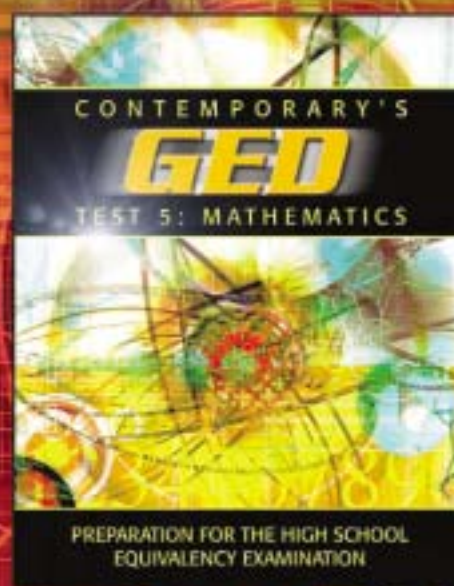
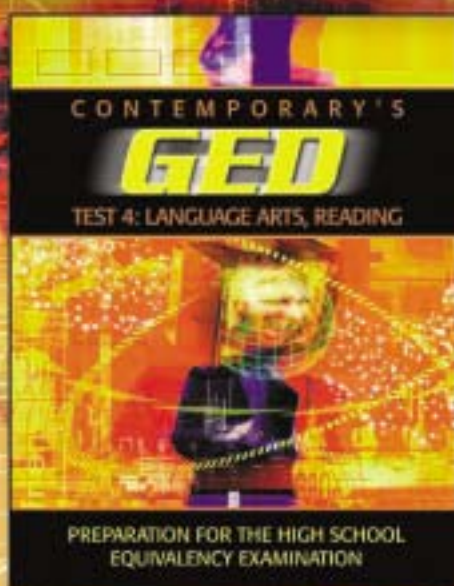
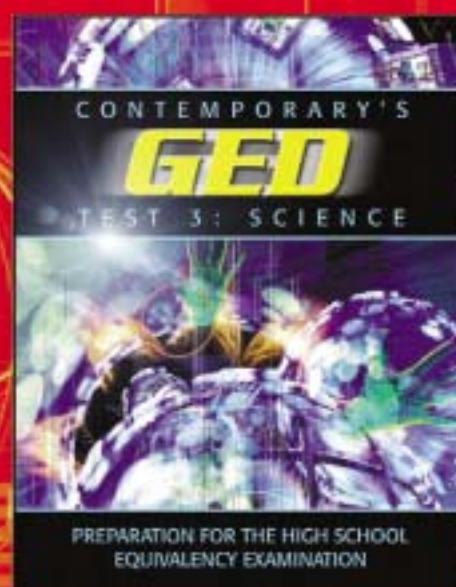
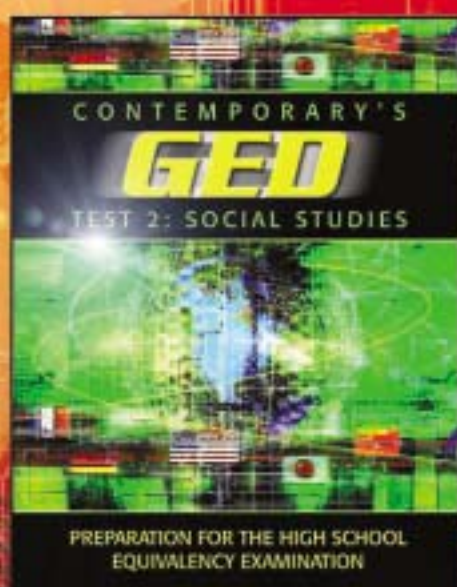
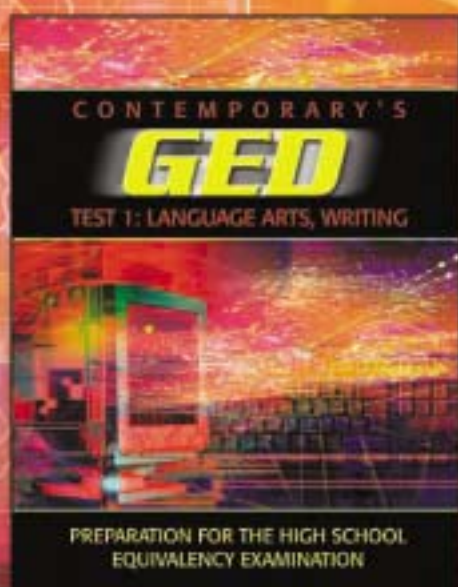


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TEST 1: LANGUAGE ARTS, WRITING



CHAPTER 1

Sentence Basics

Parts of a Sentence

Suppose a friend called you on the phone one day and said, "Won the lottery." What would your question be? Wouldn't you want to know *who* won the lottery?

Similarly, if someone said to you, "My next-door neighbor," what would you want to ask, "What about your next-door neighbor? What did he do?"

And think about this group of words: "When the project is complete." Aren't you left wondering *what happens* when the project is complete?

In all three of these cases, the speaker did not use a complete sentence. Information was missing—information that was necessary to make the point clear and understandable.

A sentence is a basic building block of clear, effective writing.

A group of words must pass three tests in order to be called a sentence.

