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ABSTRACT

The revised manual is designed to assist industrial mechanics teachers in assessing the strengths and weaknesses of their industrial mechanics program and planning for future development. With industrial mechanics being one of the major occupational clusters in Oregon, schools are being encouraged to implement industrial mechanics programs to meet present and future manpower needs. The manual recommends a planned approach for program development that is based on a Portland high school model program. Assessment charts are used to examine the status of various program elements: curriculum, planning, interdisciplinary instruction, advisory committee, work experience, facilities and equipment, student organization, inservice, individualized instruction, articulation, evaluation, instructor selection and responsibility, finance, safety, and guidance/counseling/placement/followup. Assessment steps 1, 2, 3, and 4 include reviewing the manual standards, assessing the present implementation of each element, assigning an implementation level rating to each question and element, and completing a profile chart. Steps 5, 6, and 7 cover identifying problems, selecting problems for higest priority for solution, and sorting remaining problems into additional priority levels. Other charts are included for problem solving and detail planning. (EA)

Industrial Mechanics Assessment and Planning Manual

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Preface

The previous edition of the *Industrial Mechanics Assessment Manual* was developed in cooperation with the Teacher Assistance Team, a consortium of Oregon high school and community college mechanics instructors, and used initially at John Adams High School in Portland. During the past two years, it was reviewed by students, teachers, counselors, school administrators and school board members. They used the manual, improved upon it and suggested ways to make this second edition a more effective instrument.

The procedures outlined here are meant to help the teacher determine the present status of the industrial mechanics program and plan for future development. When using this manual, amplify each question and each model program element to carefully assess your program's strengths and weaknesses. Each question should prompt you to ask another. Hopefully, the format, elements and questions presented here will help you carry out your leadership role.

Your reactions to the *Industrial Mechanics Assessment Manual* will help us revise future editions. Read it and use it; let us know what needs to be improved and what you found to be effective. Forward your comments and suggestions to the Industrial Mechanics Specialist at the Oregon Department of Education, 942 Lancaster Drive NE, Salem, Oregon 97310 (378-8693).

Acknowledgements

Special thanks are extended to the Oregon Teacher Assistance Team which cooperated in the development of the original *Industrial Mechanics Assessment Manual*. Members of the team included:

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Also cooperating were Leroy E. Wallis, Career Education Specialist, Area II, Portland Public Schools; William Bell, Career Education Coordinator, Wasco County; Joe Durland, Instructor, Automotive Department, Clackamas Community College; Jack Starr, Career Task Force, Oregon State University; Don Durland, Instructor, Industrial Mechanics, Sabin Occupational Skills Center, Milwaukie; and Darrell Brackenbrough, Curriculum Coordinator, Automotive Technology, Central Oregon Community College, Bend.

Thanks are also extended to Tom Parr for his work on this edition; he set up the format and pulled the copy together.

Why Program Assessment

Two school programs which use the same instructional materials can be just as effective as two programs which use different materials. Standardization may not directly influence how well a program accomplishes its goals; the effectiveness of a program depends in a large part upon the criteria used to evaluate it. For example, a traveler going to Los Angeles, has many ways to get there; some of the options are better than others, depending upon the criteria used to measure them.

One way to answer the question, "What constitutes a good industrial mechanics education program?" is to identify the elements of a model program and use them for program assessment. This assessment and planning manual outlines model program elements and recommends a planned approach to the appraisal and development of a career oriented industrial mechanics cluster program. By using the criteria and procedures presented here to evaluate your program, you can identify the needs for program improvement and develop a plan for meeting each need. A sound plan which demonstrates what the program can do for students will help assure the necessary budget, equipment, facilities and curriculum to implement it.

These model program criteria and the method for applying them are based on the work of the Teacher Assistance Team that worked with John Adams High School in Portland to develop its industrial mechanics program.

The objectives of the Teacher Assistance Team included:

1. Identifying the components and characteristics of a model, career-oriented industrial mechanics cluster program.

2. Developing an appraisal instrument to determine the status of a program and assist with future planning of the John Adams Industrial Mechanics Cluster Program or other high school industrial mechanic clusters.

3. Assessing the John Adams program.

4. Utilizing the assessment results to establish priorities in the form of performance expectations to enable John Adams High School to move in the direction of "model" program status.

5. Providing other assistance such as recommendations and guidelines.

The planned approach to program development called for in this manual is reflected in the priority of the State Board of Education to expand career education and the Board's planning statement, *Career Education Development in Oregon*, adopted in May, 1970.

Career Education Is

The concept of career education provides the framework and philosophy for individual program development. A summary of Oregon's approach to career education will provide a background for program planning.

Career education, "The Oregon Way," is based upon a model which entails comprehensive program development at the elementary, intermediate, secondary and post-high school levels. As applied to the elementary grades, the model calls for: 1) creating awareness of occupations and career areas; 2) developing respect and appreciation for workers in all fields; 3) relating one's self to an occupational role; and 4) developing foundations which will lead to constructive attitudes toward work and society. The elementary grade component of the model also calls for integrating the various career development objectives with the objectives of the entire elementary school program.

At the mid-school level, usually grades 7 through 10, students begin a concentrated career exploration experience designed to: 1) provide for exploration of key occupational areas; 2) enable them to make a more refined assessment of their own interest and abilities; 3) become familiar with occupational classifications and clusters of occupations; 4) become aware of the factors and implications in decision-making and career choice; and 5) develop tentative occupational plans and make a broad career choice.

Career exploration leads to career preparation in grades 11 and 12. The career preparation component of the Oregon model includes opportunities for all students to acquire occupational skills and knowledge for entry-level employment or other post-secondary alternatives, develop acceptable job attitudes, and gain actual work experience in their broad career field. Career preparation students can also join a supporting vocational student organization and continue a more in-depth exploration of work possibilities. The vehicle for implementing the career preparation component is the career cluster program.

One of the major occupational clusters in Oregon is industrial mechanics, which deals with the installation, repair, service and maintenance of mobile or stationary equipment found in various industries, and on and off road motor vehicles. Schools are being encouraged to implement industrial mechanics programs because of present and future manpower needs in several areas including the automotive industry.

Another major component of the career education model is the post-high school and adult programs in which students develop specific occupational knowledge in a particular job. This component embraces retraining for adults as well as opportunities for acquiring additional skills and knowledge necessary for vertical or horizontal mobility in occupational fields. Alternatives included in this component are community colleges, apprenticeship programs, private schools, four year colleges and universities, or on-the-job training in business and industry.

In summary, the Oregon career education model represents an articulated, continuous curriculum design which includes a major emphasis on adequate guidance and counseling in each phase. It is significant that career education makes no distinction between better occupations on the one hand, and better, more fulfilling lives for people on the other hand. Instead, career education recognizes that, along with other objectives of public education, a program of preparation for the type of work one will do in life cannot be relegated to chance or circumstance. Each discipline, through its own particular strengths, needs to support the real life goals of students so that the post-high school alternatives have meaning and purpose for each person.

CAREER EDUCATION THE OREGON WAY

SPECIALIZATION, Post-High School and Adult

Students may enter and leave educational programs as often as necessary to secure the specialized competencies needed to be an effective producer. Community colleges, apprenticeship, four-year colleges, and private schools provide alternatives for meeting these needs.

