

# Handbook

## The North Carolina High School Comprehensive Test

Reading Comprehension and  
Mathematics Applications

A Handbook for Grade 10 Teachers

**Published January 2004**

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**Public Schools of North Carolina**

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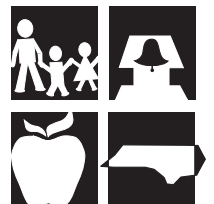
State Board of Education

Department of Public Instruction

Office of Accountability and Technology Services

Division of Accountability Services/North Carolina Testing Program

Raleigh, North Carolina 27699-6314



Stock No. 8898

## **Introduction**

### **The North Carolina High School Comprehensive Test Handbook for Teachers**

The North Carolina High School Comprehensive Test of Reading Comprehension and Mathematics was approved by the State Board of Education at the March 1997 meeting as a component of the ABCs Accountability Model for high schools. The test was developed to measure growth in student achievement in reading and mathematics from grade 8 to grade 10 for the purpose of high school accountability. The High School Comprehensive Test was a component of the ABCs through the 2000–2001 school year. In June 2001, the State Board of Education eliminated the High School Comprehensive Test effective with the 2001–2002 school year due to budget constraints. In order to meet the federal Title I regulations required in the No Child Left Behind Act of 2001, the High School Comprehensive Test was reinstated as a statewide mandate for all tenth-grade students in all high schools as a component of the North Carolina Testing Program effective with the 2002–2003 school year.

It is important to remember that unlike the end-of-course tests, the North Carolina High School Comprehensive Test is not based on one specific course such as English II or Algebra I. The comprehensive test is an end-of-grade curriculum-based multiple-choice achievement test that measures knowledge, skills, and competencies in reading and mathematics that the typical student should have mastered by the end of the tenth grade. The norms for this test were established in the spring of 1998.

This handbook, designed to serve as a resource for teachers, further explains the curriculum basis for the test. The handbook outlines the curriculum on which the test is based. In addition, it includes sample test items and test-taking strategies. This handbook was designed to assist teachers in providing information about the North Carolina High School Comprehensive Test to students and parents.

The results from the North Carolina High School Comprehensive Test, in determining a high school's Adequate Yearly Progress (AYP) status, provide schools, districts, the state, and the nation with valuable information on student performance. Consistent academic progress is an integral part of the North Carolina State Board of Education's plan for improving education in North Carolina and, thus, better preparing today's students for participation as citizens and workers in the 21st century.

<b>Table of Contents</b>
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I. Questions About the North Carolina High School Comprehensive Test .....	1
II. Information About the North Carolina High School Comprehensive Test .....	4
III. Student Preparation for the North Carolina High School Comprehensive Test .....	7
IV. Test-Taking Strategies for Students.....	9
V. Sample Test.....	11
VI. Sample Test Answers.....	28



## I. Questions about the North Carolina High School Comprehensive Test

**What is the high school comprehensive test?**

The North Carolina High School Comprehensive Test is a multiple-choice test that has two parts—reading comprehension and mathematics applications. The test measures knowledge and skills in reading and mathematics that the typical North Carolina student should have mastered by the end of the tenth grade.

**What does the reading comprehension part of the test measure?**

The reading comprehension part of the test assesses a student's ability to read, understand, and critically analyze print material. This part of the test was designed to measure specific goals and objectives from the North Carolina *Standard Course of Study* for English/Language Arts. The measured goals and objectives are located on page 5 in this document.

**What does the mathematics part of the test measure?**

The mathematics part of the test assesses a student's ability to apply mathematical knowledge to solve real-world problems. This part of the test was designed to measure specific goals and objectives from the North Carolina *Standard Course of Study* for Mathematics. The measured goals and objectives are located on page 6 in this document.

**Is the content of this test similar to the content of the end-of-course tests?**

Like most of the tests in the statewide testing program, the high school comprehensive test has a multiple-choice format. However, the knowledge and skills measured by the high school comprehensive test are *not* based on one high school course as the end-of-course tests are. For example, this test is *not* designed to measure *only* the English II curriculum or *only* the Algebra I curriculum.

**When is the test administered?**

The test is administered during the last three weeks of April.

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**Who takes the test?**

The test is administered to all students officially classified as tenth-graders by the school principal as included in the Student Information Management System (e.g. SIMS NCWISE) with the following exceptions: (1) students identified as limited English proficient who are in the first 24 months of initial enrollment at the LEA and are participating in the North Carolina Alternate Assessment Academic Inventory for Reading at grade 10 are not administered the North Carolina High School Comprehensive Test in reading; (2) students identified as limited English proficient who are in the first 24 months of initial enrollment at the LEA and are participating in the North Carolina Alternate Assessment Academic Inventory for Mathematics at grade 10 are not administered the North Carolina High School Comprehensive Test in mathematics; (3) students with disabilities who are participating in the North Carolina Alternate Assessment Academic Inventory for Reading are not administered the North Carolina High School Comprehensive Test in reading; (4) students with disabilities who are participating in the North Carolina Alternate Assessment Academic Inventory for Mathematics are not administered the North Carolina High School Comprehensive Test in mathematics; and (5) students with disabilities who are participating in the North Carolina Alternate Assessment Portfolio are not administered the North Carolina High School Comprehensive Test in reading or mathematics.

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**Are students with disabilities required to take the high school comprehensive test?**

Yes. Eligible students with disabilities must take the test, with or without accommodations, or complete alternate assessments. According to State Board of Education policy HSP-C-005, students with disabilities shall be included in the statewide testing program and may participate in the North Carolina Alternate Assessment Portfolio (NCAAP) or the North Carolina Alternate Assessment Academic Inventory (NCAAAI) as documented in the students' current Individual Education Program (IEP) or Section 504 plan.

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**May students with disabilities use accommodations?**

Students with disabilities may be eligible for certain types of accommodations while taking the test. A student's special education committee (e.g., IEP or Section 504 Committee) determines the need for accommodations. The use of the accommodations must be documented and should be consistent with those used routinely during classroom instruction. The school must refer to the most recently published *Testing Students with Disabilities* document (published February 2003) and any supplements for appropriate procedures for use of accommodations. Students following the Occupational Course of Study (OCS) must take the test as stated in the current IEP or Section 504 plan.