1. A sentence must have a **subject**. A subject tells the reader what the sentence is about. The first example above is not a sentence because it does not tell you *who* won the lottery.

My wife's sister won the lottery.

This sentence has a subject. It tells *who* won the lottery.

2. A sentence must have a **predicate**. A predicate tells the reader what the subject is or does. The second example above is not a sentence because it does not tell *what* the next-door neighbor is or does.

My next-door neighbor plays softball on Tuesday.

This sentence has a predicate. It tells *what* the neighbor does.

3. A sentence must express a **complete thought**. The reader should not leave the reader with unanswered questions. The third example above is not a complete sentence because it does not express a complete thought.

When the project is complete, you will be notified.

Important terms are emphasized in bold.

Detailed examples are provided for each concept.

Each chapter begins with a simple and concise explanation of the content.

Important key words are in bold print.

A group of words that does not have the three requirements for a complete sentence is called a **fragment** or **sentence fragment**. A group of words can be very short and still be a complete sentence or very long and still be a fragment. In the writing you do on your own and on the Language Arts, Writing Test, a fragment is an error that needs to be corrected.

Let's look at some examples. See if you can tell which groups of words are sentences and which are fragments. Write *S* or *F* on the line for each.

- _____ Leaving the office at noon.
- _____ The customer will be helped immediately.
- _____ This apartment has been rented.
- _____ The old graying dentist.

Did you write an *F* for fragment in the first and last word group? The first group is missing a subject. *Who* is leaving the office? The last group does not have a predicate. It does not tell you *what* the dentist is doing.

The other two word groups are sentences. They have all three requirements for a complete sentence.

Practice is provided within the text.

EXERCISE 1

Directions: One group of words in each pair is a sentence and one is a fragment. Write *S* or *F* on the appropriate line for each.

Examples: S Working six days a week is hard on George.
F Working six days a week and getting tired.

1. _____ Time on our hands.
_____ We have time on our hands.
2. _____ The overtired baseball team finished its practice.
_____ The overtired baseball team next to the bus.
3. _____ While you were sleeping on the couch.
_____ While you were sleeping, we took your picture.
4. _____ The mileage on your car.
_____ The mileage on your car is low.
5. _____ Emmanuel works at the front desk.
_____ Emmanuel at the front desk of the hotel.
6. _____ The idea you had.
_____ The idea sounds good.

Answers are on page 359.

Chapter topics conclude with a student exercise that asks students to apply the concept.

A reference to the answer page is provided.

Each chapter concludes with a review providing GED-style test questions.

GED PRACTICE Chapter Review

Directions: Choose the one best answer to each question. Some of the sentences may contain errors. A few sentences, however, may be correct as written. Read the sentences carefully and then answer the questions based on them. For each question, choose the answer that would result in the most effective writing of the sentence or sentences.

Questions 1-8 refer to the following newspaper article.

Rowe Fund Awards Grant to EEG

(A) In June the Environment Education Group was awarded a grant of \$50,000 by the Harriet S. Rowe Fund to continue its work building public support for better labeling on food products purchased in the United States. (2) The Rowe Fund has been in existence for 35 years, with a focus on meeting consumer needs in an increasingly complex world. (3) Mary Davidson is the founder, director, and spokesperson for EEG. (4) Both the assistant director and her were present to receive the award.

(B) (5) "We are delighted to be the recipients of this award," stated Ms. Davidson. (6) "EEG is committed to informing consumers of their rights concerning the foods they and their families consume every day. (7) Food is so essential to us. (8) That without it, we die. (9) However, what do we know about the synthetic hormones chemicals and pesticides that are ingested by humans each day? (10) We believe consumers would be shocked. (11) To learn how impure some of their daily foods really are. (12) More detailed food labeling is a basic consumer right."

(C) (13) At the Rowe Fund annual meeting held this year in Detroit, Michigan, several other awards were granted. (14) Among the largest of the grants was a \$100,000 gift to researcher Dr.

Harold Kim. (15) Dr. Kim has been involved in exploring the effects of ozone layer depletion in Countries close to the equator.

1. **Sentence 1:** In June the Environment Education Group was awarded a grant of \$50,000 by the Harriet S. Rowe Fund to continue its work building public support for better labeling on food products purchased in the United States.

What correction should be made to sentence 1?

- (1) change June to june
- (2) change it's to its
- (3) change it's to its'
- (4) change products to product's
- (5) change States to states

2. **Sentence 4:** Both the assistant director and her were present to receive the award.

What correction should be made to sentence 4?

- (1) replace assistant with Assistant
- (2) change director to director's
- (3) replace her with hers
- (4) replace her with she
- (5) no correction is necessary

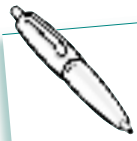
3. **Sentence 6:** EEG is committed to informing consumers of they're rights concerning the foods they and their families consume every day.

Which is the best way to write the underlined portion of the text? If the original is the best way, choose option (1).

- (1) consumers of they're rights
- (2) consumer's of they're rights
- (3) consumers of their rights
- (4) consumers of they are rights
- (5) consumers of they're rights'

"How-to" texts, informational texts, and business documents are used throughout the Chapter Reviews.

TEST 1: LANGUAGE ARTS, WRITING



CHAPTER 9

Gathering Your Ideas

In this chapter you will learn ways to gather ideas for a good GED essay.

