

Fourth Grade Sample Lesson

Math 4 Success

COMPOSITE AND PRIME NUMBERS

LEVEL 11 Lesson 7

COMPOSITE AND PRIME NUMBERS

Any whole number greater than 1 that has only 2 factors (itself and 1) is called a prime.

Any number greater than 1 that has 3 or more factors is a composite.

1. CONCEPT:

Recognizing prime and composite numbers

2. BEHAVIORAL OBJECTIVE:

The students, given a counting number less than 100, will be able to determine if it is a prime number or a composite number.

3. MATHEMATICAL IDEAS:

- a) Any whole number greater than 1 which has only two factors (itself and 1) is called a prime number.
- b) The number 2 is the only even number that is prime. Every even number greater than 2 has at least three factors
- c) The number 1 is not a prime number as it has only itself as a factor.
- d) A composite number is a whole number greater than one that has three or more factors. Those numbers that are not called prime, are called composite.
- e. Any number greater than 2 may be expressed as the sum of 2 primes (Goldback Conjecture).
- f) Any number which is both a prime and a factor is a prime factor.

- g) Counting numbers and whole numbers are number systems of arithmetic and relate to the following sets of numbers: Counting numbers or natural numbers: 1, 2, 3, 4, ... Whole numbers or nonnegative integers: 0, 1, 2, 3, 4, ...

4. KEY WORDS:

factor	primes	multiple	prime number
prime factor		composite number	
counting number		whole number	

5. ACTIVITIES:

- a) "Primes Less Than Thirty."

This activity is designed for one student or for a small group. Provide each student with thirty counters (buttons, small squares of poster board, blocks, etc.). Ask the students to take 6 counters and arrange the 6 counters in 2 or more rows and with the same number of counters in each row.

○ ○ ○		○ ○
○ ○ ○	or	○ ○
		○ ○

Ask the students to take 5 counters and arrange the 5 counters in 2 or more rows with the same number of counters in each row. It cannot be done.

○ ○ ○
○ ○

Ask the students to take 9 counters and arrange the 9 counters in 2 or more rows with the same number of counters in each row.

○ ○ ○
○ ○ ○
○ ○ ○

Ask the students to complete, using their counters, the following information for each number listed

Number	Drawing of counters Arranged in rows	Factors	Prime Number	Composite Number
1				
2				
3				
4				

The prime numbers will be those numbers for which 2 or more rows with the same number of counters in each row **cannot be formed.**

The composite numbers are those numbers for which 2 or more rows with the same number of counters in each row **can be formed.**

WORKSHEET

Name _____

	Drawing of counters	Factors	Prime Number	Composite Number
5		1,5	X	
6	000 000	1, 2, 3, 6		X
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Answers to Worksheet

	Drawing of counters	Factors	Prime Number	Composite Number
5		1,5	X	
6	000 000	1, 2, 3, 6		X
7	000 0000	1,7	X	
8	0000 0000	1,2,4,8		X
9	000 000 000	1,3,3,9		X
10	00000 00000	1,2,5,10		X
11	00000 000000	1,11	X	
12	000000 000000	1,2,3,4,6,12		X
13	000000 0000000	1,13	X	
14	0000000 0000000	1,2,7,14		X
15	00000 00000 00000	1,3,5,15		X
16	00000000 00000000	1,2,4,4,8,16		X
17	00000000 000000000	1,17	X	
18	000000000 000000000	1,2,3,6,8,18		X
19	000000000 0000000000	1,19	X	
20	0000000000 0000000000	1,2,4,5,10,20		X

PRIME AND COMPOSITE NUMBERS CONCEPT TEST

Name _____

Score _____

Determine if the number in the [] is prime or composite.

	Prime	Composite
1. [43]	_____	_____
2. [24]	_____	_____
3. [11]	_____	_____
4. [30]	_____	_____
5. [21]	_____	_____

PRIME AND COMPOSITE NUMBERS
Answers to CONCEPT TEST

1. prime
2. composite
3. prime
4. composite
5. composite