Poole Elementary 4th Grade Math Homework Helper

Unit 1- MCC4.OA.5

MCC.4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

In other words...I can make a pattern out of numbers (or shapes) that follows a rule.

For example: Use the rule "add 3" to create a number pattern. The first term in the pattern is 1.

I start with 1 and then add 3 to get the second term, which is 4. Then I add 3 to 4 to get the third term, which is 7, and so on. The first 8 terms in the pattern will look like this: 1, 4, 7, 10, 13, 16, 19, 22...

I can also use a chart to show a pattern:

A rule could be anything. Some examples are:
- Start with 60, subtract 3
- Start with one, multiply by 6
- Start with 100, add 25
- Start with 120, subtract by 10

Term	Number
1	1
2	4
3	7
4	10
5	13
6	16
7	19
8	22

This chart shows the rule for the pattern above:
Start with 1, add 3

I also know...how to figure out features (characteristics) about the pattern that the rule did not tell me.

For example: What features do you see in the number pattern 1, 4, 7, 10, 13, 16, 19, 22...?

I can look at the pattern and the chart to figure out features (or characteristics) of this number pattern. I see that every other term is odd. The terms in between the odd ones are even. I see that the sum of 3 and an even number gives me an even term. I can see that the sum of 3 and an odd number gives me an odd term.

Some new math words I am using with this standard: *Some of these may be review words*

Feature – a trait that is seen by using the rule; a characteristic like the sum of 3 and an odd number will be odd

Pattern – (Number pattern) – a series of numbers that is described by a rule and shows how the numbers are related to each other. For example: 0, 2, 4, 6, 8 is a number pattern where each number is 2 more than the number right before it.

Rule – tells you how to get from one number (or term) to the next in a pattern. For example: 0, 2, 4, 6, 8, 10 is a number pattern that has a rule which is "add 2".

Term – each number in a pattern. For example: The number sequence 0, 2, 4, 6, 8, 10 has 6 terms.

- Help your child by having them create patterns that are in your house. For example: It takes 2 minutes for the coffee maker to make one cup of coffee. Show me a number pattern that shows how long it will take for 5 cups of coffee to brew. He/she will write a number pattern that has 5 terms (one for each cup of coffee) with the rule "add 2" since it takes 2 minutes to make 1 cup of coffee. The pattern will look like: 2, 4, 6, 8, 10.
- For example: The soup needs to cook for 1 hour and must be stirred every 5 minutes. What is the rule for a number pattern? Start with 60 (because there is 60 minutes in an hour), subtract 5 (because the soup must be stirred every five minutes)
- Have your child make a chart to show each pattern he/she creates.