- Gathering Ideas
- Organizing
- Writing
- Revising

You are about to start writing your GED essay. A clean sheet of paper is lying in front of you, and you have to fill it up. Suddenly, your mind may seem as empty as the paper. You may wonder how on earth you will ever get started. What can you do to set your pen in motion?

The answer is deceptively simple—think. When you are faced with the question or any writing assignment, start by thinking about the topic. Think about the kind of information that is required to answer the question. Then jot down some ideas.

Some version of this idea-gathering process forms a part of every writer's routine. The process of gathering ideas for a good GED essay includes these three steps:

- Analyzing the GED essay question
- Choosing the main idea of your essay
- Thinking of ideas that back up your main idea

Look at the following GED essay question:

T O P I C

Is watching television good or bad for children?

In your essay, tell whether you think that watching television is good or bad for children. Give reasons for your opinion.

When you analyze this GED essay question, you find that it requires you to (1) express an opinion about television and children and (2) give reasons that back up your opinion. Your main idea might be that watching a lot of television is bad for children.

Each chapter in Part II (the Essay) focuses on a different aspect of the writing process.

This exercise trains students to evaluate their writing according to the GED Essay Scoring Guide. A complete GED Essay scoring guide also appears in the text.

Three steps for gathering ideas for a good essay are illustrated.

An essay topic is introduced with instruction.

RAISING YOUR SCORE

Look at the ideas you gathered in the GED Practice Exercise. Now look at the criteria on details from the GED scoring guide. Circle the number of the score that best describes your list.

LEVEL 4 writing has specific and relevant details and examples.

LEVEL 3 writing incorporates some focused, specific details.

LEVEL 2 writing provides few specific details. Details may be limited to a listing, repetitions, or generalizations.

LEVEL 1 writing lacks details or examples or presents irrelevant information.

Now look at your list or idea map again. Add or cross off ideas to improve your score.

Students are asked to write a topic and the type of response needed in this space provided.

A handwritten essay topic and type of response are provided as an example.

After you figure out the topic and the way you will respond, write them down on a piece of scrap paper. Look at the following scrap paper for the essay question about watching television:

Topic: Is watching TV bad for children?
How to respond: State an opinion and give reasons.

Now complete the scrap paper for the essay question about stress.

Topic: _____
How to respond: _____

The first exercise within Chapter 9 asks students to read the essay question and write the topic in the space provided.

GED Essay Question	Type of Response	Other Key Words
Do you think that people spend too much money on their pets? In your essay, <u>tell whether you think</u> people spend too much money on their pets. Give <u>specific reasons</u> to back up your <u>opinion</u> .	State an opinion Give reasons to explain your belief	• give your view • present your opinion • say whether you agree • state whether you agree
Most doctors say that eating too many sweets is bad for our health. In your essay, <u>tell what happens</u> when people eat too many sweets.	State causes and effects	• state the effect of • tell the causes of • explain what happens
Some people prefer to live in an apartment. Others like living in a house. In your essay tell whether you think it is <u>better</u> to live in a house or an apartment. Give examples.	Compare and contrast two items	

This mini practice provides another sample GED essay topic and asks students to underline key words to assist in formulating a response.

This table provides three sample GED Essay Questions, the Type of Response that should be written, and Other Key Words that should be addressed within the essay.

Look again at the sample GED essay topic on stress. Underline the key words that help you determine how to respond. Then answer the question under the box.

T O P I C

Nowadays many people say that they are under more and more stress. Why do you think they feel this way?

In your essay, explain why people feel their amount of stress is increasing.

How should the writer respond? Check the appropriate box.

- state an opinion and give reasons for the opinion
- state causes and effects
- compare and contrast

Did you underline *explain why* and check the box labeled *state causes and effects*? These answers are correct. This GED essay question asks you to state causes of people's rising stress.

Students are asked to check the box next to the appropriate essay type for the topic above.

Students are then asked to check the appropriate essay type.

After you figure out the topic and the way you will respond, write them down on a piece of scrap paper. Look at the following scrap paper for the essay question about watching television:

Topic: Is watching TV bad for children?
How to respond: State an opinion and give reasons.

Now complete the scrap paper for the essay question about stress.

Topic: _____
How to respond: _____

The first exercise within Chapter 9 asks students to read the essay question and write the topic in the space provided.

Directions: Look at the GED essay topic question on the line. What kind of answer does the question ask for? Check the appropriate box.

T O P I C

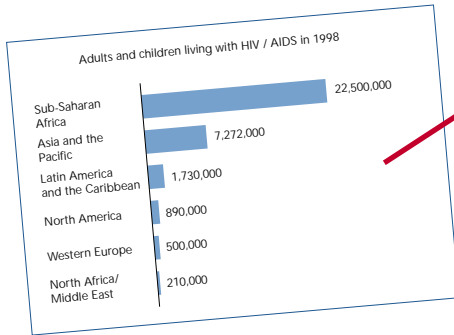
Many sports stars and entertainers make millions of dollars every year. Do you believe that sports stars and entertainers make too much money?

In your essay state whether you believe that sports stars and entertainers make too much money. Back up your opinion with specific reasons.

