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## ABSTRACT

Since 1969, the Oregon State Board of Education has undertaken to reverse the trend toward providing a single, rigid program for all students, regardless of their abilities, interests, needs, or learning styles. The new standards focus on the concept of providing students an opportunity to learn and demonstrate specific "survival" competencies. Each district must clarify to its own satisfaction the point of view of "survival" in order to identify the basic skills and abilities that all students should acquire as a result of public schooling. Following adoption of the new high school graduation requirements for Oregon public schools, teachers and administrators in local districts joined with State Department of Education specialists in identifying and describing the minimum or "survival" competencies every student should have on completion of 12 years public schooling. Identification of these competencies was meant to provide all districts with models to be used in selecting and describing those competencies essential to assure all students survival level functioning -- at individual, wage-earner, and citizen levels. (Author/WM)

# oregon graduation requirements

MODELS AND GUIDELINES FOR  
PERSONAL DEVELOPMENT EDUCATION

*Section II*

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GRADUATION  
REQUIREMENTS TASK FORCE  
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Published by:  
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Dale Parnell, Superintendent  
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## FOREWORD

Dear Colleague:

On September 22, 1972, the Oregon State Board of Education passed new Minimum State Requirements for School Graduation. Three years of effort, discussion, review, and redrafting were involved in the development of these graduation standards. The large number of people in and out of the educational community who reviewed preliminary drafts and reported their findings had a significant impact on the final product. That counsel and advice was extremely valuable in improving and forming the document.

The new standards allow districts new alternatives in designing local programs. Some of these alternatives are: credit by examination, off-campus study, multiple approaches to course design, waivers of attendance requirements, and certificates of competency. The new credit requirements deserve your attention, as do the performance requirements.

This publication contains models and guidelines designed to help districts develop local implementation plans. By July 1, 1974, districts are asked to file their plans for State Board approval. Entering freshmen in the fall of 1974 will, as the class of 1978, be the first students to receive their secondary education under the new standards.

It's exciting, it's geared to developing performance-based competencies for all students, at times it may be challenging, but the end results will be worth it.

Cordially,



Dale Parnell  
Superintendent  
Public Instruction

## ACKNOWLEDGMENTS

Approximately 350 Oregon educators worked on the development of the guidelines and models that are presented here. It is not possible to acknowledge the contributions of each person by name, but it is possible to give special recognition to individuals who played key roles.

From November 1972 to May 1973 the ground work was developed by six project groups:

Those projects were directed by Earl Anderson, Executive Director, Metropolitan Administrative Service Center, Tri-County Project; Don Bunyard, Vice Principal, Marshfield Senior High School, Coos Bay Project; Eldon Blanford, President, Trico League, Trico League Project; Erwin Juilfs, Director of Education, Eugene Project; Jerry Killingsworth, Director of Curriculum, Klamath Falls Project; Chuck Porfily, Director, Vocational Education, Lebanon Project.

The six project reports were synthesized in late May by a 50-member team of project members and State Department of Education staff.

Team leaders for this phase included: Administration, Les Adkins, State Department of Education; Personal Development, Eleanor Baker, Inter-Disciplinary Education Coordinator for Marshfield Senior High School, Coos Bay; Social Responsibility, W.R. Nance, State Department of Education; Career Development, Chuck Porfily, Director of Vocational Education, Lebanon.

Two weeks of revision and rewriting were accomplished by a team of writers.

Those individuals were: Administration Section, Earl Anderson, Metropolitan Administrative Service Center; Personal Development Section, Carroll Co. North Bend District; Social Responsibility Section, Sharon Case, Multnomah County IED; Career Development Section, Chuck Porfily, Lebanon District.

Editing for final publication was done by Evelyn Gunter, Dissemination Specialist, ESEA, Title III, in cooperation with State Department of Education specialists for each of the program areas listed in the Technical Assistance Directory.

Dave Curry, Specialist for Secondary School Administration, had general responsibility for overall coordination of the activities and the publication of the finished guidelines and models.

The guide and models were produced, in part, with ESEA, Title III funds.

This was both an exciting and difficult effort. The cooperation, creativity, and commitment of all who contributed is gratefully acknowledged.

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## INTRODUCTION

### RATIONALE FOR MODEL DEVELOPMENT

Following adoption of the new high school graduation requirements for Oregon public schools, teachers and administrators in local districts joined with State Department of Education specialists in identifying and describing minimum or "survival" competencies which every student should have upon completion of 12 years of public schooling.

This was done to provide all districts with models which could be used in selecting and describing the competencies they would consider as essential to assure survival level functioning as an individual, a wage-earner, and a citizen.

The Oregon Board of Education has singled out three areas of study at the secondary level which are most likely to develop the competencies needed to fill these three roles:

**Personal Development Education.** The State Board has said that to survive and grow as an individual it is necessary to have:

1. Basic skills—reading, writing, computing, listening, speaking, and analyzing.
2. Understanding of scientific and technological processes.
3. Ability to develop and maintain a healthy mind and body.
4. The skills, confidence, and interests to remain a lifelong learner.

**Social Responsibility Education.** Good citizenship, as defined in the graduation requirements, means ability to behave responsibly:

1. As a participant in community, state, and national government.
2. In personal interactions with the environment.
3. On the streets and highways.
4. As a consumer of goods and services.

**Career Development Education.** To survive and advance in any career area, students should develop:

1. Good work habits.
2. Positive attitudes toward work.
3. Ability to maintain good interpersonal relationships.

4. The ability to make appropriate career decisions.

5. Entry-level skills for their chosen career fields.

It is in these three areas of study, then, that model program goals, competency statements, and performance indicators have been developed.

It is important for Oregon administrators and teachers to recognize that survival level competencies in the three areas of study defined by the State Board can be identified in, or added to, ongoing programs and courses if the district does not wish to attempt a total reorientation of its curriculum.

With these things in mind, a district may choose:

**Option A:** To adopt the program goals, competencies, and performance indicators contained in this document as a beginning for planning related instruction.

**Option B:** To adapt the model statements, making desired alterations, additions, or deletions in accordance with the district's educational philosophy.

**Option C:** To develop different goals, competency requirements, and performance indicators which more nearly express the community's definition of what the outcomes of a "survival level" education should be.

### TERMINOLOGY

Levels of complexity and terminology of the models presented in this guide parallel those of the Tri-County Course Goals Project.\* Program goals are stated at the same level of generality and competencies are, in effect, course goals. Therefore, districts can use both models in developing local goals.

\*For copies of the Tri-County Course Goals Project materials, contact: Mr. Jack Allen, Director, Department of Curriculum, Multnomah County Intermediate Education District, P.O. Box 16657, Portland, Oregon 97216.

Graduation Requirements Model Terminology	Tri-County Model Terminology	Level of Complexity
Program Goal	Program Goal	The student is able to apply the conventions of English grammar and usage in speaking and writing.
Competency	Course Goal	The student is able to use appropriate singular and plural verbs with corresponding singular and plural subjects.
Performance Indicator	Behavioral Objective (measurement, diagnosis, instruction)	Given 20 sentences, ten with plural subjects and ten with singular subjects, the student will identify the correct number form of the verb (is, are).
Method for Certifying Competency	Performance Objective or Criterion Referenced Test Item (measurement)	Given 20 sentences, ten with plural subjects and ten with singular subjects, the student will identify the correct number form of the verb (is, are) with at least 90 percent accuracy.

Life teaches us that there is more than one way to be competent. The district that allows for individual differences among students by providing more than one set of performance indicators and more than one learning setting in which to receive information and training will be allowing students a fuller opportunity to develop the competencies they need.

