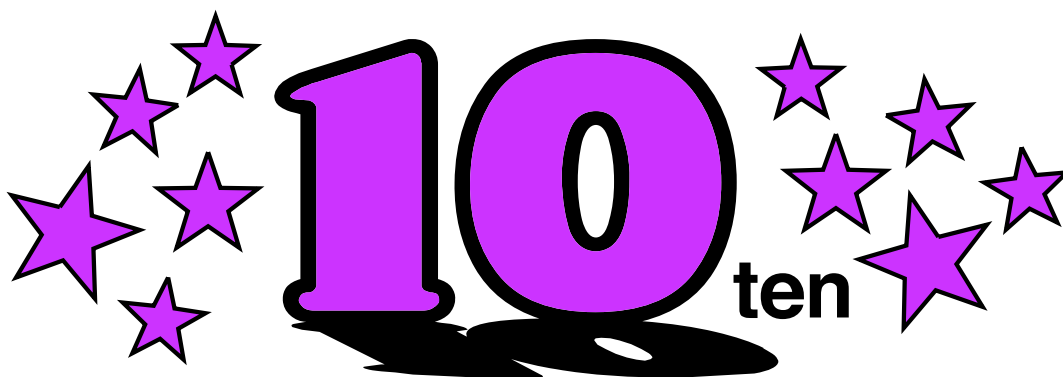


# First numbers

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

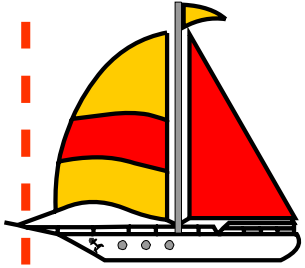


# First ordinals

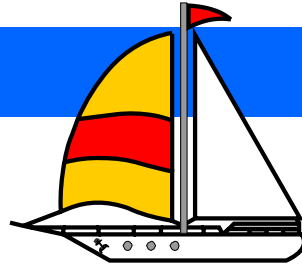
From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

An ordinal number is a number that shows place or position in a series.

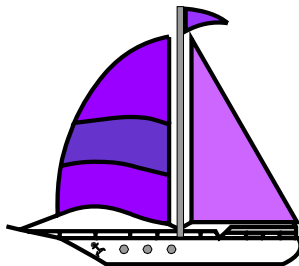
## The Boat Race



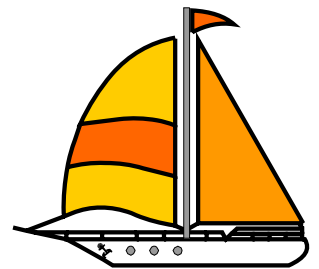
**1st**



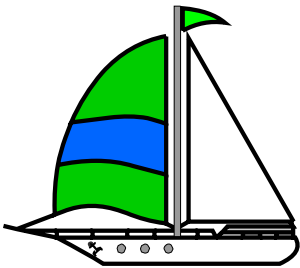
**7th**



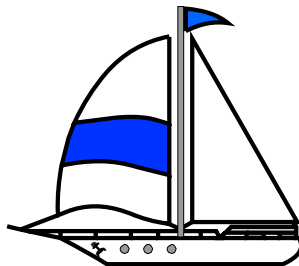
**5th**



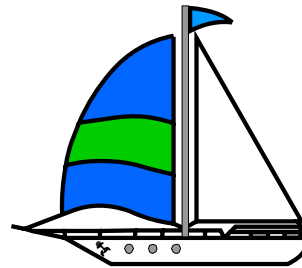
**9th**



**2nd**



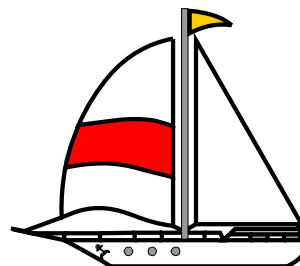
**4th**



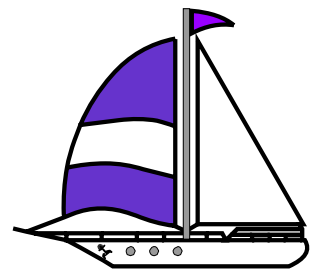
**8th**



**3rd**



**6th**



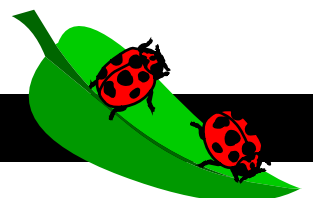
**10th**

# Ordinals Hundreds Chart

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

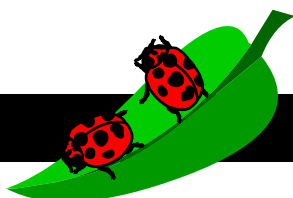


1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
11th	12th	13th	14th	15th	16th	17th	18th	19th	20th
21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th
31st	32nd	33rd	34th	35th	36th	37th	38th	39th	40th
41st	42nd	43rd	44th	45th	46th	47th	48th	49th	50th
51st	52nd	53rd	54th	55th	56th	57th	58th	59th	60th
61st	62nd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



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.