Topic: _____

- How will you respond?
- state an opinion and give reasons for the opinion
 - state causes and effects
 - compare and contrast

TEST 2: SOCIAL STUDIES



This up-to-date graphic about the AIDS epidemic will be used along with the passage on the previous page so students can answer the exercise questions.

1. According to the passage and the chart, on which of the following has AIDS had the greatest impact?
 - (1) the world economy
 - (2) the poor
 - (3) Africans south of the Sahara
 - (4) orphaned children
 - (5) the costs of drug treatments
 2. Which of the following policies might have the greatest impact in helping the areas most affected by the AIDS epidemic?
 - (1) increasing aid for industrial development so that the countries affected might become wealthier
 - (2) providing AIDS drug treatment at an affordable price to people who test HIV positive
 - (3) promoting public relations "Just Say No to Sex and Illegal Drugs" campaigns
 - (4) expanding adoption programs so that the orphaned children can all be cared for
 - (5) distributing free condoms and hypodermic needles through local clinics
- Answers are on page 349.

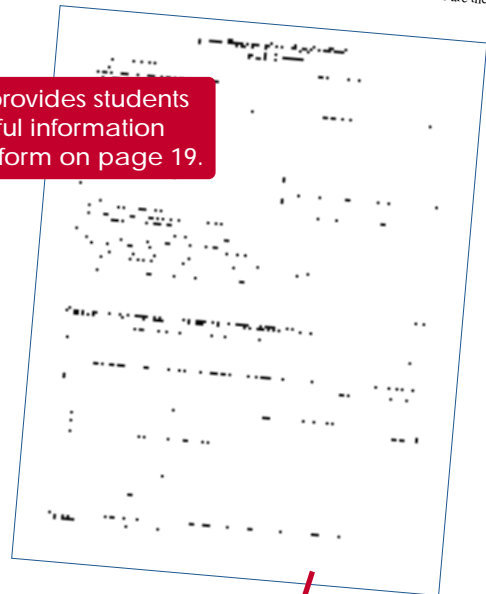
Exercise questions are designed to teach students to not only decipher graphical information but also understand underlying meaning.

Discussion questions related to the document below are provided.

Page number of the answers is provided.

The Role and Influence of the Citizen in a Democracy

Clearly the first responsibility of a citizen in maintaining a democracy is to vote. In order to vote one must register, which can be done by filling out a short form at a local city or town hall, through the mail, or over the internet. Below is a sample voter registration form. Does it appear complicated? Why might someone have reservations about filling it out? Which questions are the most challenging?



This passage provides students with some useful information regarding the form on page 19.

Practical documents have been introduced in the 2002 GED exam.

Once you are registered all you have to do is show up at your neighborhood polling place on election day. On your ballot there are usually more than one issue or office to be decided. To find out about the candidates and their stands on issues important to you, where can you look for solid information?

This exercise question relates to the Voter Registration form provided on page 19.

Non-partisan citizen information groups, or organizations that do not support a particular political party, usually publish voter information guides that come free of charge in the mail to all residents and are available at public libraries as well. Newspapers, of course, can also be good resources, as can television news. It is important when you read or view something, however, that you are aware of the political leanings of the publisher or network. Not all of what you hear is likely to be completely objective and the treatment of issues is often superficial at best.

GED PRACTICE

EXERCISE 10

"Critics of television's role in presidential campaigns emphasize what they believe is the triumph of image over issues, personalities over policies. Many media observers say primary elections are shallow popularity contests, and that political conventions are nothing more than very long, staged campaign commercials. Critics also contend television news coverage is too focused on the race and not enough on the important issues. Televised debates, they add, are merely collections of well-rehearsed sound bites in front of a live audience, and political advertisements package the candidate as if he or she were a new car. Many Americans see all of these developments as contributing to the breakdown of the presidential selection process. They argue that television has made it difficult for millions of Americans to cast an informed ballot on election day."

— Excerpted from "Television and Modern Presidential Campaigns" by Tim Walker in *Perspectives: Readings on Contemporary American Government*

TEST 3: SCIENCE

Chapters are organized according to NSES Content Standards.



Chapter 2

Science as Inquiry

Comprehending and Applying Science

Knowledge for itself alone seeks answers to such questions as "How high is the sky?" or "Why does a stone fall?" This is sheer curiosity . . . Yet there have always been people who ask such apparently useless questions and try to answer them out of the sheer desire to know . . .

— Isaac Asimov

As a first step in investigation, scientists often read material written by other scientists. Scientists need to comprehend, or understand, what they read and determine how the information applies to their investigation.

The GED Science Test will test your critical thinking skills in scientific inquiry. Two very important skills include being able to comprehend science materials and to apply science concepts. You will be tested on reading passages and graphics: drawings, diagrams, and graphs. In this chapter, you will practice each of these skills.

Each chapter opens with a quotation from a famous scientist.

Contemporary's Science Satellite book addresses conceptual understanding and problem-solving questions—a new feature of the 2002 GED Science exam.

Comprehension and summarizing main ideas are focal points within this section.

Key words appear in bold for increased emphasis.

