

Readability

The degree to which prose can be understood, based on the complexity of words and sentences.

Readability is determined by factors such as word length, word commonality, sentence length, number of clauses in a sentence, and number of syllables in a sentence. It is an attribute that is seldom considered—either because designers are not sensitive or aware of its importance, or because of the common belief that complex information requires complex presentation. In fact, complex information requires the simplest presentation possible, so that the focus is on the information rather than the way it is presented.

For enhanced readability, omit needless words and punctuation, but be careful not to sacrifice meaning or clarity in the process. Avoid acronyms, jargon, and untranslated quotations in foreign languages. Keep sentence length appropriate for the intended audience. Generally, use active voice, but consider passive voice when the emphasis is on the message and not the messenger. When attempting to produce text for a specific reading level, use published readability formulas and software applications designed for this purpose.

A variety of readability formulas and software applications are available to assist designers in producing prose with specific readability levels. The readability rating is usually represented in the form of school levels ranging from 1st to 12th grade and college. While different tools may use slightly different approaches for calculating readability, they all generally use the same combination of core readability factors mentioned above.¹

Use these formulas to verify that the textual components of a design are at the approximate reading level of the intended audience. However, do not write for the formulas. Readability formulas are primitive guides and should not outweigh all other considerations. For example, more sentences per paragraph may increase readability for lower-level readers, but frustrate readability for more advanced readers who are distracted by the lack of continuity. Simple language is preferred, but overly simple language obscures meaning.²

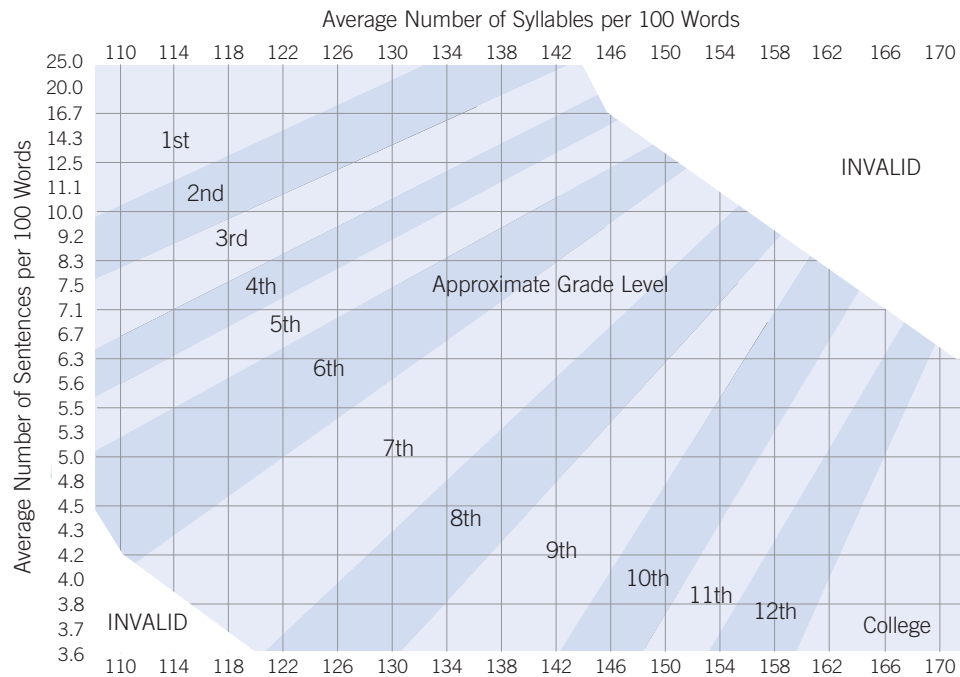
Consider readability when creating designs that involve prose. Express complex material in the simplest way possible. Follow guidelines for enhancing readability, and verify that the readability level approximates the level of the intended audience.³

See also Legibility and Ockham's Razor.

¹ Fry's Readability Graph (right) is one of many readability formulas. Other popular measures include Flesch Formula, Dale-Chall formula, Farr-Jenkins-Paterson formula, Kincaid Formula, Gunning Fog Index, and Linsear Write Index.

² "Use [readability formulas] as a guide after you have written, but not as a pattern before you write. Good writing must be alive; don't kill it with systems." *The Technique of Clear Writing* by Robert Gunning, McGraw-Hill, 1968.

³ For additional writing guidelines, see *The Elements of Style* by William Strunk Jr. and E. B. White, Allyn & Bacon; 4th edition, 2000.



Edward Fry's Readability Graph

1. Randomly select three sample passages from a text.
2. Count 100 words starting at the beginning of these passages (count proper nouns, but not numbers).
3. Count the number of sentences in each 100-word passage, estimating the length of the last sentence to the nearest 1/10th.
4. Count the total number of syllables in each 100-word passage.
5. Calculate the average number of sentences and average number of syllables for the 100-word passage. If a great deal of variability is found, sample additional passages.
6. The area of intersection on the graph between the number of sentences and average number of syllables indicate the estimated grade level. Invalid regions indicate that a reading level could not be estimated.

Sample text written at a college reading level. In the first 100 words of this passage there are 187 syllables and almost six sentences.

Chicken pox, or varicella, is an infectious disease usually occurring in young children. Chicken pox is believed to be caused by the same herpes virus that produces shingles. Chicken pox is highly communicable and is characterized by an easily recognizable rash consisting of blisterlike lesions that appear two to three weeks after infection. Usually there are also low fever and headache. When the lesions have crusted over, the disease is believed to be no longer communicable; however, most patients simultaneously exhibit lesions at different stages of eruption. Chicken pox is usually a mild disease requiring little treatment other than medication to relieve the troublesome itching, but care must be taken so that the rash does not become infected by bacteria.

Sample text written at a 4th grade reading level. In the first 100 words of this passage there are 137 syllables and almost twelve sentences.

Not too long ago, almost everyone got chicken pox. Chicken pox is caused by a virus. This virus spreads easily. The virus spreads when an infected person coughs or sneezes. People with chicken pox get a rash on their skin. The rash is made up of clear blisters. These blisters are very itchy. It is hard not to scratch them. The blisters form scabs when they dry. Sometimes these scabs cause scars. Many people with chicken pox must stay in bed until they feel better. Until recently, almost all children in the U.S. got chicken pox between the ages of 1 and 10. In 1995, the Food and Drug Administration approved a vaccine that keeps the virus from spreading. Today, most people will never get chicken pox because of this vaccine.