PREPARATION at Grades 11-12

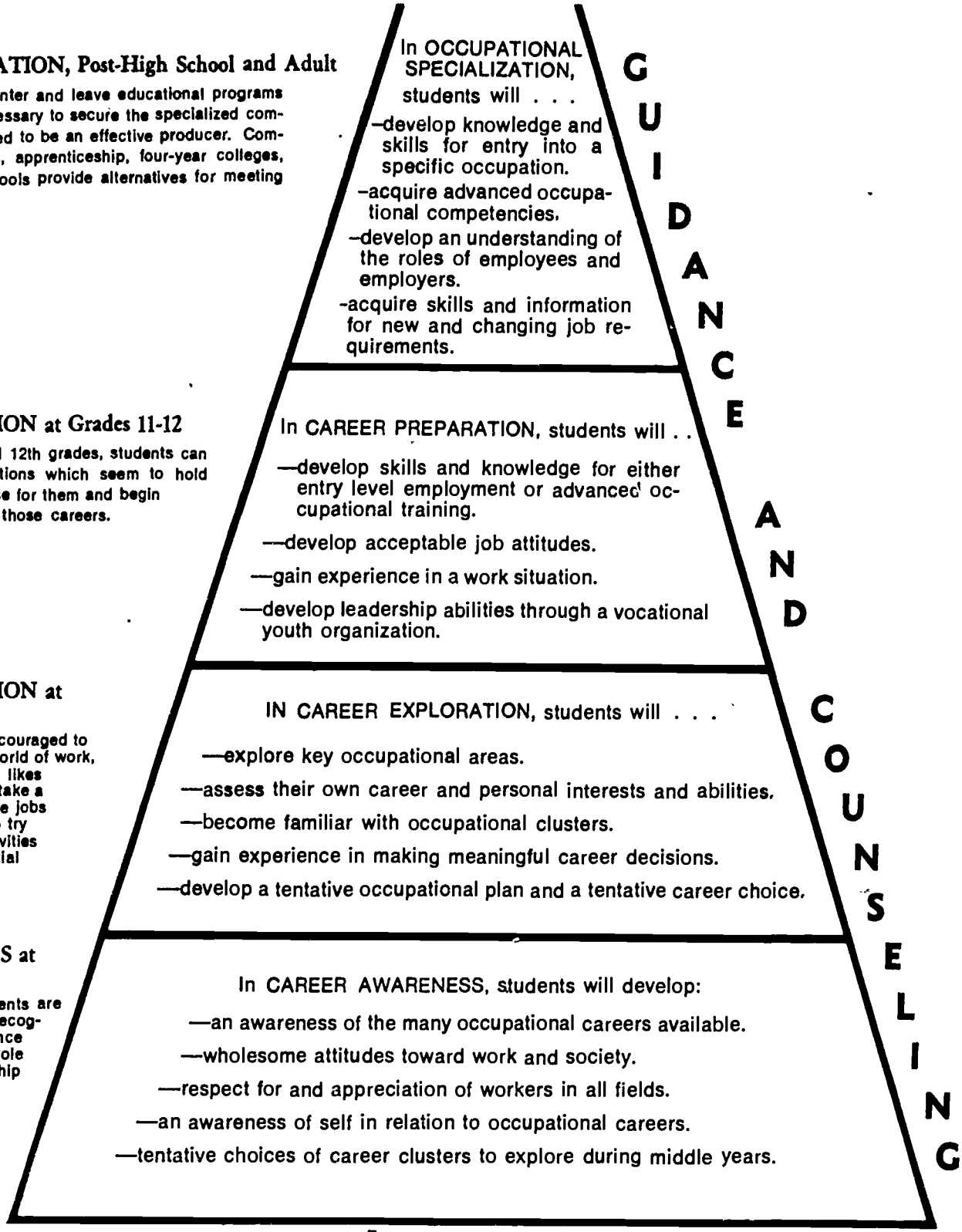
By the 11th and 12th grades, students can identify occupations which seem to hold the most promise for them and begin preparation for those careers.

EXPLORATION at Grades 7-10

Students are encouraged to EXPLORE the world of work, to identify their likes and dislikes, to take a closer look at the jobs available, and to try some of the activities related to potential careers.

AWARENESS at Grades K-6

Elementary students are encouraged to recognize the importance of the producer role and its relationship to other life. roles.