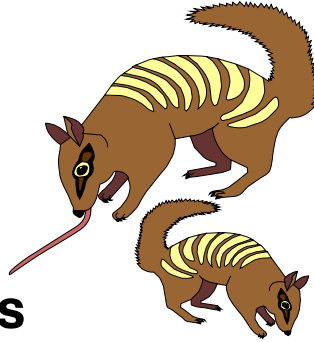
# Numbers 1-10

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

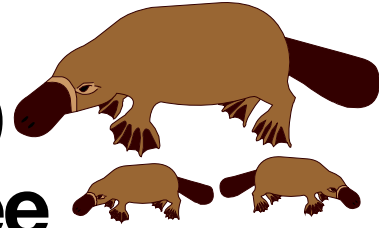
**1**  
one  
koala



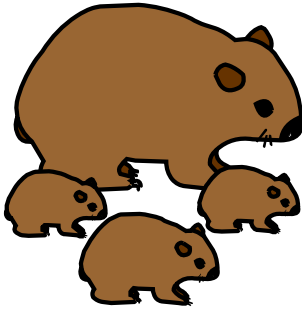
**2**  
two  
numbats



**3**  
three  
platypus



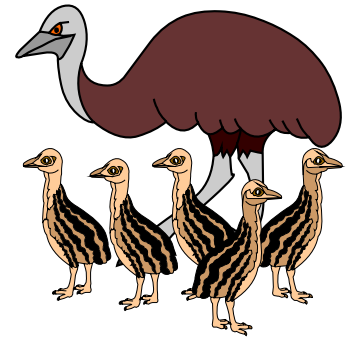
**4**  
four  
wombats



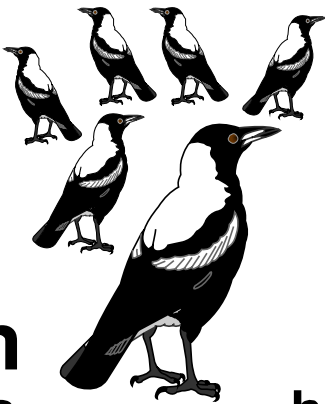
**5**  
five  
echidnas



**6**  
six  
emus



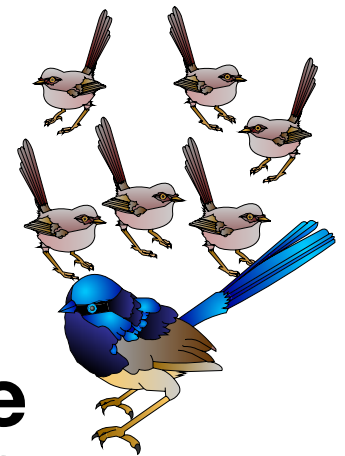
**7**  
seven  
magpies



**8**  
eight  
honeyeaters



**9**  
nine  
wrens

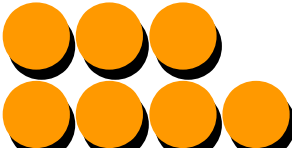


**10**  
ten  
kangaroos



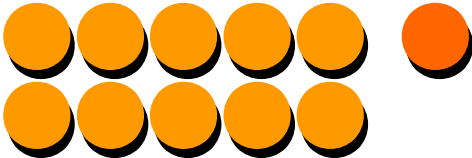
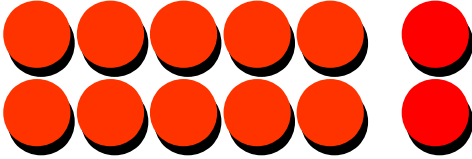
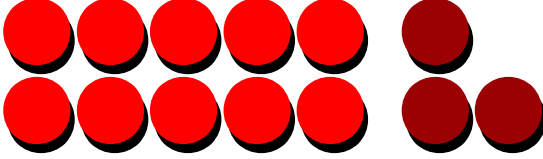
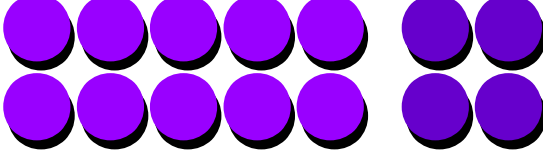
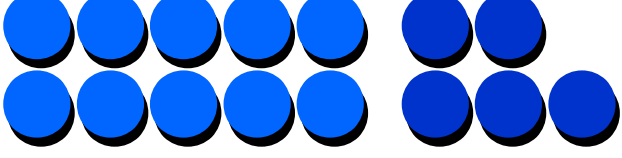
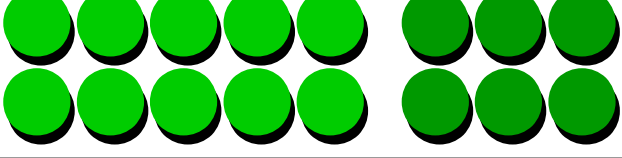
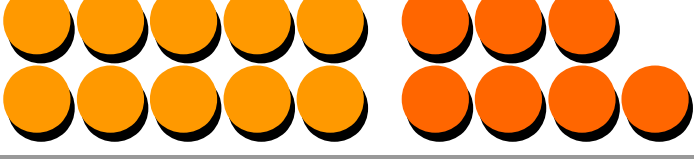
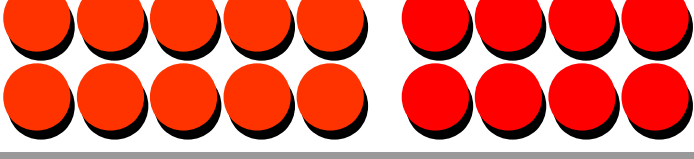
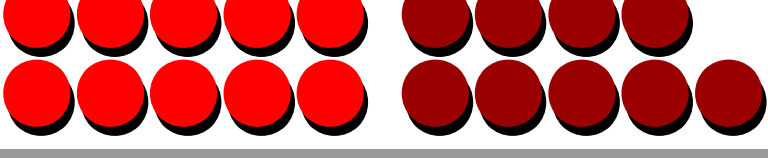
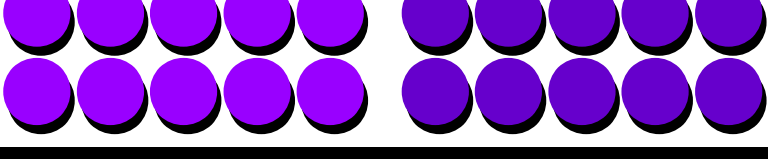
# Numbers 1-10

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

1	one	
2	two	
3	three	
4	four	
5	five	
6	six	
7	seven	
8	eight	
9	nine	
10	ten	

# Numbers 11-20

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

11	eleven	
12	twelve	
13	thirteen	
14	fourteen	
15	fifteen	
16	sixteen	
17	seventeen	
18	eighteen	
19	nineteen	
20	twenty	

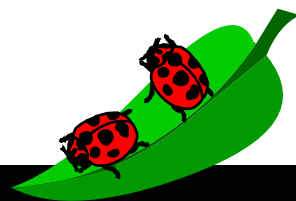
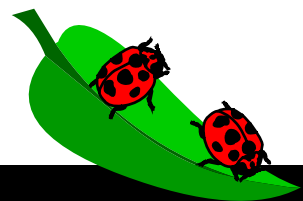
# Hundreds Chart

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



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

Count across for ones  
and down for tens.




© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

# Two Hundred Chart

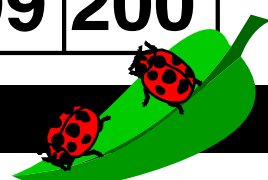
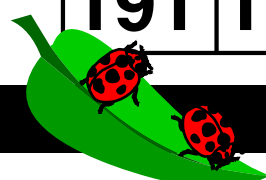
From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>
<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>50</b>
<b>51</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>
<b>61</b>	<b>62</b>	<b>63</b>	<b>64</b>	<b>65</b>	<b>66</b>	<b>67</b>	<b>68</b>	<b>69</b>	<b>70</b>
<b>71</b>	<b>72</b>	<b>73</b>	<b>74</b>	<b>75</b>	<b>76</b>	<b>77</b>	<b>78</b>	<b>79</b>	<b>80</b>
<b>81</b>	<b>82</b>	<b>83</b>	<b>84</b>	<b>85</b>	<b>86</b>	<b>87</b>	<b>88</b>	<b>89</b>	<b>90</b>
<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>100</b>
<b>101</b>	<b>102</b>	<b>103</b>	<b>104</b>	<b>105</b>	<b>106</b>	<b>107</b>	<b>108</b>	<b>109</b>	<b>110</b>
<b>111</b>	<b>112</b>	<b>113</b>	<b>114</b>	<b>115</b>	<b>116</b>	<b>117</b>	<b>118</b>	<b>119</b>	<b>120</b>
<b>121</b>	<b>122</b>	<b>123</b>	<b>124</b>	<b>125</b>	<b>126</b>	<b>127</b>	<b>128</b>	<b>129</b>	<b>130</b>
<b>131</b>	<b>132</b>	<b>133</b>	<b>134</b>	<b>135</b>	<b>136</b>	<b>137</b>	<b>138</b>	<b>139</b>	<b>140</b>
<b>141</b>	<b>142</b>	<b>143</b>	<b>144</b>	<b>145</b>	<b>146</b>	<b>147</b>	<b>148</b>	<b>149</b>	<b>150</b>
<b>151</b>	<b>152</b>	<b>153</b>	<b>154</b>	<b>155</b>	<b>156</b>	<b>157</b>	<b>158</b>	<b>159</b>	<b>160</b>
<b>161</b>	<b>162</b>	<b>163</b>	<b>164</b>	<b>165</b>	<b>166</b>	<b>167</b>	<b>168</b>	<b>169</b>	<b>170</b>
<b>171</b>	<b>172</b>	<b>173</b>	<b>174</b>	<b>175</b>	<b>176</b>	<b>177</b>	<b>178</b>	<b>179</b>	<b>180</b>
<b>181</b>	<b>182</b>	<b>183</b>	<b>184</b>	<b>185</b>	<b>186</b>	<b>187</b>	<b>188</b>	<b>189</b>	<b>190</b>
<b>191</b>	<b>192</b>	<b>193</b>	<b>194</b>	<b>195</b>	<b>196</b>	<b>197</b>	<b>198</b>	<b>199</b>	<b>200</b>

© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.





# Number Lines

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

A number line is a line on which real numbers are marked at regular intervals.

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

Number lines are usually labelled with integers.

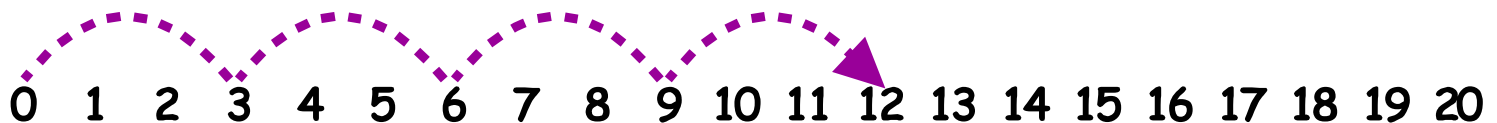
Number lines are useful to show simple number operations.



**+** Addition (forwards)  $7 + 3 = 10$



**-** Subtraction (backwards)  $10 - 3 = 7$



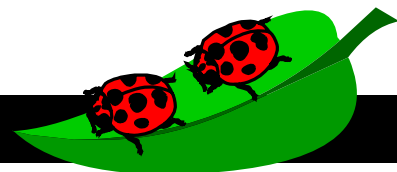
**x** Multiplication (forwards)  $4 \times 3 = 12$

## Related notes:



Most numbers used in mathematics, science and everyday life are called real numbers.

Integers are the positive and negative numbers and zero, excluding fractions.

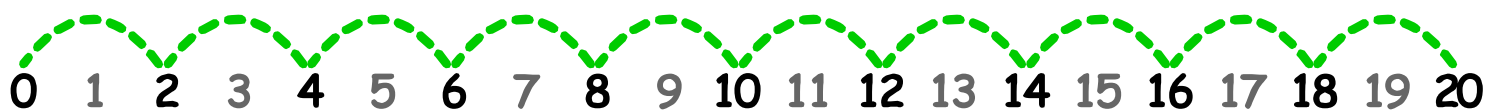


© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

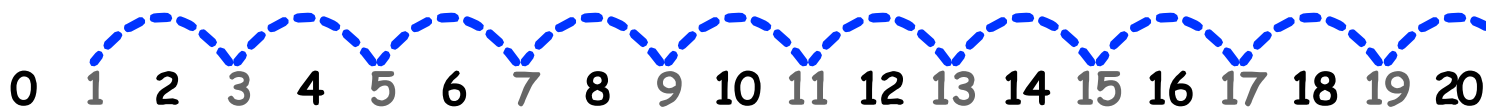
# Skip Counting by 2s

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



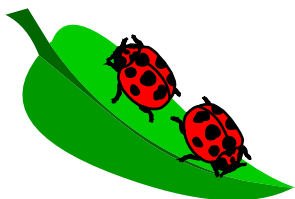
• Using even numbers.

▶ 2, 4, 6, 8, 10, 12, 14, 16, 18, 20



• Using odd numbers.

▶ 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21



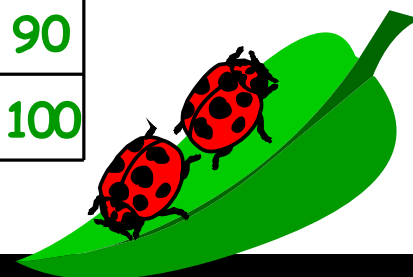
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

even

odd



Counting by 2s to 100



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

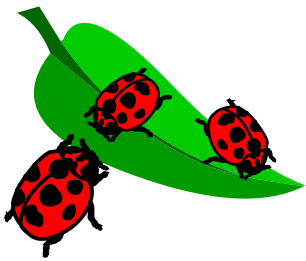
# Skip Counting by 5s

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

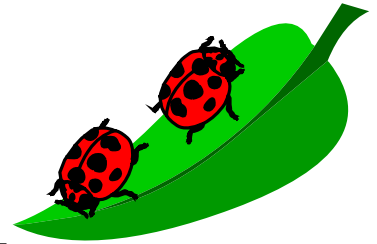
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

• Using every 5th number.

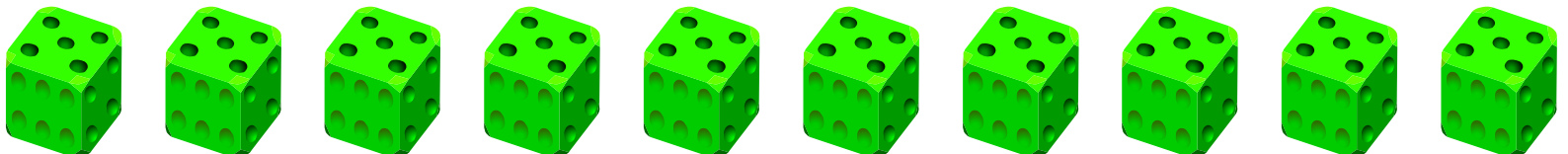
▶ 5, 10, 15, 20, 25, 30, 35, 40, 45, 50



## Counting by 5s to 100



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



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

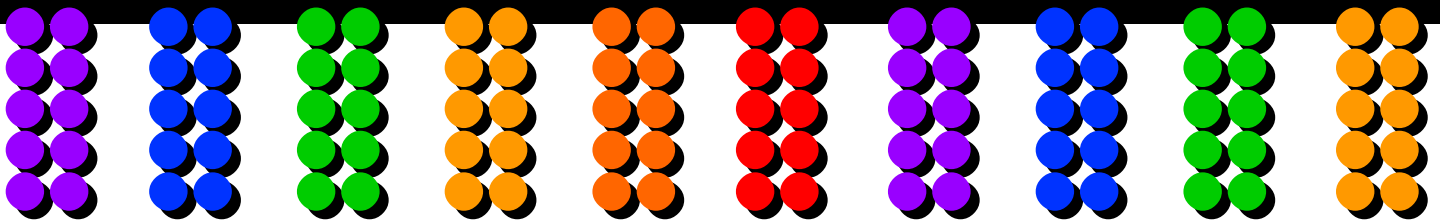
# Skip Counting by 10s

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

• Using every 10th number.

