

**Carpentry**  
**GRADE 9,**  
Developed June 2006

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## **Course Philosophy Grade 9**

The first year carpentry student t the basic fundamentals involved in mill and house carpentry. In each of these areas, the fundamental procedures and process of assembling and construction are presented and developed. The student is encouraged to develop an awareness and positive attitude about safety while learning the terminology, layout and assembly procedures used in residential building construction. Also students will be introduced to school maintenance and the off - site building program where they observe and learn to develop a work ethic and basic construction skills.

### **Course Description**

Students enrolled in the Carpentry (CP) program for the remainder of the year primarily focus on these main objectives:

- 1 Students will acquire basic knowledge in the identification and use of methods, materials, and tools.
- 2 Students will learn and perform the fundamentals of house framing.
- 3 Students will develop proper attitudes about safety and gain an appreciation for cost of tools and materials.
- 4 Students will develop proper attitudes in the areas of co-operation, respect and responsibility. .
- 5 Students will become proficient in the basics of measurement.
- 6 Students will learn the basic value of productivity and proper use of time.
- 7 Students will become active in the SkillsUSA skills competition and complete the grade 9 PDP program.

## **COURSE ASSESSMENT PLAN**

For the Carpentry) course at McCann Technical School the following assessment plan will be followed:

### **Grading System:**

“Report cards are issued quarterly and serve as a guideline for students and their parents to measure achievement. Parents are encouraged to contact teachers and counselors to ensure a continuing participation in student progress. Courses are graded numerically in accordance with the following values.” (2005-2006 McCann Student Handbook)

90-100	Advanced
80-89	Proficient
70-79	Satisfactory
65-69	Passing
0-64	Failing
I	Incomplete (make-up required)

### **Technical Grading Policy:**

#### **Theory (30%)**

20% Homework  
15% Notebook  
40% Tests/Quizzes  
10% Attendance/Participation  
15% SkillsUSA PDP

#### **Shop Performance (70%)**

75% Competency/Performance  
10% Attendance/Participation  
15% SkillsUSA Project

### **Final Examinations:**

The final examinations will be counted as a fifth marking period in the students' final grade for their Carpentry Course course.

**Timeline for course activities:**

Individual student needs and learning styles are always of the utmost importance and are considered when achieving the programs required competencies. Most of the students are able to achieve the program goals and competency within the following timeline:

The following timeline is based on a minimal amount of school repairs.

Grade 9 Carpentry

- First Quarter
  - Exploratory
  
- Second Quarter
  - Safety Procedures
  - Career Awareness
  - Introduction To Hand Tools
  - Introduction To Power Tools
  - House Framing Fundamentals
  - School Repairs
  - SkillsUSA Project
  
- Third Quarter
  - Safety Procedures
  - Career Awareness
  - Introduction To Hand Tools
  - Introduction To Power Tools
  - House Framing Fundamentals
  - School Repairs
  - SkillsUSA Project
  
- Fourth Quarter
  - Hand Tools
  - House Framing Fundamentals
  - Masonry Fundamentals
  - Plumbing Fundamentals
  - Basic Print Reading
  - School Repairs
  - SkillsUSA Project

# Instructional Activities

Several types of instructional activities are used in grade 9 to help students understand the materials and methods used in carpentry. Instructors use direct instruction and live demonstrations to explain methods of construction.

The modern carpentry text is used for visual guides and explanations of methods. A set transparencies and a complete set of videos compliments the text. Field trips to various construction sites are very common in the carpentry shop. They expose the students to actual construction and allow them to watch and meet people of different construction backgrounds.

Because of the close proximity and our relationship with the local lumberyard, bi-weekly trips to the lumberyard are used to expose the students to materials not able to be displayed in the shop.

Several power and hand tool activities are used to help new students become proficient with hand and power tools before any major projects are initiated. Afterwards, grade 9 students complete the following projects to achieve competencies listed in the Vocational Technical Education Frameworks:

- Small Tool Box Project
- Model Home Project
- 2 x 4 House Project
- Masonry Project
- Plumbing Project
- School Maintenance and Repairs

# Resources

The following resources are used in the implementation of the carpentry curriculum.

