Working with
Plain Language

A Training Manual

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Working with Plain Language

6 June 2008

Abstract

Plain language is language that is easy to understand because it matches the reading skill of the audience. This is a brief introduction to the principles of plain language. It also contains guidelines for matching your text with the reading skill of the audience.

Readers' Comments

Please send all comments and suggestions regarding this document to:

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Contents

Chapter 1—Why You Need Plain Language

Plain language is language that everyone in your audience can easily understand.

We use plain language **to close the literacy gap**.

Everyone does not have the same reading skill. Many readers find texts that are too difficult for them to read. With plain language, we attempt to bring the language down to a level more people can easily understand.

Have you ever wondered why some people in an airport terminal are reading and others are not? Do you know people who do not read the newspapers or never go browsing in a bookstore or library?

Sometimes, you might have seen people puzzling over a simple form, like in a government or doctor's office. It might be that they have poor reading skills. Or, they might not be able to read at all.

If you have advanced reading skills, you might not appreciate how difficult texts can be for others that seem easy for you. Most people are not aware of how much we differ from one another in reading skill.

The Literacy Gap

> The literacy gap costs government and business $billions every year.

Everyone has run across texts that are too difficult to read. What happens in those cases?

Unless we are highly motivated, we just give up reading, not even reflecting what just happened. The problem that the text should have solved we take elsewhere. The difficult text lies unread. We have been victims of a literacy gap.

If we are highly motivated, we might ask someone to explain what is going on with the text. We might reach for the dictionary. In today's world, we might pick up the phone and call support or speak to a helpful friend. And that all costs time and money.

It is easy to see how the costs of the literacy gap amount to billions of dollars a year.

If your organization is not using plain language, you are not operating effectively. You are wasting money. Your organization is most likely paying the costs of some of the following:

- Unclear instructions that cause unnecessary support calls.
- Forms and applications that are badly filled in or left incomplete.
- Procedures and regulations that fail to motivate.
- Memos and business letters that require endless clarification.
- Notices, papers, and reports that few people read.
- Press releases that never make the news.

As much as 40 percent of the total costs of managing all business transactions is caused by poor communications. Today's companies waste precious resources on email and websites that don't reach their audience. They often contain large amounts of information that is incomprehensible to large portions of the reading public.

> Simple English is no one's mother tongue. It has to be worked for.
> —Jacques Barzun

The Benefits of Plain Language

One obvious soluton to reducing the effects of the literacy gap is to produce documents that meet the needs of the audience. The benefits of doing this have been well documented.

> Closing the literacy gap with plain language brings down costs and satisfies clients and customers.
>
> It increases reading speed, comprehension, retention, and perseverance.

In 1996, law professor Joe Kimble reported on 25 studies on the benefits of plain language in his paper, "Writing for Dollars, Writing to Please."

The following are a few samples of those studies:

- In 1991, the **U.S. Department of Ve**terans Affairs tested newly written plain-language form letters and found that they reduced support calls from 1.5 per letter to 0.27 calls per letter. Changes in one letter alone saved the Department more than an estimated $40,000 per year.

- A 1995 study reported that a new plain-language software manual issued by General Electric reduced support calls from each customer by 125 a month and saved G.E. between $22,000 and $375,000 for each customer.

- A study by the U.S. Navy concluded that business memos written in plain language could save between $27 and $37 million of their officers' time each year.

- Ground-operation manuals revised in plain language saved Federal Express an estimated $400,000 in the very first year.

- Plain-language revision of 200 forms used by Alberta Agriculture, Food, and Rural Development saved the department a total of Can$3.4 million per year.

- Plain-language revision of re-direction-of-mail forms used by the Royal Mail in Britain saved £500,000 in the first nine months.

- Plain-language reforms carried out by other departments in the British Government in the mid-1980s saved £9 million in the first two years.

You can get a free copy of "Writing for Dollars, Writing to Please" by writing Joe Kimble, Thomas Cooley Law School, P.O. Box 13038, Lansing, Michigan 48901, USA, or kimblej@cooley.edu. The report is also available online at http://www.plainlanguagenetwork.org/kimble.

> "An honest tale speeds best being plainly told"
> — William Shakespeare, King Richard III, Act IV, Scene 4

Chapter 2—How People Read

Our Reading Public

Since the 1930s, surveys of the public and of military personnel have shown that the average reader in the U.S. is an adult of limited reading ability.

The National Adult Literacy Survey, done in 1992, produced these results, which later surveys have confirmed:
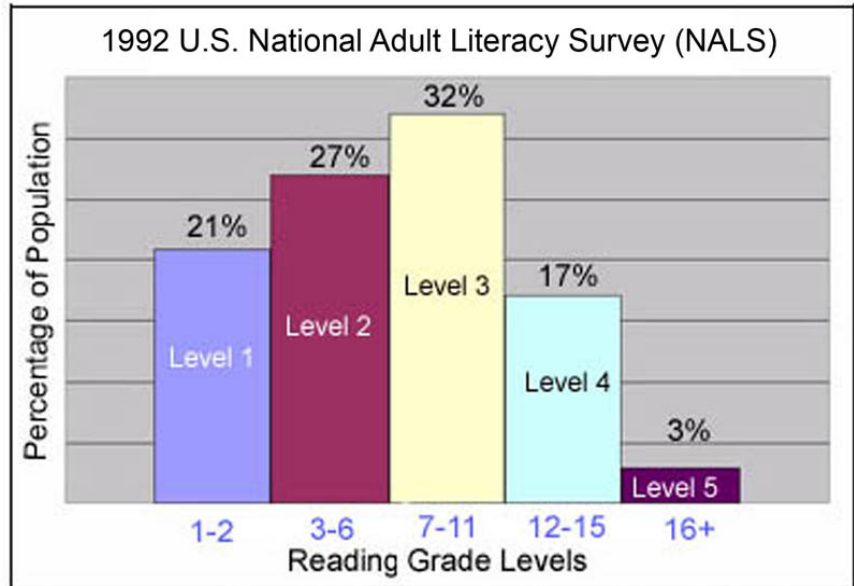
Percentages of U.S. population in each reading level.

The data in this table indicates:

- 45 million adults in the U.S. are in Level 1, defined as "functionally illiterate, not having enough reading skills for daily life."
- Almost 59 million adults are in Level 2.
- The percentage of adults at Levels 1 and 2 (below the 6th-grade level) in the U.S. reaches 48 percent or 105 million adults.
- The largest group is the intermediate readers, grades 7-9 or 70 million.
- 44 million are in the top two groups.

Another survey of young adults found that only 40 percent of young adults 17 to 25 no longer in high school, and 17 years old and in high school, read at a 12th-grade level. Large numbers graduate from high school still reading at the 8th-grade level. More than a fourth of high school students do not graduate at all.

Costs of the Literacy Gap

It is easy to see how the costs of the literacy gap amount to billions of dollars a year.

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As much as 40 percent of the total costs of managing all business transactions is caused by poor communications. Today's companies waste precious resources on email and websites that don't reach their audience. They often contain large amounts of information that is incomprehensible to large portions of the reading public.

Economic Consequences

Adults of different reading skills not only have different worldviews but also different life experiences. Forty-three percent of adults with low-literacy skills live in poverty, 17% receive food stamps, and 70% have no job or part-time job. Over 60 % of frontline workers producing goods have difficulty applying information from a text to a task.

Adults at Level 1 earned a median income of $240 a week, while those at Level 5 earned $681. Seventy percent of prisoners are in the lowest two levels.

Low levels of literacy have caused costly and dangerous mistakes in the workplace. There are other costs in billions of dollars in the workplace resulting from low productivity, poor quality of products and services, mistakes, absenteeism, and lost management time.

Health and Literacy

The Adult Literacy Survey also confirmed the effects of literacy on health care. Since 1974, when health officials became aware of the effects of low literacy on health, literacy problems have grown. A more complex health-care system requires better reading skills to negotiate the system and take more responsibility for self-care.

Using a nationally representative sample of the U.S. adult population age 16 and older, the National Academy on an Aging Society (2002) examined the impact of literacy on the use of health care services. The study found that people with low health-literacy skills use more health care services.

Among adults who stayed overnight in a hospital in 1994, those with low health literacy skills averaged 6 percent more hospital visits, and stayed in the hospital nearly 2 days longer than adults with higher health

literacy skills. The added health-care costs of low literacy are estimated at $73 billion in 1998 dollars. This includes $30 billion for the Level 2 population plus $43 billion for the Level 1 population. The total is about what Medicare pays for doctor services, dental services, home health care, prescription drugs, and nursing-home care combined.

Low literacy is not chiefly the problem of immigrants, the elderly, high school dropouts, or people whose first language is not English. Low literacy is a problem that knows no age, education, income levels, or national origins. Most people with low literacy skills were born in this country and have English as their first language.

One solution to the problem of low literacy of adults is more government and corporate support for adult literacy programs. Workplace literacy programs have cost-effective and lasting results. Another solution is to produce more texts that are written for people of diverse reading skills.

Those with advanced reading skills bring greater resources not only to their work, but to all areas of life. They possess wide domains of knowledge that make them more creative in everything they do. This is why it is important to encourage life-long reading habits. With the practice of reading, even those with low levels of education can achieve high levels of reading skill and knowledge.

New Legal Requirements

Documents today must address audiences of different reading abilities. To expect people to understand texts that require reading skills beyond their ability can be a serious error. Consent forms, legal notices, safety warnings, and internal procedures that exceed the reading levels of clients and employees have become ground for court actions.

Medical-research institutions took note in 1999 when Tampa General Hospital and University of South Florida paid a $3.8 million settlement to a group of women who claimed the informed consent they had signed exceeded their reading abilities.

The plaintiffs cited a law regarding **dignitary harm**, which is compensable even in the absence of other injury. The consent form, they claimed, informed them that they have no meaningful role in the research, because it is something that they cannot understand. Similar cases are pending elsewhere.

