

**INSTITUTIONAL REVIEW BOARD
THE UNIVERSITY OF MONTANA-MISSOULA**

**READABILITY OF INFORMED CONSENT, PARENTAL PERMISSION, AND ASSENT
FORMS**

POLICY: Informed Consent Forms, Parental Permission Forms and Assent Forms for minors, which accompany a proposal for human research submitted to the UM IRB, will be written in a manner so that they can be easily understood by the intended readers.

PROCEDURES: If there is any doubt that an Informed Consent Form, Parental Permission Form or a minor's Assent Form can be understood by the subjects of a study, the IRB will require that the document(s) be tested by an appropriate readability index, such as the "Gunning Fog Index" or the "Flesch Formula" to determine the readability level of the documents. If they are not at an appropriate level of readability, the IRB will require that the forms be revised until they are understandable at the required level. Copies of the procedures for establishing the Gunning Fog Index and the Flesch Formula are attached hereto.

APPROVED: _____

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DATE: _____

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Gunning Fog Index

(the easiest to use and probably the most popular readability index)

Steps in Applying the Index

- Select a sample
- Determine the average number of words per sentence
- Determine the percentage of hard words
- Add the 2 factors and multiply by 0.4

The result is the minimum grade level at which the writing is easily read!

Sample

In *general*, construction of *pictograms* follows the *general procedure* used in *constructing* bar charts. But two special rules should be followed. First, all of the picture units used must be of equal size. The *comparisons* must be made wholly on the basis of the number of *illustrations* used and never by *varying* the *areas* of the *individual* pictures used. The reason for this rule is *obvious*. The human eye is grossly *inadequate* in *comparing areas* of *geometric* designs. Second, the pictures or symbols used must *appropriately* depict the *quantity* to be *illustrated*. A *comparison* of the navies of the world, for *example*, might make use of *miniature* ship drawings. Cotton *production* might be shown by bales of cotton. *Obviously*, the drawings used must be *immediately interpreted* by the reader.

Computation

129 words in 10 sentences = asl of 13

26 hard words out of 129 = 20%

Average sentence length	13.0
Percentage of hard words	<u>20.0</u>

Total	33.0
Multiply by	<u>0.4</u>

Grade level of readership	13.2
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Other Popular Indexes

- Flesch Reading Ease Score
 - Rates text on a 100-point scale; the higher the score, the easier it is to understand the document.
 - Most standard documents aim for a score of 60 to 70.
- Flesch-Kincaid Grade Level Score
 - Rates text on a U.S. grade-school level (same yardstick that the Gunning Fog index uses).

Appraisal of Indexes

- Popular because they
 - reduce to simple formulas the complex work of writing
 - provide a convenient check and measure of the level of one's writing
 - possess the glitter of mathematical exactness
 - can be calculated by word processing software

Appraisal of Indexes

- Limitations
 - a low style of writing can result from a slavish use of readability indexes—a monotonous succession of short sentences and simple words can make your writing dull and dull writing doesn't hold the reader's attention
 - the indexes frequently give conflicting results

Best Use of Indexes

- Use the formulas as a general guide
- Formulas will not replace the clear and logical thinking that is the foundation of all clear writing

HOW TO WRITE PLAIN ENGLISH

Rudolf Flesch

Chapter 2: Let's Start With the Formula

If you want to learn how to write Plain English, you must learn how to use a readability formula.

Of course this isn't true if you have a talent for writing. I've come across quite a few people who can write a booklet explaining an insurance policy simply because they have the knack. But I take it you're not blessed with that knack. You belong to the 98 or 99 percent of mankind who must learn Plain English the hard way. If so, you must know where you are and where you want to go. You need a yardstick, a measuring tool, something against which you can check your progress. That's what a formula is for.

There are by now dozens of readability formulas in existence, but for general use there are only a handful to choose from. They fall into two groups—those based on sentence length and a word *list* and those based, on sentence length and word *length*.

I worked out my own formula because I tried to apply the word list formulas to adult reading matter and got nowhere. So I went in a new direction and constructed a formula based on word *length* rather than a list. It was the first of this type and has become the most widely used formula in the country. There are other sentence and word length formulas, all of which are variations of mine. Their results aren't much different from my formula but, I think, mine is easier to use. So what you're going to get in this chapter is a mini-course in using the Flesch formula.

I developed the formula in the early 1940s. It measures the average sentence length in words and the average word length in syllables. You put these two numbers into an equation and get a number between 0 and 100 that shows you the difficulty of your piece of writing. If it's too hard to read for your audience, you shorten the words and sentences until you get the score you want.

At first blush you may think this is a very crude way of dealing with writing. Writing means conveying ideas from one mind to another. To use a mechanical gadget for this doesn't seem like an intelligent approach.

But wait a minute. I spent several years of my life doing the underlying research for this formula and got my Columbia University Ph.D. degree for it. I can assure you that it is based on some very complicated facts of human psychology. It works because it is based on the way the human mind works.