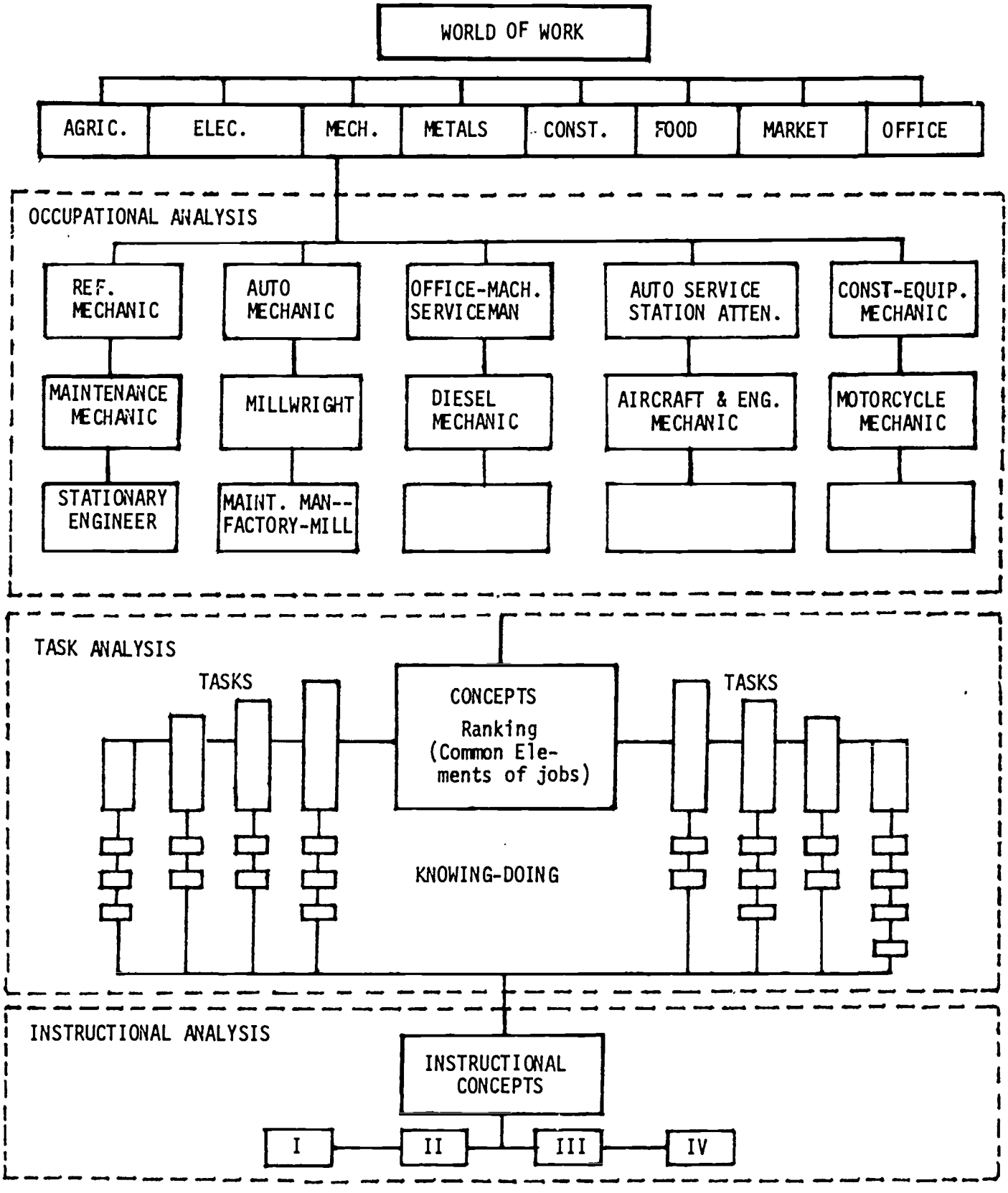
The Cluster Concept

The career preparation component of career education in Oregon is based on the occupational cluster concept. This concept holds that occupations may be classified into logically related groups on the basis of identical or similar characteristics. If the concept is to be utilized in planning occupational education, the identical or similar elements which link occupations in clusters must be located among the many skills and the knowledge required for workers to perform effectively in the multitude of jobs found in our economy. Therefore, a "cluster of occupations" is composed of recognized occupations which are logically related because they include identical or similar skills and knowledge requirements.

The "World of Work" diagram illustrates the occupational cluster concept. Some of the many related types of occupations are illustrated by the groupings shown at the top of the diagram. Through an occupational analysis, a number of these groupings or "clusters" were identified, and certain key occupations within each cluster were selected for additional analysis. The criteria for selecting key occupations in the analysis included jobs with 250 or more employed and an expansion/replacement need of 100 or more persons over a five-year period. Further research in the form of task analyses led to occupational concepts and ultimately to instructional concepts. (See *Manpower Analysis for the Industrial Mechanics Cluster** for additional information.) The key occupations for the industrial mechanics cluster are shown in the occupational analysis section of the diagram. This approach to curriculum development provides a clear instructional sequence from the classroom to the world of work.

This approach implies that occupational education centered upon common knowledge and skills should prepare students for entry into an "area" or "family" of occupations rather than any one in particular. In an economy increasingly characterized by rapid technological change, preparation for employment in a properly identified occupational cluster should be advantageous to most high school students. It should avoid premature commitment of the student to the narrow work specialty, and, at the same time, provide enough breadth in initial preparation to enable the student to cope more effectively with occupational and employment changes. In addition, such education should qualify students for enrollment in more specialized education. Students in cluster programs should develop entry-level competencies in a variety of related jobs and flexibility for occupational, education, and geographic mobility.

* Fretwell, Dave and George Warren, *Manpower Analysis for the Industrial Mechanics Cluster*, Oregon Department of Education, December, 1973. For information about this report write to the Industrial Mechanics Specialist, Oregon Department of Education, Salem, Oregon 97310.


WORLD OF WORK
AGRIC.
ELEC.
MECH.
METALS
CONST.
FOOD
MARKET
OFFICE
OCCUPATIONAL ANALYSIS
REF. MECHANIC
AUTO MECHANIC
OFFICE-MACH. SERVICEMAN
AUTO SERVICE STATION ATTEN.
CONST-EQUIP. MECHANIC
MAINTENANCE MECHANIC
MILLWRIGHT
DIESEL MECHANIC
AIRCRAFT & ENG. MECHANIC
MOTORCYCLE MECHANIC
STATIONARY ENGINEER
MAINT. MAN--FACTORY-MILL
TASK ANALYSIS
TASKS
CONCEPTS
Ranking
(Common Elements of jobs)
TASKS
KNOWING-DOING
INSTRUCTIONAL ANALYSIS
INSTRUCTIONAL CONCEPTS
I
II
III
IV
LEVELS OF INSTRUCTION
COMM. COL.
UNIVERSITY
EMPLOYMENT
APPRENTICE

A Model Program

An industrial mechanics cluster program holds a unique position in your school because the mechanics trades in Oregon have one of the highest employment and the highest expansion and replacement rates of all trade and industrial cluster groups. During the last three years in Oregon, the number of approved programs in mechanics education has increased 350 percent, from 18 to 72. Despite this growth, we are falling far short of meeting the needs of this occupational area. Our goal for the years ahead is to establish a total of 100 industrial mechanics programs which will provide job entry skills for those who go into the various mechanic occupations or community college programs.

However, implementing a successful mechanics education program may seem easier than it really is; many programs are industrial mechanics clusters in name only. Several are limited to only one occupation, such as automotive. Maintaining a program also calls for considerable effort. In Oregon we have a few outstanding examples of successful programs which hold the interest of high school students. Some programs now operating with two instructors have had to deny students because of lack of space and time.

In view of these factors, a teacher assistance team expended many hours designing a planned approach to mechanics program development. This self-assessment manual, the product of the team's effort, is intended to help assess the present status of a program in relation to a model concept and identify a list of priority needs. Use this information to develop a long-range plan at the program level and to formulate recommendations for program improvement to appropriate administrators. Comments from participants have been extremely favorable; advisory committee members have indicated that for the first time they have begun to understand the program and feel that they now have a basis for "giving advice."

There are many ways to define a model program. The model program concept referred to in this guide refers to an educational program that has identifiable components. In the case of industrial mechanics, there are 15 elements which together comprise a model program. They are:

Curriculum	Individualized Instruction
Planning	Articulation
Interdisciplinary Instruction	Evaluation
Advisory Committee	Instructor Selection & Responsibility
Work Experience	Finance
Facilities & Equipment	Safety
Student Organization	Guidance, Counseling, Placement & Follow-Up
In-Service	

These elements are not segregated into supportive or other roles. Some might better be referred to as a model program characteristic. In total, however, they reflect a comprehensive educational program in industrial mechanics, addressing curriculum and methodology as well as management oriented concerns.

Evaluation of funded programs continues to be an important role for the Oregon Department of Education. Self-evaluation of existing programs is considered a priority need; but, assessment without a follow-up plan of action may not lead to program improvement.

During the years, 1975-80, the Department of Education plans to assess, upon request, all approved industrial mechanics cluster programs using this assessment guide.

Program Level Goals

An industrial mechanics cluster program shall:

1. Provide students with a broad knowledge and entry level skills in mechanics.
2. Acquaint students with systems as they apply to various aspects of mechanics (e.g., fluid power, electrical, and mechanical).
3. Offer background in mechanical equipment and power supplies as they apply to various aspects of mechanics.
4. Develop diagnostic techniques and procedures used in the mechanical field.
5. Acquaint students with industrial work procedures as applied to identified jobs (e.g., assembly-disassembly, repair-maintenance, testing, use of specification, techniques of communication and supervised work experience).
6. Provide experiences in the application and use of hand tools, portable power tools, measuring and testing instruments, power machinery, and machine tools.
7. Offer background in industrial safety practices and their relationship to various mechanical jobs.
8. Develop students' leadership skills as needed by industries in the mechanical field (e.g., industrial mathematics, science, communication skills, student leadership organization).

Using the Manual

The assessment and planning manual may be used by an individual industrial mechanics instructor or a team of instructors, specialists and administrators. (A five or six member team is recommended and will probably provide a better comprehensive assessment.)

Seven steps are involved in completing the assessment and long-range plan:

1. Review the standards given in the manual.
2. Assess present implementation level of each element.
3. Assign an implementation level rating to each question and element.
4. Complete the profile chart.
5. Review the assessment made in Step 2 and identify problems.
6. Select those problems identified in Step 5 that have the highest priority for solution.
7. Sort remaining problems into three additional priority levels.

