



Prime numbers

Topic: Arithmetic

Theme: Prime Numbers

Abilities: Determine the prime numbers up to 150

Material: stamp, colored pencil

Level France: Age 14/18

A prime number is an integer greater than or equal to two, which has exactly two divisors: 1 and itself.

Prime numbers are essential in arithmetic with a profusion of properties, studies, wonders...

1

Small prime numbers are easy to find using « The Sieve of Eratosthenes ».

To do this, in the grid below cross out 1,

- Cross out in yellow all multiple of 2 except 2.
- Cross out in green all multiples of 3 except 3.
- Cross out in purple all multiples of 5 except 5.
- Cross out in blue all multiples of 7 except 7.
- Cross out in red all multiples of 11.

You've already crossed out all multiples of 4, 6, 8, 9 and 10.

Do you know why?

All remaining numbers are prime.

| 0 | 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 |

2

Leave a trace with the stamp on the 'Start' box....

Go on over the maze of numbers - horizontal and vertical only. The object of the game is to arrive to the 'Arrival' box. To do this, you will only have to pass over the boxes with a prime number.

Thanks to educmat.fr who came up with the idea for this game.

| | | | | | | | | | |
|-----|-----|-------------------|-----|-----|--------------------------|-----|-----|-----|-----|
| 73 | 17 | Start 2 | 130 | 22 | 379 | 127 | 301 | 299 | 1 |
| 402 | 509 | 126 | 25 | 28 | 4 | 449 | 132 | 310 | 405 |
| 7 | 89 | 19 | 400 | 63 | 487 | 151 | 353 | 108 | 497 |
| 533 | 80 | 367 | 9 | 213 | 11 | 80 | 79 | 3 | 55 |
| 11 | 97 | 229 | 47 | 150 | 383 | 418 | 107 | 18 | 12 |
| 281 | 481 | 398 | 199 | 445 | Arrival 12 589 | 15 | 421 | 500 | 473 |
| 113 | 42 | 270 | 338 | 33 | 6 | 459 | 389 | 75 | 16 |
| 139 | 61 | 433 | 251 | 13 | 193 | 317 | 179 | 200 | 327 |