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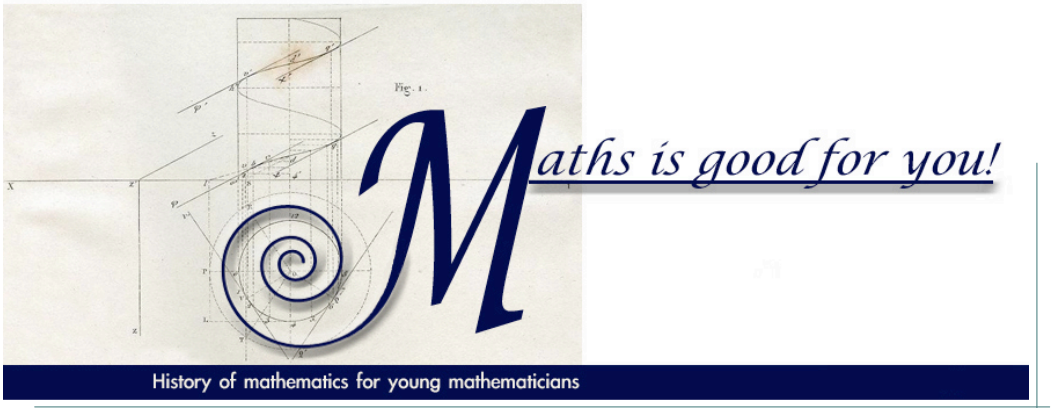
Worksheet b&tS100

Teacher

Student

Class



Eratosthenes' Sieve – prime numbers up to 200

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	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200

Sieve gives you a method for finding prime numbers.

1. Cross 1 out.
2. Then starting from 2, circle 2 but cross out every multiple of 2 from your sieve.
3. Starting with 3, circle 3, but cross out every multiple of 3 from your sieve.
4. Starting with 5, circle 5, but cross out every multiple of 5 from your sieve.
5. Starting with 7, circle 7 but cross out every multiple of it.
6. Do the same with all the primes that you know. The numbers that are circled are primes. They should have no divisors apart from themselves and 1.
7. Make a list of your primes.

Maths is Good For You Worksheets

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Investigation

How many prime numbers are less than 100?

How many prime numbers are less than 200?

Twin primes are two primes that differ by 2. E.g. 3 and 5 are twin primes because they differ by 2. Clearly, 7 and 11 are not twin primes because they differ by 4. Can you find any other twin primes on your sieve?

Use the Sieve of Eratosthenes to find other twin primes between 2 and 200.

How many primes are there between 1 and 100 and between 101 and 200?

Symmetrical primes are those where their digits are reversed. For example 17 and 71 are both primes. However, 23 and 32 are not symmetrical primes. From your list of prime numbers (or the Sieve of Eratosthenes), find other pairs like 17 and 71.

Do you think there is any pattern in the way primes are distributed?