Features of Reading Ability

It is important to understand that a person's level of education is not always a good indication of one's reading skill. There are many good readers who did not attend or graduate from high school. There are also many college graduates who do not read well.

Within a 7th-grade class, the reading levels of the students can go from as low as the second grade to as high as the 12th grade. For this reason, good teachers will group students according to their ability and give each group materials suitable for them. One truism of education is that people will not improve their reading ability without texts that match their level of reading ability.

A single company may have employees whose educational levels go from high school dropouts to PhDs. It is important to consider the range of reading levels present. You might have to write at the 7th-grade level to reach all members of your company when writing such things as employees' handbooks and emergency regulations.

According to the research:

1. Documents written at the intermediate (9th grade) level reach the **largest public audience**.

2. **College graduates** read comfortably at the 10th-grade level.

3. **High-school graduates** read comfortably at the 8th grade level.

4. **Health and safety information** as well as consent forms should be written at the 5th-grade level.

5. Nearly **50 percent of the population** reads at the two lowest literacy levels, below the 9th-grade.

6. With enough motivation, people will master texts that are **two grades above** their reading level.

7. They will find texts that are **more** than two grades above their reading level too difficult. They will **stop reading**, without even thinking about it, and do something else.

8. People read most comfortably **two grades below** their reading level. The most popular books are those written at the 7th-grade level.

English as a Second Language

After Chinese, with 1.2 billion speakers, English is the most popular language in the world, with 600 million speakers. Over half of these, however, speak **English as a second language**. We cannot assume that they have the same proficiency as native speakers.

Many language programs in this country and throughout the world teach a simplified, introductory form of the language called Basic English. Those who write for a broad or public audience need to address those who know only Basic English.

Localization

Finally, businesses and other organizations that wish to do businesses with multi-lingual and foreign audiences cannot depend on widespread use of English. They have to **localize** their texts for local languages and customs. Nothing helps more in reducing the costs of localization than clear organization, good design, and simple language in the original document.

Translators do not have the liberty of simplifying what they often recognize is language that is too complex They have to translate what they are given. Creating original texts that are plain and simple not only makes the translation easier and less expensive. It also guarantees that the resulting version will be more clearly understood.
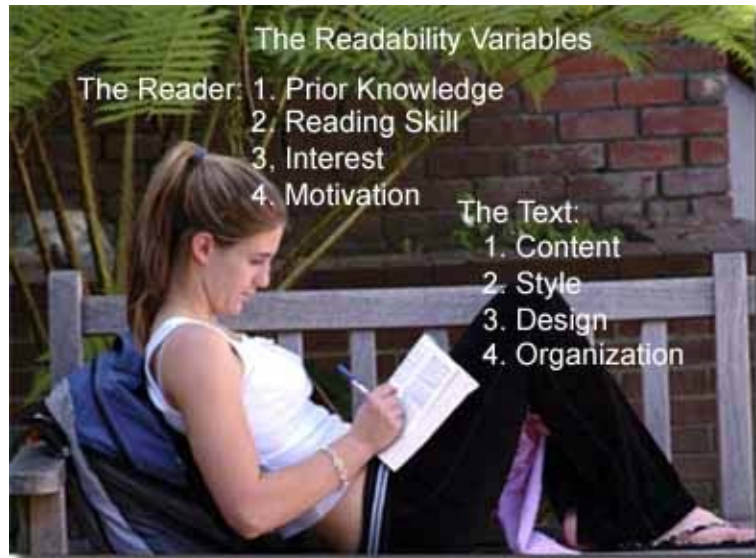
Getting Comfortable with Your Readers

Fig. 1. The reading variables, listed in the order of importance.

The readability of a document directly affects:

- **Comprehension** (understanding)
- **Reading speed**
- **Retention** (amount remembered)
- **Perseverance** (amount of text read).

In other words, the **easier** a text is to read, the **faster** you will read it, the more you **understand**, the more you will **remember**, and the greater the chance of your reading the **whole document**. One of the goals of good writing is to help the reader understand. If the reader cannot understand, what is the use of writing?

We have to remember there are variables (features) in both the reader and the text that affect reading ease.

On the reader's side, readability depends on these variables, listed in the order of importance:

1. **Prior knowledge** (how much the reader knows about the subject before reading the text)
2. **Literacy level** (reading skill)
3. **Interest** (including purpose)
4. **Motivation** (external stimulant such as pay or social esteem)

On the side of the text, readability depends, as we have seen, on these variables, listed in the order of importance:

1. **Content**, the ideas expressed.
2. **Style** of expression and level of readability
3. **Design**, including layout and typography
4. **Organization** and navigational aids.

These are all factors you must keep in mind as you prepare to write anything. The more you know about the prior knowledge, literacy level, and the interest and motivation of your readers, the better you can adjust the content, style, design, and organization to match their needs.

As you might expect, the variables are tightly related to one another:

- The more you know about a subject, the more interest you probably have in it.
- The greater your reading skill, the more general knowledge you will have.
- The content, style, design, and organization of a text work closely together to match the purpose and needs of the reader.
- High interest and motivation can compensate for low reading skill.
- An easier text can compensate for 1. low prior knowledge, 2. low interest and motivation, and 3. lower reading skill.

While we often cannot change the content we have to impart in a text, we can change the style, design, and organization to fit the reader.

While we cannot measure prior knowledge or interest, we can measure the reading skill of our readers. While we usually cannot change the content, we can change the style, design, and organization to more closely match the purpose and needs of our readers.

Getting to Know Your Readers

Here are some questions to ask about your audience:

1. Who are your readers? What do you know about their age, sex, and education?
2. Why will they read this?
3. What are the problems and tasks they face?
4. What is the purpose of this document?
5. What are the language and reading skills of your readers?
6. What do your readers already know about this subject?
7. What is the level of their reading skills? What are their reading habits? What are they currently reading?
8. What is the real-life situation of your readers in which they will access and use information?

Here are methods you can use to learn more about your audience:

- Mail or phone surveys
- Focus groups to learn the emotional reactions of readers and users
- Interviews
- On-site visits
- Marketing and demographic studies
- Analysis of Web-page statistics

Margaret Snyder, an English teacher in college, worked with the adult education program of the University of Virginia. She put together an agricultural bulletin for people of low reading ability. Her approach was to go out, talk to the farmers, and learn from them "the terms and processes for which soil-conservation terms were the labels."

After she returned, she would study her notes, which included the exact phrasing of the farmers' speech. She would write a draft and submit it to the bulletin committee, which always included at least one dirt farmer. She found the farmers' suggestions the most helpful.

The resulting bulletin had an average 6th-grade readability. According to demographic data, this meant that 65 percent of the farmers would be able to read it. A readership sample later showed that 75 percent had read from 6 to 12 of the first 16 issues.[1]

Joann Hackos and Janice Redish, in *User and Task Analysis for Interface Design*, wrote about the need to conduct early on-site interviews:

> That means that you have to observe real users in all their messy reality. You want to observe, listen to, and talk with users at all stages of use, including novices and advanced beginners, not only competent users and experts. You want to see how these real users now do what they do, even if they don't do it efficiently, even if they make mistakes. In fact, you want to see all the errors, workarounds, and problems that they have. That's all information that can help you help them with your new design.[2]

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[1] Synder, M. "Making Technical Material Readable." *General Semantics Bulletin*, Spring-Winter, 1952, pp. 71 ff.

[2] Hackos, J and J. Redish, *User and task Analysis for Interface Design*, New York: Wiley, 1998, 53.

Chapter 3—Assessing Readability

Readability is the ease of reading. Factors such as spelling, line length, interest, grammar, and font selection all affect readability.

Consider these samples:

Original version:

Due to the fact that the plaintiff-appellant had up to this point in time supplied an insufficient number of widgets, defendant-appellee specified that, in the event that an insufficient number was supplied in the future, the contract would be held to be terminated, and deemed to be null and void and of no further effect. (Grade 24)

Plain version:

Because Smith Co. had not supplied enough widgets, Jones Co. said that, if this happened again, Jones would terminate the contract. (Grade 9.4)

Sample 2:

Original version:

Studies show that reading aloud to children, beginning at an early age, is the single most important factor in preventing early reading problems.

Our pediatric staff — along with pediatric staffs of many other hospitals nationwide—believes it has a unique opportunity to intervene during the crucial early years of a child's development. Pediatricians have a special opportunity to promote early, positive book exposure because they see infants frequently in the first two years of life. They are often the only professionals to have repeated, one-to-one contacts with parents during their children's early years. The pediatrician sees the child and parent together at least every two to three months for the first 18 months of the child's life, and every six to 12 months thereafter. (Grade 14.6)

Plain version:

If you want your children to read well in school, start reading aloud to them early in life.

Pediatricians—children's doctors—can help prevent reading problems later in life. They are often the only professionals to have many contacts with you and your child in the first two years. They see both you and your child at least every two to three months for the first 18 months. After that, they see you both every six to 12 months. (Grade 6.5)

There are currently three methods of assessing the readability of a text:

- Text leveling
- Readability formulas
- Cloze tests

The following describes each one of these.

Text Leveling

Text leveling is simply a method of reading a text and subjectively guessing the reading level. You can get better at this skill by carefully studying texts written for different levels of readers.

For example, if you are trying to write for the intermediate readers, you should study books written for middle-school students. Pay close attention not only to the writing style, but also to the organization, design, typography, and format.

Jeanne Chall and her associates (1996) published *Qualitative Assessment of Text Difficulty, A Practical Guide for Teachers and Writers*. It uses graded passages, called "scales," from published works along with layouts and illustrations for leveling of texts. You can assess the readability of your own documents by comparing them to these passages and using the worksheet in the book.

For several samples from this book go to Appendix A on page 38.

