Algebra/Geometry Institute Summer 2003

Lesson Plan 2

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School: GREENVILLE WESTON HIGH
City: GREENVILLE
Grade Level: 9th GRADE ALGEBRA 1

1 Teaching objective(s)

A. Recognize and continue a number pattern.

2 Instructional Activities

- Teacher will give a list of new vocabulary words to be added to their folder and the word wall.
- Vocabulary Words
  - Sequence
  - Pattern
  - Conjecture
  - Constant Difference
  - Term
  - Fibonacci
- Teacher will list examples of sequential number patterns and fill in missing three numbers. Students will be allowed to assist to in solving the patterns.
  - Ex 1 [14, 21, 28, 35, 42, ...]
  - Ex 2 [1, 7, 3, 9, 5, 11, ...]
  - Ex 3 [1, 4, 9, 16, 25, ...]
  - Ex 4 [2, 2, 4, 6, 10, ...]
  - Ex 5 [10, 12, 14, 16, 18, ...]
- Students will be asked to give a rule to explain how the sequences were solved and teacher will assist with the patterns unable to be solved.
- Students will pull numbers to determine what group they will work in.
- Teacher will introduce the Fibonacci sequence and explain its significance.

- Teacher will hand out a worksheet that deals with Fibonacci numbers and students
- will work as a team to complete the worksheet in a ten minute time limit.
- Students will be asked to develop their own number patterns or sequences and write their rules on a separate page and exchange the patterns with a member of their group to be solved. Each group will compile a set of problems to form a worksheet and distributed to each group.
- Students from each group will be allowed to go to the board and share sequences that they developed.
- Students will complete problems on pages 8-10. (#'s 10-20 and #44)
- Students will design a worksheet with patterns involving shapes for homework.

3 Materials and Resources

Identify various materials and equipment needed for activities. Complete references will be provided.

- Holt, Reinhart and Winston Algebra 1
- Examples taken from page 8
- Worksheet was created from problems found on pages 4-8

4 Assessment

Students will be assessed from the worksheet provided.

NUMBER PATTERN WORKSHEET

Analyze each of the following and determine which 4 numbers complete the sequence.
Give the rule used to solve the sequence also.

1) [3, 13, 27, 45, 67, ...]

2) [33, 49, 65, 81, 97, ...]

4) [1, 8, 18, 31, 47, ...]

5) [20, 21, 26, 35, 48...]

6) [7, 22, 43, 70, 103, ...]

7) [4, 7, 15, 28, 46....]

8) [30, 31, 35, 42, 52, ...]

9) [1000, 729, 512, 343, 216,....]

10) [1, 6, 16, 31, 51, 76....]

***Bonus [1, 4, 6, 16, 19, 25....]**