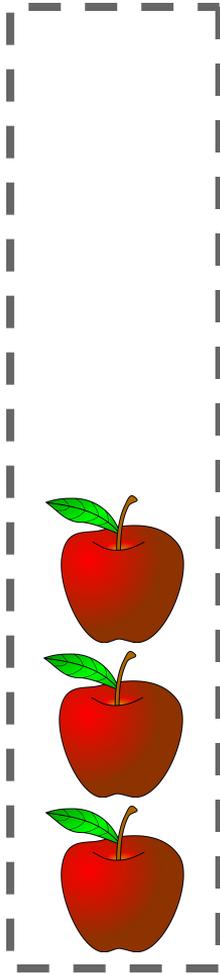
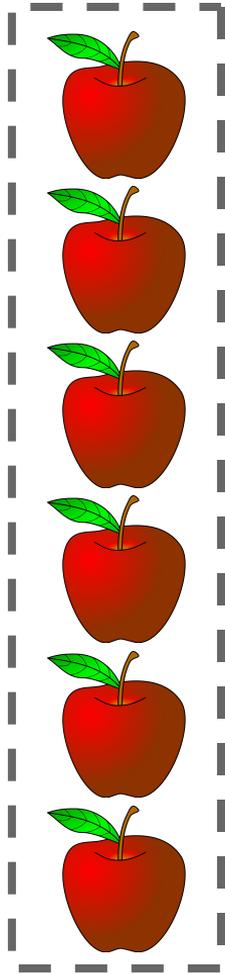
If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

If still confused or students asks you if they're correct say: “Just give me your best guess”

27.



27.

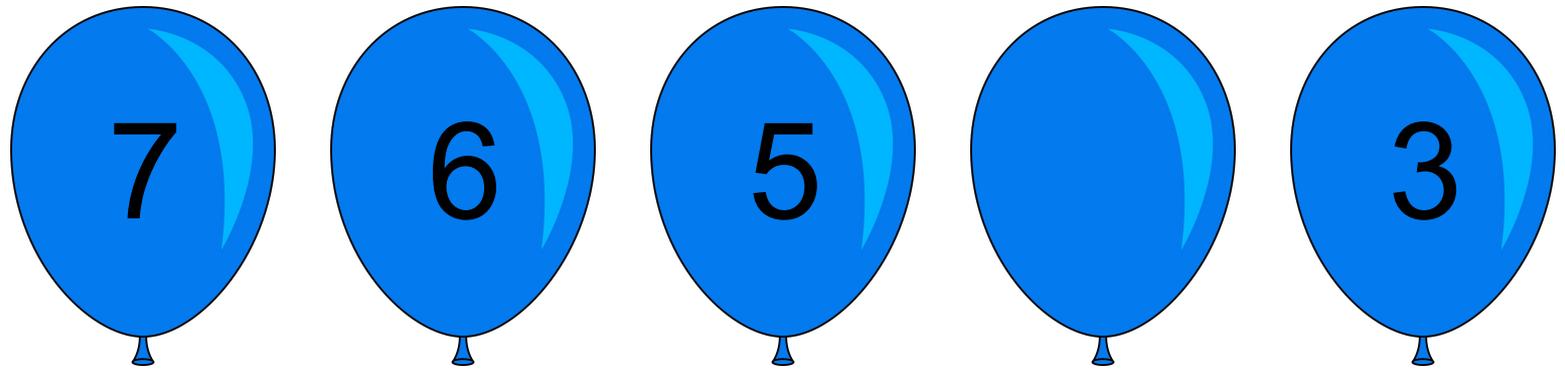


## 28. Missing Subtract 1 with numerals

Missing: “Find the missing number [gesture to the response options] that goes in this pattern [sweeping gesture across the pattern from left to right at the bottom]”.