The Readability Formulas

The popular readability formulas used today all have a large research base. Educators, teachers, textbook publishers, industry, and government the world over use them for testing the readability of documents. They are useful tools that will improve the readability and comprehensibility of your documents—**if you use them properly**.

Readability formulas predict the difficulty of the text by using these two variables:

- Difficulty of the vocabulary
- Length of the sentence

As they use mainly a word variable and a sentence-length variable, they do not measure other factors of style, organization, or design. You have to be careful using them. The usual warning is, "Do not write to the formula!"

The word and sentence factors used by the formula are tightly correlated with other factors of readability. This means that if you attempt to shorten the words and sentences the text without attending to the other factors, the text is apt to be more difficult than the original.

This means that if you need to increase the readability of the text by bringing down the grade level, you have to create text suitable for that grade. You have to also adjust the tone, voice, organization, format, and design to match the targeted grade level.

To use the readability formulas, you can apply them by hand or buy a computer program that will do it for you. One such program is Readability Calculations available from **Micro Power and Ligh**t:

http://www.micropowerandlight.com

There are several excellent Web sites that will do the job for you and provide the results of the major formulas discussed here:

Words Count:

http://wordscount.ezpublishing.com/beta.html

Okapi:

http://www.interventioncentral.org/htmdocs/tools/okapi/okapi.shtml

Juicy Studio:

http://www.juicystudio.com/fog/index.asp

To read more about the development and history of the readability formulas see this free online paper: "The Principles of Readability" at http://www.impact-information.com/impactinfo/readability02.pdf

Applying the Formulas

The following describes the most reliable readability formulas. Remember that the formulas are only 80% reliable, which means that they should be considered a rough estimate. You must also use your own discretion and judgment. Pay particular attention to other matters besides the vocabulary and sentence length, such as design and organization. These also have a strong effect on readability.

This formula rates text on a 100-point scale. The higher the score, the easier it is to understand the document. For most standard documents, aim for a score of approximately 60 to 70.

Microsoft Word and **Word Perfect** both have a utility for applying one or more readability formulas and generating **readability statistics**.

In Microsoft Word, you can turn on this feature by going to the Spelling and Grammar Page of the Tools/Options Menu and checking "Show Readability Statistics" at the bottom of the page. Microsoft Word then will display the box at the right when it finishes checking spelling and grammar (with F7).

In Word Perfect, go to the **Tools/Grammatik** page and select **Options**. Under "Analysis," check "Readability."

Microsoft Word 2000 has a bug that inaccurately reports the percentage of passive sentences in the Readability Statistics. You can correct this by turning off the passive sentence check in the grammar checker. Take these steps:

1. On the **Tools** menu, click **Options**.
2. Click the **Spelling & Grammar** tab.
3. Under **Grammar**, click **Settings**, and clear (uncheck) the **Passive sentences** check box.

Microsoft Word reports:

- The Flesch Reading Ease Score
- The Flesch-Kincaid Grade Level

Before Office 2003, these two formulas were both defective. The Flesch Reading Ease formula did not report scores below zero. The Flesch Grade-Level formula did not report scores above the 12th grade.

In Office 2003, Microsoft fixed the Flesch Grade-Level formula but not the Reading Ease formula. Also, both formulas in the 2003 Mac versions of Office remain defective.

The Flesch Reading Ease Formula
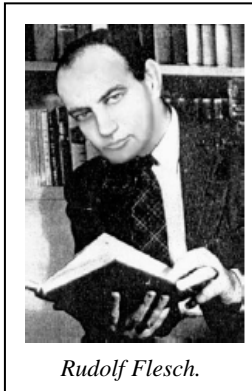
The Flesch Reading Ease Formula, introduced in 1948, is one of the most popular and reliable formulas. It predicts reading ease on a scale from 1 to 100, with 30 being "very difficult" and 70 being "easy." Flesch wrote that a score of 100 indicates reading matter understood by readers who have completed the fourth grade and are, in the language of the U.S. Census barely "functionally literate."

Rudolf Flesch.

The formula for the updated Flesch Reading Ease[3] score is:

Score = 206.835 – (1.015 x ASL) – (84.6 x ASW)

Where:

Score = position on a scale of 0 (difficult) to 100 (easy), with 30 = very difficult and 70 = suitable for adult audiences.

ASL = average sentence length (the number of words divided by the number of sentences).

ASW = average number of syllables per word (the number of syllables divided by the number of words).

The Flesch-Kincaid Grade Level

This formula rates text on a U.S. grade school level. For example, a score of 8.0 means that an eighth grader can understand the document. For most standard documents, aim for a score of approximately 7.0 to 8.0.

The Flesch-Kincaid Grade Level formula in Microsoft Word is does not report scores above the 12th grade. If you need grade higher-level texts, use the Flesch Reading Ease score and apply the grade level from the chart on the next page:

[3] Flesch, R. *The Art of Readable Writing*. New York: Harper, 1949.

Reading Ease Score	Style Description	Estimated Reading Grade	Estimated Percent of U.S. Adults (1949)
0 to 30:	Very Difficult	College graduate	4.5
30 to 40:	Difficult	13th to 16th grade	33
50 to 60:	Fairly Difficult	10th to 12th grade	54
60 to 70:	Standard	8th and 9th grade	83
70 to 80:	Fairly Easy	7th grade	88
80 to 90:	Easy	6th grade	91
90 to 100:	Very Easy	5th grade	93

The Dale-Chall Readability Formula

This formula is considered the most accurate and reliable of all the readability formulas. The original Dale-Chall formula was developed in 1948 for adults and children above the 4th grade. It uses a sentence-length variable plus a percentage of "hard words"—those words not found on the Dale-Chall "long list" of 3,000 easy words, 80 percent of which are known to fourth-grade readers.

You can find this formula in the Readability Calculations program and online on the Web sites listed on page 12.

The Gunning "FOG" Index
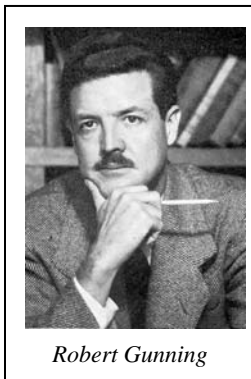
Robert Gunning

The Robert Gunning's FOG Index is suitable for secondary and older primary age groups.[4] It is the easiest formula to apply and one of the most accurate. You can easily apply it manually by taking the following steps.

1. Randomly select at least two paragraphs.

2. Count out a **section of 100 words**.

3. How many **sentences** are in the sample? Divide 100 by the number of sentences to get the average number of words per sentence.

4. Look over the sample again and count the number of words that have three or more syllables, but don't count words that make three syllables because of an additional "ing" of "ed". These are your **"difficult"** words.

5. **Add** the average number of words per sentence to the number of difficult words.

6. **Multiply** this by **.4**.

The number you have left is a rough "grade level" of this section of text.

1-6 elementary level

7-9 junior high

10-12 senior high

13-16 college

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[4] Gunning, R. *The Technique of Clear Writing,* New York: McGraw-Hill, 1952.

17+ graduate level

Worksheet:

1. Count a 100-word sample. Write the number of sentences: _____

2. Divide 100 by the number of sentences: (100/"a") _____

3. Count the number of words with three or more syllables: _____

4. Add "b" + "c": _____

5. Multiply this by .4 = grade level: _____

FOG Index Sample

In the following example, the first version has a FOG index of between 16 and 17, which suggests that it's pitched to an audience of college graduates. The second version has a FOG index of between 7 and 8.

Version 1:

Since general safety conditions are one of the responsibilities you have within your department, we would appreciate your disseminating the following information.

In a recent inspection of all areas the most obvious hazard detected was the manner in which office equipment is placed or used in relation to personnel movement or traffic.

All personnel in your area should be made aware of possible Safety Hazards and take precautionary measures at all times so that a high "Safety Level" may be maintained.

1. Electrical cords on equipment such as typewriters, adding machines, etc., should not be permitted to lie loose on the floor where the possibility of someone tripping over them exists.

2. When not in immediate use, desk and file drawers should be kept closed at all times.

Version 2:

Safety in your department is your responsibility. Please inform your workers of hazards and the remedies for preventing them.

A recent inspection revealed a chief hazard to be office equipment placed in the way of people moving about.

1. Do not permit electrical cords of typewriters, adding machines, and other appliances to lie loose on the floor. Someone may trip over them.

2. Keep desk and file drawers closed when not in use.

The Fry Readability Graph
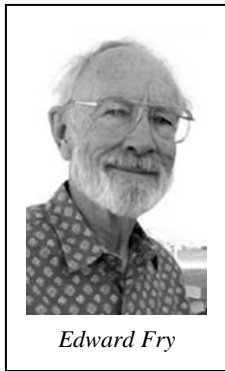
Edward Fry

Edward Fry, while teaching English students in Uganda, created one of the most easy-to-use readability formulas, this one a graph.[5]

The graph shown here determines the reading grade level.

The curve represents normal texts. Points below the curve imply longer than average sentence lengths. Points above the curve represent text with a more difficult vocabulary (as in school science texts). Points that fall in the solid black areas are invalid.