Comprehending Science Material

- Comprehension refers** to three main skills:
- Summarizing the main idea
 - Restating information
 - Identifying implications and inferences

Summarizing the Main Idea

To summarize the main idea means to briefly express a writer's key thought. You may be asked to summarize (or find) the main idea of a single paragraph or of several paragraphs. For example, a reading passage may consist of several paragraphs on research done on vaccines for common wintertime respiratory infections. You may determine that each paragraph and its many details support one main idea—There is still no way to prevent the common cold.

In the following paragraph, the main idea is stated in the first sentence. The other sentences in the paragraph provide details to support the main idea. Notice how the first sentence draws the reader's immediate attention to the point the writer is trying to make.

The action of ocean waves can change the shape of a shoreline. Waves can erode the shore, breaking up land masses near the water. Waves can also move the eroded dirt and rocks great distances down the shoreline. Beaches are formed when waves move more rock fragments toward the shore than away from it. Cliffs are formed when waves move more rock fragments away from the shore than toward it.

The changing shape of a shoreline is the writer's main idea. Each of the other sentences gives an example of how this change takes place. Each example is a detail that supports the main idea.

In the next paragraph, the main idea is stated in the final sentence. Notice how the last sentence summarizes the information given in the sentences that lead to it.

Imagine taking a microscope and looking at the edge of a piece of paper in the hope of seeing a single atom! Using the world's most powerful microscope, you still could not see one atom. In fact, if you could see one, you would find that it takes about one million atoms, placed side by side, to cross a distance as short as the thickness of the edge of the paper. Atoms are so small that scientists must be content with studying large numbers of them at the same time.

In some passages a main idea may not be expressed in a single sentence. In this case, you can usually express the main idea as a summary of several points made by the writer.

The first action your body takes when you eat food is to begin the process of digestion. Digestion takes place in the mouth, stomach, and intestines. During digestion, food is broken down into small molecules. These molecules pass into the bloodstream when they reach the intestines. The step following digestion is called absorption. During absorption, food molecules leave your blood and enter your cells. The final step, assimilation, takes place within the cells themselves. During assimilation, cells use the food molecules for body growth and maintenance.

The main idea of this paragraph is not stated in a single sentence. If you were to summarize this information, you might write: *Digestion, absorption, and assimilation are the three steps used by the body in making use of the food you eat.*

A main idea may also be taken from a graphic. The use of a graphic makes it possible for a writer to convey much information in a compact way. Also, a graphic is easy for you to read and summarize.

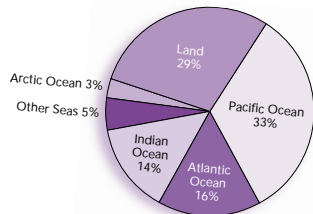
This passage illustrates an example of the main idea stated within the first sentence.

This example illustrates the main idea expressed in the final sentence of the passage.

The final example does not express the main idea within a single sentence.

TEST 3: SCIENCE

The circle graph below shows the breakdown of Earth's surface. Each segment has a label and a percent value. For example, the graph shows that the Pacific Ocean covers 33 percent (about one-third) of Earth's surface.



The main idea of this graphic is that the surface of Earth is covered mainly by water. Supporting details tell the percent of the surface covered with land and the percents covered by each of the four major oceans and other seas.

The 2002 GED Science exam has increased its usage of graphics from 30% to 50%.

In this section, students are asked to view a graph and determine its main idea.

This exercise provides three brief questions related to the previous reading.

Thinking About Science

Directions: Answer each question below.

- How do beaches form?

- What happens during absorption of food molecules?

Answers are on page 417.

GED practice provides students an opportunity to practice their skills with GED-style questions.

The location of the answer key is provided.

The first question asks students to read the passage and find the main idea.

Two questions are based on the graph provided and students are asked to extract facts as well as summarize a key point.

GED PRACTICE

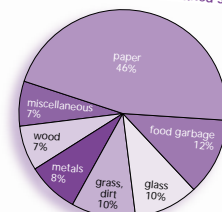
Directions: Answer each question below.
Question 1 refers to the following passage.

Chimpanzees are highly intelligent members of the ape family and are genetically very similar to human beings. Because of the similarity with human beings, chimpanzees are used as subjects in medical experiments. Researchers purposely infect chimpanzees with various diseases to study the effects of new drugs and to learn and practice new types of surgery. For example, chimpanzees purposely infected with the AIDS virus do not become sick and die as do properties of the chimpanzee's blood and immune system. Researchers hope to develop new types of medicines that can provide protection against the devastating effects of AIDS.

- What is the main idea expressed in this passage?
 - Chimpanzees get many human diseases because they are genetically similar to human beings.
 - Chimpanzees are intelligent apes that do not differ much from human beings.
 - Chimpanzees are not harmed when experiments are performed on them.
 - Chimpanzees are used in medical research because they are genetically similar to human beings.
 - Chimpanzees are not exposed to the AIDS virus as long as they are living in their natural habitat.

Questions 2 and 3 refer to the circle graph below.

Solid Waste Disposal in the United States

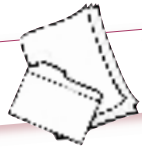


- According to the graph, what material is the largest component of garbage in the United States?
 - glass
 - paper
 - food garbage
 - metals
 - wood
- An author used this graph in article about the value of recycling paper, metal, and glass products. Which of the following statements best summarizes a key point made by the graph?
 - The United States produces more garbage than any other country on Earth.
 - Garbage can be conveniently classified in seven broad categories.
 - Sixty-four percent of American garbage is material that could be recycled.
 - Recycling efforts are failing because too much garbage is being recycled.
 - Because of the amount of dirt in garbage, most things that are thrown away cannot be recycled.