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the blank” [point to blank spot]

If still confused or students asks you if they're correct say: “Just give me your best guess”



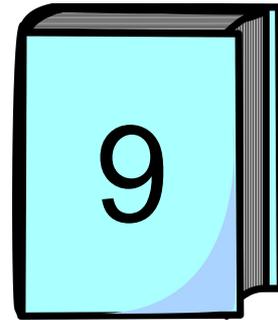
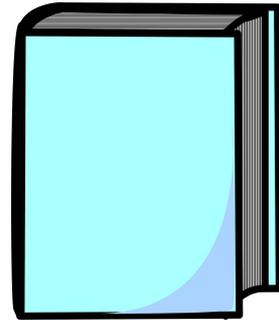
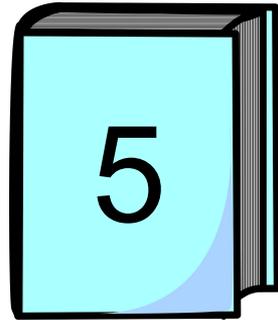
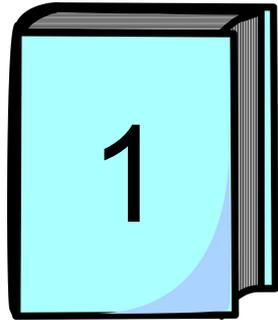


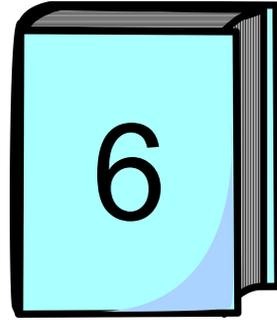
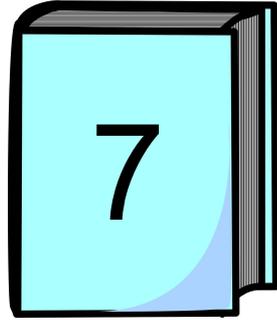
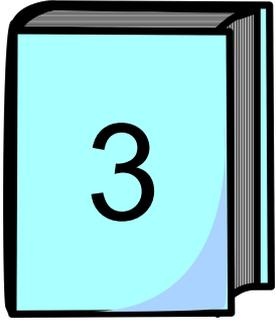
## 29. Missing Add 2 with numerals

Missing: “Find the missing number [gesture to the response options] that goes in this pattern [sweeping gesture across the pattern from left to right at the bottom]”.

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the blank” [point to blank spot]

If still confused or students asks you if they're correct say: “Just give me your best guess”