Directions:

1. Select random samples of 100 words.

2. Find y, the average number of sentences per 100-word passage (calculating to the nearest tenth).

3. Find x, the average number of syllables per 100-word sample.

EDWARD FRY'S READABILITY GRAPH

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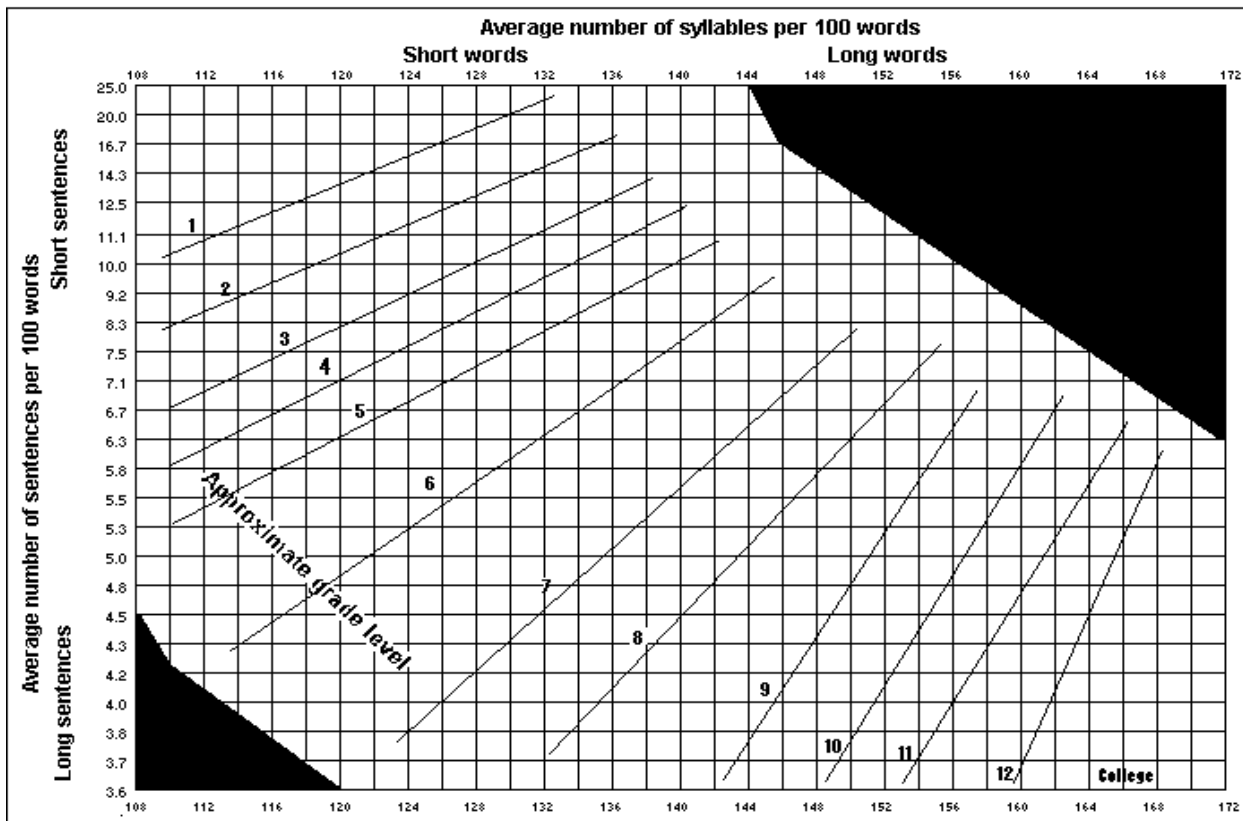
[5] Fry, Edward. *Elementary Reading Instruction*, New York: McGraw Hill, 1977, p.217.

The McLaughlin SMOG Readability Formula

Harry McLaughlin

The SMOG (Simple Measure Of Gobbledygook) is a simple and widely used method.[6]

It allows you to keep the really critical long words—a drug name, for example—and calculate the reading level by skipping that word in the counts. This method takes about five minutes to do on a standard length consent form.

The grade level is accurate to +/- 1.5 grades.

Simply follow these steps:

If the text has 30 or more sentences:

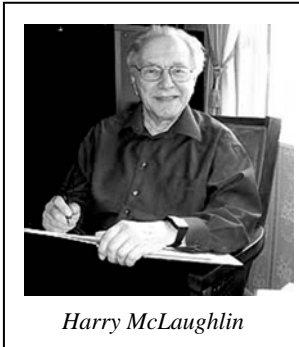1. Count off 30 sentences within the document: 10 consecutive sentences at the beginning, in the middle and near the end of the text. Do not include titles or headings and treat a bulleted list as a sentence.
2. Mark all polysyllabic words (words with 3 or more syllables) in the sample.
3. Count the total number of polysyllabic words.
4. Find the nearest square root of this number.
5. Add 3 to the square root. This gives you the **reading grade level** the person must have to understand the text.

If the text has less than 30 sentences:

1. Count all polysyllabic words in the text.
2. Count the number of sentences in the text.
3. Find the average number of polysyllabic words per sentences: total number of polysyllabic words divided by the total number of sentences.
4. Subtract the total number of sentences from 30 and multiply the remainder by the average number of polysyllabic words per sentence.
5. Add this figure to the total number of polysyllabic words.
6. Find the square root and add 3.

Additional guidelines for using the SMOG

- Consider hyphenated words as one word.
- Pronounce numbers to determine if they are polysyllabic. The number 337 has 8 syllables.
- Count proper nouns.

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[6] McLaughlin, H., "SMOG grading - a new readability formula," *Journal of Reading*, 1969, 22, 639-646.

- Pronounce abbreviations to determine if they are polysyllabic - NF=Newfoundland which has 3 syllables.
- Include all repetitions of the word, no matter how often used.
- Read bulleted lists as a single sentence.

Cloze Tests

In 1953, William Taylor published in the *Journalism Quarterly*, "Cloze Procedure: A new tools for measuring readability."

A cloze test deletes every fifth word from a text and requires the students to fill in the deleted word. The percentage of words correctly filled in are called the **cloze scores**. The lower the score, the more difficult the text. A score of above 50% is considered good for assisted reading in class. Texts for unassisted reading require a higher score.

For a while, there was a lot of excitement about using cloze testing, but it never replaced readability formulas, probably because it required testing on real readers. It did survive, however, as a means of testing the reading-comprehension levels of readers themselves, both students and adults. [7]

To create a cloze test, follow these instructions: [8]

- A cloze test is a reading with selected words that have been deleted and replaced with underlines.
- The key to constructing a **fixed ratio cloze test** is to have more than **50 blanks** in the reading selection. (This increases the reliability of the test).
- Depending on the level of difficulty you want, delete either every **5th** word (in a **250** word reading), **7th** word (in a **350** word reading), or **9th** word in a **450** word reading).
- Do not use a passage that refers back to a previous reading. (It will contain several "these" and "those" if it does.)
- To score the cloze, count all of the words that are **semantically and syntactically correct** (that is, the right word in the right form, number, person, tense, voice, etc.) Do not count spelling.

    50-60% correct = independent level

    35-50% correct = instructional level

    below 35% correct = frustration level

- These tests are appropriate for intermediate and advanced readers.

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[7] Chall, J. and E. Dale. *Readability Revisited. The New Dale-Chall Readability Formula*. Cambridge, MA: Brookline Books, 1995, p. 85.

[8] Anonymous, "Close Tests" from "English Language Learners and Learning Difficulties," Web site of the Graduate School of Education, George Mason University: http://gse.gmu.edu/ell-ld/ELL-LDcloze.shtml accessed 5/1/02.

Chapter 4—Creating a Readable Style

A readable style is one that matches the reading level of your readers.

To create a readable style, **study carefully other publications that target the same reading level.** Use them as models for language, illustrations, approach, and design.

Then take these steps:

1. Write your text first, keeping in mind the textual style and other features familiar to your audience.
2. Test your text with a readability formula.
3. Revise your text using the best practices of good writing (described below) as they apply to the reading level of your audience.
4. Retest with the formula. If not satisfactory, repeat 3.
5. Always have an editor go over your text. Ask peers friends and members of the target audience to collaborate with you. The more input you seek, the better the match will be.
6. If possible, test it on the audience.

The following are the main methods of adjusting the style of your writing to the reading skill of your audience:

1. **Use short words**. In English, basic Anglo-Saxon words are the easiest to understand because they are the first words we learn. Longer words tend to be those derived from Latin and French sources.

2. **Use short sentences**. Use simple sentences in subject/verb/object order. Superfluous, unnecessary words introduce ambiguity and error. Finding the right words always results in fewer words. Change complex sentences to simple ones.

3. **Use the active voice**. Make the agent or actor the subject of the sentence. The passive constructions are often the cause of dangling modifiers and other ambiguities. Jefferson D. Bates, in *Writing with Precision: How to Write So That You Cannot Possibly Be Misunderstood*[9], writes that the passive voice is the biggest obstacle to clear English.

4. **Use simple action verbs** instead of phrases to describe an instruction or event. For example, use "To seal, moisten, fold, and press the flap," instead of, "To seal, apply moisture, fold, and apply pressure."

5. Use the **imperative mood** for instructions. Do not express **requirement** with verbs with moral connotations such as **"may**," **"allow**," or **"should"** or **"must**." Instead use **"require**" and state

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[9] Bates, J. *Writing with Precision: How to Write So That You Cannot Possibly Be Misunderstood*, Washington, D.C.: Acropolis Books, 1980, 20.

the source of the requirement (e.g., "The program requires..."). If you can, use the imperative mood. See "The Imperative Mood" below.

6. **Avoid noun clusters**. Break up noun clusters—long strings of nouns and adjectives that lack cues indicating how they are related, such as, "broadband initiative sales team." Break up clusters with adjectives, possessives, prepositions, and hyphens. Learn the rules for hyphenating unit modifiers. Nouns used as adjectives are sometimes difficult to translate into other languages.

7. **Eliminate jargon**. Do whatever you can to reach everyone in your audience. Give descriptions of difficult terms.

8. **Emphasize what is important**. Use the techniques of thematic and topical stress to keep your reader and your text on track.

9. **Address cultural issues**. When writing for a bigger audience, you have to deal with cultural and language issues.

10. **Collaborate** with fellow workers and editors to decrease the literacy gap.

Learning to write plain language is not easy. It takes method and lots of practice. Nothing is more difficult than writing for readers not of one's own class. Good writers are often excellent readers. They find difficult texts easy-to-read and do not realize how difficult their writing is for others to read.