Students in the current generation are often described as "experience poor;" they are more likely to read about an activity, or see it on television, than to engage in it personally. Assuming facilities and equipment are available, the student may learn best from "hands on" activities. For example, if the student is to demonstrate skills in riding a bicycle, obviously the learning activity should include the use of a bicycle. In such cases it would be unfair to pass judgment on a student's *manual skill* by means of a written essay or oral description. The thing to be performed in this case should be the *manual skill*, not the ability to read, write, or speak clearly. Other performance indicators do not demand direct student involvement. For example, if a student is expected to be able to identify the safest colors and types of clothing for pedestrian use, it would not be necessary for him to actually wear or see the clothing; a picture might suffice.

#### ADDITIONAL RESOURCES

In addition to the Tri-County Course Goals Project cited previously, the six pilot projects which dealt with the Minimum State Requirements for Graduation issued reports containing many sample program goals, competencies and performance indicators.

### PERFORMANCE INDICATORS

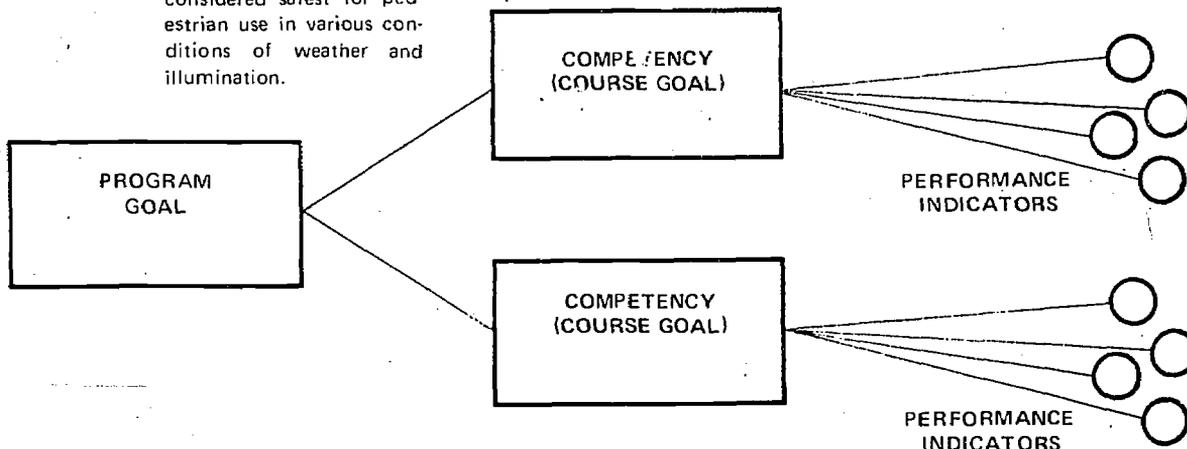
A performance indicator is a description of student behavior which takes place within a prescribed setting. When a student is able to perform in certain specified ways, the teacher may assume that he has achieved the desired competency. The following example illustrates the relationship of the performance indicator to a competency and program goal:

Program Goal:	Students will be able to behave in a responsible manner when involved in traffic as pedestrians.
Competency (Course Goal)	The student can distinguish between safe and unsafe apparel for pedestrian travel.
Performance Indicator:	Given a list of colors and types of clothing, the student will identify those considered safest for pedestrian use in various conditions of weather and illumination.

A performance indicator is composed of two parts:

1. The *statement of performance* describes what the student will be doing; it suggests observable student behavior.  
 "... student will identify the safest colors and clothing types ..."
2. The *referent condition(s)* describes under what circumstances the student will perform; it often implies both a learning and a testing activity.  
 "... given a list of twenty colors and types of clothing ..."

Represented graphically, the relationship of performance indicators and goals looks like this:



Districts may wish to contact the following project directors for copies of their reports (available at cost):

- Erwin Juilfs, Director of Education, Eugene School District 4J, 200 North Monroe Street, Eugene, Oregon 97402.
- Chuck Porfily, Director, Career Education, Lebanon High School, 60 Main Street, Lebanon, Oregon 97355.
- Jerry Killingsworth, Director of Curriculum, 475 South Alameda, Klamath Falls, Oregon 97601.
- Earl Anderson, Director, Metropolitan Administrative Service Center, 220 SE 102nd, Portland, Oregon 97216.
- Eldon Blanford, Principal, McKenzie High School, Finn Rock, Oregon 97401.
- Don Bunyard, Curriculum Vice-Principal, Marshfield Senior High School, Coos Bay, Oregon 97420.

Other resources include the following materials available from: The Documents Clerk, State Department of Education. (Most curriculum materials listed are available to Oregon schools at no cost.)

#### Career Development

- \**Accounting Occupations*, 1973, 227 p., \$2.50
- \**Agriculture*, 1970, 150 p., \$2.50
- \**Building Construction*, 1972, \$2.50
- \**Clerical Occupations*, 1970, 134 p., \$2.50
- \**Electricity-Electronics*, 1969, 149 p., \$2.50
- \**Food Services Occupations*, 1970, 163 p., \$2.50
- \**Forest Products*, 1972, \$2.50
- \**Health Occupations*, 1970, 153 p., \$2.50
- \**Industrial Mechanics*, 1969, 188 p., \$2.50
- \**Marketing*, 1970, 170 p., \$2.50
- \**Metals*, 1969, 181 p., \$2.50
- \**Steno-Secretarial*, 1970, 91 p., \$2.50

#### Social Responsibility

\**Environmental Encounters: A Handbook for Environmental Education in Oregon*, 1973.

\**Government in Oregon*. Teachers resource handbook on state and local government, 1971. \$3.

\**Personal Finance Education Guide*, 1972. \$2.

\*\**Your Chance to Live*, (grades 7-12), a no-cost survival and safety program. Contact Wendell Curry, Emergency Services and Defense Civil Preparedness Specialist, State Department of Education.

The program goals, competencies and performance indicators listed in the curricular components of the Guide are *samples only*. It is anticipated that educators throughout the state will develop additional performance indicators which are appropriate to the unique orientation and abilities of their students. As indicated previously, districts may adopt, or adapt, or develop new materials.

## 1.0 COMMUNICATION (LISTEN, SPEAK, READ, WRITE, ANALYZE)

### PROGRAM GOAL

1.1 Students will recognize the ways in which good listening techniques contribute to understanding the communication of others.

1.2 Students will recognize the role of articulate speech in conveying information and establishing satisfactory personal relationships.

### COMPETENCIES (COURSE GOALS)

The student will be able to:

1.1.1 Illustrate how the use of good listening techniques improves comprehension and personal relationships.

1.1.2 Recognize personal values or emotional reactions that interfere with the ability to listen attentively.

1.1.3 Use verbal and nonverbal clues as indicators of the purpose or effect of an oral presentation.

1.1.4 Use auditory clues (transition words, inflection, pauses) to identify patterns of development in information being presented orally.

1.2.1 Illustrate the importance of using effective speaking techniques.

1.2.2 Explain the relationship of appropriate vocabulary, correct usage, and the orderly presentation of ideas to accurate communication of information.