Here are the procedures for each step:

Step 1. Review the standards given in the manual. You must decide if they are appropriate for your situation.

a. Turn to the first page in the manual. (You will be working with the remainder of pages in this step.)

b. Notice there are three vertical columns.

The first column consists of statements which describe a model industrial mechanics program and hereafter called an element (e.g., planning, curriculum, work experience).

The second column ("Is There?") contains questions to answer to determine if the statement in the first column is being carried on or has been accomplished.

The third column ("What is-What's needed") is to be filled in in the next step.

Step 2. Assess present program implementation level.

a. Answer each "Is There" question; write the responses in the "What Is, What's Needed" column. Do not try to identify or solve problems at this time; concentrate on completing the assessment using short but understandable statements.

b. For each question, assign a percentage (up to 100) in accordance with its implementation level.

Step 3. Assign an implementation level rating for each element. To do this, average the percentages assigned to the questions. Place a mark on the rating scale at the top of the first page of each element.

Step 4. Complete the profile chart.

a. Transfer to the Program Assessment Profile the implementation level rating assigned to each element in Step 3. (See page 46 for the profile.)

b. Connect each rating with a line to create a profile for the year.

c. Because this guide is used annually, use different colored lines on the profile to show changes by year.

Step 5. Review the assessment made in Step 2.

a. Note difference between your assessment in the "What Is, What's Needed" column and the statements representing a model industrial mechanics cluster program. These differences represent problems to be solved.

b. List each problem to be solved on a separate 3 x 5 card.

Note: Do this step individually when someone involved in the assessment starts to discuss a problem in detail or starts to plan solutions. Constructing solutions prior to having all the necessary information threatens the planning process. Therefore, place only the problem statement on 3 x 5 cards; when the problem is noted, set it aside and forget it until the assessment is finished. It is important not to get hung up on problem solving until you begin to create your long-range plan.

Step 6. Select the highest priority problems identified in Step 5.

a. Go through the cards selecting the highest priority. Use the criteria "What CAN I Do First?" and "What MUST I Do First?"

b. List the top priority problems in the Year 1 column on the chart, "Industrial Long-Range Plan" (see page 75).

Step 7. Sort the remaining problems.

a. Go through the remaining cards placing them in priority levels for each planning year (e.g., Year 2, 3, and 4).

b. Enter the remaining problems on the "Here's How We Plan to Get There" chart.

c. Determine what it will cost to do what you say needs to be done and place this on the long-range plan of how you plan to get to the model stage. (Budget pages are provided for detailing this information.)

Completion of the above seven steps results in a long-range plan that is based on accepted goals, established program implementation level criteria, present program level assessment, problem identification, and priority setting. Detail planning is the next step and requires specific activities to solve the Year 1 problems. This detail planning must be accomplished by the person responsible for solving the particular problem and includes:

a. Identifying several alternate solutions to the problem.

b. Selecting the best alternative solution.

c. Establishing timelines.

d. Identifying resources needed.

e. Assigning responsibilities.

f. Establishing evaluation procedures.

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Curriculum	Is There-?	What Is ? What's Needed ?
A. The district and school philosophy includes industrial mechanics as a part of the instructional program.	A-1 Is there a written school and/or district administrative policy, philosophy, and set of objectives for the industrial mechanics program? A-2 Is there a procedure for revising (expanding) the industrial mechanics curriculum?	____% ____%
B. The Oregon Department of Education specialists have been used in the development of industrial mechanics curriculum and long-range planning.	B-1 Have the services of the Oregon Department of Education specialists been utilized for developing curriculum and long-range plans?	____%
C. The instructional program includes: 1. Mechanical systems. 2. Electrical systems. 3. Fluid power systems. 4. Inspection and testing. 5. Hand and power tools. 6. Techniques of mechanical maintenance. 7. Related communication skills. 8. Broad based vocational experience in the 11th grade. 9. More specialized vocational experiences which include work.	C-1 Does the curriculum emphasize the commonalities of the key occupations?	____%
D. Class time in the 11th and 12th grades is equal to 120 minutes per day.	D-1 Is class/laboratory teaching time adequate? (120 min./day)	____%

INDUSTRIAL MECHANICS

Curriculum	Is There-?	What Is ? What's Needed ?
E. Curricular emphasis is placed on common skills and knowledges that are included in the industrial mechanics cluster guide and which use a variety of equipment and materials that are familiar to industrial mechanics occupations.	E-1 Is the cluster guide used as the basis of curriculum development? E-2 Is there a variety of equipment and materials similar to those used in industrial mechanics occupations?	____% ____%
F. Individualized instruction and varied media are used to achieve the goals and objectives of the industrial mechanics program.	F-1 Is the industrial mechanics curriculum spelled out in performance terms? F-2 During or after completion of the basic cluster requirements, are the students permitted to pursue areas of self-interest? F-3 Is there a variety of media and materials used to help the students learn?	____% ____% ____%

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Planning	Is There-?	What Is ? What's Needed ?
A. Initial planning includes: 1. Identification of short-range goals. 2. Identification of long-range goals. 3. Identification of objectives. 4. Community survey. 5. Student survey. 6. Visitations to similar programs. 7. Consultation with Oregon Department of Education and Oregon State University. 8. Administrative leadership-input-support.	A-1 Is there a long-range five-year plan developed under the guidelines provided in state planning guide?	____%
B. Development planning involves: 1. Time allotted. 2. Administrative commitment. 3. Assignment of responsibility for administrative planning.	B-1 Is the industrial mechanics teacher allowed release time for cluster planning? B-2 Does administration facilitate implementation of planned activities? B-3 Is the function of the vocational director clearly delegated? B-4 Is the plan a joint effort of the board, administration, instructional staff, and advisory committee members?	____% ____% ____% ____%
C. Evaluation of long-range plan is an annual activity which includes program evaluation and planning evaluation.	C-1 Is the industrial mechanics long-range plan evaluated and updated annually? C-2 Is there an evaluation procedure for the industrial mechanics program as a part of long-range plan?	____% ____%

INDUSTRIAL MECHANICS

Planning	Is There-?	What Is ? What's Needed ?
D. Planning time or extended contracts are provided industrial mechanics teachers to do long-range planning.	D-1 Is The teacher offered planning time or an extended contract for planning and organization?	____%

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Interdisciplinary Instruction	Is There-?	What Is ? What's Needed ?
A. Commonalities of instruction are identified in the various general education areas and the career education clusters.	A-1 Has the school implemented the interdisciplinary approach?	____%
	A-2 Have teachers identified and written those concepts which may be taught and/or reinforced in each other's curricular area?	____%
	A-3 Is there evidence which shows that interdisciplinary instruction is being used?	____%
B. Common instructional units are developed that will be of direct benefit to the individual student throughout the curriculum.	B-1 Are students encouraged to develop projects which may earn a grade in two or more subjects?	____%
C. A staff member or administrator is responsible for implementing and coordinating the interdisciplinary instruction.	C-1 Is there a staff member or administrator responsible for implementing and coordinating interdisciplinary instruction?	____%
	C-2 Are regular interdisciplinary meetings held with departmental staff?	____%
	C-3 Is the industrial mechanics instructor or a representative included in interdisciplinary meetings?	____%

INDUSTRIAL MECHANICS

In 197_-7
We are here:

Implementation Level

0% 25% 50% 75% 100%
NEEDS IMPROVEMENT | MODEL

Advisory Commitee	Is There-?	What Is ? What's Needed ?
A. An effective and functional advisory committee has been developed using the Oregon and American Vocational Association guidelines. The committee: 1. Represents geographical and occupational areas in its membership. 2. Develops a yearly schedule for meetings. 3. Distributes minutes of meetings to members, administrators, and overall council chairman. 4. Maintains affiliation with overall council. 5. Has constitution and by-laws by which it is governed. 6. Has student and/or graduate student member. 7. Has an industrial mechanics instructor as a member.	A-1 Is there a functioning Industrial Mechanics Advisory Committee (minimum of three meetings per year)?	____%
	A-2 Is there an overall occupational advisory council?	____%
	A-3 Is there a cross section of industrial mechanics key occupations represented?	____%
	A-4 Is an agenda sent with meeting notice?	____%
	A-5 Are the meeting minutes written and distributed to instructor, committee and school administration?	____%
	A-6 Is there a student or a graduate student member?	____%
	A-7 Does the instructor participate and attend the meetings?	____%

INDUSTRIAL MECHANICS

Advisory Commitee	Is There-?	What Is ? What's Needed ?
B. Services performed by an Industrial Mechanics Advisory Committee may include: 1. Assisting in sponsoring Vocational Industrial Clubs of America (VICA). 2. Community relations. 3. Assist in training and work experience stations. 4. Providing advice on current practices relating to the Industrial Mechanical Industries. 5. Assisting in the program evaluation and updating. 6. Donating and acquiring equipment for a more effective vocational program. 7. Assisting in budget preparation.	B-1 Are area industrial mechanics employers informed about the mechanics program by its advisory committee?	____%
	B-2 Does committee advise on curriculum content?	____%
	B-3 Is the committee used as a resource for community information and involvement?	____%
	B-4 Will the advisory committee provide or make available work stations for the additional development of the instructor's skill and knowledge?	____%
	B-5 Do the decision makers consider the advice and recommendations of the advisory committee?	____%

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Work Experience	Is There-?	What Is ? What's Needed ?
A. Cooperative work experience is a part of the 12th grade industrial mechanics program and is: 1. Offered as a semester or year long experience with a minimum time allotment of 15 hours per week. 2. Offered in conjunction with or in lieu of 120 minutes per day with industrial mechanics cluster program. 3. Available to students who demonstrate 11th grade industrial mechanics competencies as a prerequisite to placement. 4. Designed as a planned progression of experiences in various occupations directly related to industrial mechanics. 5. Available either as a paid or non-paid experience dependent on availability of station and local conditions.	A-1 Is the work experience related to industrial mechanics curriculum? A-2 Does every student in the industrial mechanics program receive work experience in accordance with his or her abilities? A-3 Is there a written training agreement between every participating employer, student, parent and school staff person? A-4 Have the pay and credit details been formally arranged? A-5 Are work experience students encouraged to rotate to various types of key industrial mechanics work experience stations? A-6 Is the work experience allotted 15 hours per week as part of the total program?	____% ____% ____% ____% ____% ____%
B. Students in cooperative work experience program should be supervised by industrial mechanics instructor. Supervision is a part of the total learning process; the industrial mechanics instructor is the liaison between the school and industry.	B-1 Is the industrial mechanics instructor a part of a supervised work experience program? B-2 Is the industrial mechanics instructor given time to visit and approve work experience stations? B-3 Is supervisory and travel arrangement adequate?	____% ____% ____%

INDUSTRIAL MECHANICS

Work Experience	Is There-?	What Is ? What's Needed ?
C. Industry personnel are considered as a part of the instructional team.	C-1 Is provision made for the work experience station personnel to be part of the instructional team?	____%
D. The student keeps a diary of work experience activities which are correlated with classroom instruction.	D-1 Are students encouraged to keep records of their work experience activities?	____%
	D-2 Are the activities correlated with classroom instruction?	____%
E. Supervision, evaluation, scheduling and documentation are provided to all students enrolled in cooperative work experience including summer programs. (Three visits per semester are recommended.)	E-1 Is there a continuous program of work experience student evaluation?	____%
	E-2 Is there a planned summer work experience program available for students?	____%
	E-3 Does the work experience coordinator keep a visitation log on the progress of each student?	____%
	E-4 Are work experience stations evaluated for their effectiveness by the industrial mechanics instructor and work experience coordinator?	____%
	E-5 Are the students visited a minimum of three times a semester?	____%
	E-6 Are industrial mechanics and work experience students brought together on a regular basis to discuss and share their variety of work experience activities?	____%

INDUSTRIAL MECHANICS

Work Experience	Is There-?	What Is ? What's Needed ?
F. The Industrial Mechanics Advisory Committee helps select students and participates in work experience approval.	F-1 Does the district inform the area mechanic employers about industrial mechanics work experience program?	____%
	F-2 Is the advisory committee used in the selection and approval of students for work experience?	____%
G. Pre-work experience orientation sessions for industrial mechanics students should be conducted.	G-1 Are orientation sessions for work experience students conducted?	____%

INDUSTRIAL MECHANICS

In 197_-7
We are here:

Implementation Level

0% 25% 50% 75% 100%
NEEDS IMPROVEMENT | MODEL

Facilities and Equipment	Is There-?	What Is ? What's Needed ?
A. The general guidelines for facilities and equipment in the industrial mechanics cluster as defined by the Oregon Department of Education are being followed and include: 1. Facilities a. A minimum of 3600 sq. ft. floor space total shop size for one teacher and up to a maximum of 24 students, or b. For quality instruction and safety, 150 sq. ft. floor space per student. c. Shop heating, ventilation, lighting, noise level, and color, which meet current state safety code (Occupational Safety and Health Act) requirements. 2. Equipment a. A current written policy for equipment calibration, maintenance or repair is followed. b. Adequately equipped work areas are established to handle student loads.	A-1 Do the facilities and equipment meet the guidelines defined by the Oregon Department of Education? A-2 Are the facilities and equipment as much like the world of work as possible? A-3 Are there sufficient supplies available for teaching and student learning activities? A-4 To facilitate industrial mechanical instruction, is there adequate space and equipment available, including: a. Mechanical systems. b. Electrical systems. c. Fluid power systems. d. Inspection and testing. e. Hand and power tools. f. Techniques of mechanical maintenance and repair. g. Related leadership skills.	_____% _____% _____% _____%
B. Long-range plan provides for updating or adding equipment and facilities.	B-1 Is there a written long-range plan for adding to the existing equipment and facilities?	_____%

INDUSTRIAL MECHANICS

Facilities and Equipment	Is There-?	What Is ? What's Needed ?
C. A resource center is provided for independent study and research.	C-1 Is there a resource center for industrial mechanics? C-2 Is the space available for independent study and research? C-3 Is the resource center space allocated industrial mechanics adequate?	____% ____% ____%
D. The industrial mechanics instructor is provided time or an extended contract to organize, repair and maintain the facilities and equipment.	D-1 Is the industrial mechanics instructor provided time to organize, repair and maintain the facilities and equipment?	____%
E. The learning environment is conducive to safe and productive learning activities.	E-1 Is there a good learning environment within the shop facilities (e.g., ventilation, heat, sound level, color)?	____%

