

**SCHOENBAR MIDDLE SCHOOL COURSE GUIDE
GRADE 8**

COURSE TITLE: INDUSTRIAL/TECHNOLOGY ED.

DATE ADOPTED: Revision 06-07

DEPARTMENT VOCATIONAL

COURSE LENGTH 1 SEMESTER

Course Description:

This course will explore current methods of communication, manufacturing, and transportation technologies. Students are exposed to sketching, technical drawing, basic electronics, woodworking, metal fabrication, power mechanics, and various types of transportation modes in this hands on, activity based class.

Course Outcomes/Standards:

- 1. Students will demonstrate proper and safe procedures while working with technological tools, apparatus, equipment, and materials.**

AK Performance: **Math** **Writing** **Reading**

AK Technology:

Industry-based Standards:

AK Employability Standards:

AK Cultural Standards:

Voc/Tech Standards:

The student will:

- 1.1 Follow laboratory safety rules and procedures.
 - 1.2 Demonstrate good housekeeping at workstations within total laboratory.
 - 1.3 Conduct laboratory activities and equipment operations in a safe manner.
 - 1.4 Exercise care and respect for all tools, equipment, and materials.
 - 1.5 Safely use hand tools and power equipment.
 - 1.6 Explain fire prevention and safety precautions and practices for extinguishing fires.

- 2. Students will demonstrate computer application and literacy.**

AK Performance: **Math** **Writing** **Reading**

AK Technology:

Industry-based Standards:

AK Employability Standards:

AK Cultural Standards:

Voc/Tech Standards:

The student will:

- 2.1 Define terms related to computer parts and usage.
- 2.2 List ways in which computers are used in technology.
- 2.3 Discuss advantages and disadvantages in the use of computers.
- 2.4 Demonstrate the application of a computer.

3. The students will apply basic skills in communications, materials, and science appropriate to technological content and learning activities.

AK Performance: **Math** **Writing** **Reading**

AK Technology:

Industry-based Standards:

AK Employability Standards:

AK Cultural Standards:

Voc/Tech Standards:

The student will:

- 3.1 Use the features of books and reference materials, such as table of contents, preface, introduction, titles and subtitles, index, glossary, appendix, bibliography.
- 3.2 Read and follow complex written directions.
- 3.3 Find, understand, and apply information from a variety of sources (books, manuals, newspapers, periodicals, directories, reference works, computer printouts, and other printed matter or electronic sources such as video display terminals.
- 3.4 Use and expand general and specialized vocabulary including abbreviations, acronyms, and concepts as appropriate to subject areas studied at the grade level.
- 3.5 Identify and comprehend the main subordinate ideas in lectures and discussions, ask questions to clarify information heard, and report accurately what others have said.
- 3.6 Solve work-related problems involving the basic arithmetic operations using whole numbers, fractions, decimals, and percents.
- 3.7 Gather scientific information through skills in laboratory, field and library work.
- 3.8 Draw conclusions or make inferences from data.
- 3.9 Apply basic scientific/technical solutions to the appropriate problems.

- 4. Students will be able to demonstrate and apply design/problem-solving processes.**

AK Performance: **Math** **Writing** **Reading**
AK Technology:
Industry-based Standards:
AK Employability Standards:
AK Cultural Standards:
Voc/Tech Standards:

The students will:

- 4.1 Describe and explain steps in the design/problem-solving process.
- 4.2 Propose solutions to given problems.
- 4.3 Design and implement the optimal solution to a given problem.

- 5. Students will be able to discuss individual interests and aptitudes as they relate to a career.**

The student will:

- 5.1 Describe individual strengths and weaknesses.
- 5.2 Discuss individual interests related to a career.
- 5.3 Identify careers within specific areas of technology.
- 5.4 Explore careers within specific areas of interest.

- 6. Students will perform special skills unique to power and transportation technologies.**

AK Performance: **Math** **Writing** **Reading**
AK Technology:
Industry-based Standards:
AK Employability Standards:
AK Cultural Standards:

Voc/Tech Standards:

The student will:

- 6.1 Disassemble and reassemble or perform maintenance on an internal combustion engine.
- 6.2 Construct, maintain, or repair a land, water, or air/space vehicle.
- 6.3 Construct a water-powered, wind powered, steam-powered, or solar powered device.

7. Students will perform special skills related to technical drafting.

AK Performance: **Math** **Writing** **Reading**
AK Technology:
Industry-based Standards:
AK Employability Standards:
AK Cultural Standards:
Voc/Tech Standards:

The student will:

- 7.1 Express ideas through graphic representation.
 - a. Select appropriate drawing tools (lead, pens, compasses, erasers).
 - b. Select appropriate drawing paper.
- 7.2 Use specific criteria when analyzing or producing a design.
 - a. Use appropriate line weights and types to complete drawings.
 - b. Letter quickly and legibly according to industry standards.
 - c. Use standard drawing symbols to designate objects, details, and other appropriate information.
- 7.3 Determine and represent sectional drawings.
 - a. Produce orthographic and pictorial sketches.
 - b. Produce pictorial drawings (oblique, Perspective, isometric).

Desired Affective outcomes:

- The student should develop awareness of potentials in a variety of vocational/technical job areas.
- They will understand what is involved in preparation and problem-solving in various aspects of these professions.

Major Activities:

- Design and develop various types of working drawings.
- Plan, develop, and construct a truss styled bridge.
- Dis-assemble and assemble a small gas engine.
- Construct a metal toolbox.
- Develop, construct and test a small co2 fired car.
- Develop, build and test an electric motor airplane.
- Read about and discuss various types of transportation devices.

Assessment:

- Students will be assessed on participation, testing and completion of project meeting required construction specifications.