▶ 10, 20, 30, 40, 50, 60, 70, 80, 90, 100



Counting by 10s to 100

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

Start from any number at the top and count down the rows.

© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

# Odd and even numbers

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

## even numbers

- numbers that are divisible by 2.
- even numbers end with 2, 4, 6, 8 or 0.

▶ 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

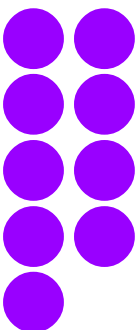
## odd numbers

- numbers that are not divisible by 2.
- odd numbers end with 1, 3, 5, 7 or 9.

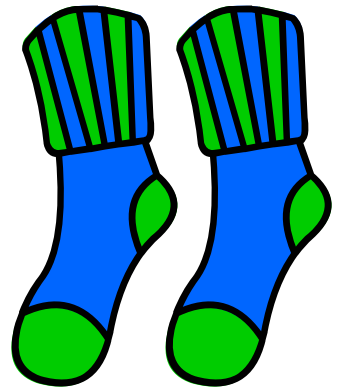
▶ 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21



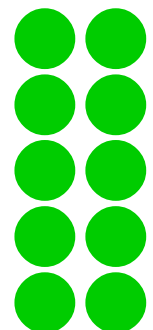
odd



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



even



# Prime and composite numbers

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

## prime number

- a positive integer that has exactly **two factors**
- can only be divided evenly by 1 or itself.

**3**  $3 = 1 \times 3$   
 $3 \div 1 = 3$

**5**  $5 = 1 \times 5$   
 $5 \div 1 = 5$

**7**  $7 = 1 \times 7$   
 $7 \div 1 = 7$

**11**  $11 = 1 \times 11$   
 $11 \div 1 = 11$

## composite number

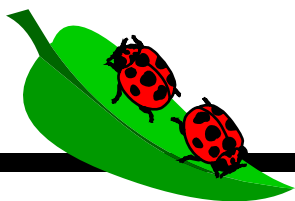
- a positive integer with **more than two factors**.

**12**

$12 = 1 \times 12$   
 $12 \div 1 = 12$

$12 = 2 \times 6$   
 $12 \div 2 = 6$

$12 = 3 \times 4$   
 $12 \div 3 = 4$



Blue - prime numbers to 100.



Green - composite numbers to 100.

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

**12**

$12 = 2 \times 2 \times 3$



Every composite number has its own unique set of prime factors.

- 1 is neither prime nor composite
- 2 is the only even prime number



# Negative and positive numbers

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

**Negative numbers**

**Positive numbers**

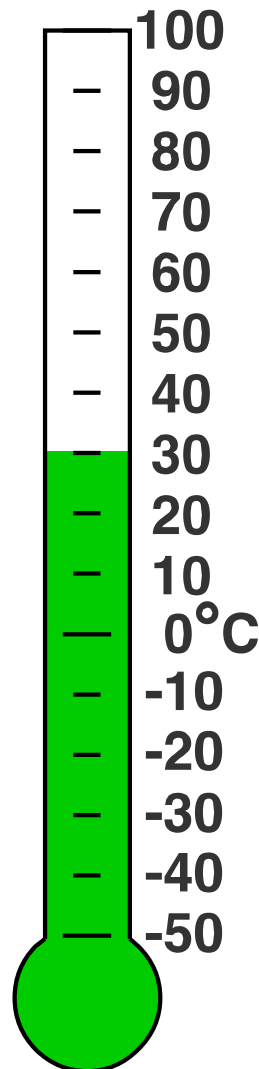
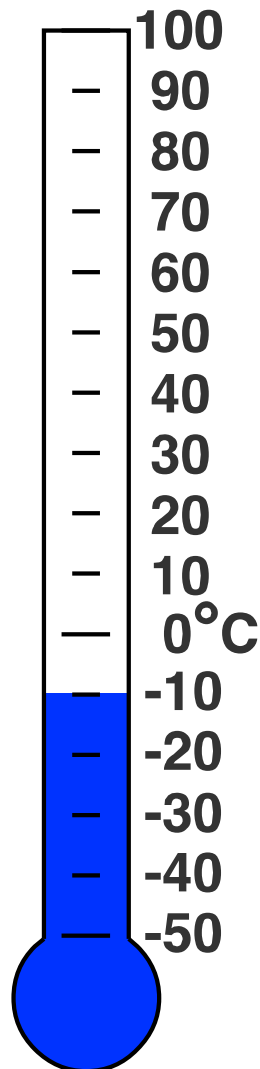
are numbers  
less than zero.

are numbers  
greater than zero.

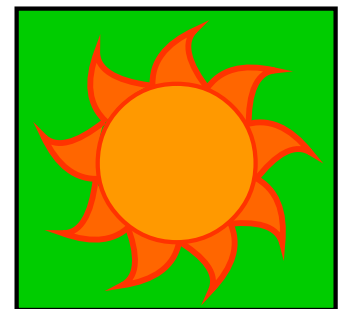
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

**Example: Celsius thermometers**

The temperature is  
 $-10^{\circ}\text{C}$   
(negative)



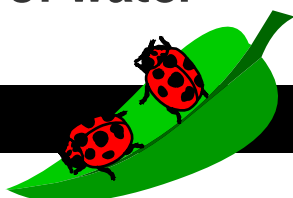
The temperature is  
 $30^{\circ}\text{C}$   
(positive)



On the Celsius scale,  $0^{\circ}$  is the freezing point of water and  $100^{\circ}$  is the boiling point.

© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

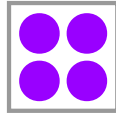


# Square numbers

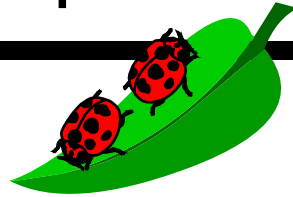
From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

Square numbers are numbers which can be represented in the shape of a square. A square number results from multiplying an integer by itself and may also be called a perfect square.

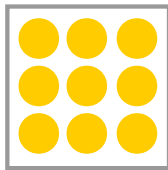
4



$$2^2 \text{ or } 2 \times 2 = 4$$

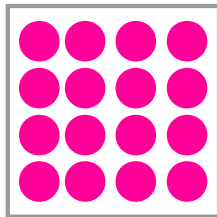


9



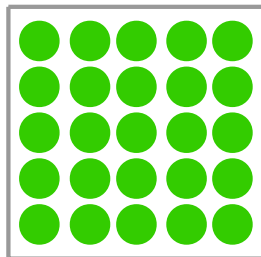
$$3^2 \text{ or } 3 \times 3 = 9$$

16



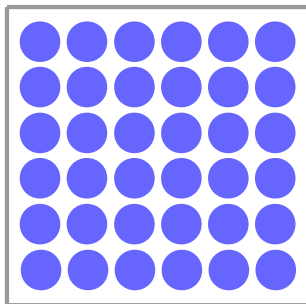
$$4^2 \text{ or } 4 \times 4 = 16$$

25

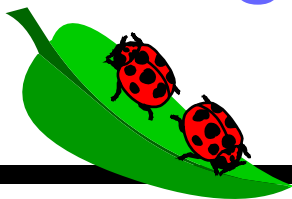


$$5^2 \text{ or } 5 \times 5 = 25$$

36



$$6^2 \text{ or } 6 \times 6 = 36$$



A number to be squared is indicated by a small 2 placed to its upper-right. This number is called an exponent, index, power or order and shows how many copies of the base number to multiply together.