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Student Organization	Is There-?	What Is ? What's Needed ?
A. The Vocational Industrial Club of America (VICA) is operated as an integral part of the industrial mechanics cluster curriculum.	A-1 Is there a VICA chapter in the school?	____%
	A-2 Is the VICA program an integral part of the curriculum?	____%
	A-3 Is class time allowed for VICA activities?	____%
B. Students operate the VICA program with administrative support, teacher commitment and financial resources allocated by the state.	B-1 Does the school administration support VICA involvement through teacher release time?	____%
	B-2 Are the reimbursable state funds available to the program?	____%
	B-3 Is the VICA program student operated?	____%
	B-4 Does the industrial mechanics instructor assist in organizing students in the VICA program?	____%
C. The VICA program devotes 90% of its efforts to local activities and 10% of its efforts to state and national activities.	C-1 Are the efforts and activities of the VICA program approximately 90% locally oriented?	____%
	C-2 Do the VICA members participate in at least three state and national activities?	____%

INDUSTRIAL MECHANICS

Student Organization	Is There-?	What Is ? What's Needed ?
D. The responsibilities for advising the VICA organization are divided equally among the multiple departments.	D-1 Are the advisor responsibilities defined and shared equally among the vocational programs?	____%
E. Besides developing technical knowledge and skill, the VICA program includes a planned program for personal growth, community understanding, safety, vocational youth cooperation, career opportunities, vocational teaching and public relations.	Does the VICA program provide opportunities for members to do any of the following? E-1 Start a personal program of self-improvement which emphasizes scholarhip, citizenship and participation in VICA activities (e.g., leadership conferences, home, school and community improvement activities). E-2 Promote and improve relations and understanding among all segments of our society (e.g., among fellow students, students and teachers, employees and employers, management and labor, school and community and other nations). E-3 Reduce the rate of accidents among youth by promoting safety in the shops, classrooms, on the job, and on the highways. E-4 Know the critical need for teachers and to encourage capable students to go into the field of industrial education. E-5 Promote greater cooperation of the youth involved in all areas of vocational education.	____% ____% ____% ____% ____%

INDUSTRIAL MECHANICS

Student Organization	Is There-?	What Is ? What's Needed ?
E. (continued)	E-6 Give the general public an awareness of the good work that youth engaged in industrial education are doing not only to better themselves, but also their community, state, nation and the world.	____%

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

In-Service	Is There-?	What Is ? What's Needed ?
A. Long-range in-service plan has been developed by teacher and administrators that includes workshops or instruction: 1. In the safe and skillful use of equipment common to industrial mechanical occupations. 2. In the development and use of individualized instruction.	A-1 Is there in-service available to industrial mechanics instructor that provides instruction in the safe use of, and skills needed to operate equipment common to the field of industrial mechanics? A-2 Is in-service available for developing the skills necessary to use and write individualized instructional units?	____% ____%
B. The in-service program is evaluated and updated yearly to meet the teacher needs for professional growth.	B-1 Are new in-service classes and workshops offered each year? B-2 Do the offerings meet the professional growth needs of the industrial mechanics teacher(s)?	____% ____%
C. In-service classes are available to prospective or first year probationary teachers.	C-1 Are non-degree industrial mechanical instructors, immediately out of industry, given in-service toward classroom proficiency prior to or in conjunction with first year of teaching?	____%
D. The in-service offerings include classes or workshops for administrators, teachers and counselors in: 1. Career education. 2. Career clusters and their objectives. 3. Career counseling.	D-1 Are classes available to administrators, teachers and counselors on career education, career clusters, and career counseling and information?	____%

INDUSTRIAL MECHANICS

In-Service	Is There-?	What Is ? What's Needed ?
E. The district and school provide time and financial support to teachers for attending statewide or industry-sponsored seminars, workshops or conferences.	E-1 Does district/school allow time and finances for instructors to attend state or industry sponsored in-service seminars, workshops or conferences?	_____%
F. Industrial mechanics instructors are encouraged and given opportunities to work in industry or attend industrial schools during the summer months.	F-1 Are instructors encouraged to seek part-time or summer experiences in the mechanical industry or industrial schools?	_____%

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Individualized Instruction	Is There-?	What Is ? What's Needed ?
A. Instruction should be student oriented and individualized.	A-1 Is there a variety of learning experiences available for any given concept?	____%
	A-2 Is the industrial mechanics program student oriented?	____%
B. A variety of media and materials are available for students and instructor use.	B-1 Is a multi-media approach used?	____%
	B-2 Have individualized materials been developed or purchased for use in the program?	____%
	B-3 Are student operated audiovisual materials being used?	____%
	B-4 Are audiovisual materials and equipment adequate for individualized instruction?	____%
C. Minimum student competency levels are identified. Students may gain advanced placement through a "challenge" process.	C-1 Have minimum industrial mechanics program competency levels for students been identified?	____%
	C-2 Is a challenge process (written and performance) used for advanced study or placement?	____%

INDUSTRIAL MECHANICS

In 197_-7
We are here:

Implementation Level

0% 25% 50% 75% 100%
NEEDS IMPROVEMENT | MODEL

Articulation	Is There-?	What Is ? What's Needed ?
A. The school district has a career education plan that includes: 1. Career awareness (Grades K-6) 2. Career exploration (Grades 7-10) 3. Career preparation, including career clusters (Grades 11 & 12) 4. Specialization placement & follow-up offerings: a. Community College b. Higher Education c. Apprenticeship d. Military e. On-the-job Training f. Private schools	A-1 Is there a planned career awareness program available for students in grades K-6?	____%
	A-2 Is there a planned career exploration program available for students in grades 7-10?	____%
	A-3 Is exploration of the industrial mechanics cluster a part of the career exploration program?	____%
	A-4 Does the industrial mechanics curriculum articulate with the community colleges program?	____%

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INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Evaluation	Is There-?	What Is ? What's Needed ?
A. The industrial mechanics program is evaluated regularly in accordance with standards established in this assessment manual.	A-1 Is the industrial mechanics assessment manual used as a part of program evaluation?	____%
	A-2 Is the industrial mechanics instructor involved in program evaluation?	____%
B. Evaluation instruments and surveys are used to determine student outcomes and needs.	B-1 Are there adequate procedures for evaluating the student's performance?	____%
	B-2 Are follow-up studies utilized in program evaluation?	____%
	B-3 Are students who leave the industrial mechanics program prior to completion surveyed to determine their reason for leaving?	____%
	B-4 Are surveys evaluated for their validity and used as a management tool?	____%

INDUSTRIAL MECHANICS

Evaluation	Is There-?	What Is ? What's Needed ?
C. Administrative, student, community and advisory committee input is gained through a formalized evaluation plan.	C-1 Are student, administrative and advisory committee input used to change the program?	____%
	C-2 Is there a means by which the advisory committee can easily assess the program and make suggestions?	____%
	C-3 Are in-school students given the opportunity to evaluate the program?	____%
	C-4 Is the Secondary Educational Report for Vocational Enrollment (SERVE) used as a part of the formal evaluation plan?	____%
D. Evaluation of industrial mechanics personnel is used as a means of improving the program.	D-1 Do appropriate administrators or staff observe and evaluate the program and personnel?	____%

INDUSTRIAL MECHANICS

In 197_-7
We are here:

Implementation Level

0% 25% 50% 75% 100%
NEEDS IMPROVEMENT | MODEL

Instructor Selection	Is There-?	What Is ? What's Needed ?
A. The industrial mechanics teacher(s) are vocationally certified with work experience in the industrial mechanics area.	A-1 Does the industrial mechanics teacher meet the vocational certification requirements?	____%
	A-2 Does the teacher have work experience in the industrial mechanical area?	____%
	A-3 Does the instructor have the competencies necessary to teach the instructional objective of the cluster program?	____%
B. Aides are used as a support to industrial mechanics instruction.	B-1 Does the school provide teacher aides to assist the industrial mechanical instructor?	____%
C. The teaching responsibilities and departmental responsibilities are defined in writing with additional compensation or time allocated when extra responsibilities are required.	C-1 In multi-teacher shops, is the division of responsibility in written form?	____%
	C-2 Is there time provided to complete the defined responsibilities?	____%
D. A staff/student ratio of 1-24.	D-1 Is the student/teacher ratio not greater than 24 students per class?	____%

INDUSTRIAL MECHANICS

In 197_-7
We are here:

Implementation Level

0% 25% 50% 75% 100%
NEEDS IMPROVEMENT | MODEL

Finance	Is There-?	What Is ? What's Needed ?
A. A formal budgeting program provides for the capital outlay and supplies required to offer a model industrial mechanics cluster program.	A-1 Are sufficient funds allocated the industrial mechanics cluster program for: a. Expansion/remodeling. b. Replacement. c. Repair. d. Supplies, consumable. e. Instructional aids/supplies. f. Hand/power tools. g. Equipment. h. Furnishings. i. Professional growth expenses. j. Installation costs. k. Delivery cost. l. Inflationary trends.	____%
B. The industrial mechanics advisory committee and instructor input is used to determine the budgeting needs for the program and its long-range plan.	B-1 Has the budget been developed around a sound long-range plan? B-2 Was the budget submitted to the industrial mechanics advisory committee for its input and support? B-3 Is the instructor included in the building and establishing of priorities for the final industrial mechanical program budget? B-4 Is the instructor included in the spending of the allotted industrial mechanical cluster program budget?	____% ____% ____% ____%

INDUSTRIAL MECHANICS

Finance	Is There-?	What Is ? What's Needed ?
C. Donations of surplus equipment and technical assistance from local businesses and community agencies are considered in budget planning.	C-1 Is industry contacted for donations of instructional materials and equipment required in the industrial mechanics curriculum?	____%

INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

NEEDS IMPROVEMENT | MODEL

Safety	Is There-?	What Is ? What's Needed ?
A. In accordance with Oregon Administrative Rule, 22-070, each school district shall: 1. Comply with all local, state, federal laws relating to safety standards. 2. Conduct and document regularly scheduled safety inspections of all schools and property under its jurisdiction. 3. Conduct an accident prevention in-service program as a part of its regular orientation program for all teachers and employees of the district. 4. Conduct an accident reporting system and record in the school district office, accidents happening on school property, or on school assignment to teachers, students and other school personnel. 5. Cause all schools to provide the necessary safety devices, safety equipment, and safety instruction for students and adults who operate power tools and conduct laboratory experiments.	A-1 Is there a functioning safety program which includes periodic inspection involving staff, students and qualified safety inspectors?	____%
	A-2 Is in-service provided at regular intervals to insure that all instructors are kept up to date in all safety practices and policies?	____%
	A-3 Is adequate funding available to provide the required materials and equipment to maintain a safe program?	____%
	A-4 Is there an established policy for first aid, reporting and inspections?	____%
	A-5 Is the instructor informed of, and practicing safe procedures and instruction?	____%
	A-6 Are all power tools properly guarded and electrically approved by Underwriters' Laboratories? Do the tools meet the state health and safety standards?	____%

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INDUSTRIAL MECHANICS

In 197_-7 We are here:

Implementation Level

0% 25% 50% 75% 100%

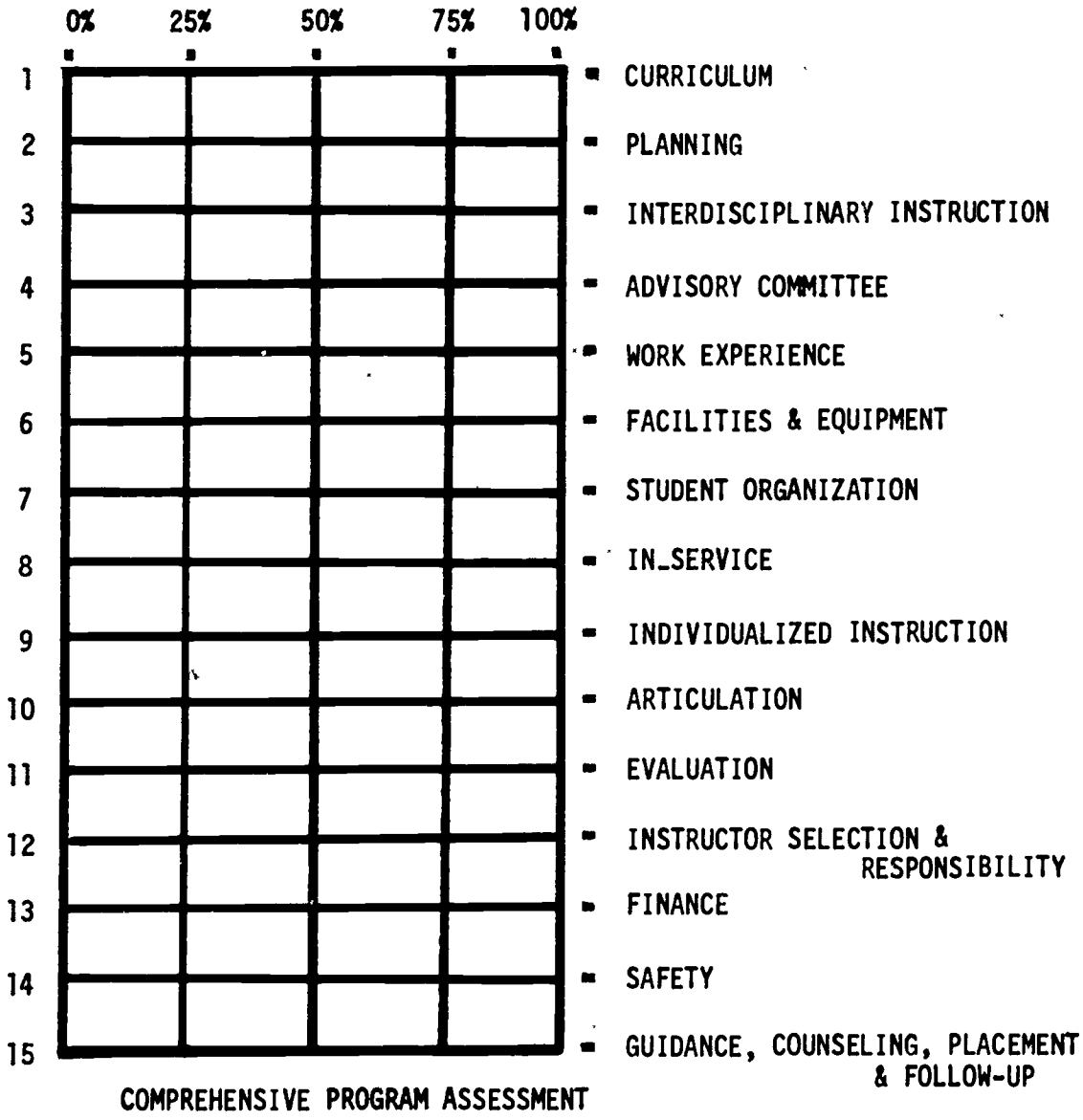
NEEDS IMPROVEMENT | MODEL

Guidance-Counseling Placement-Follow-Up	Is There-?	What Is ? What's Needed ?
A. Guidance, counseling, placement and follow-up services are offered to all students; the services include: 1. Administering and interpreting interest inventories. 2. Aptitude testing and interpretation. 3. Providing occupational guidance information. 4. Providing information about the assistance in planning post-high school opportunities for further education and training, job placement or apprenticeships. 5. Developing job search skills needed to compete in the labor market.	A-1 Do the students in the industrial mechanics program have a career goal? A-2 Are job search techniques a part of the program? A-3 Is a testing program offered that includes interest inventories and aptitude tests? A-4 Is the industrial mechanics instructor informed about the results of the test provided by counseling/guidance? A-5 Does the industrial mechanics instructor use the results of testing conducted by counseling and guidance?	____% ____% ____% ____% ____%
B. For incoming students the guidance and counseling department offers a planned forecasting and information program that includes an overview of career cluster offerings and opportunities.	B-1 Is the guidance and counseling program articulated with an exploratory program for entrance into industrial mechanics? B-2 Is the program articulated with placement and follow-up for the student's next career step? B-3 Does the counseling department understand the career cluster concept? B-4 Is there cooperation and communication between the industrial mechanics and counseling staff?	____% ____% ____% ____%

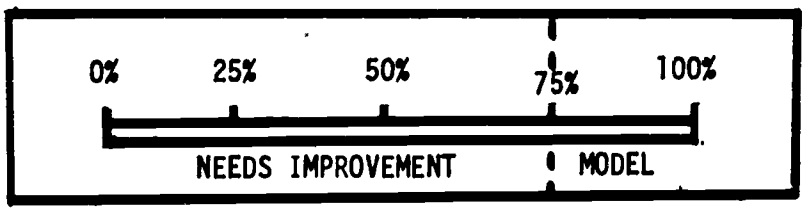
INDUSTRIAL MECHANICS

Guidance-Counseling Placement-Follow-Up	Is There-?	What Is ? What's Needed ?
C. The Secondary Educational Report for Vocational Enrollment (SERVE) is used for reporting and follow-up.	C-1 Are student records kept for follow-up?	____%
	C-2 Are all graduated students followed?	____%
	C-3 Are students who drop-out followed?	____%

Program Assessment Profile



COMPREHENSIVE PROGRAM ASSESSMENT



Note: Use a different color line for each year

____ 19__ ____ 19__ ____ 19__

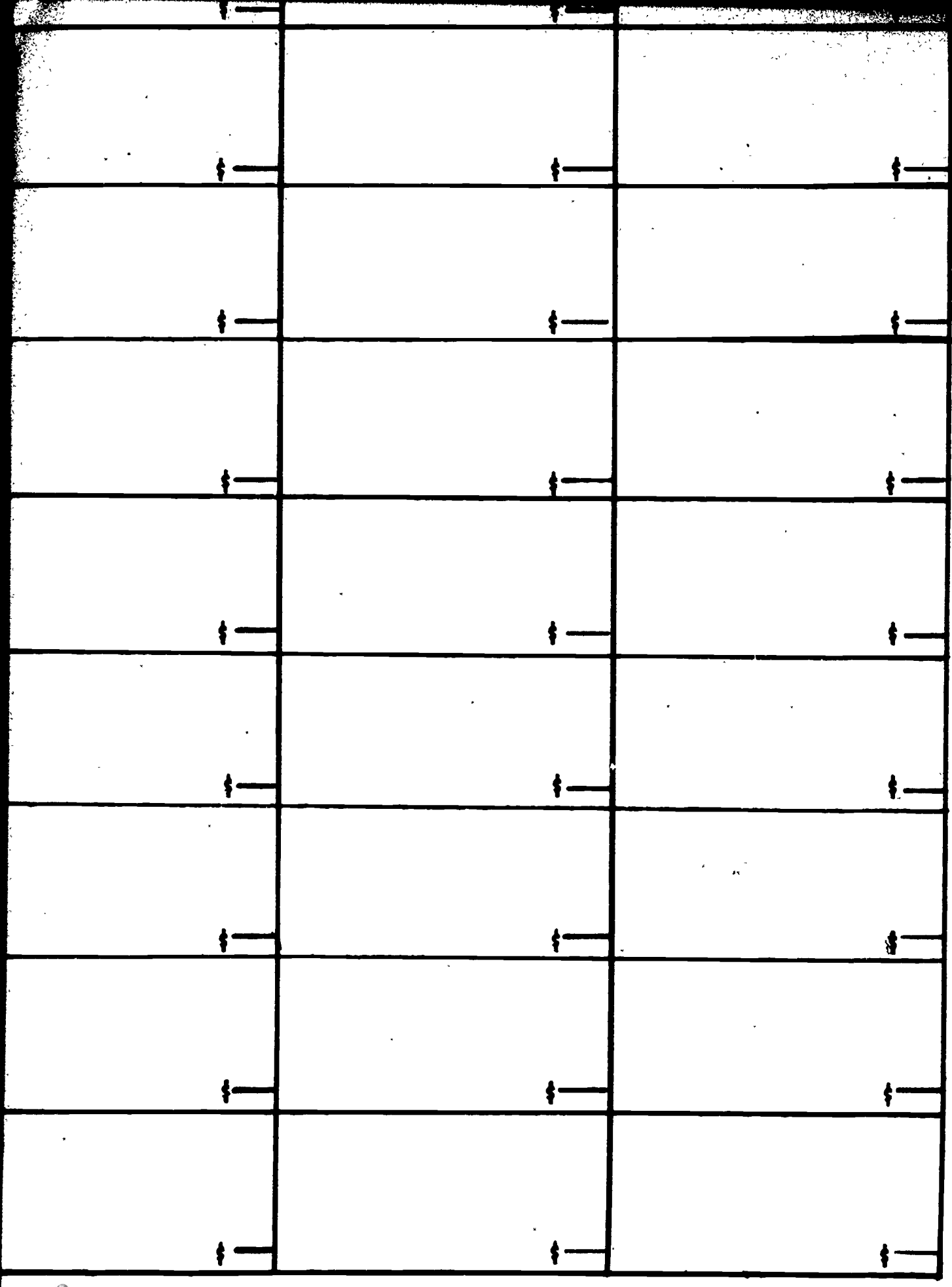
Industrial Mechanics Long

Here's how we plan to get there!	Year 1	Ye
Curriculum	$—	
Planning	$—	
Interdisciplinary Instruction	$—	
Advisory Commitee	$—	
Work Experience	$—	
Facilities and Equipment	$—	
Student Organization	$—	

Long Range Plan 19__ to __19

	Year 2	Year 3	Year 4

In-Service		
Individualized Instruction		
Articulation		
Evaluation		
Instructor Selection and Responsibility		
Finance		
Safety		
Guidance-Counseling Placement-Follow-Up		



Industrial Mechanics Budget 19__-__

ELEMENT	OBJECTIVE	METHOD OF REACHING OBJECTIVE	PERSONNEL	SUPPLIES	EQUIPMENT	OTHER	TOTAL
		Totals					

Page ___ of ___