It is easy, however, to recognize a plain-language style. For a reader eager to learn a skill or master a process, a well-crafted document in plain language can be a real joy.

The following sections discuss the main features of the plain style in more detail.

Use Short Words and Sentences

Research over the last 70 years has consistently shown that the difficulty of the vocabulary and the average length of sentences are the strongest indicators of reading difficulty[10]. This finding is based on our ability to use more difficult words and sentences as we read more and improve our reading skill.

While good teachers and editors have long taught the importance of brevity and conciseness for a readable style, these lessons are often forgotten in the workplace. The professions and business especially have favored long words and complex sentences, forgetting that general audiences do not.

Long words and complex sentences often fail to communicate as well as short words and simple sentences. Good editors often reduce the size of a

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[10] Chall, J.S. and Dale, E. *Readability Revisited, The New Dale-Chall Readability Formula*. Cambridge, MA: Brookline Books, 2000. p. 83. Toppins, A. D. "Great Truths in Small Words: Can More Be Said with Less?" *English Journal*; v76 n3 Mar 1987. p31-32.

text by a third. They know that wordiness is an obstacle to clarity and precision.

To make a sentence more effective, reduce it to one idea. Long sentences can confuse readers with too many ideas. Reducing the number of words is an important goal of effective writing. Sentences destined for the general public should have an average length of less than 20 words.

Short words and sentences contribute to:

1. Conciseness
2. Readability

The Case for Short Words
by Richard Lederer

When you speak and write, there is no law that says you have to use big words. Short words are as good as long ones, and short, old words—like *sun* and *grass* and *home*—are best of all. A lot of small words, more than you might think, can meet your needs with a strength, grace, and charm that large words do not have.

Big words can make the way dark for those who read what you write and hear what you say. Small words cast their clear light on big things—night and day, love and hate, war and peace, and life and death. Big words at times seem strange to the eye and the ear and the mind and the heart. Small words are the ones we seem to have known from the time we were born, like the hearth fire that warms the house.

Short words are bright like sparks that glow in the night, prompt like the dawn that greets the day, sharp like the blade of a knife, hot like salt tears that scald the cheek, quick like moths that flit from flame to flame, and terse like the dart and sting of a bee.

Here is a sound rule: Use small, old words where you can. If a long word says just what you want to say, do not fear to use it. But know that our tongue is rich in crisp, brisk, swift, short words. Make them the spine and heart of what you speak and write. Short words are like fast friends. They will not let you down.

The title of this essay and the four paragraphs you have just read are wrought entirely of words of one syllable. [11]

(Flesch Reading Ease score = 100.92)

In her book on writing, Dianna Booher says, "Writing long sentences is like adding water to tea; the more words, the weaker the message." [12] Writing effectively exploits the structure of the sentence:

Subject→Verb→Object

Whatever gets in the way of the relationships between subject, verb, and object weakens the force of the sentence. Brevity is not only the soul of wit; it is the soul of good writing. Consider common sayings like:

- Many hands make light work.
- A stitch in time saves nine.

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[11] Lederer, R. *The Miracle of Language*, New York: Pocket Books, 1991, 30-31.

[12] Booher, D. *E-Writing: 21st-Century Tools for Effective Communication.* New York: Pocket Books, 2001.

- Familiarity breeds contempt.
- Haste makes waste.

Because they are concise and to-the-point, they are part of our language.

Good writers know that effective style does not attract attention to itself but is transparent and simple. Good editors know that the meaning is often buried under too many words. By reducing the number of words, they bring the meaning to the surface.

Besides using the active voice and action verbs, you can increase conciseness by:

a. Avoiding too many adjectives and adverbs.

b. Eliminating redundant ideas, words, phrases, and clauses.

2.   Avoid too many adjectives and adverbs

For narrative writing, teachers tell us to use verbs to describe characters and emotions instead of adjectives and adverbs.

Original:

John was very kind, but slow to react.

Better:

John stood there, trying to figure out how to help.

In plain language writing, the same principle holds true. To describe an action, adjectives and adverbs often get in the way. Notice the way adverbs and adjectives weaken the meaning of these examples.

Original:

You probably should go see the doctor.

Better:

Go see the doctor.

Original:

Following these important steps will surely provide a good solution to your problem.

Better:

Follow these steps to solve your problem.

Original:

When all your reports are turned in, they will be properly evaluated on a truly comparative basis.

Better:

After you turn in your reports, we will judge them by comparing them with one another.

Eliminate redundant ideas, words, phrases, and clauses

Good writing means trimming the fat. Redundancies and padding indicate careless thinking and reduce the strength of your writing. Not all repetition is bad. Unnecessary repetition, however, has no place in good writing.

Here are some examples:

subject matter few in number round in shape red in color add together	goals and objectives separate and distinct plan ahead refer back to repeat again	facts and figures time of day continue to remain open up start out
alternate choices desirable benefits honest truth basic elements main essentials serious crisis	conclusive proof true facts honest truth close together end result current status	foreign imports any and all as a general rule in actual fact equally as well in two equal halves
if at all possible with a view toward for the purpose of with the result that by the same token	for the reason that by means of in conjunction with in all other cases in the vicinity of	at the present time at an early date whether or not a large number of in the very near future

Use the Active Voice

The passive voice is an important feature of English. Its overuse, however, is a feature of poor writing.

In the passive voice, the subject is the recipient of the action. In the active voice, the subject is the doer of the action.

Examples of passive voice:

> John was hit by the ball.
>
> The reports have been determined to be false.
>
> The players were shocked by the decision.

Active voice:

> The ball hit John.
>
> City officials determined the reports were false.
>
> The decision shocked the players.

Traditionally, academics, lawyers, engineers, and bureaucrats have favored the passive voice. They often use the passive voice because of a mistaken need to be impersonal and "objective." But mostly they use it out of habit.

The passive voice usually results in longer sentences than the active voice.

The main problem with the passive voice is that the actor or agent is often left out of the sentence, giving the impression that events happen in a vacuum. The passive voice leaves reader to wonder who the actor is. For example:

> The form should be filled out by Monday.

Take this description from a VCR manual:

> As the OSD button on the remote is pressed the sequence of overlays shown below will be displayed as long as the arrow appears in the lower right (for about the first 5 seconds). After

the arrow disappears, the display will remain on the TV screen until it is removed by the next press of the OSD button.

It is not clear how the reader should take part in this activity. Also, the text fails to state the relationships between causes and effects. Does pressing the button display the arrow or does something else do it?

Fixed:

Pressing the OSD button on the remote displays the sequence of overlays shown below (and the arrow in the lower right) for about five seconds. After that, the display remains on the TV screen until the next time you press the OSD button.

Significant research has shown that in English the active voice is always easier to read. Readers are consistently more accurate in verifying information in active-voice constructions.[13] The human brain is a problem-solving machine that searches for cause-and-effect relationships. It looks for an actor or agent.

A good rule of plain language is:

Make the actor or agent the subject of the sentence.

The passive voice often leads to other problems such as misplaced modifiers. Consider this sentence:

A 30-year-old man was found murdered by his parents in his home late Saturday.

The problem with the previous sentence is that there are two passive words, "found" and "murdered." It is not clear which passive word "by his parents" modifies. One solution would be:

The parents of a 30-year old man found him murdered in his home late Saturday.

Passive constructions also lead to dangling modifiers, as in:

Feeling completely hopeless, the project was abandoned.

Better:

Feeling completely hopeless, we abandoned the project.

Original:

He was handcuffed without reading his rights.

Better:

The officer handcuffed him without reading his rights.

Original:

This button is used to open the Setup menu.

Better:

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[13] Clark, H. H. and S. E. Haviland. "Comprehension and the Given-New Contract." In R. O. Freedle (Ed) *Discourse Production and Comprehension*. Norwood NJ: Ablex Press. 1977, pp. 1-40. Hornby, P. A. "Surface Structure and Presupposition." Journal of Verbal Learning and Verbal Behavior, 13, 530-538. 1974.

This button opens the Setup menu.

Best:

Press this button to open the Setup menu.

The passive voice also weakens the force of the sentence.

Original:

This line is used to mark the end of the table.

Better:

This line marks the end of the table.

Original:

The Real-Time program is called by the dispatcher.

Better:

The dispatcher calls the Real-Time program.

Original:

When the F5 key is pressed, the main menu appears.

Better:

"The F5 key displays the main menu."

Best:

"Press F5 to display the main menu."

Be brave. Show responsibility. Make the agent or actor the subject of your sentence. Show the connection between cause and effect.

Use Action Verbs

To describe actions (how things work), use **action verbs.**

Something that contributes wordiness in descriptions is the **nominalization** of verbs: using a noun and a weak verb rather than an **action verb**.

There was a time when U.S. Air Mail sheets read, "Moisten flap, fold, and apply pressure to seal." The first part of the sentence, "Moisten flap well, fold" uses direct and strong verbs. The second part, "apply pressure," is a weakened version of "press." A better version would say, "Moisten flap, fold, and press to seal."

Original:

All telephone systems now have the access capability to utilize system speed call numbers for frequently called numbers.

Better:

All telephone systems now use speed-call numbers to access frequently called numbers.

Original:

All functions described here will be available for use with the Phase 1 feature set.

Better:

> The feature set of Phase 1 includes the following functions.

Substitute action verbs for nominalized verbs, as shown here:

Weak verb	Action verb
provides support for	supports
provides management for	manages
gives a description of	describes
does an assessment of	assesses
handles execution of	executes
allows creation of	creates
provides power control of	controls power of
takes action	acts
gives permission for	permits
conveys the meaning of	means
is helpful for	helps
enables resolution of	resolves

Use the Imperative Mood for Instructions

For instructions, use the **imperative mood**: "Take this and do that."

The words "must," "should," "shall," and "have to" are really passive verbs that mean, "is obligated." As with all passives, they leave the subject– in this case the source of the requirement–out of the sentence. Such verbs, along with "permit," "allow," "can," and "may," often weaken the force of the requirement.