$$2^2 = 2 \times 2 = 4$$

← exponent, index, power or order  
base      expanded      value

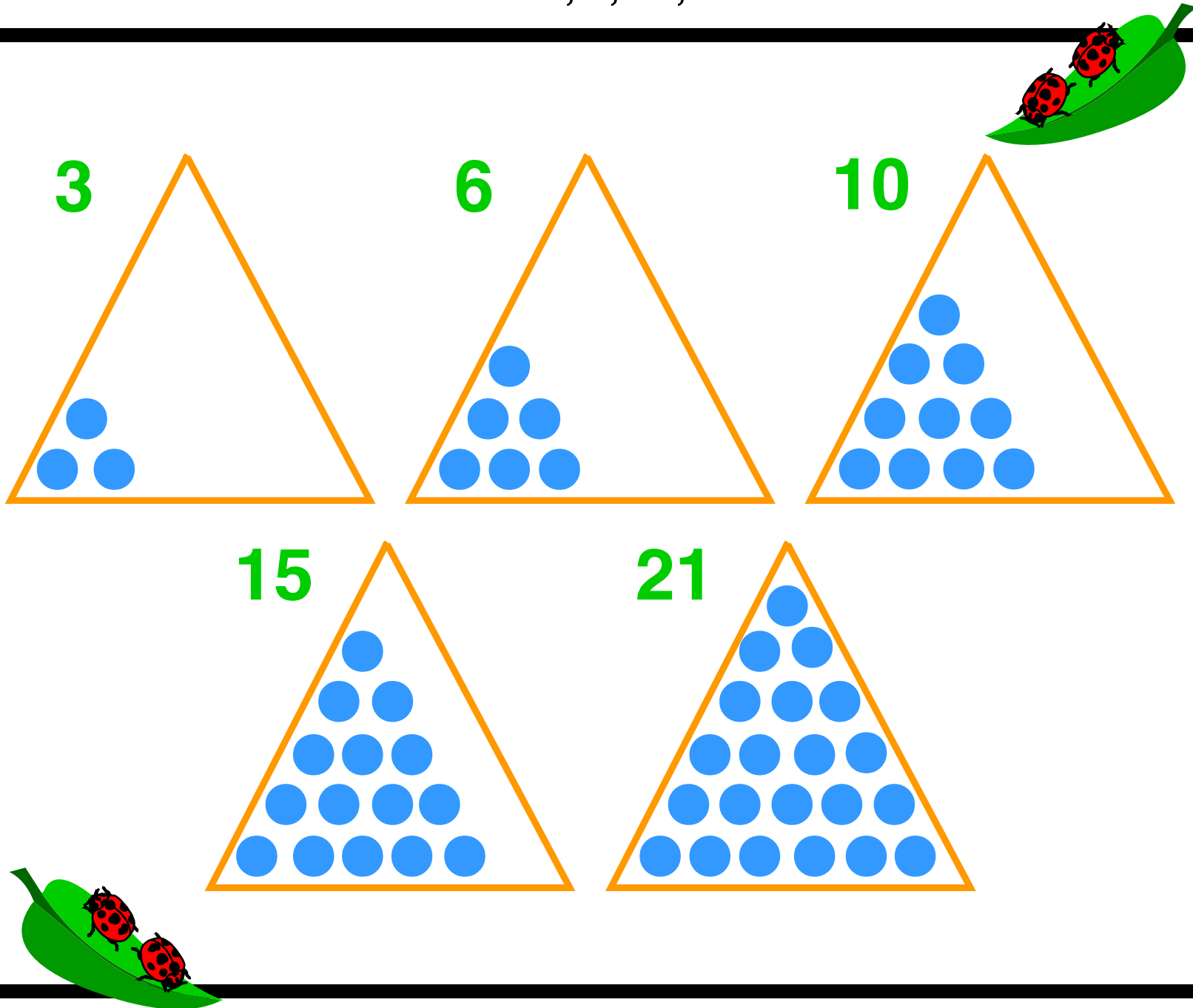


# Triangular numbers

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

Triangular numbers are numbers that can be represented in the shape of a triangle.

EXAMPLES: 3, 6, 10, 15 and 21



Triangular numbers sequence rule:

$$x_n = n(n+1)/2$$

For example, the 10th triangular number is:

$$x_{10} = 10(10+1)/2 = 55$$

© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

# Roman Numerals

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

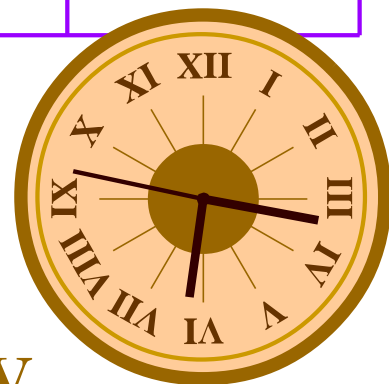


The Roman numeral system was invented by the ancient Romans and uses letters of the alphabet to represent numerical values.

Thousands	Hundreds	Tens	Units
<b>M</b> one thousand	<b>C</b> one hundred	<b>X</b> ten	<b>I</b> one
<b>MM</b> two thousand	<b>CC</b> two hundred	<b>XX</b> twenty	<b>II</b> two
<b>MMM</b> three thousand	<b>CCC</b> three hundred	<b>XXX</b> thirty	<b>III</b> three
	<b>CD</b> four hundred	<b>XL</b> forty	<b>IV</b> four
	<b>D</b> five hundred	<b>L</b> fifty	<b>V</b> five
	<b>DC</b> six hundred	<b>LX</b> sixty	<b>VI</b> six
	<b>DCC</b> seven hundred	<b>LXX</b> seventy	<b>VII</b> seven
	<b>DCCC</b> eight hundred	<b>LXXX</b> eighty	<b>VIII</b> eight
	<b>CM</b> nine hundred	<b>XC</b> ninety	<b>IX</b> nine

## EXAMPLES:

<b>1</b>	<b>I</b>	<b>8</b>	<b>VIII</b>
<b>5</b>	<b>V</b>	<b>25</b>	<b>XXV</b>
<b>10</b>	<b>X</b>	<b>156</b>	<b>CLVI</b>
<b>50</b>	<b>L</b>	<b>1624</b>	<b>MDCXXIV</b>
<b>100</b>	<b>C</b>	<b>2379</b>	<b>MMCCCLXXIX</b>
<b>500</b>	<b>D</b>	<b>2800</b>	<b>MMDCCC</b>
<b>1000</b>	<b>M</b>	<b>3012</b>	<b>MMMXII</b>



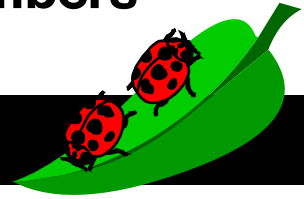
Roman numerals are often used on the faces of watches and clocks, to show the year a movie was released and in the names of popes and monarchs, e.g. Elizabeth II.