When you read a passage, your eyes and mind focus on successive points on the page. Each time this happens, you form a tentative judgment of what the words mean *up to that point*. Only when you get to a major punctuation mark—a period, a colon, a paragraph break—does your mind stop for a split second, sum up what it has taken in so far, and arrive at a final meaning of the sentence or paragraph. The longer the sentence, the more ideas your mind has to hold in suspense until its final decision on what all the words mean *together*. Longer sentences are more likely to be complex—more subordinate clauses, more prepositional phrases and so on. That means more mental work for the reader. So the longer a sentence, the harder it is to read.

Exactly the same thing is true of words. Some words are short and simple, others are long and complex. The complexity shows up in the prefixes and suffixes. *Take* is a simple, short word that doesn't present much difficulty to a reader. But *unmistakably* has the prefixes *un-* and *mis-* and the suffixes *-able* and *-ly* and gives the mind much more to think about than *take*. (My very first readability formula was based on a count of prefixes and suffixes to measure word complexity. A few years later I tried to make it easier to use and changed to a count of syllables. Statistically, the results are about the same.)

In using the formula, you count words and syllables to measure the mental work the reader will have to

do. A paragraph that measures 0 on the scale is apt to give the reader a headache; a paragraph that scores 100 is child's play.

Let's take an example. Take the sentence "John loves Mary." That's short and sweet and obviously presents no reading difficulties. Its score is 92, which means "very easy."

Now let's say the same thing with a little more sophistication - "John has a profound affection for Mary." This adds some complexity to the idea. It rates "Plain English"-a score of 67-but gives the reader a little to think about. Just exactly what *are* John's feelings toward Mary?

Now let's go into further complexities: "Even though John is not normally given to a display of his deeper emotions, he allegedly has developed a profound affection for Mary, as compared to the more equable feelings he seems to have for Lucy, Fran and, to a lesser extent, Sue." This has a score of 32 ("difficult") and throws the whole affair into a state of some obscurity and ambivalence. The sentence now compares in difficulty with the *Harvard Law Review*.

All right, I've given you the fundamentals. Here's how you use the formula:

Test only the running text of your piece of writing. Skip titles, headings, subheads, section and paragraph numbers, captions, date lines and signature lines.

Step 1. Count the words.

Count the words in your piece of writing. Count as single words contractions, hyphenated words, abbreviations, figures, symbols and their combinations, e.g., *wouldn't, full-length, TV, 17, &, \$15, 7%*.

Step 2. Count the syllables.

Count the syllables in your piece of writing. Count the syllables in words as they are pronounced. Count abbreviations, figures, symbols and their combinations as one-syllable words. If a word has two accepted pronunciations, use the one with fewer syllables. If in doubt, check a dictionary.

Step 3. Count the sentences.

Count the sentences in your piece of writing. Count as a sentence each full unit of speech marked off by a period, colon, semicolon, dash, question mark or exclamation point. Disregard paragraph breaks, colons, semicolons, dashes or initial capitals *within* a sentence. For instance, count the following as a single sentence:

You qualify if-

- (1) You are at least 58 years old; and
- (2) Your total household income is under \$5,000.

Step 4. Figure the average number of syllables per word.

Divide the number of syllables by the number of words.

Step 5. Figure the average number of words per sentence.

Divide the number of words by the number of sentences.

