

# Academic Innovations

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## **Secretary's Commission on Achieving Necessary Skills (SCANS): Final Report Available**

*What Work Requires of Schools* is the title of the initial SCANS report. This 61 page report defines the five competencies and three-part foundation that constitute the SCANS skills. Single copies are available for \$31.50, plus \$4 for handling from: National Technical Information Service (NTIS), Technology Administration, U.S. Department of Commerce, Springfield, VA 22161, 1-800-553-6847. NTIS Order Number: PB92-146711INZ. This product may also be ordered by fax at (703) 321-8547, or by e-mail at [orders@ntis.fedworld.gov](mailto:orders@ntis.fedworld.gov)

### **The SCANS Skills and Competencies: an Overview**

The Secretary's Commission on Achieving Necessary Skills (SCANS) was appointed by the Secretary of Labor to determine the skills our young people need to succeed in the world of work. The Commission's fundamental purpose is to encourage a high-performance economy characterized by high-skill, high-wage employment.

The primary objective is to help teachers understand how curriculum and instruction must change to enable students to develop those high performance skills needed to succeed in the high performance workplace.

SCANS has focused on one important aspect of schooling: what they called "learning a living" system. In 1991, they issued their initial report, *What Work Requires of Schools*. As outlined in that report, a high-performance workplace requires workers who have a solid foundation in the basic literacy and computational skills, in the thinking skills necessary to put knowledge to work, and in the personal qualities that make workers dedicated and trustworthy.

High-performance workplaces also require other competencies: the ability to manage resources, to work amicably and productively with others, to acquire and use information, to master complex systems, and to work with a variety of technologies.

This document outlines both these "fundamental skills" and "workplace competencies"

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## **A Three-Part Foundation**

### **Basic Skills:**

Reads, writes, performs arithmetic and mathematical operations, listens and speaks

- A. Reading--locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules
- B. Writing--communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts
- C. Arithmetic/Mathematics--performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques
- D. Listening--receives, attends to, interprets, and responds to verbal messages and other cues
- E. Speaking--organizes ideas and communicates orally

### Thinking Skills:

Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons

- A. Creative Thinking--generates new ideas
- B. Decision Making--specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative
- C. Problem Solving--recognizes problems and devises and implements plan of action
- D. Seeing Things in the Mind's Eye--organizes, and processes symbols, pictures, graphs, objects, and other information
- E. Knowing How to Learn--uses efficient learning techniques to acquire and apply new knowledge and skills
- F. Reasoning--discovers a rule or principle underlying the relationship between two or objects and applies it when solving a problem

### Personal Qualities:

Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

- A. Responsibility--exerts a high level of effort and perseveres towards goal attainment
- B. Self-Esteem--believes in own self-worth and maintains a positive view of self
- C. Sociability--demonstrates understanding, friendliness, adaptability, empathy, and
- D. Self-Management--assesses self accurately, sets personal goals, monitors progress, and exhibits self-control
- E. Integrity/Honesty--chooses ethical courses of action

## Five Workplace Competencies

### Resources:

Identifies, organizes, plans, and allocates resources

- A. *Time*--Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules
- B. *Money*--Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives
- C. *Material and Facilities*--Acquires, stores, allocates, and uses materials or space efficiently

- *D. Human Resources*--Assesses skills and distributes work accordingly, evaluates performance and provides feedback

## **Interpersonal:**

Works with others

- *A. Participates as Member of a Team*--contributes to group effort
- *B. Teaches Others New Skills*
- *C. Serves Clients/Customers*--works to satisfy customers' expectations
- *D. Exercises Leadership*--communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies
- *E. Negotiates*--works toward agreements involving exchange of resources, resolves divergent interests
- *F. Works with Diversity*--works well with men and women from diverse backgrounds

## **Information:**

Acquires and uses information

- *A. Acquires and Evaluates Information*
- *B. Organizes and Maintains Information*
- *C. Interprets and Communicates Information*
- *D. Uses Computers to Process Information*

## **Systems:**

Understands complex inter-relationships

- *A. Understands Systems*--knows how social, organizational, and technological systems work and operates effectively with them
- *B. Monitors and Corrects Performance*--distinguishes trends, predicts impacts on systems operations, diagnoses deviations in systems' performance and corrects malfunctions
- *C. Improves or Designs Systems*--suggests modifications to existing systems and develops new or alternative systems to improve performance

## **Technology:**

Works with a variety of technologies

- *A. Selects Technology*--chooses procedures, tools or equipment including computers and related technologies
  - *B. Applies Technology to Task*--Understands overall intent and proper procedures for setup and operation of equipment
  - *C. Maintains and Troubleshoots Equipment*--Prevents, identifies, or solves problems with equipment, including computers and other technologies
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# Glossary of Terms

## Basic Skills

### Reading:

Locates, understands, and interprets written information in prose and documents—including manuals, graphs, and schedules—to perform tasks; learns from text by determining the main idea or essential message; identifies relevant details, facts, and specifications; infers or locates the meaning of unknown or technical vocabulary; and judges the accuracy, appropriateness, style, and plausibility of reports, proposals, or theories of other writers.