# Number Sequences

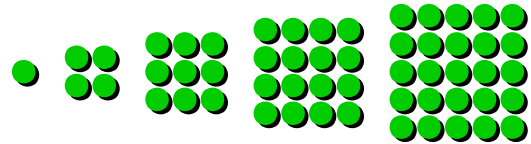
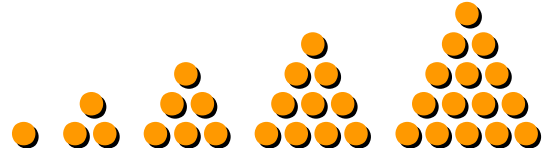
From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



A number sequence is an ordered set of numbers arranged according to a rule.



## Examples:

<b>Arithmetic sequences</b> • same number added each time	▶ 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, ...
<b>Geometric sequences</b> • multiplied by same number each time	▶ 2, 4, 8, 16, 32, 64, 128, 256, 512, ...
<b>Odd numbers</b>	▶ 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, ...
<b>Even numbers</b>	▶ 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, ...
<b>Prime numbers</b>	▶ 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31 ...
<b>Composite numbers</b>	▶ 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20 ...
<b>Square numbers</b>	▶  1, 4, 9, 16, 25, ...
<b>Triangular numbers</b>	▶  1, 3, 6, 10, 15, ...
<b>Fibonacci numbers</b>	▶ 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...

The Fibonacci number sequence is named after the Italian mathematician Leonardo Fibonacci (1175-1250).  
**Each number is the sum of the two numbers before it.**



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

# Types of Numbers

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

Numbers describe quantities or values.

There are many types of numbers.

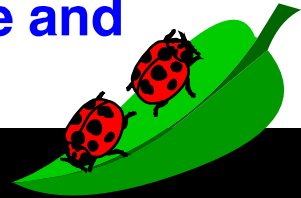
Numerals are symbols used to represent numbers.

Types of numbers and numerals include:

<p><b>Hindu Arabic Numerals</b> • used in the decimal system.</p>	▶	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ...
<p><b>Roman Numerals</b></p>	▶	I, II, III, IV, V, VI, VII, VIII, ...
<p><b>Ordinal Numbers</b></p>	▶	1st, 2nd, 3rd, 4th, 5th, ...



Most numbers used in mathematics, science and everyday life are called real numbers.



Real numbers may be classified as:

<p><b>Natural Numbers</b></p>	<p>Counting numbers from one to infinity.</p>	<p>1, 2, 3, ...</p>
<p><b>Whole Numbers</b></p>	<p>Counting numbers from zero to infinity.</p>	<p>0, 1, 2, 3, ...</p>
<p><b>Integers</b></p>	<p>Positive and negative numbers (excluding fractions) and zero.</p>	<p>... -3, -2, -1, 0, 1, 2, 3, ...</p>
<p><b>Rationals</b></p>	<p>Integers, fractions, terminating and repeating decimals.</p>	<p>... -3, -2, -1, 0, 1, 2, 3, ... <math>\frac{1}{2}</math> 0.5 <math>\frac{1}{3}</math> 0.3333333...</p>
<p><b>Irrationals</b></p>	<p>Non-terminating and non-repeating decimals.</p>	<p>3.14159265359... <math>\pi</math>, <math>\sqrt{2}</math>, <math>\sqrt{3}</math></p>

© Jenny Eather. All rights reserved.

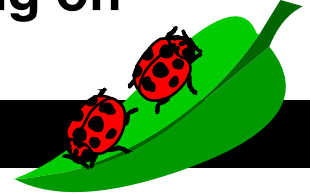
Educational reference material for non-commercial use only.

# Place Value

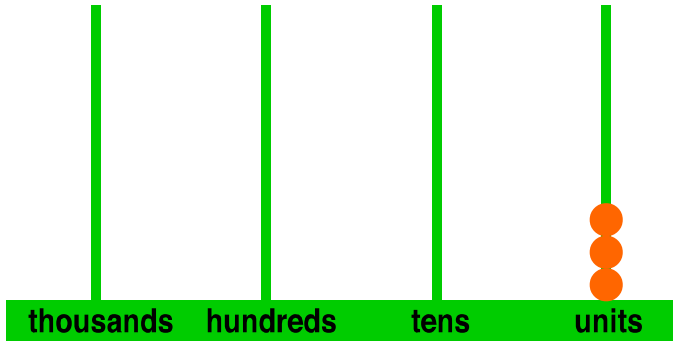
From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



Place value is the value of a digit depending on its place in a number.

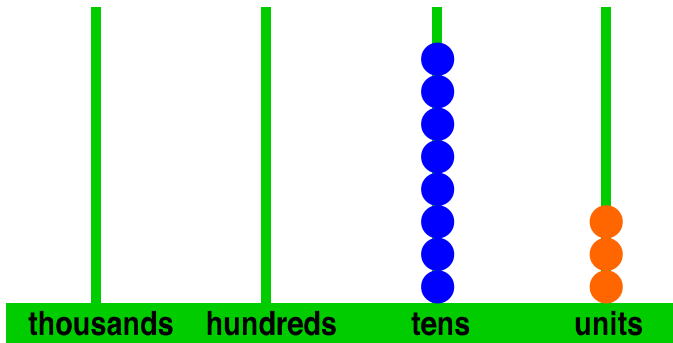


Units and ones mean the same thing.



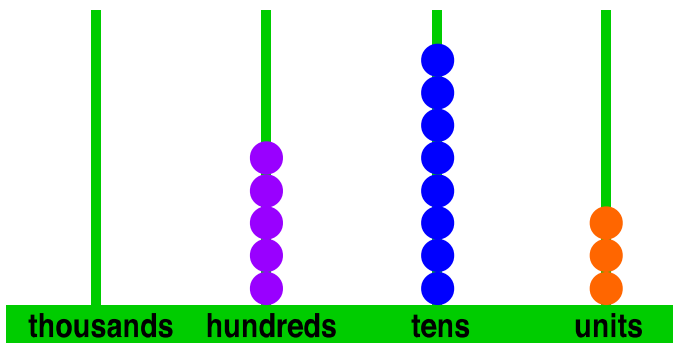
Thousands	Hundreds	Tens	Ones
			3

three



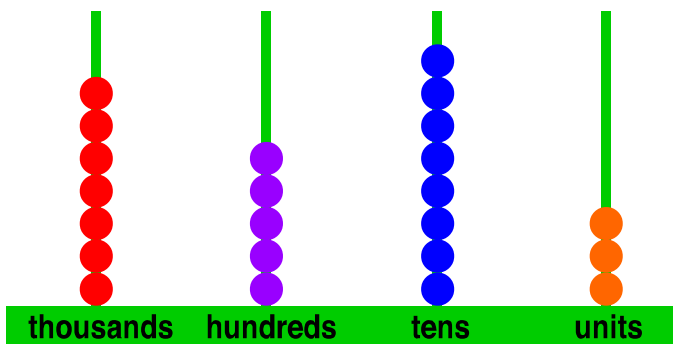
Thousands	Hundreds	Tens	Ones
		8	3

eighty-three



Thousands	Hundreds	Tens	Ones
	5	8	3

five hundred and eighty-three



Thousands	Hundreds	Tens	Ones
7	5	8	3

seven thousand, five hundred and eighty-three

Each place is 10x larger than the place to its right.