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**Are students identified as limited English proficient required to take the high school comprehensive test?**

Yes. Eligible students identified as limited English proficient who do not participate in the regular administration of the test, (with or without accommodations) must participate in an alternate assessment. According to State Board of Education policy HSP-C-005, students identified as limited English proficient shall be included in the statewide testing program and may participate in the North Carolina Alternate Assessment Portfolio (NCAAP) or the North Carolina Alternate Assessment Academic Inventory (NCAAAI) if they meet particular criteria.

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**May students identified as limited English proficient use accommodations?**

Students identified as limited English proficient may be eligible for certain types of accommodations while taking the test. The student's committee for limited English proficiency determines the need for accommodations. The use of the accommodations must be documented and should be consistent with those used routinely during classroom instruction. The school must refer to *Guidelines for Testing Students with Limited English Proficiency* for appropriate procedures for the use of accommodations.

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**When will schools receive the test scores?**

Students will receive reports of individual student performance after the answer sheets are scanned and scored locally. The test scores will consist of scale scores, percentiles, and achievement levels—similar to the test results provided for the North Carolina End-of-Grade Tests. In addition, schools receive class rosters and summary data depicting overall student performance at the school. The rosters and summary data are typically provided locally soon after the student answer sheets are scanned. School performance and AYP results are also reported during the summer and early fall.

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## II. Information about the North Carolina High School Comprehensive Test

### Reading Comprehension

- ◆ The reading comprehension part of the test is multiple-choice.
- ◆ It requires students to read and understand literary, informational, and practical texts.
- ◆ There are 72 reading comprehension test questions.
- ◆ The test administration time is 115 minutes.
- ◆ It requires students to read eight passages and to answer questions about each passage. The questions require students to use reading strategies to help them understand and think about what they have read.
  - 📖 Three of the reading passages are literary (e.g., poetry, drama, fiction, narrative, essay, biography, myth, novel excerpt, or epic).
  - 📖 Three of the reading passages are content-based (e.g., art, science, health, mathematics, social studies, or work-force preparedness).
  - 📖 Two of the reading passages are human interest (e.g., recipe, craft project, brochure, human interest story, table of information, or form).

### Mathematics Applications

- ◆ The mathematics applications part of the test is multiple-choice.
- ◆ It is a test of mathematics applications that measures students' ability to use mathematical procedures and problem-solving skills.
- ◆ During the test administration, students may use a ruler, protractor, and graphing calculator.\*
- ◆ Mathematical formulas will be located on the test book.
- ◆ There are 70 mathematics applications test questions.
- ◆ The test administration time is 100 minutes.
- ◆ The content for mathematics includes:
  - ▲ Number sense, numeration, and numerical operations;
  - ▲ Spatial sense, measurement, and geometry;
  - ▲ Patterns, relationships, and functions; and
  - ▲ Statistics, probability, and discrete mathematics.

\* Students who do not have access to a graphing calculator will be at a disadvantage. Students are allowed to use more than one calculator (e.g. scientific and graphing) during the test if more than one calculator is used during regular classroom instructional activities.

## **North Carolina Testing Program English/Language Arts K–12**

### **Goal 1 The learner will use strategies and processes that enhance control of communication skills development.**

- 1.1 The learner will apply preparation strategies to comprehend or convey experiences and information.
- 1.2 The learner will apply engagement strategies to comprehend or convey experiences and information.
- 1.3 The learner will apply response strategies to comprehend or convey experiences and information.

### **Goal 2 The learner will use language for the acquisition, interpretation, and application of information.**

- 2.1 The learner will identify, collect, or select information and ideas.
- 2.2 The learner will analyze, synthesize, and organize information and discover related ideas, concepts, or generalizations.
- 2.3 The learner will apply, extend, and expand on information and concepts.

### **Goal 3 The learner will use language for critical analysis and evaluation.**

- 3.1 The learner will assess the validity and accuracy of information and ideas.
- 3.2 The learner will determine the value of information and ideas.
- 3.3 The learner will develop criteria and evaluate the quality, relevance, and importance of the information and ideas.

### **Goal 4 The learner will use language for aesthetic and personal response.**

- 4.1 The learner will respond to personal situations and events in selections and to personal situations and events.
- 4.2 The learner will respond to the personal, social, cultural, and historical significance of selections or personal experiences.
- 4.3 The learner will respond critically and creatively to selections or personal experiences.

## North Carolina Testing Program Grade 10 Mathematics

### **Goal 1 This strand will focus on performing operations, solving problems, and representing mathematical relationships using real numbers. [10% of the items]**

- 1.1 The learner will perform operations with real numbers. (\*IM: 1.01–1.09; A1: 1.01, 2.01; TM1: 1.01)
- 1.2 The learner will solve problems involving number theory. (IM: 1.02–1.08; A1: 2.02)
- 1.3 The learner will use ratios, proportions, and percents to solve problems. (IM: 1.04; TM1: 3.06)

### **Goal 2 This strand will focus on describing, defining, and using the properties of plane and solid figures; using methods and systems of measurement, both direct and indirect, customary and metric; and solving related problems. [30% of the items]**

- 2.1 The learner will solve geometric problems using two- and three-dimensional shapes. (IM: 2.01–2.10; TM1: 2.06–2.08; G: 2.08, 2.09, 2.12–2.19)
- 2.2 The learner will use properties of angles, lines, and planes to solve problems. (TM1: 2.07; G: 2.08)
- 2.3 The learner will understand and use perimeter, area, and volume formulas to solve problems. (IM: 2.03–2.07; TM1: 2.06; G: 2.15, 2.19)
- 2.4 The learner will solve problems using right triangle relationships. (IM: 2.06; TM1: 2.05, 2.08; G: 2.13–2.15)
- 2.5 The learner will transform polygons in the coordinate plane. (IM: 2.07; G: 3.03)