Modern Carpentry 1992 Willis H Wagner

Modern Carpentry 1996 Willis H Wagner

Modern Carpentry 2000 Willis H Wagner

Modern Carpentry 2003 Willis H Wagner

Practical problems in Math 2001 Huth&Huth

Modern Masonry 2003 Clois E Kicklighter

Various construction videos and PowerPoint presentations

Also widely used are our local lumber suppliers, Advisory board members, and local contractors.

# Vocational Technical Education Framework

## Construction Cluster

### *Carpentry Grade 9*

**DRAFT – March 2006**

#### Strand 1: Health and Safety

##### 1.B Demonstrate health and safety practices:

- 1.B.04a Demonstrate safe dress and use of relevant safety gear and personal protective equipment (PPE), including wrist rests, adjustable workspaces and equipment, gloves, boots, earplugs, eye protection, and breathing apparatus
- 1.B.05a Illustrate appropriate safe body mechanics, including proper lifting techniques and ergonomics
- 1.B.06a Locate emergency equipment in your lab, shop, and classroom, including (where appropriate) eyewash stations, shower facilities, sinks, fire extinguishers, fire blankets, telephone, master power switches, and emergency exits
- 1.B.07a Demonstrate the safe use, storage, and maintenance of every piece of equipment in the lab, shop, and classroom
- 1.B.08a Describe safety practices and procedures to be followed when working with and around electricity
- 1.B.09a Illustrate proper handling and storage practices, including working with hazardous materials, disposal, and recycling
- 1.B.10a Demonstrate proper workspace cleaning procedures
- 1.B.11c Identify and describe ladder and scaffold safety practices and procedures
- 1.B.12c Identify and describe mechanical platform lift and material handling equipment safety practices and procedures
- 1.B.13c Use and maintain fall arrest systems
- 1.B.14c Identify and describe standard precautions for blood borne pathogens and the procedures for responding to and reporting exposure

##### 1.C Demonstrate responses to situations that threaten health and safety

- 1.C.02a Describe the importance of emergency preparedness and an emergency action plan

- 1.C.03a Illustrate procedures used to handle emergency situations and accidents, including identification, reporting, response, evacuation plans, and follow-up procedures
- 1.C.04a Identify practices used to avoid accidents
- 1.C.05a Identify and describe fire protection, precautions and response procedures
- 1.C.06a Discuss the role of the individual and the company/organization in ensuring workplace safety
- 1.C.07a Discuss ways to identify and prevent workplace/school violence

## Strand 2: Technical Skills

### 2.A Print Reading

- 2.A.01c Explain the basic layout of a set of prints as well as the importance of the accompanying job specifications document
- 2.A.02c Recognize and identify basic print terms, abbreviations, line types, symbols and notes
- 2.A.03c Interpret and follow drawing dimensions
- 2.A.04c Determine true measurements from a print using an Architect's scale
- 2.A.05c Read and interpret plan, elevation, section and detail views and schedules
- 2.A.06c Identify, develop and complete material quantity takeoff sheets

### 2.B Demonstrating the Fundamentals of Carpentry

- 2.B.01 Identify building materials and describe their applications
- 2.B.06 Apply basic carpentry math principles
- 2.B.07 Demonstrate measuring and layout procedures and applications
- 2.B.08 Explain proper storage methods for lumber
- 2.B.11 Check materials for square, plumb, and level
- 2.B.12 Identify and produce various forms of millwork

### 2.C Using Hand Tools

- 2.C.01 Demonstrate use and maintenance of layout, marking, and measuring tools
- 2.C.02 Demonstrate use and maintenance of fastening, clamping and dismantling tools
- 2.C.03 Demonstrate use and maintenance of sawing tools
- 2.C.04 Demonstrate use and maintenance of drilling and boring tools
- 2.C.05 Demonstrate use and maintenance of planing, smoothing and shaping tools

### 2.D Operating Power Tools

- 2.D.01 Demonstrate use and maintenance of a portable circular saw
- 2.D.02 Demonstrate use and maintenance of a portable table saw
- 2.D.03 Demonstrate use and maintenance of reciprocating saws
- 2.D.04 Demonstrate use and maintenance of portable drills