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

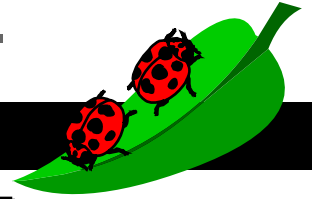
# Reading large numbers

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



Inside each **large group** we read the numbers as **hundreds, tens and ones**.

Ones can also be called units.



Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O
				5	3	2	7	9
			9	2	5	6	3	1
6	8	2	4	3	5	7	1	2

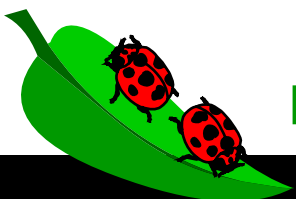
## EXAMPLES:

- ▶ Fifty-three **thousand**, two hundred and seventy-nine.
- ▶ Nine hundred and twenty-five **thousand**, six hundred and thirty-one.
- ▶ Six hundred and eighty-two **million**, four hundred and thirty-five **thousand**, seven hundred and twelve.

Quadrillions			Trillions			Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O	H	T	O	H	T	O
1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3

Try reading this one!!

**NOTE:** US convention - leave out the word 'and'.



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.

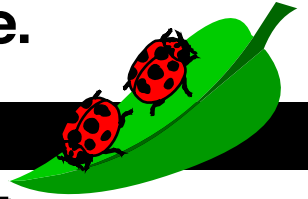
# Expanding numbers 1

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



Expanded notation is a way of writing numbers to show place value.

Ones can also be called units.



Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O
				5	3	2	7	9
			9	2	5	6	3	1
6	8	2	4	3	5	7	1	2

## Examples

Two methods of writing expanded notation are shown for each number below.

▶  $5 \times 10,000 + 3 \times 1,000 + 2 \times 100 + 7 \times 10 + 9$   
**OR**  $50\ 000 + 3\ 000 + 200 + 70 + 9$

▶  $9 \times 100,000 + 2 \times 10,000 + 5 \times 1,000 + 6 \times 100 + 3 \times 10 + 1$   
**OR**  $900\ 000 + 20\ 000 + 5\ 000 + 600 + 30 + 1$

▶  $6 \times 100,000,000 + 8 \times 10,000,000 + 2 \times 1,000,000$   
 $+ 4 \times 100,000 + 3 \times 10,000 + 5 \times 1,000 + 7 \times 100 + 1 \times 10 + 2$   
**OR**  $600\ 000\ 000 + 80\ 000\ 000 + 2\ 000\ 000$   
 $+ 400\ 000 + 30\ 000 + 5\ 000 + 700 + 10 + 2$

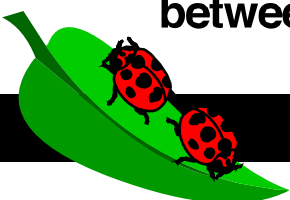
### NOTE:

The use of commas, spaces or points in large numbers varies between countries. In four digit numbers, they are often optional. Commas and spaces are included above.



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.



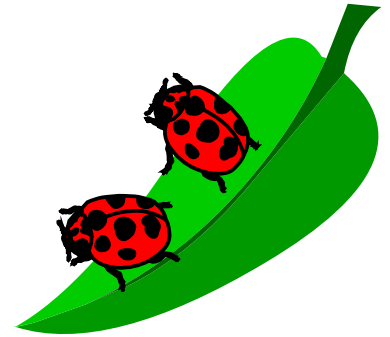
# Expanding numbers 2

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

Expanded notation is a way of writing numbers to show place value.



Thousands	Hundreds	Tens	Ones	Decimal Point	Tenths	Hundredths	Thousandths	Ten-thousandths
$\times 1000$	$\times 100$	$\times 10$	$\times 1$	.	$\frac{1}{10}$ $\times 10$	$\frac{1}{100}$ $\times 100$	$\frac{1}{1000}$ $\times 1000$	$\frac{1}{10000}$ $\times 10000$



## Examples

Two methods of writing expanded notation are shown for each number below.

$$64 = (6 \times 10) + (4 \times 1)$$

$$64 = 60 + 4$$



$$964 = (9 \times 100) + (6 \times 10) + (4 \times 1)$$

$$964 = 900 + 60 + 4$$

$$4.32 = (4 \times 1) + (3 \times \frac{1}{10}) + (2 \times \frac{1}{100})$$

$$4.32 = 4 + 0.3 + 0.02$$

$$34.05 = (3 \times 10) + (4 \times 1) + (5 \times \frac{1}{100})$$

$$34.05 = 30 + 4 + 0.05$$

$$0.375 = (3 \times \frac{1}{10}) + (7 \times \frac{1}{100}) + (5 \times \frac{1}{1000})$$

$$0.375 = 0.3 + 0.07 + 0.005$$



$$967.123 = (9 \times 100) + (6 \times 10) + (7 \times 1) + (1 \times \frac{1}{10}) + (2 \times \frac{1}{100}) + (3 \times \frac{1}{1000})$$

$$967.123 = 900 + 60 + 7 + 0.1 + 0.02 + 0.003$$

© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.



# Rounding Hundreds Chart

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

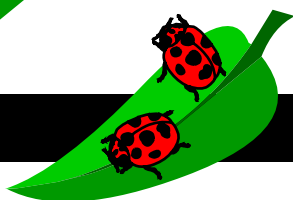
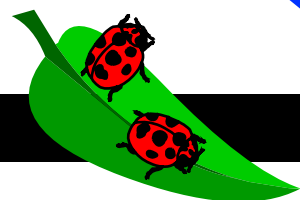


0	1	2	3	4	5	6	7	8	9	10
10	11	12	13	14	15	16	17	18	19	20
20	21	22	23	24	25	26	27	28	29	30
30	31	32	33	34	35	36	37	38	39	40
40	41	42	43	44	45	46	47	48	49	50
50	51	52	53	54	55	56	57	58	59	60
60	61	62	63	64	65	66	67	68	69	70
70	71	72	73	74	75	76	77	78	79	80
80	81	82	83	84	85	86	87	88	89	90
90	91	92	93	94	95	96	97	98	99	100



© Jenny Eather. All rights reserved.

Educational reference material for non-commercial use only.



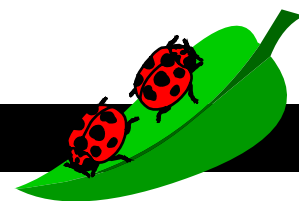
# Rounding numbers 1

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



Numbers are rounded to change them to a more convenient value.

Rounding makes it easier to estimate quickly.





Look at the **last digit** of the number.



If it is:

- 5 or more, round up to the next higher multiple of 10.
- less than 5, round down to the next lower multiple of 10.