### **Goal 3 This strand will focus on using the language of algebra to express numerical, geometric, and problem-based relationships; modeling, graphing, and exploring data sets and functions, including those involving linear, quadratic, and exponential relations; and solving related problems. [34% of the items]**

- 3.1 The learner will use the language of algebra and formulas to solve problems. (IM: 3.01, 3.02; A1: 2.01, 3.01–3.12; TM1: 3.01–3.07)
- 3.2 The learner will demonstrate an understanding of relations and functions. (IM: 3.03; A1: 3.02–3.12; TM1: 3.01–3.07)
- 3.3 The learner will graph and use linear equations and inequalities. (IM: 3.03; A1: 3.05–3.09; TM1: 3.01–3.03, 3.05, 3.07)
- 3.4 The learner will solve problems that involve nonlinear equations. (A1: 3.10–3.12; TM1: 3.04)
- 3.5 The learner will use an appropriate method to solve problems involving systems of equations and inequalities. (A1: 3.09; TM1: 3.05)
- 3.6 The learner will perform operations with polynomials. (IM: 1.10, 1.11; A1: 1.02, 1.03)

### **Goal 4 This strand will focus on using statistical methods, analyses, and relationships to collect, organize, and describe data and communicate the results; determining the probability of simple and compound events; and solving related problems. [26% of the items]**

- 4.1 The learner will use statistics to analyze and solve real-world problems. (IM: 4.01–4.04; TM1: 4.01, 4.02)
- 4.2 The learner will use probability to solve real-world problems. (IM: 4.05, 4.06; TM1: 4.03, 4.04; G: 4.01)
- 4.3 The learner will fit a line or curve to a set of data and use this line or curve to make predictions about the data. (A1: 4.02, 4.03)

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\* IM—Introductory Mathematics, A1—Algebra I, TM1—Technical Math I, and G—Geometry, according to the 1998 Mathematics *Standard Course of Study*

### III. Student Preparation for the North Carolina High School Comprehensive Test

#### Before the Test: Students Should Review the Sample Test Questions

The best way for students to prepare for this test is to learn all they can about the test before the test administration. Careful reading of this teacher handbook provides information about the test. The teacher and students can become familiar with the types of test questions by trying the sample questions in this handbook. Students should plan ahead so that they feel prepared.

- ✓ Read this handbook.
- ✓ Do the sample questions.
- ✓ Students should ask teachers or counselors questions about the test. In addition, students should ask questions about any sample question they do not understand in this handbook.

#### Before the Test: Students Should Be Ready to Test

Preparation for testing is a mental and physical activity. Along with becoming familiar with the skills measured by the test, students should try to feel their best. Students should do the things that make them feel confident. For some, it might mean getting a good night's rest and eating a good breakfast. For others, it might be wearing favorite clothes. Students should make sure that they have all the materials they need for testing, such as No. 2 pencils and blank paper. Students should plan ahead so that they feel comfortable when they take the test. On the day of the test, students should:

- ✓ Plan ahead so they don't have to rush.
- ✓ Ask a teacher or guidance counselor if they have questions about the materials they need to bring.
- ✓ Bring a graphing calculator, if possible.\*
- ✓ Bring worksheet paper (scratch paper) and at least two No. 2 pencils.

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\* Students who do not have access to a graphing calculator will be at a disadvantage. Students are allowed to use more than one calculator (e.g. scientific and graphing) during the test if more than one calculator is used during regular classroom instructional activities.

## During the Test: Students Should Pay Attention

The person giving the test (the test administrator) should try to make the testing situation comfortable and free of distraction. Students should:

- ✓ Concentrate on the test. Students should not allow themselves to be distracted by noises, things going by the window, or distractions outside the testing room.
  - ✓ Schedule their time, follow directions, and use good test-taking strategies, such as reading questions carefully and eliminating obviously incorrect answers before choosing an answer.
  - ✓ Pay close attention to the sample questions. These questions help students understand what the test questions will be like.
  - ✓ Raise their hands and ask questions if the students do not understand the directions.
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## During the Tests: Students Should Use Time Well

Students should:

- ⌚ Arrive on time so that they will be able to get organized.
  - ⌚ Understand the time restrictions for the tests.
  - ⌚ Keep working until they have finished the test. Other classmates may finish first.
  - ⌚ Avoid unnecessary clock-watching but pace themselves accordingly. Unnecessary clock-watching breaks concentration and causes anxiety. The administrator will remind students when they are near the end of the testing period.
  - ⌚ Check their work if they finish before other classmates.
- 

## During the Tests: Students Should Mark Their Answers Carefully

Students should:

- ✓ Mark only within the answer circle.
- ✓ Erase all changed answers carefully. If the circle disappears, do **not** redraw it.
- ✓ Erase all stray answers on the answer sheets. Stray marks will cause answers to be scored incorrectly.

## IV. Test-Taking Strategies for Students

### General Strategies

Students should:

- ◆ Use blank paper to help solve the problems.
- ◆ Draw diagrams or charts to help solve the problems.
- ◆ Check to make sure that they are using the correct section of the answer sheet for the part of the test they are working on before marking an answer. (Answers for reading are marked on the reading section of the answer sheet, and answers for mathematics are marked on the mathematics section of the answer sheet.)
- ◆ Make sure that the number of the question on the answer sheet matches the number of the question the student is working on when the student marks each answer.
- ◆ Read the whole question. Think about what the question asks before choosing an answer.
- ◆ Read each of the choices for a multiple-choice question.
- ◆ Answer the easier questions first.
- ◆ Not spend too much time on any one question.
- ◆ Come back to difficult questions. Try to eliminate some of the choices that are obviously incorrect. Choose the best answer from the remaining choices. There is no penalty for guessing.
- ◆ Answer every question.
- ◆ Check worksheets for mistakes.
- ◆ Go back and recheck answers if they finish before their classmates.
- ◆ Follow all directions. Ask questions if they do not understand the directions.

