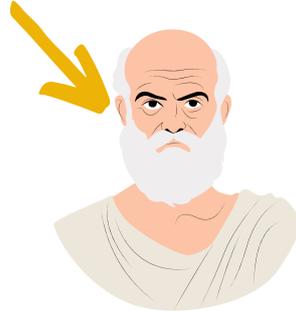
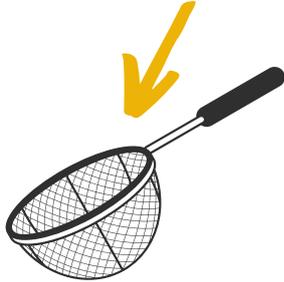


Name: _____

DISCOVERING PRIME NUMBERS:



THE SIEVE OF ERATOSTHENES



This method for finding **prime numbers** was discovered by the ancient Greek polymath **Eratosthenes**. Follow the steps to uncover all the prime numbers up to 100!

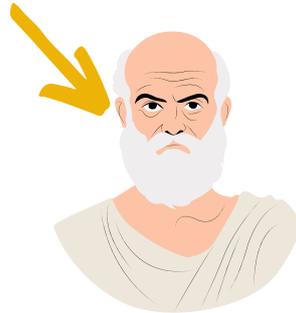
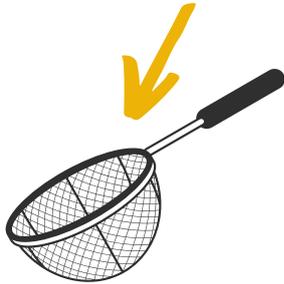
1. Starting from the grid (numbers 2 to 100), cross off all multiples of **2** – but don't cross off **2** itself.
2. Next, cross off all multiples of **3**, but leave **3**
3. Now, cross off all multiples of **5**, but leave **5** itself. (Why do you think we skipped multiples of **4**? You'll answer this on the next page!)
4. Continue until you cannot cross off any more numbers.

	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

Name: _____

DISCOVERING PRIME NUMBERS:

THE SIEVE OF ERATOSTHENES



Now that you've completed the **prime number** grid, use it to answer these questions and discover more about prime numbers!

- 1) Why did Step 3 jump from crossing out multiples of 3 to crossing out multiples of 5?

All multiples of 4 are also multiples of 2 - so they were already crossed out.

- 2) Use the grid to find the smallest prime number greater than 20. **23**

- 3) What is the **largest** prime number less than 100? **97**

- 4) **How many** prime numbers are there between 1 and 50? **15**

- 5) What is the only **even** prime number? **2**

- 6) Find **two** prime numbers on the grid that **add** up to 30. **23+7 | 19+11 | 17+13**

- 7) Find **two** prime numbers that **add** up to 50. **47+3 | 43+7 | 37+13 | 31+19**

- 8) Prime numbers only have two factors. **True** or False

- 9) All **odd** numbers are prime. **True** or **False**

- 10) 91 is a prime number. **True** or **False**