

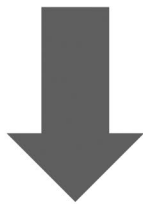
1. Follow the directions.

Shade the number 1.

- Circle the first unmarked number.
- Cross off every multiple of that number except the one you circled. If it's already crossed off, skip it.
- Repeat Steps (a) and (b) until every number is either circled or crossed off.
- Shade every crossed out number.

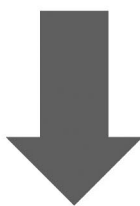
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

I cross off every multiple of 2 except for the number 2.



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

I circle 3 because it is the next number that is not circled or crossed off. I cross off every multiple of 3 except for the number 3. I skip-count by threes to find the multiples.



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

I continue the process, first for the multiples of 5 and then for the multiples of 7.

I circle 11 because 11 is the next number that is not circled or crossed off. I notice that every multiple of 11 is already crossed off.

I don't have to cross off the multiples of 13 because they are crossed off already.

I realize that when I circle any of the other numbers that are not already crossed off their multiples have already been crossed off.

I shade every crossed out number.

I see that this process helps me to find the numbers from 1 to 100 that are prime and the numbers from 1 to 100 that are composite.

Name _____

Date _____

1. A student used the sieve of Eratosthenes to find all prime numbers less than 100. Create a step-by-step set of directions to show how it was completed. Use the word bank to help guide your thinking as you write the directions. Some words may be used just once, more than once, or not at all.

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

Word Bank

composite

cross out

number

shade

circle

X

multiple

prime

Directions for completing the sieve of Eratosthenes activity:

2. What do all of the numbers that are crossed out have in common?
3. What do all of the circled numbers have in common?
4. There is one number that is neither crossed out nor circled. Why is it treated differently?