1.2.3 Adapt speaking style to particular audiences or purposes.

### SAMPLE PERFORMANCE INDICATORS

1.1.1.1 Given opportunities to observe filmed enactments of personal conflicts, the student *will identify the effects of inattentive listening on conflict resolution.*

1.1.1.2 After listening to group discussions, the student *will identify instances in which misunderstanding of directions or information resulted from participant's inattentive listening.*

1.1.2.1 Given pictures of people of widely differing appearance, the student *will explain and evaluate any inclinations he might have to listen to some and not to others.*

1.1.2.2 After participating in debate of an emotional issue, the student *will analyze how his emotions might have interfered with comprehending his opponent's arguments.*

1.1.3.1 After listening to selected oral presentations, the student *will describe the eye movements, gestures, body movements, and signal words that helped to determine each speaker's purpose.*

1.1.3.2 After observing selected TV panel discussions or talk shows, the student *will describe the reactions of a group when one member interrupts, monopolizes, or makes irrelevant comments.*

1.1.4.1 While listening to a five-minute news commentary, the student *will list the clues that aid him in identifying the main topics and supporting facts.*

1.1.4.2 While listening to a set of directions, the student *will list the auditory clues that signal each new step.*

1.2.1.1 After viewing films or other enactments of common conflict situations, the student will:

(1) *Explain the effects of poor spoken communication.*

(2) *Identify the factors that contribute to poor communication.*

1.2.1.2 After participating in group discussion, the student *will identify instances where verbal and nonverbal blocks occurred and point out the reasons.*

1.2.2.1 After listening to formal and informal debates over issues of current interest, the student *will identify the most persuasive contestant and explain the reasons for his choice.*

1.2.3.1 Given role playing assignments (addressing a service group, interviewing a prospective employer, or reporting to a group of children), the student *will modify his manner of presentation to suit each audience.*

**1.0 COMMUNICATION (LISTEN,  
SPEAK, READ, WRITE, ANALYZE)**

**PROGRAM GOAL**

**COMPETENCIES  
(COURSE GOALS)**

The student will be able to:

**SAMPLE PERFORMANCE  
INDICATORS**

1.3 Students will recognize the role of critical reading in acquiring information or learning about people and their relationships.

1.2.4 Use verbal and nonverbal cues to emphasize, entertain, or signal a change of thought.

1.2.5 Demonstrate effective voicing techniques.

1.3.1 Illustrate how critical reading of a well-written novel, play, or autobiography has increased his understanding of himself and others.

1.3.2 Recognize the impact of critical and noncritical reading on success in understanding the purpose and content of written communications.

1.3.3 Apply basic reading skills to obtain needed information, ideas, or directions.

1.2.3.2 In an objective test or oral discussion, the student *will demonstrate that he knows the factors which must be considered in adjusting speech techniques to various audiences (e.g., proper voicing techniques, understandable vocabulary, etc.)*

1.2.3.3 Given a series of simulated interviews with persons in such positions as credit manager, banker, teacher, tax consultant, employer, policeman, or librarian, the student will:

(1) *Phrase questions to elicit needed information.*

(2) *Formulate answers to provide relevant, or requested, information.*

1.2.4.1 Given a task such as explaining how to operate a voting machine, change a tire, or cook a meal, the student *will use verbal and nonverbal cues to enhance his explanation.*

1.2.4.2 Given a choice of prominent TV or other well-known personalities, the student *will imitate the eye and body movements, gestures, and facial expressions of one whom he considers to be poised and personable.*

1.2.5.1 Given an announcement to make (or a dramatic part to play), the student *will demonstrate the ability to use voicing techniques so that he is easily heard and understood by a large group.*

1.2.5.2 Given a story to tell, the student *will relate it, using adequate enunciation, pitch, and inflection.*

1.3.1.1 After reading specified novels, plays, or autobiographies, the student will:

(1) *Identify incidents or characters which parallel his own experience.*

(2) *Describe the insights he received.*

1.3.1.2 Given the assignment, the student *will read books of his own choice and analyze their contribution to his own development as a person.*

1.3.2.1 Given several different purchasing contracts, the student *will make an accurate interpretation of their provisions.*

1.3.2.2 Given several case studies concerning consumer deception, the student *will analyze the fallacies and hidden assumptions in advertising materials.*

1.3.3.1 Given a list of topics, the student *will locate and identify resource materials.*

1.3.3.2 Given a map or atlas, the student *will locate two specific cities, approximate the distance between the cities by using the scale or mileage chart, and plot a direct route by listing the names and types of roads that might be traveled.*

**1.0 COMMUNICATION (LISTEN,  
SPEAK, READ, WRITE, ANALYZE)**

**PROGRAM GOAL**

**COMPETENCIES  
(COURSE GOALS)**

**SAMPLE PERFORMANCE  
INDICATORS**

The student will be able to:

1.4 Students will recognize the importance of clarity, form, and organization in written communications.

1.3.4 Demonstrate mastery of basic reading skills.

1.3.5 Demonstrate knowledge of sufficient reading vocabulary to function in common community, business, and social activities.

1.4.1 Predict the effectiveness of various types of written communications.

1.4.2 Write legible passages using correct punctuation, capital letters, spelling, and sentence structure.

1.3.3.3 Given a variety of forms such as job applications, checks, accident reports and claim forms, the student will read and fill out the forms correctly.

1.3.4.1 Given written materials concerning career and job opportunities, the student will:

- (1) Predict potential opportunities within his career field.
- (2) Draw conclusions about trends in the field.
- (3) Identify data related to his chosen career field.

1.3.5.1 Given standardized or teacher-made vocabulary tests, the student will demonstrate comprehension of word meanings.

1.3.5.2 Given unfamiliar but common types of governmental, business or social communications, the student will indicate ability to:

- (1) Translate symbols into words.
- (2) Determine word meanings through dictionary use, contextual and picture clues, etc.

1.4.1.1 Given several examples of business letters or letters of application, the student will predict their effectiveness on the basis of word choice, form, and organization of ideas.

1.4.1.2 After watching an important news event on television, the student will:

- (1) Identify the ways in which newspaper stories do, or do not, convey an accurate impression of what happened.
- (2) Predict possible outcomes of erroneous impressions gained by readers who do not have first-hand information.

1.4.1.3 Given examples of letters or other written expressions of opinion, the student will suggest word choices, organizational changes, or revisions in sentence structure that would improve the effectiveness of the messages.

1.4.2.1 Using himself as a subject, the student will write three legible paragraphs.

1.4.2.2 Given a sample of writing without punctuation, the student will provide commas, periods, question marks, apostrophes in contractions, and simple quotation marks.

1.4.2.3 Given a sample of writing without capital letters, the student will rewrite the passage demonstrating correct use of capital letters.

1.4.2.4 Given a topic, the student will write a paragraph containing no sentence fragments or run-on sentences.

**1.0 COMMUNICATION (LISTEN,  
SPEAK, READ, WRITE, ANALYZE)**

**PROGRAM GOAL**

1.5 Students will recognize the importance of critical analysis in understanding the meaning, purpose, and effectiveness of oral and written communications.

**COMPETENCIES  
(COURSE GOALS)**

The student will be able to:

1.4.3 Organize sentences and paragraphs that will give directions, report, describe, or support an opinion.

1.5.1 Illustrate how critical analysis of oral and written communications can increase his ability to avoid, as well as to solve problems.

1.5.2 Use the techniques of critical analysis to infer an author's point of view and purpose.

**SAMPLE PERFORMANCE  
INDICATORS**

1.4.3.1 Using his own address, the student will write a paragraph describing the location of his home in relation to the nearest hospital, school, shopping center, police department, or fire station.

