

Math Kangaroo Class Level 3-4

Lesson 5:

# Finding a Pattern and Solving a Simpler Related Problem



Warm Up



Instruction



Finding a  
Pattern



Exit Ticket

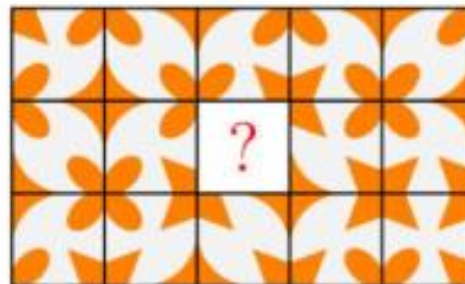


Bonus Slides

# Warm up

MK 2020 # 2

Which piece completes the pattern?



(A)



(B)



(C)



(D)



(E)



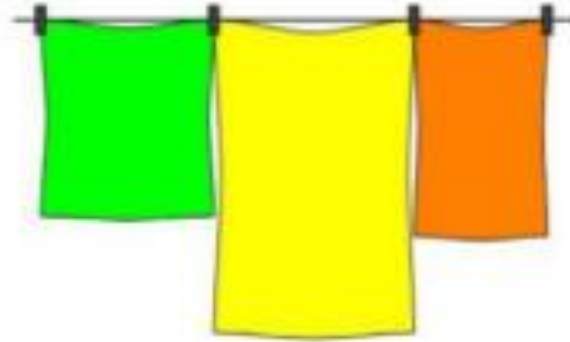


# Patterns

- Recognizing and extending a pattern is one of the most frequently used strategies – for example, identifying a pattern in a given data and simply applying that pattern to the problem situation.
- This is often used as a strategy in conjunction with other problem solving strategies such as solving a simpler related problem.
- When faced with a problem that appears difficult or complicated, you may find it helpful to first solve one or more similar problems that have simpler conditions.
- Today we focus on the strategy of finding a pattern, but also show when combined with the strategy of solving a simpler related problem, it makes it easier to detect the patterns.

MK 2012 # 3

1. Father hangs the laundry outside on a clothesline. He wants to use as few pins as possible. For 3 towels he needs 4 pins, as shown. How many pins does he need for 9 towels?

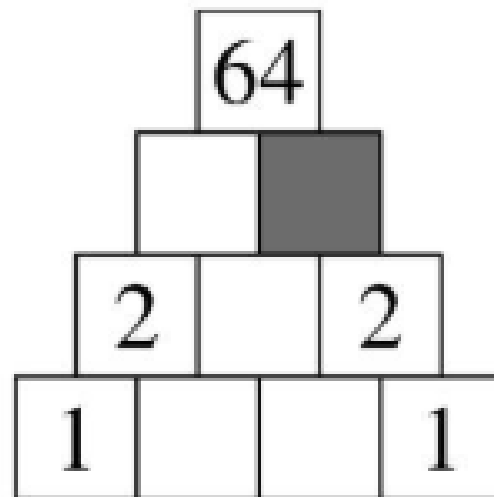


MIK 2003 # 4


2. Sophia is drawing kangaroos. The first one is blue, the next one green, the one after it red, the fourth one yellow, and then again blue, green, red, yellow, and so on, in the same order. What color will the seventeenth kangaroo be?

MK 2014 # 7

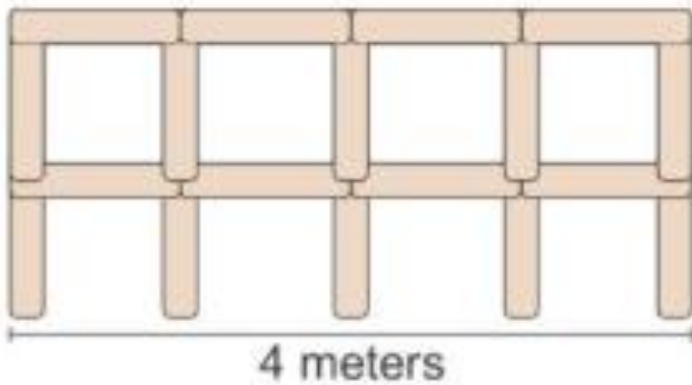
3. Monica writes numbers in the diagram in the picture so that each number is the product of the two numbers below it. Which number does she write in the gray cell?



MK 2020 # 12

4. Lonneke builds a fence using 1-meter-long poles. 

The picture shows a 4-meter-long fence. How many poles does Lonneke need to build a 10-meter-long fence?



MK 2010 #14

5. Camilla wrote all the positive integers from 1 to 100 in order in a chart with 5 columns. A part of the chart is shown in the picture on the right. Her brother cut out a part of the chart and then he erased some of the numbers from it. Which picture represents the part of the incomplete chart cut out by Camilla's brother?

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

(A) 

	43			
		48		

(B) 

				60
	52			

(C) 

			69	
	72			

(D) 

	81			
	86			

(E) 

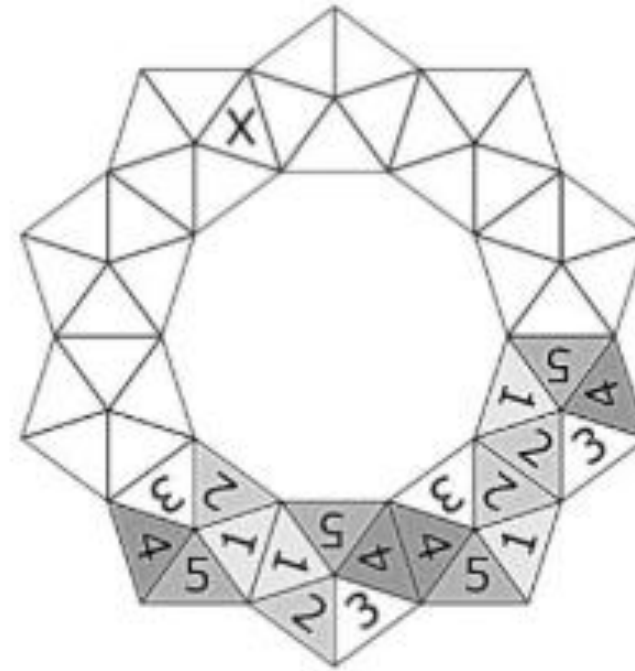
		87		
			94	



6. Amelie wants to build a crown using 10 copies of the token shown in Picture 1. She is making the pattern shown in Picture 2. When two tokens share a side, the corresponding numbers match. Four tokens have already been placed. Which number goes in the triangle marked with X?







Picture 1



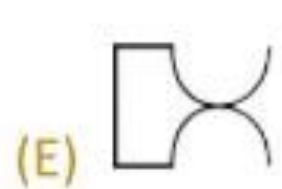
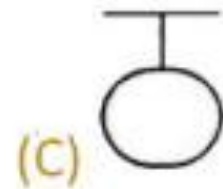
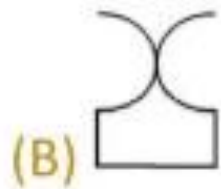
Picture 2

MK 2001 # 17

7. In a certain picture you can see the numbers 1, 2, 3, 4

with their mirror reflections    

What is the next picture in the sequence of reflections?



# Bonus Question

Lesson 5:  
Patterns

MK 2006 # 18

Johnny builds a house made out of cards. In the picture, such one-story, two-story, and three-story houses are shown. How many cards does Johnny need to build a 4-story house?