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### Reading Strategies

Students should:

- ◆ Read the whole passage before answering the questions. This is the best strategy for most passages.
- ◆ Use context clues to try to understand any unfamiliar words.
- ◆ Look for cue words. Words such as “but,” “however,” and “therefore” may come before major ideas in the passage.
- ◆ Take brief notes of important ideas on blank paper.
- ◆ Try to identify the author’s point of view.

## Mathematics Strategies

Students should:

- ◆ Have access to a ruler, protractor, and graphing calculator during the mathematics applications part of the high school comprehensive test. Students should be comfortable in using these tools in their daily mathematics program.
- ◆ Use blank paper to figure mathematics problems. Students must remember to transfer answers to the answer sheet.
- ◆ Develop a strategy for solving complex problems. For example:
  - ◆ Identify the problem. (What does the question ask?)
  - ◆ Choose a procedure to get the answer.
  - ◆ Solve the problem.
  - ◆ Check to determine whether the answer makes sense.
- ◆ Become familiar with a variety of formulas and when they should be used. Some formulas will be given on the test.

## V. Sample Test

### Reading Comprehension

This part of the actual test consists of 8 passages, each of which is followed by five to ten questions related to the passage. You will be asked to read three literary passages selected from world literature (such as a short story, a poem, or a speech); three content-based passages selected from art, science, health, mathematics, social studies, or work-force preparedness; and two consumer/human interest passages (such as recipes, projects, or relevant short pieces from popular magazines). The 72 questions will ask about your strategy for reading the passage, how much you comprehend from the passage, and if you can critically analyze the passage.

This sample test consists of a science passage and the 7 questions that go with that passage and a literary passage (a short story) and the 11 questions that go with that passage.

### Mathematics Applications

This part of the actual test consists of 70 questions. You will be able to use a ruler, a protractor, and a calculator during this part of the test. Students who do not have access to a graphing calculator will be at a disadvantage. Students are allowed to use more than one calculator (e.g. scientific and graphing) during the test if more than one calculator is used during regular classroom instructional activities. The use of a calculator tends to ensure that students who apply sound mathematical reasoning will not miss a question because of computational errors. Commonly used formulas (shown on the next page) will be provided on the back of your test book.

This sample test consists of 9 mathematics applications questions that cover the four content areas of the test.

### Directions

To answer a question, first decide which is the *best* answer choice for a particular question. Then, find the question number on your answer grid (below) and make a mark in the circle containing the letter of the correct answer. Remember to mark only one answer for each question.

<b>Reading Comprehension</b>		<b>Mathematics Applications</b> (Calculator use allowed)	
1 (A) (B) (C) (D)	10 (A) (B) (C) (D)	1 (A) (B) (C) (D)	
2 (A) (B) (C) (D)	11 (A) (B) (C) (D)	2 (A) (B) (C) (D)	
3 (A) (B) (C) (D)	12 (A) (B) (C) (D)	3 (A) (B) (C) (D)	
4 (A) (B) (C) (D)	13 (A) (B) (C) (D)	4 (A) (B) (C) (D)	
5 (A) (B) (C) (D)	14 (A) (B) (C) (D)	5 (A) (B) (C) (D)	
6 (A) (B) (C) (D)	15 (A) (B) (C) (D)	6 (A) (B) (C) (D)	
7 (A) (B) (C) (D)	16 (A) (B) (C) (D)	7 (A) (B) (C) (D)	
8 (A) (B) (C) (D)	17 (A) (B) (C) (D)	8 (A) (B) (C) (D)	
9 (A) (B) (C) (D)	18 (A) (B) (C) (D)	9 (A) (B) (C) (D)	

The following information is for your reference in solving some of the problems on the test.

Area of a Trapezoid  $A = \frac{1}{2}h(b_1 + b_2)$

Trig Ratios:  $\sin x = \frac{\text{opposite side}}{\text{hypotenuse}}$

Area of an Equilateral Triangle  $A = \frac{s^2}{4}\sqrt{3}$

$\cos x = \frac{\text{adjacent side}}{\text{hypotenuse}}$

Distance  $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$\tan x = \frac{\text{opposite side}}{\text{adjacent side}}$

Midpoint  $M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

Probability  $P(A \text{ and } B) = P(A) \cdot P(B)$   
 $P(A \text{ or } B) = P(A) + P(B)$

Circle  $(x - h)^2 + (y - k)^2 = r^2$

$P(n, r) = \frac{n!}{(n - r)!}$

$C(n, r) = \frac{n!}{(n - r)!r!}$

Cylinder    Lateral Area (right)  $L = 2\pi rh$   
               Total Area (right)  $T = 2\pi r(h + r)$   
               Volume  $V = \pi r^2 h$

Prism, where  $p$  is the perimeter of the base and  $B$  is the area of the base

Lateral Area (right)  $L = ph$   
 Total Area (right)  $T = L + 2B$   
 Volume  $V = Bh$

Sphere      Surface Area  $A = 4\pi r^2$   
               Volume  $V = \frac{4}{3}\pi r^3$

Pyramid, where  $p$  is the perimeter of the base,  $B$  is the area of the base, and  $l$  is the slant height

Cone, where  $l$  is the slant height  
               Lateral Area (right)  $L = \pi rl$   
               Total Area (right)  $T = \pi r(l + r)$   
               Volume  $V = \frac{1}{3}\pi r^2 h$

Lateral Area (regular)  $L = \frac{1}{2}lp$   
 Total Area (regular)  $T = L + B$   
 Volume  $V = \frac{1}{3}Bh$

### Other Formulas

$C = \frac{5}{9}(F - 32)$      $F = \frac{9}{5}C + 32$

Simple Interest     $A = prt$

Compound Interest     $A = p(1 + r)^t$



## Part I — Reading Comprehension

### Seeking Medical Secrets in the Rain Forest

by Jo Yohay

*In the film Medicine Man, Sean Connery found a cure for cancer in the rain forests of South America, only to be defeated in the end by clear-cutters who destroyed the forest. Some critics said this scenario was alarmist and fanciful. But now real-life scientists are in a race against time to identify and save medicinal plants in a rapidly disappearing ecosystem. Read about these medicine men and women in the following article from the April / May 1992 issue of National Wildlife magazine. Then answer the questions that follow.*

An old, wrinkled bush doctor sits in a tiny cinder-block clinic near the Macal River in Belize. A Mayan named Don Elijo, he tends his patients amid burlap sacks filled with medicinal herbs gathered from the surrounding rain forest. Reaching into a bag, he withdraws a handful of crackling leaves and begins preparing a mixture for a patient's lesion. From other bags he takes seeds, bark and twisted roots.