1.4.3.2 After viewing a film of an automobile accident, the student will write an accident report.

1.4.3.3 Given a description of a saleable object or skill, the student will write a classified advertisement.

1.4.3.4 Given a topic for which he feels concern, the student will write a persuasive essay justifying that opinion.

1.5.1.1 After listening to both sides of a debate about freedom of the press, the student will:

- (1) Identify the major arguments of each side and assess their validity.
- (2) Point out faulty assumptions or misrepresentations of facts.
- (3) Explain how uncritical acceptance of such faulty reasoning by a majority of people could affect his own daily existence.

1.5.1.2 After reading conflicting editorials or other reports concerning the implications of certain school district budget requests, the student will explain how critical analysis of these reports by the citizens of his community might affect the way many of them would vote, and the quality of their educational program.

1.5.1.3 Given several advertisements concerning competing products, the student will point out missing or inaccurate information and explain how the ability to do so will affect his buying habits.

1.5.2.1 After listening to a musical composition or studying a work of art, the student will select the most accurate among a series of statements that describe its structure or theme.

1.5.2.2 Given a series of advertisements, the student will point out irrelevancies, exclusion of relevant information, misleading juxtaposition, missing premises, and misleading emphasis.

1.5.2.3 Given selected paragraphs from political speeches, the student will recognize overgeneralization, pandering, and exploitation of basic human fears such as the fear of unpopularity, failure, injury, or death.

1.5.2.4 Given an editorial, the student will tell the purpose (explanation, persuasion, criticism, praise, or entertainment) for which it was written.

**1.0 COMMUNICATION (LISTEN,  
SPEAK, READ, WRITE, ANALYZE)**

**PROGRAM GOAL**

**COMPETENCIES  
(COURSE GOALS)**

**SAMPLE PERFORMANCE  
INDICATORS**

The student will be able to:

1.5.3 Determine whether arguments are relevant and consistent.

1.5.4 Recognize elements in a communication which are not clearly labelled or identified by the author.

1.5.3.1 After watching a filmed or televised story, the student *will identify how the major events related to the purpose of the story and distinguish inconsistencies in the words and behaviors of the major characters.*

1.5.3.2 Given statements in an argument, the student *will determine which statements support the main theses, which have cause-and-effect relationships, and which have sequential relationships.*

1.5.4.1 Given a paragraph which contains several statements of fact and a conclusion based upon one unstated assumption, the student *will choose the most accurate of several sentences describing what that unstated assumption is.*

1.5.4.2 Given a paragraph which contains both facts and assumptions, or hypotheses, the student *will distinguish between them.*

**2.0 COMPUTATIONAL SKILLS (COMPUTE,  
USING THE BASIC PROCEDURES)**

**PROGRAM GOAL**

**2.1 Students will be able to use basic computational skills and knowledge.**

**2.2 Students will be able to perform simple arithmetic operations.**

**COMPETENCIES  
(COURSE GOALS)**

The student will be able to:

**2.1.1** Apply the basic computational skills in solving problems commonly encountered in society.

**2.1.2** Recognize and use equivalent forms of a number.

**2.1.3** Convert between whole numbers, integer fractions, decimal fractions and percents.

**2.2.1** Perform operations with powers of ten by (10, 100, 1,000) mentally.

**2.2.2** Determine factor properties of whole numbers mentally.

**2.2.3** Demonstrate knowledge of the basic whole number facts of arithmetic.

**2.2.4** Estimate sums, differences, products and quotients.

**2.2.5** Estimate distance, area, volume, and time.

**SAMPLE PERFORMANCE  
INDICATORS**

**2.1.1.1** Given a road map, the student *will find the highway distances between towns on the map.*

**2.1.1.2** Given the list price of an item and the monthly installment if purchased on credit, the student *will determine the amount of credit charges when payment is deferred.*

**2.1.2.1.** Given decimals (tenths and hundredths), the student *will identify the corresponding equivalent percents.*

**2.1.2.2** Given a set of ruler fractions, decimals, and mixed fractions and mixed decimals, the student *will determine which of these are equivalent to a given ruler fraction or decimal.*

**2.1.3.1** Given fractions or mixed fractions, the student *will write equivalent fractions or mixed fractions.*

**2.1.3.2** Given common fractions or mixed fractions, the student *will write the decimal equivalents.*

**2.2.1.1** Given a list of whole number exercises involving multipliers and divisors of 10, 100, or 1,000, the student *will find the answers without using paper and pencil.*

**2.2.1.2** Given a list of decimals and mixed decimals involving multipliers and divisors of 10, 100, or 1,000, the student *will find the answers without using paper and pencil.*

**2.2.2.1** Given a list of whole numbers, the student *will select mentally those numbers which are divisible by 2, 5, or 10.*

**2.2.2.2** Given a list of whole numbers, the student *will classify each number as odd or even without the use of paper or pencil.*

**2.2.3.1** When given the basic addition combinations, the student *will give the sums.*

**2.2.3.2** When presented with the basic multiplication combinations, the student *will give the products.*

**2.2.4.1** Given the cost of five items, the student *will estimate the sum by a rounding procedure.*

**2.2.4.2** Given numbers, the student *will estimate the quotients by rounding each number.*

**2.2.5.1** Given a diagram of circles or rectangles, the student *will by estimation shade in the requested areas.*

**2.2.5.2** Given a distance, the student *will estimate that distance in specified units (e.g., centimeters, meters, kilometers, car lengths, or football fields).*

## 2.0 COMPUTATIONAL SKILLS (COMPUTE, USING THE BASIC PROCEDURES)

### PROGRAM GOAL

2.3 Students will be able to apply basic measuring skills.

2.4 Students will be able to apply basic comparing and ordering skills.

### COMPETENCIES (COURSE GOALS)

The student will be able to:

2.3.1 Use the terminology of the metric (SI)\* and other common measurement systems.

\*SI (Systems International) will be introduced nationwide within ten years. Schools in Oregon will be initiating the state plan involving SI by school year 73-74. Paul, Martin A. "International System of Units (SI)," *Chemistry XLV* (Oct. 1972) 14. *A Metric America: A Decision Whose Time Has Come*, National Bureau of Standards, Publication 345, Washington: U.S. Dept. of Commerce, July 1971.

2.3.2 Use measurement units and devices.

2.4.1 Use ratios, proportions, and percents to represent comparisons.

2.4.2 Use the ratio of two units as a means of converting from one unit of measurement to another.

2.4.3 Order numbers.

2.4.4 Recognize situations in which the probability of an event occurring is likely, unlikely, or equally likely.

### SAMPLE PERFORMANCE INDICATORS

2.3.1.1 Given measurements (some of which are equivalent) and the appropriate conversion tables, the student *will select the measurements which are equivalent.*

The measurements could involve mixed numbers, decimals, and units such as:

- (1) Yards, feet, inches
- (2) Meters, centimeters, kilometers
- (3) Liters, milliliter, kiloliter
- (4) Gram, kilogram, milligram
- (5) Hours, minutes, seconds
- (6) Pounds, ounces
- (7) Cups, pints, tablespoons, teaspoons

2.3.1.2 Given statements of metric measurement, the student *will convert measurements from one metric unit to another.* For example:

centimeters	meters
millimeters	centimeters
meters	kilometers
grams	kilograms
milligrams	grams
milliliters	liters

2.3.2.1 Given the cost of a rug per square yard and the dimensions of a rectangular room in feet, the student *will estimate the cost of wall-to-wall carpeting.*

2.3.2.2 Given several angles and a protractor, the student *will perform the appropriate measurements.*

2.4.1.1 Given a variety of one-step percent problems, the student *will select which form can be used to solve each problem.*