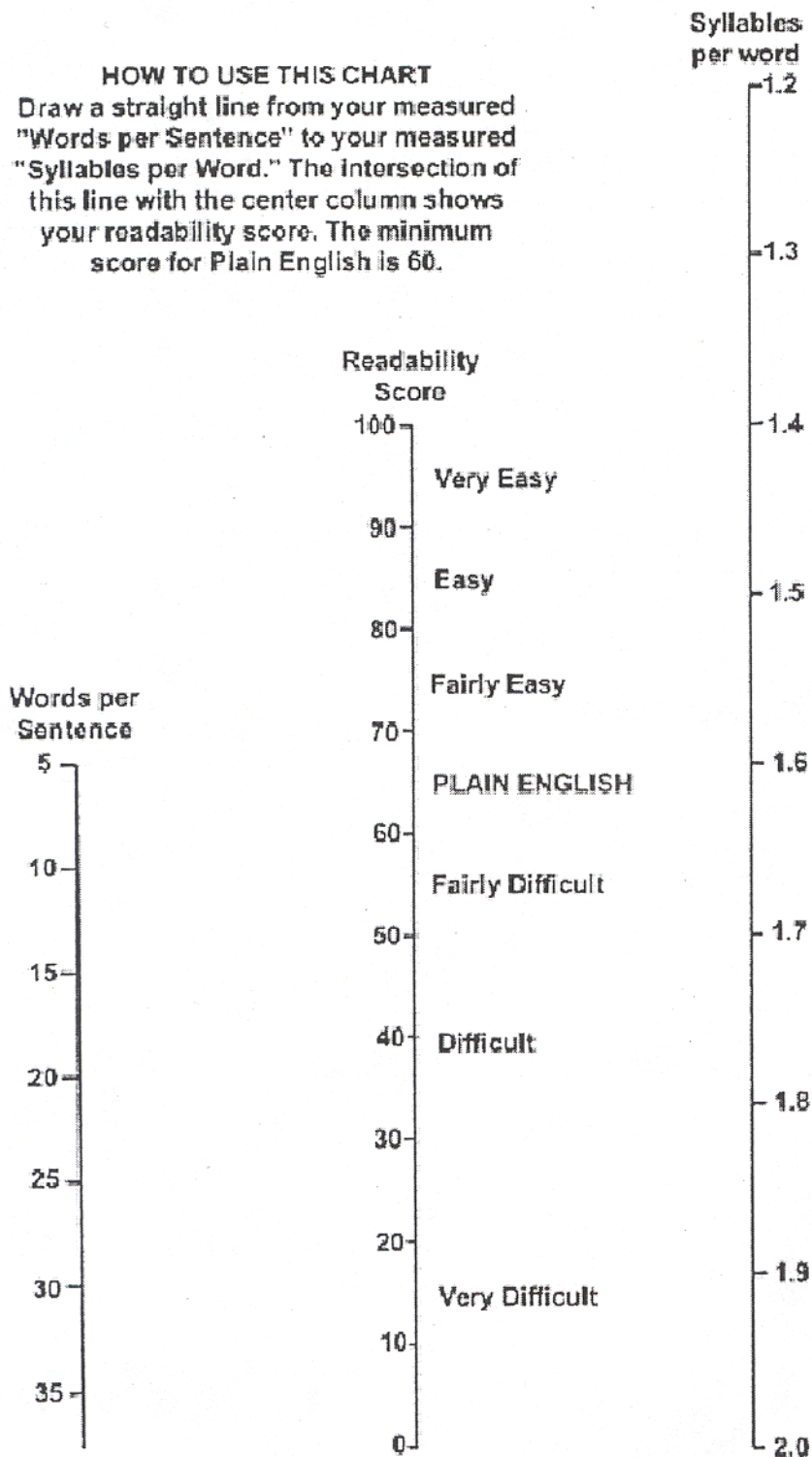
Step 6. Find your readability score.

Find the average sentence length and word length of your piece of writing on the chart (below). Take a straightedge or ruler and connect the two figures. The intersection of the straightedge or ruler with the center column shows your readability score.

Readability Chart

HOW TO USE THIS CHART

Draw a straight line from your measured "Words per Sentence" to your measured "Syllables per Word." The intersection of this line with the center column shows your readability score. The minimum score for Plain English is 60.



You can also use this formula: Multiply the average sentence length by 1.015. Multiply the average word length by 84.6. Add the two numbers. Subtract this sum from 206.835. The balance is your readability score.

The scale shows scores from 0 to 100. Zero means practically unreadable and 100 means extremely easy. The minimum score for Plain English is 60, or about 20 words per sentence and 1 1/2 syllables per word. Conversational English for consumers should score at least 80, or about 15 words per sentence and 1 1/2 syllables per word.

All Plain English examples in this book score at least 60.

Here are the scores of some reading materials I've tested. These are average scores of random samples.

Comics	92
Consumer ads in magazines	82
<i>Movie Screen</i>	75
<i>Seventeen</i>	67
<i>Reader's Digest</i>	65
<i>Sports Illustrated</i>	63
<i>New York Daily News</i>	60
<i>Atlantic Monthly</i>	57
<i>Time</i>	52
<i>Newsweek</i>	50
<i>Wall Street Journal</i>	43
<i>Harvard Business Review</i>	43
<i>New York Times</i>	39
<i>New York Review of Books</i>	35
<i>Harvard Law Review</i>	32
Standard auto insurance policy	10
<i>Internal Revenue Code</i>	minus 6

Here's how the scores translate into school grades. Reading matter with the score shown on the left side will be easy for students on the level shown on the right.

<i>Score</i>	<i>School Level</i>
90 to 100	5th grade
80 to 90	6th grade
70 to 80	7th grade
60 to 70	8th and 9th grade
50 to 60	10th to 12th grade (high school)
30 to 50	college
0 to 30	college graduate

Next, let me give you two important tips.

First, if you want to rewrite a passage to get a higher score, you'll have to cut the average sentence length. This means you'll have to break up long, complex sentences and change them to two, three or four shorter ones. In other words, sprinkle periods over your piece of writing. When you're turning subordinate clauses into independent sentences, you'll find that a lot of them will start with *And*, *But* or *Or*. Don't let that bother you. It's perfectly good English and has been good usage for many centuries. The Old Testament says, "And God said, Let there be light; and there was light." The New Testament says, "But Jesus gave him no answer." And Mark Twain wrote, "Man is the only animal that blushes. Or needs to." So never mind that old superstition. And don't-please don't-put unnecessary commas after your *And's*, *But's* and *Or's*.

Second tip: When it comes to replacing complex words with simple ones, take first aim at words with prefixes and suffixes, like *establishment*, *available* or *required*. Often the best Plain English replacement is a two-word combination like *setting up*, *in stock* or *called for*. If you can't think of a good substitute, use any good thesaurus or book of synonyms. You'll find that there's no complex, legalistic word that can't be translated into Plain English.