- 2.D.05 Demonstrate use and maintenance of a portable router
- 2.D.06 Demonstrate use and maintenance of a portable power miter box
- 2.D.07 Demonstrate use and maintenance of portable sanders
- 2.D.08 Demonstrate use and maintenance of a screw gun
- 2.D.09 Demonstrate use and maintenance of pneumatic equipment
- 2.D.10 Describe the operation of power fastening tools and systems
- 2.D.11 Demonstrate use and maintenance of stationary woodworking machinery

2.E Using and Maintaining Ladders and Scaffolds

- 2.E.01 Demonstrate use and maintenance of ladders

2.F Framing Floors

- 2.F.01 Install sills and girders
- 2.F.02 Layout and install floor frame
- 2.F.03 Install floor sheathing

2.G Framing Walls

- 2.G.01 Layout walls
- 2.G.02 Frame walls
- 2.G.03 Sheathe walls
- 2.G.04 Erect walls
- 2.G.05 Frame and sheathe gable ends
- 2.G.06 Determine opening sizes and components for floors and walls
- 2.G.07 Determine sizes for door headers
- 2.G.08 Determine floor and wall framing members

2.H Framing Ceilings and Roofs

- 2.H.01 Layout ceiling and roof frame
- 2.H.02 Frame ceiling
- 2.H.03 Layout common rafter
- 2.H.04 Frame and sheathe gable roof systems

3.A English Language Arts

VTE #	Acad #	Standard	Grade	Topic
3.A.03c	13.19	Identify and use knowledge of common graphic features (charts, maps, diagrams).	Pre-9th	Reading
3.A.04c	2.4	Integrate relevant information gathered from	Pre-9th	Language

	group discussions and interviews for reports.	
3.A.08c	Follow correct procedures for technical documentation	Voc
3.A.09c	Read technical manuals, guides, resource books and technical literature to gain information and solve problems.	Voc
3.A.10c	Read, comprehend, and follow written technical directions for repairs, procedures and processes.	Voc

VTE #	Acad #	Standard	Grade	Topic
3.B.01c	7.G.5	Use a ruler, protractor, and compass to draw polygons and circles.	Pre-9th	Geometry
3.B.02c	7.M.2	Given the formulas, convert from one system of measurement to another. Use technology as appropriate.	Pre-9th	Measurement
3.B.08c	10.G.10	Demonstrate the ability to visualize solid objects and recognize their projections and cross sections.	9/10	Geometry
3.B.09c	10.M.1	Calculate perimeter, circumference, and area of common geometric figures such as parallelograms, trapezoids, circles, and triangles.	9/10	Measurement

3.B.13	10.N.4	Use estimation to judge the reasonableness of results of computations and of solutions to problems involving real numbers	9/10	Numbers
3.B.15	10.G.1	Identify figures using properties of sides, angles, and diagonals. Identify the figures' type(s) of symmetry.	9/10	Geometry
3.B.16	10.G.2	Draw congruent and similar figures using a compass, straightedge, protractor, and other tools such as computer software. Make conjectures about methods of construction. Justify the conjectures by logical arguments	9/10	Geometry

### 3.C Science and Engineering/Technology

VTE #	Acad #	Standard	Grade	Topic
3.C.02c	3	Recognize that the measurement of volume and mass requires understanding of the sensitivity of measurement tools (e.g., rulers, graduated cylinders, balances) and knowledge and appropriate use of significant digits.	Pre-9th	Physics/Chem
3.C.07c	2.1	Distinguish among tension, compression, shear, and torsion, and explain how they relate to the selection of materials in		Eng/Tech

		structures.	
3.C.08c	2.2	Identify and explain the purposes of common tools and measurement devices used in construction, e.g., spirit level, transit, framing square, plumb bob, spring scale, tape measure, strain gauge, venturi meter, pitot tube.	Eng/Tech
3.C.09c	2.3	Describe how structures are constructed using a variety of processes and procedures, e.g., welds, bolts, and rivets are used to assemble metal framing materials.	Eng/Tech

3.C.11c	2.5	Differentiate the factors that affect the design and building of structures, such as zoning laws, building codes, and professional standards.	Eng/Tech
3.C.27c		Explain the concept of BTU	Voc
3.C.28c		Define and interpret elevation and topography components in drawings and technical documents	Voc

3.C.32	1.5	Interpret plans, diagrams, and working drawings in the construction of a prototype.	Eng/Tech
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Strand 4 - See **Skills USA PDP curriculum**