Original:

> The entry points must be used in protected mode (or, "You must use the entry points in protected mode.")

Better:

> Protected mode requires the use of entry points.

Best:

> In protected mode, use entry points.

Original:

> A set of standard connectors must be provided for each joint.

Better:

> Each joint requires a set of standard connectors.

Best:

> Supply a set standard connectors for each joint.

Original:

> This password permits the database to be accessed.

Better:

> This password accesses the database.

Best:

Use this password to access the table.

Use the verb "require" (with an appropriate requiring subject) to express requirement. Or better, use the **imperative mood**. It is direct and personal without being familiar or patronizing.

Examples of the imperative mood:

- Remove the backing from the label.

- Fill out the form and mail it back to us.

- Mix ingredients thoroughly.

- Stop exercising if you feel faint or dizzy.

A "Take this, and do that" approach is often the best way to help a reader accomplish a task. In English, the imperative form of the verb is like the infinitive. It is the simplest form of the verb. You can replace "should," "shall," "must," "be sure to," and "have to" with the imperative form of the verb.

Examples:

Remove the label from its backing. Place it on the space provided on the upper right corner of the license. Press firmly.

Turn the knob clockwise several times and stop at the first number. Then turn the knob counter-clockwise past the first number to the second number. Finally, turn the knob clockwise to the third number. Open the lock.

Empower the reader to act without having to guess what to do.

Get It Right

"The difference between the right word and almost the right word is like the difference between lightning and a lightning bug."
— Mark Twain

Avoid Noun Clusters

Another obstacle to clarity is a noun cluster, several nouns in a string. Noun clusters result from using too many nouns as adjectives to modify other nouns. Readers have a hard time figuring out the relationships between words.

Original:

> The numerous drug rehabilitation, crime prevention, and **job training program design strategies** have not yielded good results.

Better:

> Our many strategies for designing programs for drug rehabilitation, crime prevention, and job training have not yielded good results.

Original:

> **Humpback whale group instinct travel behaviors** are very complex.

Better:

> Because of the group instincts of humpback whales, their traveling behaviors are very complex.

Original:

> End User Satisfaction

Better:

> End-User Satisfaction (The hyphen creates a unit modifier) or
>
> The Satisfaction of End Users (The preposition indicates the relationship) or
>
> Satisfied End Users

Like other Germanic languages, English allows the use of **nouns as adjectives**. At first, this seems like a good idea, but it creates a lot of problems.

All of the following phrases seem to have the same meaning:

> A wooden chair (adjective)
>
> A chair of wood (prepositional modifier)
>
> A wood chair (noun used as an adjective)

The problem with the third example is that the reader has to supply the relationship between "wood" and "chair." While not a problem here, it often becomes a problem, especially when you group together more than two nouns, a practice resulting in noun clusters**.**

Original:

> Resource starved engineer device protocols

This might mean the following, but we are never sure:

> Device protocols for resource-starved engineers

Original:

> The tier two seasonal broken ice regulation meeting

This could possibly mean:

> The tier-two meeting for discussing seasonal regulations for broken ice

Noun clusters create blocky sentences that read like slogans or headlines. They can be impossible to read and translate.

To clarify the relationships between nouns, use the following methods:

- Use **prepositions** (for example, to, of, by, for, with, etc.)
- Use the **possessive case** (for example, "the company's interest")
- Hyphenate **unit modifiers** when they precede the noun they modify

A unit modifier consists of two or more nouns (or a noun and an adjective) that together modify something else.

Examples:

> Ten-year campaign
>
> Small-business incentives
>
> Community-based policing
>
> End-of-year sale

The general rule for unit modifiers is:

Hyphenate a unit modifier when it comes in front of the noun it modifies.

All style authorities agree that using the hyphen to break up noun clusters is one of the most helpful aids to reading. It not only ties together the two or more words to make them a unit modifier, it also lets the reader know that they modify the noun that follows.

In the first example, "word-length registers," the hyphen not only ties "length" to "word" but also signals the reader that the couplet modifies the word that follows.

Note: Unit modifiers do not require the hyphen when they come after the noun they modify, as in "the registers are word length."

Other examples:

- 21st-century advantages
- Old-time costumes
- One-night stand
- Read-and-write commands
- 24-bit color
- Speed-dependent values
- Year-old colts
- First-love romance

The following examples are also correct because they do not contain unit modifiers. Each of the modifiers correctly stands by itself in modifying what follows:

- Employee fire procedures (fire procedures for employees)
- Regulated aircraft parts (aircraft parts that are regulated)
- Specified wedding guests (specified guests of the wedding)
- Buffered data attributes (data attributes that are buffered)

Define Difficult Terms

Remember that difficult words are often necessary. What defines readability is the **average** number of difficult words. So, you can use some, depending on the reading level. Define difficult terms well. Then use them frequently in the same document in different contexts.

Emphasize the Important Things

Good writing means keeping the important points clearly in mind. This emphasis, keeps the reader focused and eliminates unnecessary details. It also moves the flow of information from the familiar to the unfamiliar, from the known to the unknown.

Above all, keep the reader interested.

Document Design

Study the design features of the reading preferences of your audience.

Chose the Right Medium

Document design includes selecting a suitable medium and how best to deliver the information. The different media include:

- Printed book or booklet
- Memo
- Website or Web page
- Online help
- Flip chart
- Flyer
- Newsletter
- Video

- Computer-aided instruction
- Any combination of the above

Do not put off the choice of medium. It directly affects the content, organization, layout, and tone of the document. What you write for a book, for example, cannot easily be converted to video or a Website at the last moment. The sooner you decide the medium, the sooner you can develop prototypes for the go-ahead you need to start development.

In all cases, consider the reading level of the readers, their reading habits, there situation, and how they will use the text. This should influence your choice of paper, typeface, size of the document, and its binding. For instance, can the document be perfect bound or does it need to lie flat on a desk?

Design secondly includes all the other aspects of the document appearance, what some authorities call the **presentation** or **representation** of the text:

- Typography
- Format, the arrangement of elements on the page
- Margins and borders
- Line length
- Illustrations and captions
- Headings
- Headers and footers
- Callouts

Questions to ask about the editorial design of your document (or Website):

1. Does the design conform to the reading habits and expectations of your audience?
2. Is the appearance professional and appealing?
3. Are your table of contents, titles, headings, and subheadings appropriate for the grade level?
4. Do you have navigational aids such as table of contents, index, and search methods appropriate for the grade level?

Editorial design used to be the job of typesetters, graphic artists, and printers. It is now the responsibility of the writer. You can best learn layout by studying popular commercial books and periodicals designed for specific grade levels.

Illustrations

Good illustrations, like good tables, diagrams, and flow charts, not only break up the text, they also draw the reader into the text. They also inspire confidence in the writer's expertise and competence.

Use the following guidelines:

1. Design is always a function of the document's objectives, organization, rhetoric, and cognitive strategies. It should always indicate how the textual and graphic elements are related to one another.

2. With illustrations, exercise regard for local customs as well as the grade level. The use of bodily gestures, especially of the hands, can cause problems for different audiences. It does little good to add illustrations for decoration only. To be effective, they have to be well integrated with the text and explained in the text.

3. For maximum readability, keep the length of the paragraph lines short. Shorter lines are easier to read. The length of the line depends on the size of the typeface. For a 10-point Times Roman, limit the length of the line to 75 characters. Lower grades require shorter lines.

4. Use only one or two typefaces for text and headings. Use Italic only for the names of books and publications. Use bold for emphasis, and don't use it too much.

5. Keep the denser part of the page toward the middle and bottom of the page. Study the arrangement of graphical elements in magazines and newspapers.

5. Use pictures, charts, and other graphics when you can to illustrate statistical, geographical, and visual information. Locate them near the text they illustrate.

Designing Forms

Forms are often difficult to understand and fill out. Bad forms create unnecessary burdens for both users and organizations.

Forms require the same plain-language methods as other documents. Pay special attention to audience, purpose, and brevity. Study what makes forms work or not work. Also remember these points:

1. Make the form easy for the user, not for the organization.
2. Make the form look appealing and easy to use.
3. Request only information that is absolutely required.
4. Design the form with plenty of space for handwriting.
5. Do not use little boxes for individual characters.
6. Limit each form to one purpose only.
7. Do not require more information than is actually needed.
8. Do not use all-capital characters for warnings or notices.

For more information, see *How to Create Forms That Get the Job Done* by Carolyn and Rich Bagin.[14]

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[14] Bagin, C. and R. Bagin. *How to Create Forms that Get the Job Done*, Blackwood, NJ: Communication Publications and Resources, 1993.

Organization

Organization is another important feature of readability. The younger the audience, the less familiar it is with the subject matter, and the lower the level of its reading skills, the more important organization is. Advanced readers can usually tie things together and figure out the organization; but poor readers need more help with it. For them, it has to be much more explicit.

Organization is something the writer or speaker must create for each audience. The common approaches include:

- Hierarchical outline
- Narrative–tell a story, with the important stuff at the end
- Inverted pyramid, with the important stuff at the beginning.
- History and background
- Procedures and processes
- User tasks and instructions
- Question and answer
- Alphabetical listing
- Problem and solution

You can often combine organizational schemes, for instance by giving history or problems and solutions in an introduction, and then treating of remaining items in a hierarchical or procedural structure.

The following explains the three common forms of organization,

A. The hierarchical outline

B. The inverted pyramid.

C. Procedural instructions

The Hierarchical Outline

The hierarchical organization uses the outline method for its headings. You can use headings I, II, III, and so on for the top levels, and indented headings A, B, C, and so on for the next levels, and 1, 2, 3, and so on for the next levels.

In its style guide for computerized word processing, Xerox promoted the outline method using indented headings. Microsoft Word later adopted this method in its default heading styles.

