

# Sieve of Eratosthenes

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

1. Cross out 1. It is not prime by definition.
2. Circle 2, the first prime. Now cross out all its multiples.
3. Switch colors if you can and circle 3, the next prime.  
Cross out all its multiples.
4. Switch colors again. Circle 5, the next prime. Cross out all its multiples.
5. Switch colors again and circle 7, the next prime. Cross out all its multiples. Notice the smallest one is  $7 \times 7$ , because if 7 was multiplied by anything smaller, that would have already been crossed out.
6. Switch colors again and circle 11, the next prime. Cross out all its multiples. Notice there are none because  $11 \times 11 = 121$ . So you are done crossing out.
7. Circle all the remaining numbers. They are prime, too.

You can see a Java Script program that takes a sieve that goes to 360 and does all the blanking out for you at:

<http://www.faust.fr.bw.schule.de/mhb/eratosiv.htm>