



**Prime Numbers**  
**A Mathematics Kit for 6<sup>th</sup> Grade**

## Primes and Composites

Prime numbers are those numbers which are divisible by themselves and 1 ONLY. Therefore, 1, 2, 3, 5 etc. are prime. They have no factors other than 1 and the number itself.

Composite numbers are those that have factors other than 1 and the number themselves. Therefore, 4 (4 x 1 and 2 x 2) 6 (6 x 1 and 3 x 2) and 12 (12 x 1, 6 x 2, and 4 x 3) are all composite.

## Sieve of Eratosthenes

Eratosthenes was a Greek mathematician who figured out that to find all the prime numbers between two and some large number, you need to remove all the multiples of each number between two and your larger number.

1. Mark out "1" because it is neither prime nor composite, it is a unit.
2. Start at "2" and mark out all of the multiples of "2". Do not mark out the "2", only the multiples of "2".
3. Next, begin with the "3". Mark out all of the multiples of "3". Do not mark out the "3", only the multiples of "3".
4. Four has been marked out, so begin with the "5". Mark out all of the multiples of "5". Do not mark out the "5" only the multiples of the "5".
5. Continue until you have checked out all of the numbers between 1 and 100, looking for multiples of each number.

Make a list of the prime numbers.

Using the information that you have, answer the following problem:

Julia and Dan are father and daughter. They were born on the same day only several years apart. Find out how old both Julia and Dan are. Both Julia and Dan are at an age represented by a prime number. Dan has lived over nine decades. Julia was born on Dan's 56<sup>th</sup> birthday. How old is Dan? How old is Julia?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150

**Directions:**

Indicate the numbers between 1 and 150 that are prime by coloring them in with a vis-à-vis pen.

Be careful. Remember the Divisibility Rules.

**Answer Key**

Prime numbers are

1	41	97
2	43	101
3	47	103
5	53	107
7	59	109
11	61	113
13	67	127
17	71	131
19	73	137
23	79	139
29	83	149
31	89	
37		

**Slap the Prime**

1. Create a deck of cards so you can play “Slap the Prime”.
2. This deck should have a total of 100 cards.
3. For the deck make one card for each number between 2 and 79.
4. Make a second card for the numbers that are prime between 2 and 79
5. Shuffle the deck and distribute between two players
6. Simultaneously, players turn over a card. If the number shown is prime, the person slaps the card.
7. If the player slaps a card that is NOT prime, he/she must turn over 2 cards and give to the pile.
8. Player with the most cards at the end of the game, wins.



For more information, contact  
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