2.4.1.2 Having two given quantities, the student *will find the percent one is of the other.*

2.4.2.1 Given problems and accompanying proportion equations, the student *will indicate whether or not the solution of an equation is the answer to a problem.*

2.4.2.2 Given a variety of grids, the student *will shade in a given percent of the squares.*

2.4.3.1 Given fractions or ruler fractions between two integers, the student *will determine which number is closer to the smaller integer and which to the larger integer.*

2.4.3.2 Given a roster of decimals and mixed decimals, the student *will list them in ascending order.*

2.4.4.1 Given the odds for a particular event to happen, the student *will determine if the odds are favorable or unfavorable for the event to occur.*

2.4.4.2 Given a "chance" (expressed in percent) of an event happening, the student *will rate the probability of occurrence as good, equal chance, or poor.*

**2.0 COMPUTATIONAL SKILLS (COMPUTE, USING THE BASIC PROCEDURES)**

**PROGRAM GOAL**

2.5 Students will be able to interpret numerical information in a variety of ways.

2.6 Students will be able to use common formulae.

**COMPETENCIES (COURSE GOALS)**

The student will be able to:

2.5.1 Construct an appropriate form (graph, chart, table) to display a given type of data clearly.

2.5.2 Derive numerical information from commonly used graphs, tables, and charts.

2.5.3 Recognize misleading or incorrect methods of displaying data.

2.5.4 Determine measures of central tendency (mode, median, and arithmetic mean) and make interpretations for a given set of data.

2.6.1 Evaluate simple algebraic expressions and formulae.

**SAMPLE PERFORMANCE INDICATORS**

2.5.1.1 Given data on such topics as mountain heights or population of cities, and a chart with a suitable scale clearly indicated, the student will make a bar graph of the data.

2.5.1.2 Given data on such topics as hourly temperatures and a chart with a suitable scale clearly indicated, the student will make a line graph of the data.

2.5.2.1 Given a circle graph, bar graph, or line graph and appropriate statements, the student will determine the validity of the statement.

2.5.2.2 Given a simple bar graph or line graph, the student will determine one component when the other component is given.

2.5.3.1 From a selection of line graphs, the student will identify that graph in which a trend is least apparent.

2.5.3.2 From a selection of graphs, the student will identify that graph which is most likely to mislead the reader, and indicate why this is so.

2.5.4.1 Given a selection of numbers, the student will find the average (arithmetic mean).

2.5.4.2 Given several numbers, the student will find the middle number (median).

2.6.1.1 When whole number replacements are given for the other variables, the student will find the value for the dependent variable in simple formulas.

$$\begin{array}{ll}
 P = a + b + c & \text{(exclude grouping symbols and the need to} \\
 V = 1 \cdot w \cdot h & \text{consider order of operations.)} \\
 A = 3.14 \cdot r \cdot r & \\
 \quad \quad \quad \frac{b \cdot h}{A = 2} & 
 \end{array}$$

2.6.1.2 When the whole number replacements are given for  $a$  and  $b$ , the student will find the value of the following:

$$\begin{array}{llll}
 a + b & a \cdot b & & \\
 a - b, a > b & a : b, b \neq 0 & -\frac{a}{b}, b \neq 0 & 
 \end{array}$$

**2.0 COMPUTATIONAL SKILLS (COMPUTE, USING THE BASIC PROCEDURES)**

**PROGRAM GOAL**

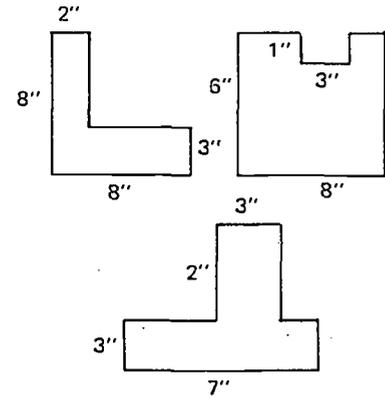
**COMPETENCIES (COURSE GOALS)**

**SAMPLE PERFORMANCE INDICATORS**

The student will be able to:

**2.6.2** Recall the appropriate commonly used formula for the solution of a given problem.

**2.6.2.1** Given rectilinear figures (including a rectangle and others like those given below) with a sufficient number of indicated measurements, the student will determine the area of the figures.



**2.6.2.2** Given a simple interest rate and the principal for a one-year period, the student will calculate the interest.

**2.7** Students will deal with simple geometric forms and relationships in 1, 2, and 3 dimensions.

**2.7.1** Make an accurate estimate of the relationship of lines in space.

**2.7.1.1** Using his surroundings, the student will identify parallel, perpendicular, and intersecting lines.

**2.7.1.2** Using yardsticks, the student will manipulate them to illustrate vertical and horizontal lines.

**2.7.2** Recognize certain angle properties and relationships.

**2.7.2.1** Using objects within his own classroom, the student will identify right angles which open in different directions.

**2.7.2.2** Given a set of angles, the student will order the angles according to size.

**2.7.3** Recognize common two and three dimensional figures in space, and their significant parts and properties.

**2.7.3.1** By sketching or selecting prepared models, the student will identify the following geometric figures and objects:

- |           |         |          |
|-----------|---------|----------|
| triangle  | cube    | cylinder |
| square    | pyramid | cone     |
| rectangle | sphere  |          |
| circle    | box     |          |

**2.7.3.2** Using the following six items, the student will respond as suggested:

- (1) Given a triangle, sketch in an altitude.
- (2) Given a circle, sketch in a diameter.
- (3) Given a circle and its center, draw its diameter and radius.
- (4) Given figures and objects, some of which possess line symmetry, locate the line of symmetry.
- (5) From a set of figures, select that figure which is congruent to a given figure.
- (6) From a set of figures, select that figure which is similar to a given figure.

**2.8** Students have a working knowledge of calculators and are aware of the uses and limitations of computers.

**2.8.1** Use the calculator to perform the basic arithmetic operations.

**2.8.1.1** Using a calculator, the student will find the sum of several numbers.

**2.0 COMPUTATIONAL SKILLS (COMPUTE,  
USING THE BASIC PROCEDURES)**

**PROGRAM GOAL**

**COMPETENCIES  
(COURSE GOALS)**

**SAMPLE PERFORMANCE  
INDICATORS**

The student will be able to:

2.8.2 Identify real life situations which illustrate the uses and limitations of the computer.

2.8.3 Identify societal concerns of computer misuse.

2.9 Students will apply basic number concepts and properties.

2.9.1 Use number properties to simplify computations.

2.9.2 Express the magnitude of a given large number.

2.9.3 Explain the decimal place value system.

2.8.1.2 Using a calculator, the student will find the difference between numbers.

2.8.2.1 Given a list of technological advances, the student will identify those which were due partly to the electronic computer.

2.8.3.1 Given examples of computerized lists, the student will illustrate ways they can be misused.

2.8.3.2 Given descriptions of privacy rights of the individual, the student will identify dangers posed by the use of computers.

2.9.1.1 Given a proper fraction, the student will express at least two equivalent proper fractions.

2.9.1.2 Given a problem of the type:

$$\begin{array}{r} 29 \\ 47 \\ 21 \\ + 53 \\ \hline \end{array}$$

the student will simplify his computations by commuting the 47 and 21.

2.9.2.1 Given large numbers (i.e., million, billion, and trillion), the student will compare the magnitude of numbers.

For example:

- (1) The passage of one million, one billion, and one trillion seconds.
- (2) The height of a stack of one million, one billion, and one trillion dollar bills.
- (3) The weight and/or volume of one million, one billion, and one trillion grains of sand.