EXAMPLES:



578**6**  5790  
542**3**  5420

Look at the **last two digits** of the number.



If they are:

- 50 or more, round up to the next higher multiple of 100.
- less than 50, round down to the next lower multiple of 100.



57**86**  5800  
54**23**  5400

Look at the **last three digits** of the number.



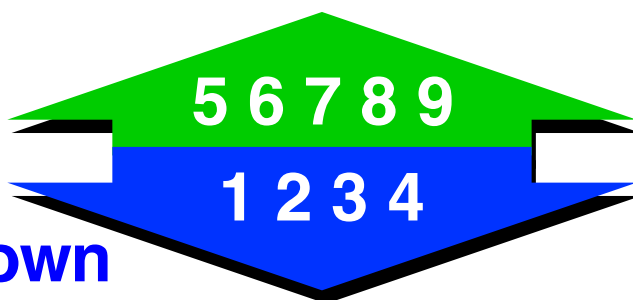
If they are:

- 500 or more, round up to the next higher multiple of 1000.
- less than 500, round down to the next lower multiple of 1000.

5**786**  6000  
5**423**  5000



round down



round up



© Jenny Eather. All rights reserved.

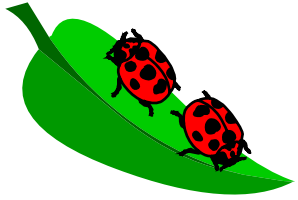
Educational reference material for non-commercial use only.

# Rounding numbers 2

From: A Maths Dictionary for Kids by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

Numbers are rounded to change them to a more convenient value.

← whole numbers				decimal fractions →				
Thousands	Hundreds	Tens	Ones	Decimal Point	Tenths	Hundredths	Thousandths	Ten-thousandths
6	9	4	5	.	3	7	2	8



The number of decimal places is the number of digits to the right of a decimal point.

A rounding instruction tells how many digits to keep.

1. Look at **the digit in the place value** to be rounded to.
2. Increase it by 1 if the **digit to the right of it** is 5 or more.
3. Leave it the same if the **digit to the right of it** is less than 5.
4. Remove everything to the right of the digit.



Round to the nearest ...

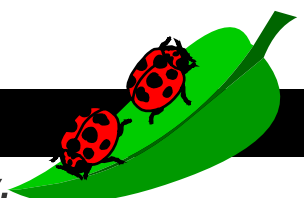
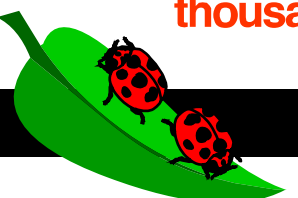
3 decimal places (thousandth)	6945.37 <b>28</b>	6945.37 <b>3</b>
2 decimal places (hundredth)	6945.3 <b>728</b>	6945.3 <b>7</b>
1 decimal place (tenth)	6945. <b>3728</b>	6945. <b>4</b>
whole number	694 <b>5.3728</b>	694 <b>5</b>

When rounding to 10 or above there's an important change to step 4.

4. Replace whole numbers to the right of the digit with zero(s), then remove everything to their right.

Round to the nearest ...

ten	69 <b>45</b> .3728	69 <b>50</b>
hundred	6 <b>945</b> .3728	6 <b>900</b>
thousand	<b>6945</b> .3728	<b>7000</b>



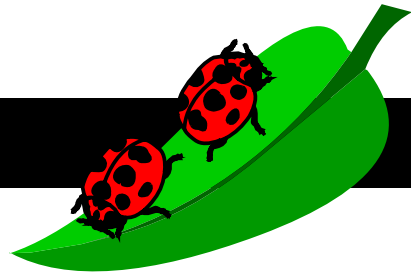
# Rounding examples

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)



## Original number

35276.538479



## Rounded to

10



35280

100



35300

1000



35000

1 decimal place



35276.5

2 decimal places



35276.54

3 decimal places



35276.538

4 decimal places

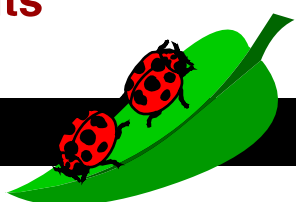
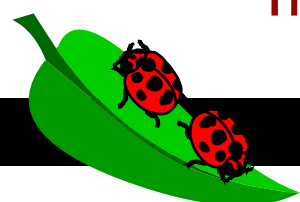


35276.5385

The number of decimal places is the number of digits to the right of a decimal point.

© Jenny Eather. All rights reserved.

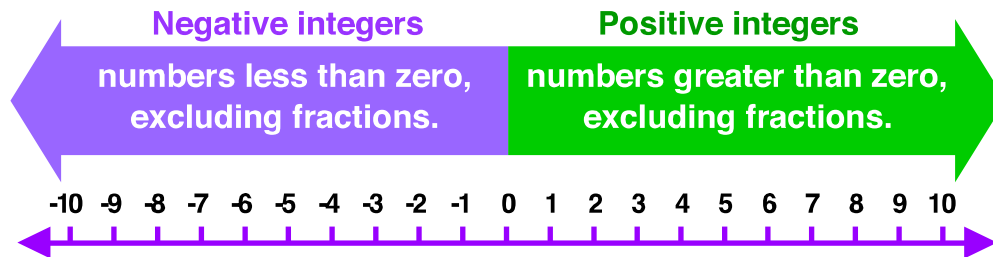
Educational reference material for non-commercial use only.



# Integers

From: *A Maths Dictionary for Kids* by Jenny Eather at [www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

Integers are positive numbers, negative numbers and zero ... but not fractions or decimal fractions.



## Operations on integers

### Addition

Positive + Positive = Positive

$$5 + 3 = 8$$

Negative + Negative = Negative

$$(-5) + (-3) = -8$$

\* Positive + Negative or Negative + Positive

$$(-5) + 3 = -2$$

- subtract the smaller number from the larger number,
- then use the sign of the larger number in the answer

$$3 + (-5) = -2$$

$$(-3) + 5 = 2$$

$$5 + (-3) = 2$$

### Subtraction

Negative - Positive = Negative

$$(-5) - 3 = (-5) + (-3) = -8$$

Positive - Negative = Positive

$$5 - (-3) = 5 + 3 = 8$$

\* Negative - Negative = Negative + Positive

$$(-5) - (-3) = (-5) + 3 = -2$$

- treat as Negative + Positive

$$(-3) - (-5) = (-3) + 5 = 2$$

- subtract the smaller number from the larger number,
- then use the sign of the larger number in the answer

### Multiplication

Positive x Positive = Positive

$$5 \times 3 = 15$$

Negative x Negative = Positive

$$(-3) \times (-5) = 15$$

Negative x Positive = Negative

$$(-3) \times 5 = -15$$

Positive x Negative = Negative

$$3 \times (-5) = -15$$

- change double negatives to a positive

### Division

Positive ÷ Positive = Positive

$$15 \div 3 = 5$$

Negative ÷ Negative = Positive

$$(-15) \div (-3) = 5$$

Negative ÷ Positive = Negative

$$(-15) \div 3 = -5$$

Positive ÷ Negative = Negative

$$15 \div (-3) = -5$$

- change double negatives to a positive