Answers are on page 418.

The location of the answer key is provided.

TEST 4: LANGUAGE ARTS, READING



CHAPTER 5

Nonfiction Prose

On *GED Test 4: Language Arts, Reading*, you will be asked to read and interpret passages from **nonfiction prose**. Twenty-five percent of the test consists of two passages with approximately ten questions. The topics of nonfiction prose include real people, places, events, and social issues. (Prose nonfiction deals with imaginary people and events.) The purpose of nonfiction reading selections is to present factual information or to express a viewpoint. Examples of nonfiction prose will come from three content areas:

Informational Nonfiction	Literary Nonfiction	Visual Communication
business documents	biographies	film
speeches	essays	photography
magazines	diaries	television
newspapers	memoirs	computer art
research reports	letters	painting/sculpture

25% of the new Language Arts, Reading Test will consist of passages from nonfiction prose.

The first writing activity in this chapter asks students to write a commentary that includes both factual information and opinion.

Reading to Understand Nonfiction

When you study nonfiction prose, you apply all the reading skills discussed in the first four chapters of this book:

- Understanding the literal meaning (Comprehension)**
 - Identifying the main idea
 - Finding supporting details—examples, reasons, facts, descriptions
- Applying information and ideas from the passage (Application)**
 - Transferring concepts from the passage to a new context
- Analyzing content, style, and structure (Analysis)**
 - Making inferences based on details from a single passage
 - Drawing conclusions from supporting details
 - Interpreting figurative language
 - Examining the effects of the language used in a passage
 - Determining how an author organizes information

Nonfiction selections will include business documents, speeches, magazine articles, newspaper selections, and research reports.

The Critical Thinking skills studied in the chapter on Nonfiction Prose are based on Bloom's Taxonomy.

- Which commentary does not judge a specific production of the show?
- Which commentary implies that the show is out of date?

Answers are on page 380.

WRITING ACTIVITY 1

Watch your favorite television show and write a short commentary in which you include both factual information and your opinion. In the first paragraph, record facts about the show. Include the title of the show, the names of the leading actors and the characters they portray, and a brief summary of the plot.

In the second paragraph, state your opinion of the show. Answer the following questions: Why is the show your favorite? How would you rate the actors' performances? Would you recommend the show to a friend? Use a separate sheet of paper for your commentary.

Answers will vary.

Descriptive Language

Descriptive language often characterizes the writing style of commentaries on the arts. As you have already observed, reviewers rely on colorful adjectives in phrasing their opinions. An **adjective** is a part of speech that describes a person, a place, a thing, or an idea. The following are examples of adjectives used in movie and play reviews:

- hilarious
 - wild, witty, and wonderful
 - sensational, clever, and warm-hearted
 - delightful, funny, and sophisticated
- You probably noticed that all of these adjectives are flattering. The reviewers have chosen words praising the movie or play described.
- On the other hand, you can also infer a reviewer's disapproval of a play or movie from the descriptive language. The following adjectives from play and movie reviews are uncomplimentary:
- unimaginative and predictable
 - strained and clumsy

Descriptive language, such as adjectives, is explained to students to illustrate writing styles in phrasing opinions.

EXERCISE 7

Directions: Read the passage and choose the best answer to each question that follows.

HAVE WE GONE TOO FAR?

Roger Pearson, a Detroit area teacher, was walking his dog when he saw a small boy fall off his bike. Pearson stopped to help him up, but the boy became terrified and ran away and hid. "He was so scared of me," Pearson said, "he didn't even take his bike with him."

Nancy Zimmerman of Washington, D.C., drives three miles out of her way to shop at a store that puts her groceries in plain bags. She also buys milk in plastic, gallon containers because the paper half gallons she used to buy all bear the pictures of missing children. "Every morning when they eat breakfast, my kids don't need to see pictures of children who have been separated from their parents," she says. "Children feel powerless enough as it is."

America suddenly seems full of missing children. Their faces are everywhere, on grocery store bags, on TV specials, on huge corporate-sponsored banners in children's clothing stores. Book and toy store shelves are flooded with books and games that warn children against the "stranger danger." Companies selling personal alarms, insurance policies and dental identity disks have sprung up overnight. Safety programs have proliferated in schools promoting the "yell and tell" message. Shopping centers host fingerprinting campaigns.

Surely one missing child is too many, but experts who work in the field of missing, sexually abused and runaway children say the avalanche of publicity has grossly distorted the situation. Indeed, many feel that by overstating the problem we are poisoning relations between children and adults and creating a national paranoia that may permanently damage the psyches of our children.

—Excerpted from "Are We Filling Our Children with Fear?" by Gini Hartzmark, *Chicago Tribune*, April 6, 1986

GED Practice is provided, giving students GED-style test questions.