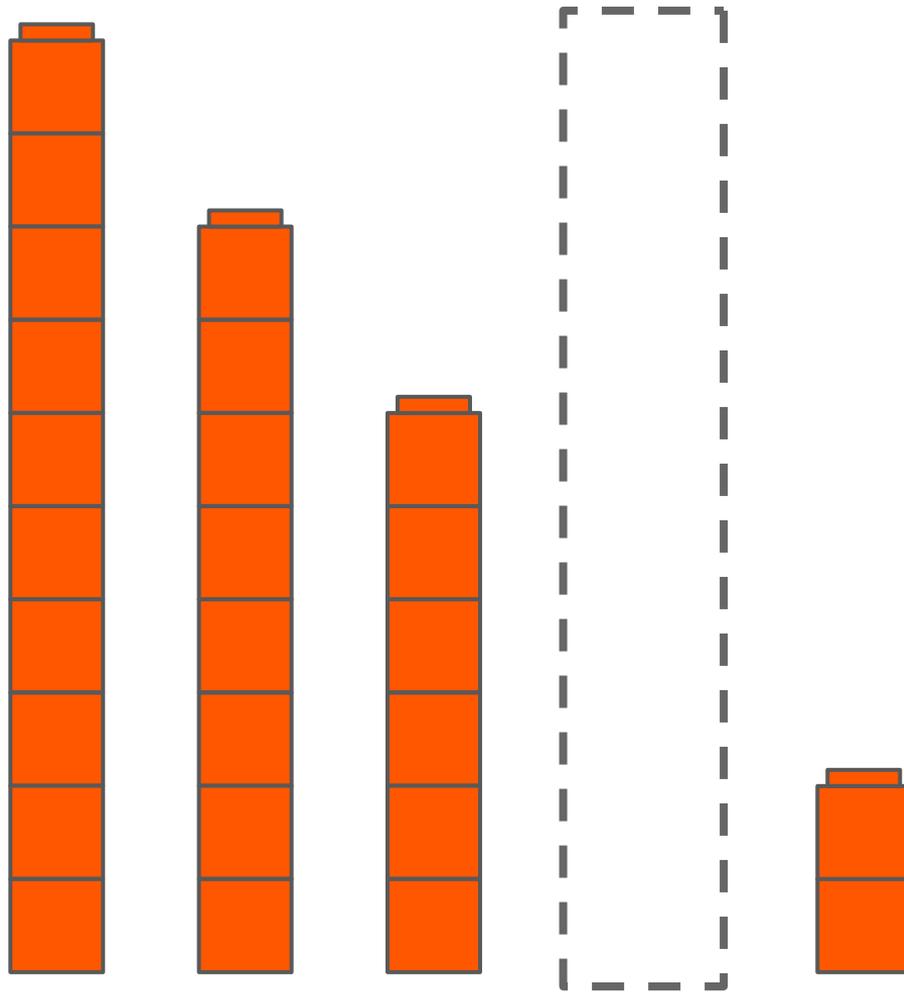
### 30. Missing Subtract 2 with objects

Missing: “Find the missing group of cubes [gesture to the response options] that goes in this pattern [sweeping gesture across the pattern from left to right at the bottom]”

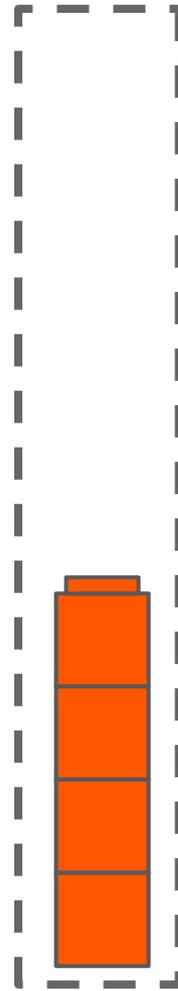
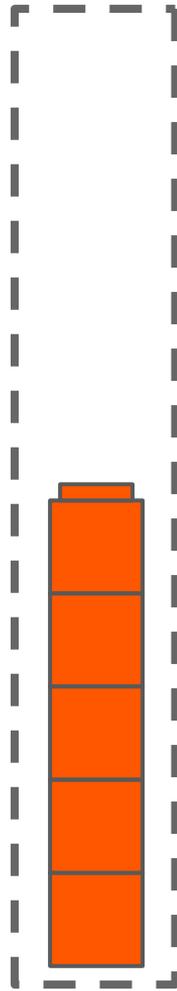
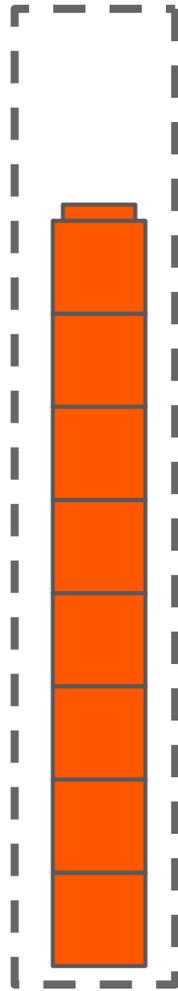
If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

If still confused or students asks you if they're correct say: “Just give me your best guess”

30.



30.



### 31. Missing Subtract 1 with large numerals

Missing: “Find the missing number [gesture to the response options] that goes in this pattern [sweeping gesture across the pattern from left to right at the bottom]”.

