

INTRODUCTION

Background

Industrial Arts Rationale

Industrial Arts education provides lifelong learning patterns for living and working effectively in a changing technological environment. Participants in Industrial Arts programming work actively in a hands-on environment with technological tools, materials, and processes to transform concepts and ideas into goods and services. Problems, ideas, and concepts are explored from the research/investigation stage to product construction, and ultimately to final testing and assessment/evaluation of the goods produced. Because of the changing nature of society and the workplace, the practical skills and knowledge developed in Industrial Arts education are relevant to many other areas of life.

Education needs to be about developing foundation skills. Industrial Arts provides students the opportunity to work independently and co-operatively as they apply decision-making, problem-solving, and critical-thinking skills to problems and/or issues. Additional skills such as inferring, synthesizing, analyzing, and evaluating, as well as a complete range of communication skills including listening, speaking, representing, viewing, reading, and writing are part of Industrial Arts classrooms. These learning environments offer challenging, stimulating, and enjoyable activities that motivate people.

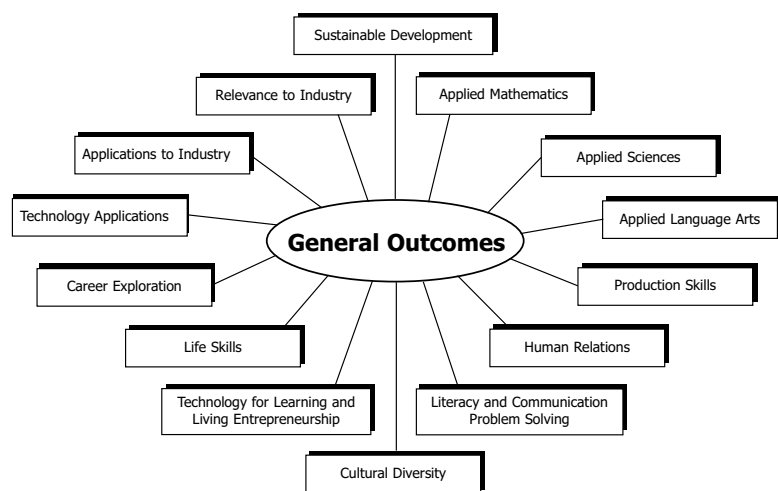
Curricular Foundations

This document represents the first major Senior Years Industrial Arts curriculum review since the mid-1980s. That review resulted in the development of eighteen Grade 10 to Grade 12 Industrial Arts courses (Drafting 101, 201, 301; Electricity/Electronics 101, 201, 301; Graphics 101, 201, 301; Metalwork 101, 201, 301; Power Mechanics 101, 201, 301; and Woodwork 101, 201, 301). The framework serves as a basis for the development of Grade 9 to Grade 12 Industrial Arts courses. It replaces the former curriculum documents mentioned above.

The need to make curricula more responsive to the needs of the students and the community has resulted in significant changes. The emphasis in Industrial Arts courses on problem-solving, teamwork skills, creative design, and diverse learning styles is reflected in the new framework. The shift from previous curricula structures to the new framework involves the following major changes:

Former Guidelines	New Frameworks
1. Goals and objectives	1. Student Learning Outcomes
2. Focus on teacher inputs	2. Focus on how students learn, and on integrated components to learning
3. Teaching concepts separately	3. Themes and concepts
4. Layers of learning	4. Spirals of learning
5. Linear, lock-step sequential outline of content	5. Thinking and problem-solving skills
6. Passive participation	6. Active participation

Industrial Arts programming teaches students to apply knowledge and skills from other subject areas as they learn new skills to analyze problems, design solutions, and create products.



This document builds on recent education research, including

- the restructuring of educational objectives as General Learning Outcomes and Specific Learning Outcomes
- brain-based research which has led to theory on multiple intelligences, learning styles, and thinking styles
- authentic assessment
- school-to-work transition skills

Vision

Learning Environment

Industrial Arts students are immersed in a holistic learning environment that prepares them to adapt to a society in which the workplace is rapidly changing with advancing technology and blurred career lines.

Industrial Arts students gain a unique, meaningful, and practical experience while learning in a facility that relates to out-of-school experiences. They gain a variety of life and employability skills while working with hands-on applications.

Lifelong Skills

The Industrial Arts experience and environment leads to the development of life and employability skills. Students gain technological literacy and an array of life skills. They learn to

- manipulate materials and tools
- interact with processes
- define, analyze, and solve problems
- design and create products
- apply and integrate knowledge
- work safely
- manage time
- manage information
- work on teams

- communicate
- observe and record data
- show initiative
- be responsible
- be adaptable

Integration of Experience

Industrial Arts facilities provide the venue for the integration of learning experiences for students. Students gain a new depth of understanding because of the integration of knowledge and skills in a practical setting. Industrial Arts courses integrate a blend of knowledge in the physical and biological sciences, social sciences, and the arts and humanities, with activities that incorporate the four modalities of learning (kinesthetic, tactile, visual, and auditory).

This integration can occur naturally for the learner, or it may happen through a teacher-directed connection with other subject areas—a process which the Industrial Arts learning environment innately encourages. This serves to add relevance to the student’s overall learning experience.

Active Learner

A student of Industrial Arts is an active learner in an activity-based course that demands thinking and doing. The student will

- take an active role in negotiating and planning specific activities to fulfill the learning outcomes
- participate in activities from design and development, through production and evaluations of activities
- practise and execute the necessary skills in applying production skills
- use combinations of intellectual, physical, and multiple sensory skills
- participate as a member of a team
- transfer and adapt previous learned knowledge, skills, and attitude

Teacher’s Role

The teacher’s role is to

- be a facilitator and a co-learner
- act as a role model
- plan and manage themes and concepts
- provide opportunities for students to develop skills and knowledge
- be prepared to venture with students into unpredictable situations where, together, solutions to technological problems will be pursued

Senior Years Industrial Arts Framework Purpose

In Manitoba, Industrial Arts programming represents a wide variety of learning opportunities that focus on fundamental personal and production skill development. This framework strives to affirm and strengthen current practices while encouraging teachers to broaden the focus of their courses.

This framework will serve to

- enhance and reaffirm the value of Industrial Arts courses
- provide a framework for the development of further support documents for Industrial Arts
- guide teachers in enhancing current practices
- strengthen and revitalize programming
- provide General Learning Outcomes that introduce two new skill sets for all Industrial Arts courses
- provide Specific Learning Outcomes that are common to all Senior Years Industrial Arts strands