### Writing:

Communicates thoughts, ideas, information, and messages in writing; records information completely and accurately; composes and creates documents such as letters, directions, manuals, reports, proposals, graphs, flow charts; uses language, style, organization, and format appropriate to the subject matter, purpose, and audience. Includes supporting documentation and attends to level of detail; checks, edits, and revises for correct information, appropriate emphasis, form, grammar, spelling, and punctuation.

### Arithmetic/Mathematics:

Arithmetic --Performs basic computations; uses basic numerical concepts such as whole numbers and percentages in practical situations; makes reasonable estimates of arithmetic results without a calculator; and uses tables, graphs, diagrams, and charts to obtain or convey quantitative information.

Mathematics--Approaches practical problems by choosing appropriately from a variety of mathematical techniques; uses quantitative data to construct logical explanations for real world situations; expresses mathematical ideas and concepts orally and in writing; and understands the role of chance in the occurrence and prediction of events.

### Listening:

Receives, attends to, interprets, and responds to verbal messages and other cues such as body language in ways that are appropriate to the purpose; for example, to comprehend; to learn; to critically evaluate; to appreciate; or to support the speaker.

### Speaking:

Organizes ideas and communicates oral messages appropriate to listeners and situations; participates in conversation, discussion, and group presentations; selects an appropriate medium for conveying a message; uses verbal languages and other cues such as body language appropriate in style, tone, and level of complexity to the audience and the occasion; speaks clearly and communicates message; understands and responds to listener feedback; and asks questions when needed.

## Thinking Skills

### Creative Thinking:

Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas, and reshapes goals in ways that reveal new possibilities.

**Decision Making:**

Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternatives.

**Problem Solving**

Recognizes that a problem exists (i.e., there is a discrepancy between what is and what should or could be), identifies possible reasons for the discrepancy, and devises and implements a plan of action to resolve it. Evaluates and monitors progress, and revises plan as indicated by findings.

**Seeing Things in the Mind's Eye:**

Organizes and processes symbols, pictures, graphs, objects or other information; for example, see a building from blue print, a system's operation from schematics, the flow of work activities from narrative descriptions, or the taste of food from reading a recipe.

**Knowing How to Learn:**

Recognizes and can use learning techniques to apply and adapt new knowledge and skills in both familiar and changing situations. Involves being aware of learning tools such as personal learning styles (visual, aural, etc.), formal learning strategies (note taking or clustering items that share some characteristics), and informal learning strategies (awareness of unidentified false assumptions that may lead to faulty conclusions).

**Reasoning**

Discovers a rule or principle underlying the relationship between two or more objects and applies it in solving a problem. For example, uses logic to draw conclusions from available information, extracts rules or principles from a set of objects or written text; applies rules and principles to a new situation, or determines which conclusions are correct when given a set of facts and a set of conclusions.

**Personal Qualities****Responsibility:**

Exerts a high level of effort and perseverance towards goal attainment. Works hard to become excellent at doing tasks by setting high standards, paying attention to details, working well, and displaying a high level concentration even when assigned an unpleasant task. Displays high standards of attendance, punctuality, enthusiasm, vitality, and optimism in approaching and completing tasks.

**Self-Esteem:**

Believes in own self-worth and maintains a positive view of self; demonstrates knowledge of own skills and abilities; is aware of impact on others; and knows own emotional capacity and needs and how to address them.

**Sociability**

Demonstrates understanding, friendliness, adaptability, empathy, and politeness in new and on-going group settings. Asserts self in familiar and unfamiliar social situations; relates well to others; responds appropriately as the situation requires; and takes an interest in what others say and do.

### **Self-Management:**

Assesses own knowledge, skills, and abilities accurately; sets well-defined and realistic personal goals; monitors progress toward goal attainment and motivates self through goal achievement; exhibits self-control and responds to feedback unemotionally and nondefensively; is a "self-starter."

### **Integrity/Honesty.**

Can be trusted. Recognizes when faced with making a decision or exhibiting behavior that may break with commonly-held personal or societal values; understands the impact of violating these beliefs and codes on an organizations, self, and others; and chooses an ethical course of action.

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*Taken from: **What Work Requires of Schools: A SCANS Report for America 2000.** The Secretary's Commission on Achieving Necessary Skills, a publication of the US Department of Labor, June 1991.*



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