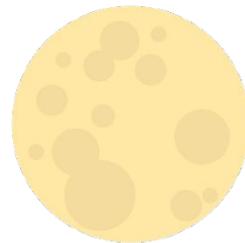
If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the blank” [point to blank spot]

If still confused or students asks you if they're correct say: “Just give me your best guess”

16

15

14



12

13

15

12

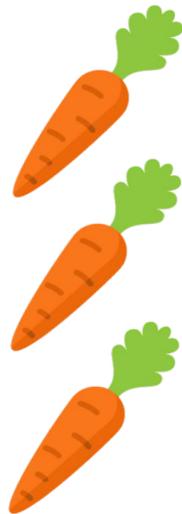
### 32. Extend Add 1 with objects

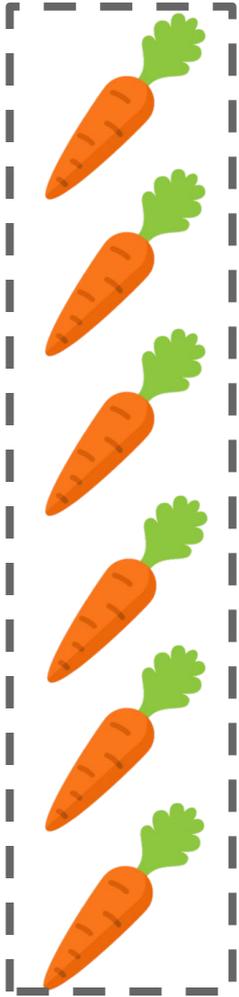
Extend: “What comes next in this pattern?” [sweeping gesture from the left bottom to the right bottom of the pattern then place response options in front of child]

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

If still confused or students asks you if they're correct say: “Just give me your best guess”

32.





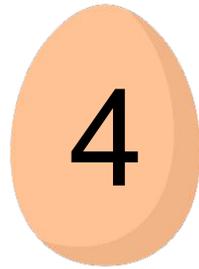
### 33. Extend Subtract 1 with numerals

Extend: “What comes next in this pattern?” [sweeping gesture from the left bottom to the right bottom of the pattern then place response options in front of child]

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the blank” [point to blank spot]

If still confused or students asks you if they're correct say: “Just give me your best guess”





34.

### 34. Extend Add 2 with numerals

Extend: “What comes next in this pattern?” [sweeping gesture from the left bottom to the right bottom of the pattern then place response options in front of child]

If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the blank” [point to blank spot]

If still confused or students asks you if they're correct say: “Just give me your best guess”

34.



34.



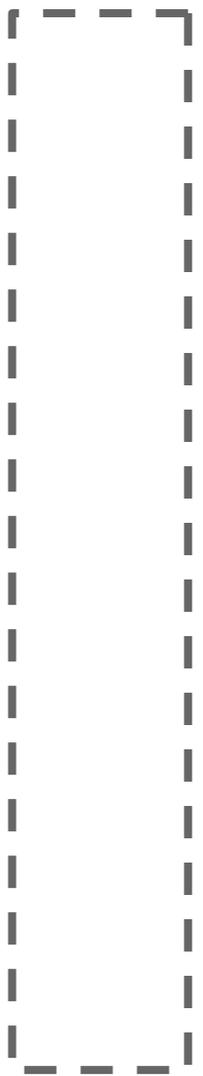
### 35. Extend Subtract 2 with objects

Extend: “What comes next in this pattern?” [sweeping gesture from the left bottom to the right bottom of the pattern then place response options in front of child]