Two thousand miles away in Maryland, a National Cancer Institute (NCI) scientist scoops through samples of those same roots and leaves, getting ready to put them through a rigorous chemical analysis. But how did Don Elijo's dusty herbs get to this gleaming medical laboratory?

The answer is a story of scientists racing against time, in history's most extensive search for healing agents in wild plants. Native healers on three continents are a vital part of that quest, which has been launched by the NCI.

The number of plant-based medicines in use by physicians today barely hints at the untapped potential of nature's pharmacopeia. "Of more than 250,000 known plant species, less than 1 percent have been thoroughly tested for medical applications," says Michael Balick, director of the New York Botanical Garden's Institute of Economic Botany. "Yet out of this tiny portion have come 25 percent of our prescription medicines."

But if chemists had to collect and analyze tens of thousands of wild plants, they would never finish the task. Tropical deforestation ensures that many plant species will disappear before they can be identified, let alone tested, by science.

Part of NCI's strategy is to have ethnobotanists (scientists who study the relationship between plants and people) seek out plants that native healers have found effective as local medicines. Ethnobotanist Balick travels to Central American rain forests searching for bush doctors who appear to treat diseases successfully with specific herbs. Botanists from the University of Illinois and Missouri Botanical Garden do similar work for NCI elsewhere.

Balick collects plants recommended by healers in the form of seeds, leaves, bark, roots and stems. He sends samples to NCI scientists, who test extracts against cancer cells and the AIDS virus. Plants with promise are tried in experiments with mice. Several years into the process, some may end up in human drug trials.

Skeptics argue that native lore is mere superstition. But Balick says, "The traditional lore of Central America is built on more than 200 generations of trial and error experimentation with local plants. A very specific pharmacopeia has been developed and been refined into an advanced system of medicine."

A number of today's drugs have long been part of native lore. Curare, the dart poison

avored by Amazon Indians, is used as a muscle relaxant in surgery. Reserpine, now used to treat hypertension, has a centuries-old history as a tranquilizer. For NCI and its ethnobotanical explorers, the search for such traditional knowledge is urgent. Tests of the most promising plants will require that larger quantities be collected from the wild. But Balick warns, "Plants are disappearing so fast that they

may not be there when we go back for more." Further, the healers themselves are aging. Don Elijio is 93 years old; much of his knowledge will die with him.

Ethnobotanists see the door to the rain forest medicine chest swinging shut. "Because the species—and the people who know their uses—are disappearing so quickly," says Balick, "we have just 10 to 15 years to do this work."

"Seeking Medical Secrets in the Rain Forest" by Jo Yohay, *National Wildlife Magazine*, Apr-May 1992. Copyright 1992. Used by permission of the publisher.

1. Which **best** describes the author's tone in this article?
  - A philosophical
  - B satirical
  - C optimistic
  - D concerned
2. Which **best** describes NCI's strategy of using ethnobotanists to collect rain forest plants?
  - A focusing on the past
  - B exploring the exotic
  - C benefiting from experience
  - D depending upon tradition
3. In which endeavor would an ethnobotanist be **least** useful?
  - A defending the rights of animals
  - B discovering new edible plants
  - C searching for nontoxic pesticides
  - D protecting endangered wildflowers
4. Which is the **best** evidence that native lore about healing plants is not mere superstition?
  - A Native lore is based on 200 years of experimentation.
  - B Native healers have developed a very specific pharmacopeia.
  - C Plants are the source for one-fourth of our prescription medicines.
  - D Some of the drugs we use today have long been a part of native lore.

5. Which is the chief antagonist in this story of scientists racing against time?
- A isolated habitats
  - B tropical deforestation
  - C scientific skepticism
  - D native superstition
6. What literary technique is used in the sentence, “Ethnobotanists see the door to the rain forest medicine chest swinging shut”?
- A metaphor
  - B personification
  - C symbolism
  - D onomatopoeia
7. Which **best** describes the main purpose of the first two paragraphs in this article?
- A to describe the setting of the article
  - B to state the main idea of the article
  - C to appeal to the reader’s curiosity
  - D to introduce the main characters



## Federigo's Falcon

*Translated by Mark Musa and Peter Bondanella*

*Giovanni Boccaccio was an important figure during the Renaissance period. From about 1351 to 1353, he worked on The Decameron, which consisted of a hundred short tales and novellas. In the frame story, Boccaccio has seven young women and three young men flee from Florence to escape the plague. Read the following story about Federigo's falcon from the fifth day and answer the questions that follow.*

There once was in Florence a young man named Federigo, the son of Messer Filippo Alberighi, renowned above all other men in Tuscany for his prowess in arms and for his courtliness. As often happens to most gentlemen, he fell in love with a lady named Monna Giovanna, in her day considered to be one of the most beautiful and one of the most charming women that ever there was in Florence; and in order to win her love, he participated in jousts and tournaments, organized and gave feasts, and spent his money without restraint; but she, no less virtuous than beautiful, cared little for these things done on her behalf, nor did she care for him who did them. Now, as Federigo was spending far beyond his means and was taking nothing in, as easily happens he lost his wealth and became poor, with nothing but his little farm to his name (from whose revenues he lived very meagerly) and one falcon which was among the best in the world.

