Whitepaper

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Getting Started with Numbers in Technical Writing

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Numbers

Writers sometimes ignore the rules regarding the writing of numbers. Not following the proper rules results in ambiguity, and impacts readability and consistency. The situation is made worse as technical documents tend to have a lot of numbers, large and small, often associated with scientific units. For numbers, as with everything else, it is critical to follow some basic rules. Let us review some of these.

Use Numerals

When to Use	Example
For numbers of two or more digits.	*10* *20th century*
When a unit of measurement follows.	*5 cm* *12 inches*
When mathematical operations are implied.	*Factor of 2* *3x3 matrix*
To identify pages, figures, steps, and diagrams.	*10th page* *2nd step*
To write fractions and percentages.	*87.4%* *1/3rd*
For all decimals, even those less than 10.	*Add 0.6 mg of hydrochloric acid*
Monetary units of mixed dollars-and-cents amounts.	*The computer costs $799.99.*
For addresses and identification numbers.	*Room 5* *4 Plano Street*

Spell out

When to Use	Example
For single-digit numbers (zero through nine)	*Six* *one*
For a number at the beginning of a sentence (If this rule produces an awkward looking sentence, rewrite the sentence to avoid starting with a number.)	Incorrect: *5 % of the teenage population is left-handed.* Correct but awkward: *Five percent of the teenage population is left-handed.* Best: *Among the teenage population, 5% are left-handed.*
Approximate values or "round numbers"	*about five years* *two orders of magnitude*
For numbers one million or above, use a figure followed by the word million, billion etc.	*36 million* *4.5 billion*

Numbers in Sentences

When to Use	Example
For numbers between -1 and +1, insert a zero to the left of the decimal point in order to avoid a "naked decimal point".	Incorrect: *The saline content of the solution is .47%.* Correct: *The saline content of the solution is 0.47%.*

More than One Number in a Sentence

When to Use	Example
Use figures for all related numbers if any one of the numbers has two or more digits.	*6 of 23 physicians recommend*
If two numbers are consecutive, use a numeral for one and spell out the other.	*Enter six 5-digit codes* *Please form four 4-person teams*

Punctuation with Numbers

When to Use	Example
Use a comma to separate whole numbers of four digits or more into groups of three.	*We are expecting 3,456 people to come.* *We received your invoice for $16,527.*
Do not use a comma with • Decimal fractions and serial numbers • Numbers in set combinations like check numbers • Numbers of policies, contracts, streets, room numbers, etc.	*This trouble ticket pertains to serial number 15974802.* *The amount for check 3782 is $3,500.* *Conference room attendees should meet in room 2255.*
Use a hyphen with a number that forms the first part of a compound modifier. However, do not use a hyphen when the number is followed by the word percent.	*We dug a 5-foot hole for the pipe.* *There was a 30 percent increase in profit this year.*
Use a hyphen in between the numerator and the denominator of a fraction when it is used as a modifier	*A two-thirds majority of the workers voted to ratify the contract.*
Do not use decimal points with even-dollar amounts.	*Use $27 not $27.00*
However, if the even-dollar amount is used in a series, be consistent and follow the style used for the other dollar amounts.	*The membership cost rose from $25.50 in 2004, to $30.00 in 2005, and then to $35.50 in 2006.*

Units with Numbers

When to Use	Example
All numerical values that have dimensions must have their units specified. In general, the units follow the numerical value.	*Sam is 6' tall and weighs 170 lbs.*
For two numbers in a phrase with the same unit, put the unit only after the second number.	*Frequency between 4 and 5 kHz.*
In a table of numbers, the units may be specified at the top of the column rather than listing them with each entry, provided all of the values have the same unit.	*Person* — *Height (cms)* *John* — *170* *Susie* — *162* *Michael* — *180*
There is no space between the metric prefix and the base unit.	*cms* *ml* *kg*
There should always be one blank space between a number and a unit.	*5 cms*, not *5cms*
Units of measurement, e.g. kHz, are nouns and cannot be used to modify another noun.	Incorrect: *The signal generator had a 15 kHz frequency.* Correct: *The signal generator had a frequency of 15 kHz.*
Use the degree symbol (°) rather than writing out the word degree.	*The internal temperature must not exceed 35°C.*
In general, choose a metric prefix that will make the numerical value between 0.1 and 1000 as this is easier to remember.	*9 km rather than 9,000 m* *2 Mbytes rather than 2,000 Kbytes*
However, if the value of a parameter or a variable is presented over a range of successive paragraphs, or in a table, use the same metric prefix to allow easy comparison of different values.	*Document* — *Size (Kbyte)* *Get Started Guide* — *170* *User Guide* — *162* *Reference Guide* — *1,800*

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