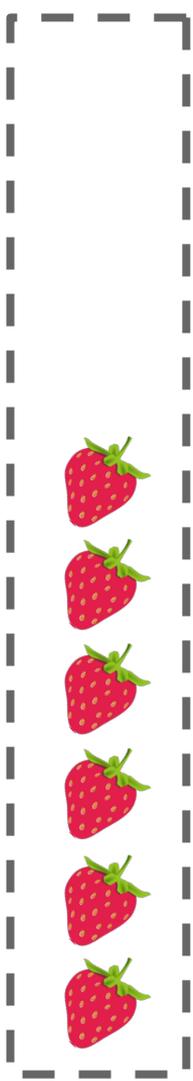
If child doesn't respond or looks confused say: “Choose one of these [gesture to response items] to show me what goes in the box” [point to blank box]

If still confused or students asks you if they're correct say: “Just give me your best guess”

35.



35.



**36. Extend Add 2 with large numerals**

Extend: “**What comes next in this pattern?** [sweeping gesture from the left bottom to the right bottom of the pattern then place response options in front of child]

If child doesn't respond or looks confused say: “**Choose one of these** [gesture to response items] **to show me what goes in the box**” [point to blank box]

If still confused or students asks you if they're correct say: “**Just give me your best guess**”

36.



36.



Demo.

## DEMO ITEM

### Identify Pattern Unit

“Look at this pattern. [sweeping gesture from the left bottom to the right bottom of the pattern] This is a growing pattern because it grows by 2 stars each time [point to each individual line of stars]

“Now it’s your turn”

Demo.



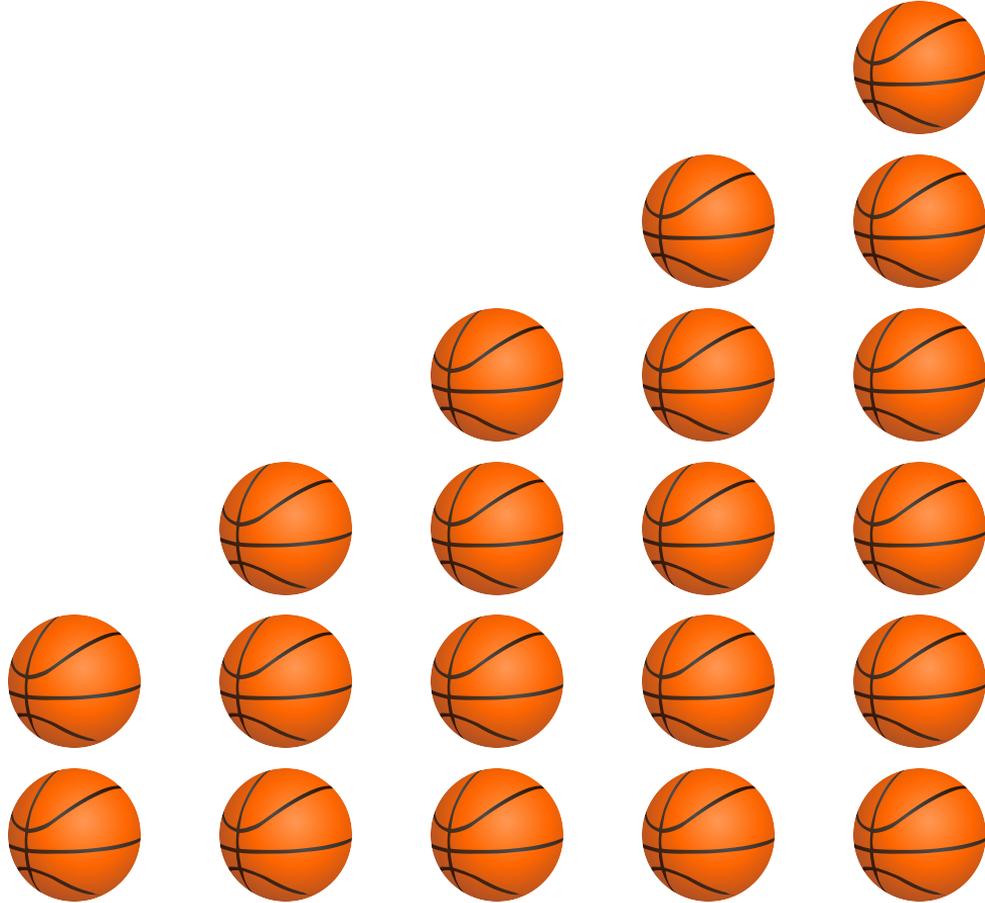
Practice.