- Who is the person who kidnapped the boy?
 - the police
 - a teacher
 - a detective
 - an actor
 - a person who has been convicted of kidnapping
- Why did the small boy run away from Pearson?
 - Because the boy
 - was riding a stolen bicycle
 - didn't want to go to the emergency room
 - was afraid Pearson wanted to harm him
 - feared Pearson would tell his parents he fell
 - had hit Pearson's dog with his bicycle
- Why does Nancy Zimmerman buy milk in plastic containers instead of paper cartons?
 - Plastic is a stronger material.
 - Milk in plastic containers is cheaper.
 - Milk spoils more quickly in paper cartons.
 - Her grocery store doesn't sell milk in paper cartons.
 - Pictures of missing children don't appear on plastic cartons.
- What conclusion does the author reach about the topic?
 - Because the issue of missing children is a serious problem, publicity is unnecessary.
 - Too much publicity about the problem of missing children is damaging to children and their relationships with adults.
 - Many missing children are runaways, not kidnap victims.
 - Fingerprinting children makes them feel like criminals.
 - School safety programs effectively teach children how to avoid strangers.

This nonfiction selection was excerpted from a *Chicago Tribune* article.

Answer key location is provided.

Answers are on page 321.

TEST 5: MATHEMATICS



Chapter 1

Whole Number Review

The Basic Operations

The four basic operations in arithmetic are **addition**, **subtraction**, **multiplication**, and **division**. This book assumes that you have a basic understanding of these four operations. If you have trouble following the examples or if you miss more than a couple of problems in the next exercise, take the time to practice these four basic skills in another book such as Contemporary's *Number Power* series.

Addition

Recall that the answer to an addition problem is called the **sum**, or **total**. The symbol for addition is the + sign.

Example 1 $2723 + 8 + 925 =$

Step 1 Line up the numbers with units under units, tens under tens, and so on.

Step 2 Add each column, and carry the digit on the left of each sum to the next column. (You may know this as **regrouping**.)

$$\begin{array}{r} 2723 \\ 8 \\ + 925 \\ \hline 3656 \end{array}$$

To check the answer to an addition problem, add the numbers from the bottom to the top. The sum should equal your original sum. For the last example, $925 + 8 + 2723 = 3656$.

Contemporary's *GED Satellite Mathematics* book begins with basic operations of addition, subtraction, multiplication, and division.

Sample problems illustrate the problem-solving process.

The first section of the GED Mathematics exam will allow the use of a Casio fx-260 calculator.

Examples and step-by-step instruction are provided to teach students basic mathematical skills.

Example 2 Find the difference between 982 and 6039.

Step 1 Put the larger number, 6039, on top. Line up the digits with units under units, tens under tens, and so on.

$$\begin{array}{r} 6039 \\ - 982 \\ \hline 5057 \end{array}$$

A subtraction problem is called the **difference**. The symbol for subtraction is the - sign. To find the difference between two numbers, subtract the smaller number from the larger number.

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Using a Calculator

The GED Mathematics Test permits the use of a calculator on half of the mathematics test. The Casio fx-260 solar is the only calculator permitted with the test.

To turn the calculator on, press the **ON** key at the upper right or the red **AC** key. A small "DEG" will appear at the top center of the display, and "0." will appear at the right of the display.

To perform any arithmetic operation, first press **AC** (all clear) to clear the display. Then enter the numbers and operating signs. Press **=** (the equals sign) key when you are finished.

You will find tips on using the Casio fx-260 calculator throughout this book.

Example 1 Use a calculator to find the sum of 9 + 7.

Press **AC**.
Press **9** **+** **7** **=**.

The display should read .

Example 2 Use the calculator to find the difference of 28 - 9.

Press **AC**.
Press **2** **8** **-** **9** **=**.

The display should read .

Example 3 Use a calculator to find the product of 8 x 56.

Press **AC**.
Press **8** **x** **5** **6** **=**.

The display should read .

Since the Casio fx-260 will be the only calculator allowed during the GED exam, instructions and sample problems for the fx-260 are provided relating to the chapter content.

Many examples are given in story problem format providing real-life application. Step-by-step illustrated instruction is provided for each example.

Mean and Median

A **mean** is a number that represents a set of numbers. *Mean* is another name for "average."

RULE

To find the mean of a set of numbers, add the numbers in the set and divide by the number of numbers in the set.

Find the mean of 10, 15, 23, and 28.

Find the sum by adding the four numbers.

$$\begin{array}{r} 10 + 15 + 23 + 28 = 76 \\ 76 \div 4 = 19 \end{array}$$

Divide the sum by 4, the number of numbers in the set. The mean, or average, of the four numbers is 19.

Finding a mean is a common application of arithmetic skills. Look at the next example.

Example 2 Houses on the block where the Garcias live recently sold for \$140,000, \$143,000, and \$152,000. What was the mean selling price of the houses?

Step 1 Find the sum by adding the cost of each house.

$$\begin{array}{r} \$140,000 \\ 143,000 \\ + 152,000 \\ \hline \$435,000 \end{array}$$

Step 2 Divide by the number of houses, 3. The mean selling price was \$145,000.

Example 3 Use the calculator to find the mean of 17, 29, and 23.

Press **AC**.

Press **1** **7** **+** **2** **9** **+** **2** **3** **=**.

The display should read .

Press **=** **3** **=**.

The display should read .

A **median** is a number in the middle of a group of numbers. Half of the numbers in a group are greater than the median, and half are less. For the house prices in Example 2 the median is \$143,000.

