



Gold Seal Lesson

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Grade Span			ICLE Application Model			
K-4 X	5-8	9-12	A	B X	C	D

Instructional Focus:

Number Operations and Concepts

Students use number, number sense, and number relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.

Algebraic Concepts and Relationships

Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation. Students evaluate and communicate the reasoning used in solving these problems.

Listening

Students listen for a variety of purposes appropriate to the grade level.

Performance Task

This lesson allows students the opportunity to work with patterns in math.

1. Ask students to look for patterns in each list of numbers on the worksheet (see I've Got Your Number Chart). Work through a few examples with the students.
2. Ask students to predict the next 5 numbers in the sequence for each pattern.
3. Have students also show the rule for each pattern set.
4. If time allows, students could create their own number patterns for other classmates to solve.

ICLE Essential Skills

Perform operations with signed (positive and negative) number, including decimals, ratios, percents, and fractions. (m1)

Understand basic algebraic properties (i.e., commutative: $ab=ba$; associative: $ab(c) = a(bc)$; and distributive: $a(b+c) = (ab)+(ac)$). (m3)

Understand the use of variables in expressions such as $4x$, $x+2$, and $2x-1$, solve for the variable, and know how to represent expressions such as "twice the number" or "four more than the number" using variables. (m7)

Understand appropriate terminology used to define relations and functions and their properties. (m40)

Follow oral or written directions. (ela4)

Scoring Guide:

- 4** The student:
- selects and applies appropriate mathematical procedures and makes no mathematical errors;
 - explores alternate solutions or uses additional approaches;
 - is able to write the next five numbers in each sequence and can state the rule for each pattern.
- 3** The student:
- completes all parts of task;
 - correctly selects and applies mathematical processes with minor errors;
 - uses basic mathematical ideas and procedures appropriately;
 - is able to write the next five numbers for most sequence and can state the rule for most patterns.
- 2** The student:
- incompletely selects and applies appropriate mathematical procedures;
 - makes some errors in mathematical processes;
 - is able to write the next five numbers in some sequences, but is not able to state the rule for each pattern;
 - is able to write some, but not, all of the next five numbers in each sequence and can only state the rule for a few of the patterns
- 1** The student:
- lacks understanding of process and/or uses inappropriate procedures;
 - is not able to write the next five numbers in any of the sequences and cannot state the rule for any of the patterns
- 0** The student:
- makes no attempt or provides an off-topic response.

Keywords

English Language Arts	Mathematics	Science
Reading	Algebra Computation Patterns	Earth Science
Writing	Geometry	Life Science
Communications Listening Discussion	Statistics	Chemistry
Literature	Calculus	Physics
Other	Trigonometry	Other
	Other	

Chart

I'VE GOT YOUR NUMBER

1. 2 4 6 8 10 ---- ---- ---- ---- ----
2. 3 6 12 24 48 ---- ---- ---- ---- ----
3. 1 2 4 7 11 ---- ---- ---- ---- ----
4. 1 6 10 13 15 16 21 25 ---- ---- ---- ---- ----
5. 2 7 5 10 8 13 11 ---- ---- ---- ---- ----
6. 5 10 15 20 25 ---- ---- ---- ---- ----
7. 10 5 15 10 20 15 ---- ---- ---- ---- ----
8. 1 4 9 16 25 36 ---- ---- ---- ---- ----
9. 3 9 27 81 ---- ---- ---- ---- ----
10. 20 21 19 20 18 19 17 ---- ---- ---- ---- ----