2.9.3.1 Given a decimal fraction, the student will identify the place value of each digit.

2.9.3.2 Given a set of decimal fractions, the student will arrange them in ascending and descending order.

### 3.0 SCIENTIFIC AND TECHNOLOGICAL PROCESSES

#### PROGRAM GOAL

**3.1 Students will understand the structure of and changes that occur in matter.**

**3.2 Students will be able to apply knowledge of the forms of energy—their nature and uses.**

**3.3 Students will understand how machines transfer forces to extend man's physical limitations.**

#### COMPETENCIES (COURSE GOALS)

The student will be able to:

**3.1.1** Demonstrate a knowledge of the three states of matter.

**3.1.2** Demonstrate a knowledge of the physical and chemical changes of matter.

**3.1.3** Discuss the differences between elements, compounds, mixtures, and solutions.

**3.2.1** Identify the various forms of energy.

**3.2.2** Explain the wave theory.

**3.2.3** Describe how types of energy are converted from one form to another.

**3.2.4** Describe how energy is conserved.

**3.3.1** Demonstrate a working knowledge of six simple machines.

**3.3.2** Explain the relationship between force, distance, and work.

#### SAMPLE PERFORMANCE INDICATORS

**3.1.1.1** Given substances, the student will identify them as a solid, a liquid, or a gas.

**3.1.1.2** Using water as an example, the student will describe the three states of matter.

**3.1.2.1** Given a list of substances in which change has taken place, the student will identify examples of physical and examples of chemical changes.

**3.1.2.2** Upon burning a given substance, the student will observe and list the apparent physical and chemical changes.

**3.1.3.1** From a given list, the student will select the substances that are elements, mixtures, and compounds.

**3.1.3.2** Using two elements, the student will demonstrate the properties of a mixture and compound.

**3.2.1.1** Using his home kitchen, the student will list different forms of energy evident there.

**3.2.1.2** Using his county as an example, the student will list different forms of energy that are produced by nature.

**3.2.2.1** From a diagram of a transverse wave, the student will identify amplitude, frequency, and wave lengths.

**3.2.2.2** Using sound waves and water waves, the student will note comparisons.

**3.2.3.1** Given several forms of energy, the student will describe the nature of each and explain a method of converting each to another form.

**3.2.3.2** Given a water reservoir and a home appliance as a problem base, the student will trace the path of energy from the reservoir to the appliance.

**3.2.4.1** Given several forms of energy, the student will describe ways they are used, and then are retained in other forms.

**3.3.1.1** Using a bicycle as an example, the student will point out the simple machines used in a compound machine.

**3.3.1.2** Given drawings of a variety of levers, the student will identify the fulcrum, load, and the best point to apply effort.

**3.3.2.1** Given a series of illustrations, the student will select those in which work is being done.

**3.3.2.2** Given a 500 pound rock to be moved 10 feet, the student will determine methods for accomplishing the work.

### 3.0 SCIENTIFIC AND TECHNOLOGICAL PROCESSES

#### PROGRAM GOAL

**3.4 Students will understand man's relationships with the earth and its natural resources.**

**3.5 Students will understand the diversity in organisms, their form, structure, and function.**

**3.6 Students will understand the interrelationships and patterns of life in communities.**

#### COMPETENCIES (COURSE GOALS)

The student will be able to:

**3.3.3 Identify potential and kinetic energy.**

**3.4.1 Describe the forces shaping the earth.**

**3.4.2 Explain renewable and nonrenewable resources.**

**3.4.3 Describe the effect of man's use of natural resources on the balance of nature.**

**3.5.1 Demonstrate a knowledge of basic genetics.**

**3.5.2 Identify the wide variety of organisms.**

**3.6.1 Recognize that biotic communities possess structure and order.**

**3.6.2 Explain the transfer of energy through the food chains.**

**3.6.3 Describe how matter moves continuously between the living system and the abiotic environment.**

#### SAMPLE PERFORMANCE INDICATORS

**3.3.3.1** Given a list of examples, the student will identify those that represent potential energy.

**3.3.3.2** Using a pendulum as an example, the student will describe its motion in respect to kinetic and potential energy.

**3.4.1.1** Given several natural forces, the student will describe their effect on shaping the earth.

**3.4.1.2** Using a list of the earth's features, the student will list ways in which man's existence has changed them.

**3.4.2.1** Given a list of natural resources, the student will separate them into renewable and nonrenewable categories.

**3.4.2.2** Given a list of the earth's non-renewable resources, the student will design an alternative life style which has a less depleting effect than the current life style.

**3.4.3.1** Given descriptions of regulated use of natural resources, the student will list restrictions man has imposed upon himself.

**3.4.3.2** Given descriptions of man's use of the environment, the student will list practices which are detrimental.

**3.5.1.1** Given a list of traits, the student will select those that are inherited.

**3.5.1.2** Using a parent and his offspring as an example, the student will describe the process by which basic traits are transmitted.

**3.5.2.1** Given a group of organisms, the student will place them in categories of structural difference.

**3.5.2.2** Given a description of a geographic area, the student will determine the diversity of organisms in it.

**3.6.1.1** Given an aquarium with a certain environment, such as salt water or fresh water, the student will describe balance-of-life forms.

**3.6.2.1** Given a list of organisms, the student will group them into a food chain.

**3.6.2.2** Given a food chain, the student will describe the primary energy source.

**3.6.3.1** Given a diagram, the student will show how carbon is cycled between the biotic and abiotic.

**3.6.3.2** Given the cycling of matter as a topic, the student will discuss why decay is an essential part of the cycling process.

### 3.0 SCIENTIFIC AND TECHNOLOGICAL PROCESSES



#### PROGRAM GOAL

**3.7 Students will solve problems by using common scientific and technological processes and knowledge.**

#### COMPETENCIES (COURSE GOALS)

The student will be able to:

**3.6.4** Describe how every species population has an important role in the community.

**3.7.1** Apply the scientific method to problem solving.

**3.7.2** Construct data, tables, and graphs.

**3.7.3** Classify as an aid to solving problems.

#### SAMPLE PERFORMANCE INDICATORS

**3.6.4.1** Given a biotic community, the student *will discuss how removing a population could cause a collapse.*

**3.6.4.2** Given two species in competition for the same environmental factor, the student *will describe a probable change in population density.*

**3.7.1.1** When presented with a problem, the student *will choose a method for solving it that is consistent with scientific methods.*

**3.7.1.2** When confronted with a problem, the student *will state the controllable and uncontrollable variables.*

**3.7.2.1** When presented with graph data, the student *will predict and forecast.*

**3.7.2.2** Given a table of temperatures and time intervals, the student *will construct a line graph.*

**3.7.3.1** Using his own set of criteria, the student *will classify a given set of objects.*

**3.7.3.2** Given a set of apparently unrelated objects, the student *will find a common criteria for classification.*

## 4.0 HEALTHY MIND AND BODY

### PROGRAM GOAL

4.1 Students will recognize the importance of using appropriate techniques for coping with common problems of conflict and stress.

### COMPETENCIES (COURSE GOALS)

The student will be able to:

4.1.1 Explain the advantages of using appropriate techniques to cope with personal conflicts and stress.

4.1.2 Identify acceptable alternatives for meeting various human needs (e.g., need for security, social acceptance, self-esteem).