This section deals with Mean and Median and begins by defining the terms and giving the mathematical rules.

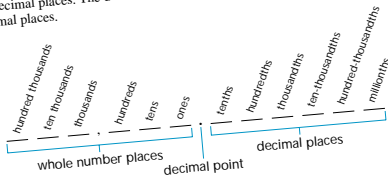
Another example problem is featured, this time using the Casio fx-260 for practice.

TEST 5: MATHEMATICS

Place Value

As you saw with dollars and cents, the first place to the right of the decimal point is the tenths place. (A dime is one of the ten equal parts of a dollar.) The second place to the right of the decimal point is the hundredths place. (A penny is one of the hundred equal parts of a dollar.)

Below is a diagram of the first six whole number places and the first six decimal places. The decimal point separates whole numbers from decimal places.



Notice that all the decimal place names end in *-ths*. They represent fractions or parts of one unit.

TIP
To learn the decimal place names, remember that 10 has one zero and tenths has one place, 100 has two zeros and hundredths has two places, 1000 has three zeros and thousandths has three places.

The fraction $\frac{3}{4}$ describes the part of the figure at right that is shaded. There are 3 shaded parts. The whole figure has 4 equal parts.

You can think of a fraction in three ways:

- as part of a whole
 $\frac{3}{4}$ of the circle in the illustration is shaded.
- as part of a group
The Dawson family has four members, and three of them work in the construction business. $\frac{3}{4}$ of the Dawson family works in the construction business.



This section introduces students to place value of whole numbers and provides a helpful illustration.

This Using Shortcuts section helps students deal with percents.

This chart illustrates the conversion of percents to fractions.

Using Shortcuts

Look at the percents and fractions in the chart below. Each percent in the list is equal to a fraction with a numerator of 1.

50%	$33\frac{1}{3}\%$	25%	20%	$16\frac{2}{3}\%$	$12\frac{1}{2}\%$	10%
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$	$\frac{1}{8}$	$\frac{1}{10}$

To find a percent of a number using any percent in this list, divide the number by the denominator of the equivalent fraction. Look at Method 3 in the example, where 36 is divided by 4, the denominator of $\frac{1}{4}$.

Example Find 25% of 36.

METHOD 1
Change 25% to a decimal and multiply. $0.25 \cdot 36 = 9$

METHOD 2
Change 25% to a fraction and multiply. $\frac{1}{4} \cdot \frac{36}{1} = \frac{36}{4} = 9$

METHOD 3
Divide 36 by 4. $36 \div 4 = 9$

Notice that the shortcut in Method 3 is the same as the canceling in Method 2.

Example 20% of what number is 9?

METHOD 1
Step 1 Change 20% to a fraction. $20\% = \frac{1}{5}$

Step 2 Divide 9 by $\frac{1}{5}$. $9 \div \frac{1}{5} = \frac{9}{1} \cdot \frac{5}{1} = \frac{45}{1} = 45$

METHOD 2
Step 1 Change 20% to a decimal. $20\% = 0.2$

Step 2 Divide 9 by 0.2. $9 \div 0.2 = 45$

To solve the last problem on a calculator, first press **AC**. Then press **9** **÷** **0.2** **=** **SHIFT** **%**. The display should read **45**.

The two examples are provided to demonstrate several methods of percent calculations.

The second example shows students how to use the Casio fx-260 to perform the calculation.

The 2002 GED Mathematics exam will require alternate format responses. The first two questions in this GED practice introduce students to one of those grid formats.

These helpful tips provide students with easy ways to remember important concepts.

GED Practice provides students a chance to practice their new skills with GED-style questions.

GED PRACTICE Word Problems Review

PART I

Directions: Use a calculator to solve problems 1-4. Mark the answers to problems 1 and 2 on the corresponding number grids.

- A publisher has to ship a large order of workbooks to a program that teaches English as a second language. Each box holds 48 workbooks. How many boxes are needed to ship an order of 7488 workbooks?
- Of the 420 employees at Tess's Textiles, 63 regularly walk to work and 187 take public transportation. How many employees at Tess's do not regularly walk to work?

1.

○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○

2.

○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○
○	○	○	○	○	○	○	○	○	○

This practice section allows students to use a calculator just as the first section of the GED Mathematics test will.

- In one month the leading U.S. car manufacturer sold 259,056 cars. The second manufacturer sold 139,109 cars.

- Sandy is the bookkeeper for a senior citizen's center. At the beginning of the week the center's checking account had a balance of \$2453.18. That week Sandy wrote a rent check for \$658.00 and paid the electric bill of \$49.57. She also deposited a grant check from the county for \$860.00. What was the balance in the account at the end of the week?
 - \$1745.67
 - \$1795.18
 - \$2605.61
 - \$2655.18
 - \$2704.75

PART II

Directions: Solve each of the following problems without a calculator.

- Fred works part-time for \$12 an hour. He worked for 9 hours on Monday and 6 hours on Wednesday. Which expression tells how many dollars Fred made on those two days?
 - $12(9 + 6)$
 - $12(9 + 6)$
 - $6(12 + 9) + 6(9)$
 - $(12 + 9) + 6$
 - $(12 + 9) + 9$