**PRACTICE ITEM: Identify Pattern Unit Add 1 with objects**

“Tell me how this pattern grows” [sweeping gesture from the left bottom to the right bottom of the pattern]

If child doesn't respond or looks confused say: “Just give me your best guess”

Practice.



37.

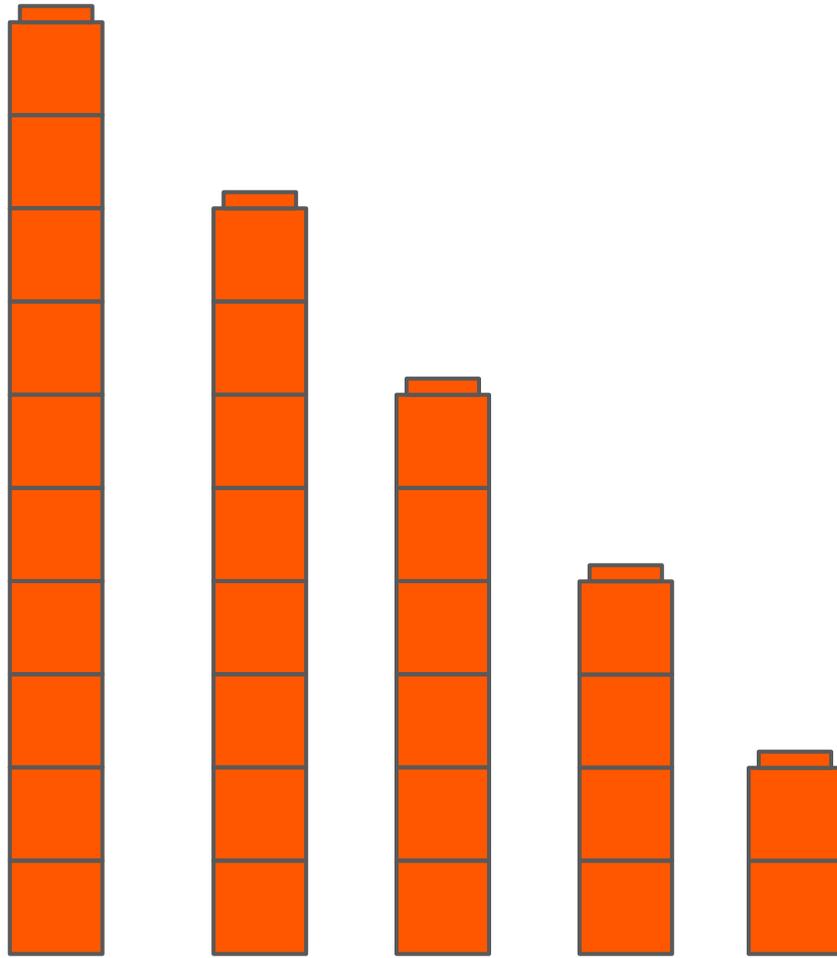
**37. Identify Pattern Unit Subtract 2 with objects**

“Tell me how this pattern grows” [sweeping gesture from the left bottom to the right bottom of the pattern]

If child provides a numeric answer, score 1

If child doesn't respond or looks confused say: “Just give me your best guess”

37.



38.

**38. Identify Pattern Unit Add 2 with numerals**

“Tell me how this pattern grows” [sweeping gesture from the left bottom to the right bottom of the pattern]

If child provides a numeric answer, score 1

If child doesn't respond or looks confused say: “Just give me your best guess”