4.1.3 Identify acceptable alternatives for coping with changes in role or life style.

### SAMPLE PERFORMANCE INDICATORS

4.1.1.1 Given opportunities to observe the outcomes of personal and group conflicts when decisions were made on the basis of emotional appeal, the student *will illustrate how the application of problem-solving techniques might have made a considerable difference in the outcomes.*

4.1.1.2 Given case studies of crisis situations which resulted from failure to use appropriate (accident-prevention, life-saving, first aid, firefighting) techniques, the student *will identify the techniques that should have been used and explain how their use might have changed the outcome in each situation.*

4.1.2.1 Given an opportunity to read selected novels, plays, or autobiographies, the student *will identify the desires or needs that motivate the main characters and evaluate their strategies for meeting those needs;*

4.1.2.2 Given the assignment, the student:  
(1) *Will identify the desires or needs which motivated his own behavior in recently experienced stress situations.*  
(2) *Will suggest alternative strategies which might have had more beneficial outcomes.*

4.1.3.1 Given descriptions of major conflict or crisis situations growing out of inability to cope with a family role (e.g., single, married, divorced, parent), the student will:  
(1) *Identify the causes of conflict.*  
(2) *Suggest alternative strategies and community resources available to help resolve the conflict or crisis.*

4.1.3.2 Given the telephone book and various chamber of commerce materials describing an unfamiliar town or city, the student *will describe the steps a newly arrived family should take to meet its housing, recreational, cultural, educational, medical, or welfare needs.*

4.1.3.3 Given case studies of individuals who made unsuccessful occupational changes, the student will:  
(1) *Identify the attitudes (e.g., fear, hostility, aggressiveness, inferiority, condescension) which interfered with successful adaptation.*  
(2) *Suggest techniques for coping with such attitudes.*

4.1.3.4 Given two timelines from 0 to 65 years, the student will:  
(1) *Plot the phases of male and female sexual development and list the primary psychological manifestations of each phase.*  
(2) *Suggest strategies for understanding and coping with attitudes, values, or misconceptions that could lead to conflict or crisis for himself and others.*

## 4.0 HEALTHY MIND AND BODY

### PROGRAM GOAL

4.2 Students will recognize the need for developing and maintaining physical fitness.

### COMPETENCIES (COURSE GOALS)

The student will be able to:

4.1.4 Accept differences in personalities, values, and beliefs as a natural and vital part of our society.

4.2.1 Illustrate the interrelationship of physical fitness, emotional well-being, and intellectual growth.

4.2.2 Plan a program to maintain or improve his personal level of:

- (1) Organic vigor
- (2) Normal symmetrical growth
- (3) Good posture
- (4) Strength
- (5) Endurance
- (6) Power
- (7) Speed
- (8) Agility
- (9) Balance
- (10) Flexibility
- (11) Relaxation

4.2.3 Plan a balanced diet.

4.2.4 Identify the symptoms and treatments of common illnesses and ailments.

### SAMPLE PERFORMANCE INDICATORS

4.1.4.1 Given a list of vocations, the student will identify which personality types would be most compatible with each job.

4.1.4.2 After participating in a group discussion where someone else's opinion prevailed, the student will demonstrate his ability to accept differing opinions by continuing to actively participate.

4.1.4.3 Given a supportable value, belief, position different from his own, the student will list reasons why a person might understandably and legitimately have that attitude or belief.

4.2.1.1 Using situations in his own life, the student will:

- (1) Describe feelings of emotional stress during an illness.
- (2) Describe how feelings of hunger or thirst affect his ability to study or concentrate.
- (3) Describe changes in his self-confidence as he discovers that he develops new levels of physical proficiency.

4.2.2.1 Having taken an approved physical fitness program, the student will list the areas in which he is below norm and describe what he could do to improve in each area of deficiency.

4.2.2.2 Having planned a program of progressive physical conditioning, the student will show an improvement on a test-retest basis.

4.2.2.3 Having taken a test in a sport of his choice, the student will demonstrate improved skill levels with each retest.

4.2.2.4 Based on his age, height, and body type, the student will identify a satisfactory weight level, measure his own weight, and plan an appropriate weight control program.

4.2.3.1 Given a list of foods, the student will specify to what nutrition group each food belongs.

4.2.3.2 Given the school's lunch menu for a week, the student will list reasons why it did or did not provide a balanced diet.

4.2.3.3 Asked to plan an alternative school lunch menu for a week, the student will plan lunches which are nutritious.

4.2.3.4 Given a description of a diet of brown rice and tea (i.e., the Ten Macrobiotic diet), the student will describe the dangerous deficiency states that could result.

4.2.4.1 Given a list of common illnesses and ailments (cold, sprained ankle, strained muscle, stomachache, etc.), the student will describe the medically approved treatment.

## 4.0 HEALTHY MIND AND BODY

### PROGRAM GOAL

### COMPETENCIES (COURSE GOALS)

The student will be able to:

4.3 Students will be able to make constructive use of their leisure time.

4.2.5 Demonstrate basic first aid skills.

4.2.6 Identify situations conducive to accidents in the home, at work, and at play.

4.2.7 Identify factors important to the community health and safety.

4.3.1 Recognize the large amount of leisure time at his disposal, now and in the future.

4.3.2 Identify recreational activities in which lifelong participation is possible, and those in which such participation will be limited.

4.3.3 Describe recreational activities that meet physical, mental, social, esthetic, and spiritual developmental needs.

### SAMPLE PERFORMANCE INDICATORS

4.2.4.2 Given a list of illnesses and ailments, the student will identify those which should receive prompt medical attention.

4.2.5.1 Given an emergency situation which involves shock, the student will describe the ways of treating and protecting the victim.

4.2.5.2 Given a simulated drowning, the student will demonstrate his ability to provide artificial respiration.

4.2.6.1 Given the example of a car with bald tires, the student will list reasons why bald tires increase the driver's chances of having an accident.

4.2.6.2 Given his home or school environment, the student will identify serious accident-prone areas and suggest possible remedies.

4.2.6.3 Given the hunter's code of safety rules, the student will explain the safety value of each rule.

4.2.7.1 Using his own community, the student will locate major sources of pollution.

4.2.7.2 Using his own community, the student will evaluate its health-related resources (i.e., the number of doctors and dentists, the number and size of hospitals, etc.).

4.2.7.3 Using his own community, the student will evaluate its safety-related resources (i.e., the number of policemen and firemen, the amount and adequacy of their equipment, etc.).

4.3.1.1 Taking a typical week in his life, the student will determine the total number of leisure hours.

4.3.1.2 Taking a typical week in his life, the student will list what he did during his leisure time and identify which activities were productive.

4.3.2.1 Given the recreational resources in his community, the student will:

(1) List the recreational activities in which adults of all ages participate.

(2) Identify those activities in which younger or older adults do not normally participate.

4.3.3.1 Given the following categories, the student will describe a recreational activity for each: physical, mental, social, esthetic, and spiritual.

4.3.3.2 Using a recreational activity which he presently participates in, the student will describe how it contributes to his physical, mental, social, esthetic, or spiritual development.

# 5.0

## DEVELOP AND MAINTAIN THE ROLE OF A LIFE-LONG LEARNER

Because everyone is naturally curious, it is probably safe to say that everyone is a lifelong learner. It would be hard to imagine any person who stopped learning simply because he had left his formal "schooling" behind him.

If young people are, by nature, destined to be lifelong learners, then one of education's main tasks is to help them become more efficient learners. This involves helping students to:

- (1) Acquire the basic knowledge necessary to recognize the nature of a problem and the ability to locate sources of needed information.
- (2) Become familiar with the steps, or systematic procedures, intrinsic in problem-solving.
- (3) Practice using these procedures.
- (4) Experience success in using them to solve various kinds of problems—personal, social, financial, or career.