The Inverted Pyramid

Today, **business writers** and **journalists** use the **inverted pyramid** and put the most important points first. The traditional, "once upon a time," narrative starts with the introduction, builds up, and saves the best part for the conclusion. The inverted pyramid reverses this and starts with the conclusion. It then gives the supporting details in the order of descending importance. This arrangement gives the readers more control over the text by letting them decide earlier whether or not to continue reading.

Diane Booher demonstrates the inverted pyramid arrangement in her M A D E method for business letters:

M   Message—actually the conclusion: "We have reviewed your application and have decided to award you the grant…"

A   Action—what we will do and what we expect you to do: "The Secretary will contact you the next few days to arrange a meeting…"

D   Details—the steps leading to the conclusion: "What convinced us to take this action was your emphasis on community action…"

E   Evidence—attachments, citations, references, and copies.

Booher emphasizes that many situations justify changing the order, as in the case of negative responses (e.g., "We are denying your request"), apologies, directions, transmittals (the enclosure is the message), and procedures.

How to Write a Business Letter

Business letters should turn people on rather than turn them off. To write a good business letter, know what the goal is before starting to write, call the reader by name, tell what the letter is about in the first paragraph, refer to dates when answering letters, and write from the reader's point of view.

Be positive, be nice, and be natural. Don't be cute or flippant, but don't be afraid to display a sense of humor. Be specific. Lean heavier on nouns and verbs and lighter on adjectives, and use the active voice instead of the passive voice.

Make the letter visually appealing. Keep it short, use underlining and indentation for emphasis, and make it perfect. Make the meaning crystal clear, use good English, don't put on airs, don't exaggerate, distinguish opinions from fact, and be honest. Edit ruthlessly.

Use the last paragraph to tell the reader what is anticipated as a follow-up. Close with something simple and sign legibly.

—Malcolm Forbes, 1981

Procedural Instructions

Task-oriented instruction manuals can go from simple to complex tasks. As these manuals arrive at more complex tasks, they often offload those instructions to a Website or online reference, thereby reducing the size of the text. Once readers have mastered easy tasks, they will return to master the hard ones.

Use the organization to make plain how the tasks:

- Are broken up into manageable chunks.
- Consist of a finite number of doable steps with a beginning and an end.
- Are within the abilities and time constraints of the reader to learn.

Clear organization is the best way to give the readers that assurance.

Collaboration

Another way of increasing the success of your document is to exploit the knowledge of your editor and fellow workers. Research shows that the more people there are working on a document, the closer it will be in meeting the needs of the readers and matching their reading ability. A single vision of the audience is always very limited. We expand that vision by working with others.

Networking

Nothing is more important for a writer than a network of resource persons. They contribute in many ways to the success of a document. Subject-matter experts, designers, managers, testers, peers, editors, attorneys, and members of the targeted audience all have a contribution to make.

Nothing contributes more to the smooth progress of a project than keeping all the participants and sponsors well informed and feeling appreciated. Like the conductor of an orchestra, the writer is center stage, directing the activities of others, and moving the project to a conclusion. And like the conductor, the writer needs to have an understanding of everyone's part.

Editing

During development, it is natural to seek the advice and help of others. After the first draft is completed, the document requires an editor.

No document is finished until a second set of eyes has given it a critical review. Why? Writing and reading are two different activities. Reading is a very creative skill that brings one's own experiences to the text. Editors are the first readers. They are able to spot problems and ambiguities that the writer missed.

New writers are often surprised when their manuscripts often undergo several revisions on their way to completion. Changes can result from the many issues that affect the reader's response to a document, such as:

- Safety
- Completeness
- Accuracy
- Organization
- Clarity
- Grammar, Spelling, and Punctuation
- Cultural Issues
- Voice and Tone

Testing

Consider testing a rehearsal to get the bugs out and fine tune the document before putting it before the audience.

Test your documents before publication to make sure they accomplish their objectives. Never establish an objective of the document without

planning a test for it. The objective and the test for it are the only way to establish success.

Testing is an activity that should take place at every step. During the planning phase, you can test your prototype document, preferably on actual members of the target audience. The earlier a document is tested, the more time is saved later on.

If possible, have readers test your document before publication. Observe them using it. Remember that testing is not a substitute for careful planning and editing. It supplements them. Testing provides a final form of discovery of problems.

Although testing is often expensive, whatever testing you can do, before, during, and after development, will greatly contribute to its success. The larger the audience, the more formal the testing should be. Documents intended for the general public deserve to be tested extensively.

Questions to ask about testing:

1. Do you have a way of establishing the effectiveness of your document before it is published?
2. Does the document achieve its stated objectives?
3. Can you find out how the document works in different environments?
4. Have you lined up the personnel and other resources for conducting tests?

There are several different kinds of tests:

- **Read-through tests** by the writers or peers ensure that the information is technically complete and correct. This is perhaps the most common type of test.

- **Reading protocols** in which a member of the target audience reads the text out loud and is encouraged to articulate difficulties. Record the reader's statements and reactions.

- **Engineering reviews** by engineers provide a technical validation.

- **Usability tests** are used on texts designed to help a reader through a task, such as using a computer program. Tasks such as these often require skills other than reading.

- **Readability tests** determine the appropriateness of the style for the audience. See the previous chapter.

Remember it is immensely more helpful to discover and correct problems before publication, not after.

Evaluation

Evaluation measures the success of your document. This includes not only the mistakes you have made along the way, but also the effects on the readers. Does the document accomplish its purpose?

Evaluation should include a record of the project, the insights you gained, the problems you solved, and the problems that are still unsolved.

Concluding the project means first finding out how well it serves the needs of the audience. You can set up some methods of getting user evaluation of the final product, such as:

- Include audience feedback forms with the publication.

- Review support calls relating to the publication.

- Visit or contact customers and clients who have been using the publication.

- For Websites, analyze the usage statistics and use feedback forms.

Try to learn more about what your audience expects from your publications.

Mangled Meanings

The following are examples of dangling modifiers:

- Yoko Ono will talk about her husband, John Lennon, who was killed in an interview with Barbara Walters.

- Do not sit in a chair without being fully assembled.

- Two cars were reported stolen by the Groveton police yesterday.

- As a baboon who grew up wild in the jungle, I realized that Wiki had special nutritional needs.

- Locked in a vault for 50 years, the owner of the jewels has decided to sell them.

- The patient was referred to a psychiatrist with a severe emotional problem.

The following are examples of poor references, usually caused by misuse of pronouns:

- After Governor Baldwin watched the lion perform, he was taken to Main Street and fed 25 pounds of raw meat in front of the Cross Keys Theater.

- About two years ago, a wart appeared on my left hand, which I wanted removed.

- Guilt, vengeance, and bitterness can be emotionally destructive to you and your children. You must get rid of them.

--Richard Lederer in *Anguished English*

Appendix A—Sample Grade-Level Texts

The following samples are taken from *Qualitative Assessment of Text Difficulty, A Practical Guide for Teachers and Writers* by Jeanne S. Chall, Glenda L. Bissex, Sue S. Conard, and Susan Harris-Sharples. [15] You can use them to compare with other texts for a subjective measurement of their difficulty.

Grade 1

A train! A train!

A train! A train!

Could you, would you,

On a train?

Not on a train! Not in a tree!

Not in a car! Sam! Let me be!

I would not, could not, in a box.

I could not, would not, with a fox.

I will not eat them with a mouse.

I will not eat them in a house.

I will not eat them here or there.

I will not eat them anywhere.

I do not like green eggs and ham.

I do not like them, Sam-I-am.

> From *Dr. Seuss, Green Eggs and Ham* [16]
>
> Flesch Reading Ease: 100
>
> Flesch-Kincaid Grade Level: 0

Have you ever visited a pond? The water is still. The air is quiet. You can hear a buzz.

Something is flying by. Splash! A shadow moves under the water. Many things are happening here.

A green frog is sitting on a green plant. Can you see it?

It is hard to see a frog when it sits still. How does a frog's color help it?

A frog can swim in the water. It can also hop on land.

> From *Heath Science* [17]

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[15] The following texts are quoted in Chall, J. S.; Bissex, G. L.; Conard, S. S.; & Harris-Sharples, S. H. *Qualitative Assessment of Text Difficulty: A Practical Guide for Teachers and Writers*. Cambridge, MA: Brookline Books, 1996, pp. 20-45.

[16] Dr. Seuss. *Green Eggs and Ham.* New York: Random House Beginner Books, 1960, pp. 33-34.

> Flesch Reading Ease: 99.3
>
> Flesch-Kincaid Grade Level: .1.1
>
> Fog Grade Level: 3.3
>
> Smog Grade Level: 5.5
>
> Fry Grade Level: 1

Grade 2

Farley lived next door to Grover's garden. He looked out his window and watched Grover planting seeds. Farley called out:

"Hi, Grover! Can I help you plant those seeds?"

"Why certainly, little Farley! Do not forget to wear a sweater," said Grover. "It is just a little bit cold outside today."

Farley took out his favorite sweater. His grandmother had made it for him. Farley started to put on his sweater. Something was wrong! The hole in the top was too small for his head. The sleeves were too tight. The front of the sweater only came down to the middle of his stomach.

> From *Sesame Street Magazine* [18]
>
> Flesch Reading Ease: 88.1
>
> Flesch-Kincaid Grade Level: 2.7
>
> Fog Grade Level: 4.3
>
> Fry Grade Level: 2

Grade 3

Most amphibians lay their eggs in the spring. Most of them lay their eggs in the water.

The female frog lays lots of eggs. Each one has a ball of jelly around it. The eggs float in clumps on the water. The egg clumps are called spawn.

At first the eggs have no eyes or mouths. After a few days the eggs turn into tadpoles. They hang onto plants with their suckers.