More in love than ever, but knowing that he would never be able to live the way he wished to in the city, he went to live at Campi, where his farm was. There he passed his time hawking whenever he could, asked nothing of anyone, and endured his poverty patiently. Now, during the time that Federigo was reduced to dire need, it happened that the husband of Monna Giovanna fell ill, and realizing death was near, he made his last will: he was very rich, and he made his son, who was growing up, his heir, and, since he had loved Monna Giovanna very much, he made her his heir should his son die without a legitimate heir; and then he died.

③ Monna Giovanna was now a widow, and as is the custom among our women, she went to the country with her son to spend a year on one of her possessions very close by to Federigo's farm, and it happened that this young boy became friends with Federigo and began to enjoy birds and hunting dogs; and after he had seen Federigo's falcon fly many times, it pleased him so much that he very much wished it were his own, but he did not dare to ask for it, for he could see how dear it was to Federigo. And during this time, it happened that the young boy took ill, and his mother was much grieved, for he was her only child and she loved him enormously; she would spend the entire day by his side, never ceasing to comfort him, and often asking him if there was anything he desired, begging him to tell her what it might be, for if it were possible to obtain it, she would certainly do everything possible to get it. After the young boy had heard her make this offer many times, he said:

"Mother, if you can arrange for me to have Federigo's falcon, I think I would be well very soon."

When the lady heard this, she was taken aback for a moment, and she began to think what she should do. She knew that Federigo had loved her for a long while, in spite of the fact that he never received a single glance from her, and so, she said to herself:

"How can I send or go and ask for this falcon of his which is, as I have heard tell, the best that ever flew, and besides this, his only means of support? And how can I be so insensitive as to wish to take away from this gentleman the only pleasure which is left to him?"

And involved in these thoughts, knowing that she was certain to have the bird if she asked for it, but not knowing what to say to her son, she stood there without answering him. Finally the love she bore her son persuaded her that she should make him happy, and no matter what the consequences might be, she would not send for the bird, but rather go herself for it and bring it back to him; so she answered her son:

“My son, take comfort and think only of getting well, for I promise you that the first thing I shall do tomorrow morning is to go for it and bring it back to you.”

The child was so happy that he showed some improvement that very day. The following morning, the lady, accompanied by another woman, as if going for a stroll, went to Federigo’s modest house and asked for him. Since it was not the season for it, Federigo had not been hawking for some days and was in his orchard, attending to certain tasks; when he heard that Monna Giovanna was asking for him at the door, he was very surprised and happy to run there; as she saw him coming, she greeted him with feminine charm, and once Federigo had welcomed her courteously, she said:

“Greetings, Federigo!” Then she continued: “I have come to compensate you for the harm you have suffered on my account by loving me more than you needed to; and the compensation is this: I, along with this companion of mine, intend to dine with you—a simple meal—this very day.”

To this Federigo humbly replied: “Madonna, I never remember having suffered any harm because of you; on the contrary: so much good have I received from you that if ever I have been worth anything, it has been because of your merit and the love I bore for you; and your generous visit is certainly so dear to me that I would spend all over again that which I spent in the past; but you have come to a poor host.”

And having said this, he received her into his home humbly, and from there he led

her into the garden, and since he had no one there to keep her company, he said:

“My lady, since there is no one else, this good woman here, the wife of this workman, will keep you company while I go to set the table.”

⑭ Though he was very poor, Federigo, until now, had never before realized to what extent he had wasted his wealth; but this morning, the fact that he found nothing with which he could honor the lady for the love of whom he had once entertained countless men in the past gave him cause to reflect: in great anguish, he cursed himself and his fortune and, like a man beside himself, he started running here and there, but could find neither money nor a pawnable object. The hour was late and his desire to honor the gracious lady was great, but not wishing to turn for help to others (not even to his own workman), he set his eyes upon his good falcon, perched in a small room; and since he had nowhere else to turn, he took the bird, and finding it plump, he decided that it would be a worthy food for such a lady. So, without further thought, he wrung its neck and quickly gave it to his servant girl to pluck, prepare, and place on a spit to be roasted with care; and when he had set the table with the whitest of tablecloths (a few of which he still had left), he returned, with a cheerful face, to the lady in his garden, saying that the meal he was able to prepare for her was ready.

The lady and her companion rose, went to the table together with Federigo, who waited upon them with the greatest devotion, and they ate the good falcon without knowing what it was they were eating. And having left the table and spent some time in pleasant conversation, the lady thought it time now to say what she had come to say, and so she spoke these kind words to Federigo:

“Federigo, if you recall your past life and my virtue, which you perhaps mistook for harshness and cruelty, I do not doubt at all that you will be amazed by my presumption

when you hear what my main reason for coming here is; but if you had children, through whom you might have experienced the power of parental love, it seems certain to me that you would, at least in part, forgive me. But, just as you have no child, I do have one, and I cannot escape the common laws of other mothers; the force of such laws compels me to follow them, against my own will and against good manners and duty, and ask you of a gift which I know is most precious to you; and it is naturally so, since your extreme condition has left you no other delight, no other pleasure, no other consolation; and this gift is your falcon, which my son is so taken by that if I do not bring it to him, I fear his sickness will grow so much worse that I may lose him. And therefore I beg you, not because of the love that you bear for me, which does not oblige you in the least, but because of your own nobility, which you have shown to be greater than that of all others in practicing courtliness, that you be pleased to give it to me, so that I may say that I have saved the life of my son by means of this gift, and because of it I have placed him in your debt forever.”

⑰ When he heard what the lady requested and knew that he could not oblige her since he had given her the falcon to eat, Federigo began to weep in her presence, for he could not utter a word in reply. The lady, at first, thought his tears were caused more by the sorrow of having to part with the good falcon than by anything else, and she was on the verge of telling him she no longer wished it, but she held back and waited for Federigo’s reply after he stopped weeping. And he said:

“My lady, ever since it pleased God for me to place my love in you, I have felt that Fortune has been hostile to me in many things, and I have complained of her, but all this is nothing compared to what she has just done to me, and I must never be at peace with her again, thinking about how you have come here to my poor home where, while it was rich, you never deigned to come, and you

requested a small gift, and Fortune worked to make it impossible for me to give it to you; and why this is so I shall tell you briefly. When I heard that you, out of your kindness, wished to dine with me, I considered it fitting and right, taking into account your excellence and your worthiness, that I should honor you, according to my possibilities, with a more precious food than that which I usually serve to other people; therefore, remembering the falcon that you requested and its value, I judged it a food worthy of you, and this very day had it roasted and served to you as best I could; but seeing now that you desired it another way, my sorrow in not being able to serve you is so great that I shall never be able to console myself again.”