A list of the minimum competencies every student should have in order to survive in today's world will most certainly identify specific research, analytic and problem-solving abilities in every program area. They are as basic to survival as communication skills for the individual, the citizen, and the wage-earner.

In fact, few of the competencies identified as essential for communication, learning, or problem-solving are isolated in one subject matter field, or area of study (social responsibility, career development, personal development). They are isolated and included in this section of the *Graduation Requirements Guidelines and Models* in order to give them special prominence and meaning.

Undoubtedly, as teachers in every field begin to identify the competencies (course goals) for which they will accept responsibility, communication and problem-solving competencies will be included in many lists.

There are some questions that teachers should ask themselves as they begin to identify in a subject area the skills, knowledge, and values that students should have to become "lifelong," self-directed learners in that field. For example, what do students *need to know* about:

- (1) How each discipline labels and defines the information with which it is concerned.
- (2) How each discipline acquires information and insures its validity and accuracy.
- (3) How each discipline organizes and interprets information.
- (4) How each discipline uses information to produce new information or to guide decision-making and problem-solving.
- (5) How each discipline communicates information to others.

Finally, there is the problem of choosing performance indicators and verifying that students are, indeed, able to direct their own learning with some degree of efficiency and enjoyment.

Perhaps the most important indication is an ability to cope with a constantly changing environment, which is bound to create problems and stress. A self-directed learner must be able to draw upon a reservoir of skills and knowledge and come up with the right combination for finding acceptable solutions and making wise decisions:

One way to test this ability is to arrange impromptu or surprise situations in which students are confronted with the need to use problem-solving skills. Another possibility is the use of simulations or role playing. A third is to evaluate student ability to analyze case studies or other descriptions of problem situations (e.g., receiving a large legacy, finding one's house burned down, death in the family, moving to a new job or a new town) and to suggest satisfactory procedures for arriving at solutions.

The number of possibilities for applying learning and problem-solving skills is endless. In order for a teacher to verify that a student has the minimum required competencies, it would be necessary to assure that in at least one problem situation the student has made deliberate use of problem-solving techniques.

Impromptu problem-solving is not always easy, even for one who is trained and experienced. Students beginning to learn this process have neither the skills nor experience which create confidence in the usefulness of problem-solving techniques. Consequently, teachers should begin by observing student performance in simple situations where ample time is given to work out each step. Only as the student develops confidence should time be reduced or complexity levels raised. Progress, growth, and confidence are of more importance than achieving an arbitrary skill level.

## 5.0 DEVELOP AND MAINTAIN THE ROLE OF A LIFE-LONG LEARNER

### PROGRAM GOAL

5.1 Students will be able to recognize the contribution of efficient, self-directed learning to satisfactory achievement of personal, social, and economic goals.

### COMPETENCIES (COURSE GOALS)

The student will be able to:

5.1.1 Develop a workable plan for acquiring the skills and knowledge he will need to achieve a real and immediate goal for personal, social, or career development.

### SAMPLE PERFORMANCE INDICATORS

5.1.1.1 Having identified a career field which interests him, and given access to appropriate sources of information, the student will:

- (1) Establish goals related to meeting the entry-level requirements of available jobs in his career field.
- (2) Identify the skills and knowledge he needs to acquire in order to meet these qualifications.
- (3) Identify alternative ways for acquiring the competencies needed and select the most practical way.
- (4) Explain how pursuit of his chosen plan will benefit his personal, as well as his career development.

5.1.1.2 Having identified a school or community problem which interests him, and given access to appropriate sources of information, the student will:

- (1) Establish goals for making realistic contributions to the solution of the problem or cause he has identified.
- (2) Determine what skills or knowledge he needs to acquire in order to make a worthwhile contribution.
- (3) Identify alternative ways for acquiring the competencies needed.
- (4) Identify several ways in which pursuit of his plan will benefit him as well as his school or community.

5.1.1.3 Given an opportunity to study the political and governmental systems of his community, state, and nation, the student will:

- (1) Identify the political party that most nearly represents his own beliefs about the organization and purposes of government.
- (2) Identify a variety of ways in which he could become involved in supporting the activities of that party.
- (3) Describe other ways in which he would like to contribute to or influence community decisions and actions.
- (4) Explain the procedures or processes by which he could become involved in the activities of his choice.

5.1.1.4 Given a variety of case studies or descriptions of common purchasing, credit, banking, and budgeting problems, the student will:

- (1) Identify the goals and values that would influence his own decisions in similar situations.
- (2) Identify the knowledge and skills he would need to solve, or to avoid, the problems described.
- (3) Propose practical alternatives for acquiring the needed competencies.

## 5.0 DEVELOP AND MAINTAIN THE ROLE OF A LIFE-LONG LEARNER

### PROGRAM GOAL

### COMPETENCIES (COURSE GOALS)

### SAMPLE PERFORMANCE INDICATORS

The student will be able to:

5.1.2 Combine appropriate knowledge with problem-solving or learning skills to arrive at solutions to expected or unexpected problems.

5.1.1.5 Given an opportunity to study appropriate informational materials, the student *will describe the characteristics of various occupations in his chosen career field, predict potential mental or physical health hazards, and propose practical precautions.*

5.1.1.6 Given an opportunity to interview persons employed in his chosen career field, the student will:

- (1) *Predict his income, living and transportation arrangements, and leisure time.*
- (2) *Propose practical alternatives for recreation and leisure time activities.*
- (3) *Identify the knowledge and skills needed to enjoy such activities.*

5.1.2.1 Given a variety of carefully structured descriptions of problem situations (e.g., job loss, death in the family, receipt of an unexpected legacy), the student will:

- (1) *Determine the nature of the problem to be solved and the desired outcomes.*
- (2) *Investigate alternative solutions.*
- (3) *Choose the most acceptable alternative.*
- (4) *Suggest how time and money should be budgeted to meet specified objectives.*
- (5) *Suggest ways to judge whether proposed activities or actions are leading to the desired outcomes.*

5.1.2.2 Asked to plan a week's menu for a hypothetical family of three with a very restricted budget, the student will:

- (1) *Identify nutritional needs, nutritional values of various types of foods, costs of various types of foods, food storage, as elements which should be investigated.*
- (2) *Prepare an ideal menu, determine its cost, begin to look for alternatives, or cheaper substitutes for various foods originally selected.*
- (3) *Weigh the alternatives in relation to all other elements of the problem that have been identified.*
- (4) *Propose a menu that is nutritionally acceptable and within the specified budget limits.*

5.1.2.3 Asked to prepare a research report on the nutritional values of various foods, or the impact of price controls, the student will:

- (1) *Outline his topic.*
- (2) *Locate and verify sources of information.*
- (3) *Collect appropriate data.*
- (4) *Present findings in a logical way and draw conclusions.*

5.1.2.4 Given a list of questions which require research in several areas (state or local government, consumer ratings, health and nutrition, traffic regulations, job opportunities), the student *will locate and use appropriate resource materials.*

**5.0 DEVELOP AND MAINTAIN THE  
ROLE OF A LIFE-LONG LEARNER**

**PROGRAM GOAL**

**COMPETENCIES  
(COURSE GOALS)**

**SAMPLE PERFORMANCE  
INDICATORS**

The student will be able to:

**5.1.2.5** Given a list of questions which require the obtaining of information from various community agencies, the student *will use a telephone directory and identify the appropriate agencies to contact for each type of information needed.*