Soon gills grow on the tadpole's head. The tadpole breathes through these gills and its skin while new gills grow inside its head. Then it loses the outside gills.

From *Frogs and Toads* [19]

> Flesch Reading Ease: 96.9
>
> Flesch-Kincaid Grade Level: 1.8
>
> Fog Grade Level: 4.2

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[17] Barufald, J.P.; Ladd, G.T.; & Moses, A. J. *Heath Science, Level 2*. Lexington, MA: D.C. Heath, 1984, pp. 193-5.

[18] Anon. "Too Much Farley, Too Little Sweater." *Sesame Street Magazine,* March 1979, pp. 14-15.

[19] Morris, D. *Frogs and Toads*, Milwaukee, WI: Raintree Children's Books, 1977, pp. 20-2.

Smog Grade Level: 5.2

Fry Grade Level: 2

Grade 4

Frogs, toads, and salamanders are *amphibians.* Amphibian comes from a Greek word that means double life. Amphibians begin their life cycle as water animals. They develop into air-breathing animals as they grow up.

Female amphibians lay their eggs in wet places. The eggs are covered with a jelly-like material to protect them. The eggs hatch into larvae, or tadpoles. Tadpoles swim in the water and grow legs. When they are adults, amphibians live on land and breathe air.

Toad tadpoles grow up quickly. It takes them only a few months to lose their tails and become small toads. After that, it may take as long as three years to become full-grown adults! Toads have been known to live 30 to 40 years.

When frog eggs hatch into tadpoles it takes them a very long time to grow up. Several years can go by before the tadpoles become frogs.

From *Addison-Wesley Science*[20]

Flesch Reading Ease: 76.2

Flesch-Kincaid Grade Level: 4.9

Fog Grade Level: 7.5

Smog Grade Level: 8.1

Fry Grade Level: 6

Grades 5-6

Black holes are probably the weirdest objects in space. They are created during a supernova explosion. If the collapsing core of the exploding star is large enough—more than four times the mass of our sun—it does not stop compressing when it gets as small as a neutron star. The matter crushes itself out of existence. All that remains is the gravity field—a black hole. The object is gone. Anything that comes close to it is swallowed up. Even a beam of light cannot escape.

Like vacuum cleaners in space, black holes suck up everything around them. But their reach is short. A black hole would have to be closer than one light-year to have even a small effect on the orbits of the planets in our solar system. A catastrophe such as the swallowing of the Earth or the sun is strictly science fiction.

From *Exploring the Sky*[21]

Flesch Reading Ease: 77.5

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[20] Rockcastle, V. N.; McKnight, B. J.; Salamon, F. R.; & Schmidt, V. E. *Addison Wesley Science, Level 4*. Menlo Park, CA: Addison Wesley Publishing Co., 1984, p. 15.

[21] Dickinson, T. *Exploring the Night Sky*. Ontario, Canada: Camden East, 1987, p. 42.

Flesch-Kincaid Grade Level: 5.4

Fog Grade Level: 8.4

Smog Grade Level: 8.7

Fry Grade Level: 6

Grades 7-8

General Thomas Gage awoke before dawn one morning early in April 1775 and went to his office in Province House overlooking Boston Harbor. He paced back and forth, his hands clasped behind his back, deep in thought.

There was a lot to think about. On the desk lay reports from spies, "good" Yankees loyal to their king. Their reports detailed, among other things, the movements of John Hancock and Sam Adams. Both were preparing to attend the Second Continental Congress and would be staying with Hancock's relative, the Reverend Jonas Clark, at Lexington, a village twelve miles northwest of Boston. Five miles up the road, at Concord, patriots had stored enough supplies for a small army: muskets and cannon, barrels of gunpowder and bullets, tents, medicines, food, entrenching tools.

Gage made his plans carefully, telling as few people as possible of his intentions. On the eighteenth of April, Redcoats would be rowed across Boston Harbor under cover of darkness for a raid to capture the patriot leaders and destroy their supplies. With one swift blow Gage would smash the rebellion before it began.

From *The War for Independence* [22]

Flesch Reading Ease: 59.2

Flesch-Kincaid Grade Level: 8.8

Fog Grade Level: 10.4

Smog Grade Level: 10

Fry Grade Level: 9

Grades 9-10

When the tadpoles hatch, they have a tail, suckers and feathery external gills. Gradually, each tadpole undergoes a change of form, or metamorphosis. The external gills are replaced by internal gills. Then legs start to develop, the internal gills are replaced by lungs, and the tadpole becomes a small frog.

The eggs and tadpoles of frogs and toads are very vulnerable to predators, and some species have ingenious methods of protecting their young. Asian tree frogs lay their eggs in foam nests on leaves overhanging a stream or pool. When the eggs hatch, the tadpoles drop into the water below and continue their development there. The male smith frog builds a mud basin that fills with water and forms a private

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[22] Marrin, A. *The War for Independence*. New York: Atheneum, 1988, pp. 43-4.

pool for the tadpoles. The tadpoles of some frogs develop in tiny pools of water that forms in the leaves of certain plants.

The male midwife toad carries his string of eggs wrapped around his legs. When they are ready to hatch, he takes them to a pool of water. In some species, such as the Seychelles frog and the Surinam toad, the tadpoles are carried on the back of one of the parents until they have fully developed. The tadpoles of the mouth-breeding frog develop in the large vocal sac of the male.

From *Nature*[23]

> Flesch Reading Ease: 71.6
> Flesch-Kincaid Grade Level: 7.3
> Fog Grade Level: 10.3
> Smog Grade Level 10.1
> Fry Graph Grade Level: 7

Grades 11-12

In this way, a general explanation of the different types of galaxies begins to emerge. In an elliptical galaxy, the stars all formed before the gas had time to flatten into a disk; the more spheroidal the galaxy, the more rapidly this formation occurred. In a spiral galaxy, the stars of population II formed before the end of the flattening phase. When the gas was concentrated in the shape of a flat disk, the stars formed from the gas where the gas was located—i.e., in the disk. It remains to be explained why the formation of stars took place more rapidly in the elliptical than in the spiral galaxies. Inasmuch as we cannot explain in detail how stars form, it is not easy to answer that question. It seems that the rate of formation of stars in related to the density of the gas; the denser the gas, the faster the rate of formation of stars. Therefore, some people have believed that the density of the gas making up the protogalaxy was higher in the elliptical galaxies than in spiral galaxies. However, when we consider the average density of matter, currently in the form of stars, that is contained in a galaxy, that average density does not seem to be significantly higher in the ellipticals.

From *Larousse Astronomy*[24]

> Flesch Reading Ease: 55.3
> Flesch-Kincaid Grade Level: 10.4
> Fog Grade Level: 13.7
> Smog Grade Level: 13.0
> Fry Grade Level: 10

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[23] Anon. *Nature* (Marshall Cavendish Library of Science). New York, NY: Marshall Cavendish Corp., 1989, p. 33.

[24] De la Cotardier, P. *Larousse Astronomy.* New York, NY: Facts on File Publications, 1986, p. 229.

Grades 13-15

Beginning in 1740, a series of crises undermined the stability of these established political and social orders. Religious turmoil, war with France, and an economic cycle of boom and bust struck in rapid succession. Britain's sudden imposition of new measures of taxation and control prompted riots, petitions, and the movement for American independence. By 1775, many colonists had repudiated British rule and the traditional monarchical system of government. Many other Americans actively questioned the authority of existing religious institutions and the legitimacy of established political and social distinctions. The struggle for home rule raised the crucial question of who should rule at home.

Between 1776 and 1820, the citizens of the new United States created a republican institutional order. While fighting a financially draining war against Great Britain, they devised effective state constitutions and governments. Subsequently, they organized themselves into a strong national union and began the expansion into the trans-Appalachian west. Americans debated, argued, and even fought bitterly with one another during these years. They were divided into distinct social groups, each seeking to defend or extend its own values and interests.

In the end, American Revolution had both radical and conservative results.

From *Evolution and Revolution: American Society, 1600-1820*[25]

Flesch Reading Ease: 22

Flesch-Kincaid Grade Level: 13.6

Fog Grade Level: 16

Smog Grade Level: 14.5

Grade 16+

Since the invention of GUTs in 1974, particle theorists have been vigorously working on attempts to construct the ultimate theory of nature—an elegant theory which would include a quantum description of gravity. The characteristic energy scale of such a theory is presumably the Planck scale, 10^{19}GeV, a point at which the gravitational interactions of elementary particles become comparable in strength to the other types of interactions. It is then hoped that a GUT would emerge as a low-energy approximation.

The latest and most successful of these attempts at unification is a radically new kind of particle theory known as 'superstring theory.' Superstrings represent a dramatic departure from conventional theories in that particles are viewed as ultramicroscopic strings (length = 10^{-33} centimeters). Furthermore, according to this theory, the universe has *nine* spatial dimensions. Early in the history of the universe, when the temperature cooled below 10^{32} degrees Kelvin, all spatial dimensions,

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[25] Henretta, J. A. &Nobles, G. H. *Evolution and Revolution: American Society, 1600-1820.* Lexington, MA: D.C. Heath, 1987, p. 248.

except the three we know today, stopped expanding and remained curled up with an unobservably small extent. As bizarre as the theory may sound, the superstring theory has been shown to possess a number of unique properties crucial to a quantum theory of gravity, and it has totally captured the attention of a large fraction of the worldwide particle theory community.

From *Bubbles, Voids, and Bumps in Time: The New Cosmology*[26]

> Flesch Reading Ease: 20.8
>
> Flesch-Kincaid Grade Level: 17.3
>
> Smog Grade Level: 17.3

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[26] Guth, A. H. "Starting the Universe: The Big Bang and Cosmic Inflation." In J. Cornell (ed.), *Bubbles, Voids, and Bumps in Time: The New Cosmology.* Cambridge, UK: Cambridge Press, 1989, pp. 143-4.