And after he had said this, he laid the feathers, the feet, and the beak of the bird before her as proof. When the lady heard and saw this, she first reproached him for having killed such a falcon to serve as a meal to a woman; but then to herself she commended the greatness of his spirit, which no poverty was able or would be able to diminish then, having lost all hope of getting the falcon and, perhaps because of this, of improving the health of her son as well, she thanked Federigo both for the honor paid to her and for his good will, and she left in grief, and returned to her son. To his mother’s extreme sorrow, either because of his disappointment that he could not have the falcon, or because his illness must have necessarily led to it, the boy passed from this life only a few days later.

After the period of her mourning and bitterness had passed, the lady was repeatedly urged by her brothers to remarry, since she was very rich and was still young; and although she did not wish to do so, they became so insistent that she remembered the merits of Federigo and his last act of generosity—that is, to have killed such a falcon to do her honor—and she said to her brothers:

“I would prefer to remain a widow, if that would please you; but if you wish me to

take a husband, you may rest assured that I shall take no man but Federigo degli Alberighi.”

In answer to this, making fun of her, her brothers replied:

“You foolish woman, what are you saying? How can you want him; he hasn’t a penny to his name?”

To this she replied: “My brothers, I am well aware of what you say, but I would rather have a man who needs money than money that needs a man.”

②5 Her brothers, seeing that she was determined and knowing Federigo to be of noble birth, no matter how poor he was, accepted her wishes and gave her in marriage to him with all her riches; when he found himself the husband of such a great lady, whom he had loved so much and who was so wealthy besides, he managed his financial affairs with more prudence than in the past and lived with her happily the rest of his days.

“Federigo’s Falcon” from *The Decameron* by Giovanni Boccaccio, translated by Mark Musa and Peter Bondanella. Translation copyright 1982 by Mark Musa and Peter Bondanella. Reprinted by permission of W.W. Norton & Co., Inc.

8. Which of the following **best** states the theme of “Federigo’s Falcon”?
- A A person’s true worth is best measured by the possessions he or she accumulates.
  - B Money is not a true indicator of a person’s worth.
  - C A person’s worth determines his or her fate.
  - D Money can bring happiness to those who wait.
9. Who is the antagonist in this story?
- A Giovanna’s son
  - B Federigo
  - C the falcon
  - D Giovanna
10. Monna Giovanna’s son stated that he would soon be well if he had which of the following?
- A a servant
  - B a hunting dog
  - C money
  - D Federigo’s falcon
11. Why did Giovanna debate with herself before asking Federigo for the falcon?
- A She wanted her son’s wealth to come to her.
  - B She did not want to be in debt to Federigo.
  - C She felt guilty asking Federigo for his falcon.
  - D She was still in mourning and should not visit with other men.

12. Why does Giovanna decide to marry Federigo?
- A He has good financial sense.
  - B Her brother wants her to marry Federigo.
  - C He saved her son's life.
  - D He is generous and honorable.
13. All of the following statements from the story describe the role of women in society in Renaissance Italy *except* which one?
- A “. . . but she, no less virtuous than beautiful, cared little for these things done on her behalf, nor did she care for him who did them.”
  - B “I would prefer to remain a widow, if that would please you; but if you wish me to take a husband, . . .”
  - C “. . . and he made his son, who was growing up, his heir, and, since he had loved Monna Giovanna very much, he made her his heir should his son die without a legitimate heir, . . .”
  - D “The following morning, the lady, accompanied by another woman, as if going for a stroll, went to Federigo's modest house and asked for him.”
14. Which of the following literary devices is present in this story?
- A onomatopoeia
  - B irony
  - C extended metaphor
  - D personification
15. Which paragraph contains the climax of the story?
- A 3
  - B 14
  - C 17
  - D 25
16. All of the following are examples of irony *except* which one?
- A Giovanna becomes a wealthy widow at the same time that Federigo is poorest.
  - B After ignoring him for so long, Giovanna learns that Federigo has the only thing that can save her son.
  - C Federigo, for all his poverty, still has white tablecloths.
  - D In his desire to please Giovanna, Federigo destroys the thing he most needs.

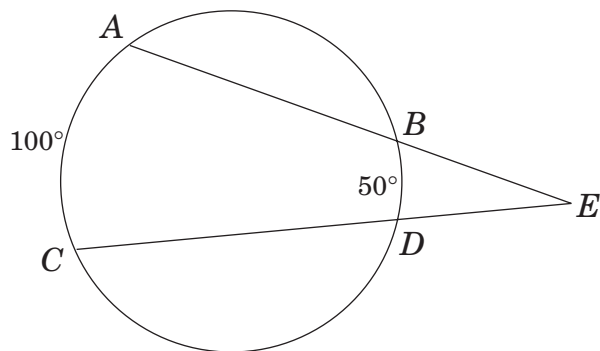
17. The word “prowess,” used to describe Federigo in paragraph 1, means which of the following?
- A forthrightness
  - B skill
  - C knowledge
  - D strength
18. If Ellie wanted to read more tales from *The Decameron*, what would be the **best** thing for her to do **first**?
- A go to the card catalog or library computer and look up Boccaccio
  - B read a history book about Renaissance Italy
  - C look up *The Decameron* in the encyclopedia
  - D skim through a collection of Italian short stories

## Part II—Mathematics Applications

1. Mrs. Pepperwhite has bought a suit on sale. The suit was marked down to one-half its original price. She then received a 25% discount on the sale price. If she paid \$127.50 for the suit, what was the original price (exclusive of tax)?

- A \$1,020.00  
 B \$510.00  
 C \$425.00  
 D \$340.00

2. According to the diagram, what is  $m\angle E$ ?



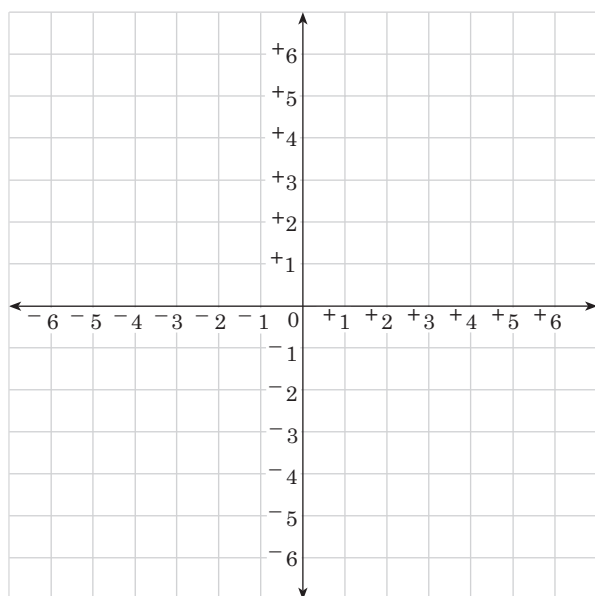
Note: Figure not drawn to scale.

- A  $25^\circ$   
 B  $50^\circ$   
 C  $75^\circ$   
 D  $100^\circ$

3. Two similar square pyramids have base areas  $4 \text{ m}^2$  and  $36 \text{ m}^2$ . If the height of the larger pyramid is 27 m, what is the height of the smaller pyramid?

- A 3 m  
 B  $4\frac{1}{2}$  m  
 C  $6\frac{3}{4}$  m  
 D 9 m

4. What is the reflection of the point  $(0, 4)$  about the line  $y = x$ ?



- A  $(0, 4)$   
 B  $(4, 0)$   
 C  $(-4, 0)$   
 D  $(0, -4)$

5. When the space shuttle leaves its orbit and enters Earth's atmosphere, the air friction produces a tremendous amount of heat. Temperature on the wings of the shuttle can reach  $1510^{\circ}\text{C}$ . What is this temperature in degrees Fahrenheit?

- A  $308.4^{\circ}\text{F}$   
 B  $1542^{\circ}\text{F}$   
 C  $2750^{\circ}\text{F}$   
 D  $2775.6^{\circ}\text{F}$

6. The line which passes through the points  $(2, 5)$  and  $(7, -2)$  also passes through which of the following points?

- A  $(-16, 4)$   
 B  $(12, -9)$   
 C  $(17, 16)$   
 D  $(17, -12)$

7. Carol has to present a report on how tax dollars are spent. She collected the following data:

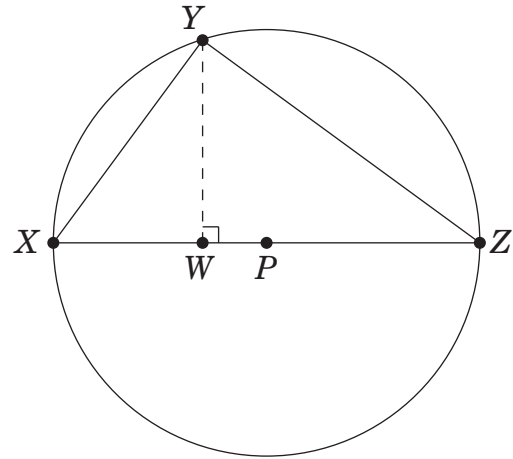
### How Tax Dollars Are Spent

Payroll	12%
Buildings	35%
Roads	40%
Maintenance	10%
Supplies	3%

Which of the following would **not** be a good way for Carol to display the data?

- A stem-and-leaf plot
- B pictograph
- C circle graph
- D bar graph

8. The circle below represents a dartboard having a 20-inch diameter.



$\triangle XYZ$  is inscribed in circle  $P$  as shown and  $YW = 9.6$  inches. If a dart lands in the interior of circle  $P$ , what is the probability that it will also land in the interior of  $\triangle XYZ$ ?

- A 0.15
- B 0.31
- C 0.46
- D 0.61

9. The table below gives the nationwide data on the number of households with CD players and the number of CDs sold for 5 consecutive years.

**Nationwide CD Data**

<b>CD Player in Household (in millions)</b>	<b>CD Sales (in millions)</b>
5.1	\$7.4
10.3	\$20.9
15.4	\$35.0
22.0	\$53.1
32.0	\$79.8

Find the equation of the line that best fits these data. (Let the number of “CD Player in Household” be your independent variable,  $x$ , and the number of “CD Sales” be your dependent variable,  $y$ .)

- A  $y = -6.6x + 2.7$
- B  $y = 0.4x + 2.4$
- C  $y = 2.4x + 0.4$
- D  $y = 2.7x - 6.6$

## VI. Sample Test Answers

### North Carolina High School Comprehensive Test

#### Part I—Reading Comprehension

##### *Seeking Medical Secrets in the Rain Forest*

Question Number	Curriculum Objective*	Correct Answer
1	2.2	D
2	2.2	C
3	2.3	A
4	3.1	D
5	2.1	B
6	2.2	A
7	3.2	C

##### *“Federigo’s Falcon” from The Decameron*

Question Number	Curriculum Objective*	Correct Answer
8	2.2	B
9	2.1	A
10	2.1	D
11	2.2	C
12	2.2	D
13	2.3	A
14	2.2	B
15	2.2	C
16	2.2	C
17	2.1	B
18	3.1	A

#### Part II—Mathematics Applications

Question Number	Curriculum Objective*	Correct Answer
1	1.3	D
2	2.1	A
3	2.3	D
4	2.5	B
5	3.1	C
6	3.3	B
7	4.1	A
8	4.2	B
9	4.3	D

\* Refer to the Goals and Objectives for Reading Comprehension and Mathematics described earlier in the handbook.















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