

Wallenpaupack Area School District

COURSE: Building Construction 1

GRADE LEVEL: 10

LENGTH OF COURSE: Masonry 45 days; Carpentry 135 days

TEXT: Modern Masonry

PUBLISHER: The Goodheart-Willcox Co. Inc.

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COURSE DESCRIPTION:

Masonry

Lays building materials, such as brick, concrete block, cinder block, and stone to construct or repair walls, partitions, arches, and other structures: measure distance from reference points and marks guidelines on working surface to lay out work. Spreads soft bed layer of mortar that serves as a base and binder for block and brick using a trowel. Applies mortar to ends and positions in mortar bed. Taps with trowel to level, align, and embed in mortar, allowing specified thickness of joint. Removes excess mortar from face using trowel. Finishes mortar between block with pointing tool and trowel. Cuts brick and block to fit into spaces too small for a whole unit, using edge of trowel or brick hammer. Determines vertical and horizontal alignment of courses, using plumb bob, gage line, tightly stretched cord and level. Fastens brick veneer to face of structures, with tie straps embedded in mortar between bricks.

Carpentry

Carpenters need to know how to use and maintain hand and power tools. They need to know the kinds, grades, and characteristics of the materials with which they work-how each can be cut, shaped, and most satisfactorily joined. Carpenters must be familiar with the many different fasteners available and choose the best for each task.

Carpenters must know how to lay-out and frame floors, walls, stairs, and roofs. They must know how to install windows and doors, and how to apply numerous kinds of interior and exterior finish. They must use good judgment to decide on proper procedures to do the job at hand in the most efficient and safest manner.

CURRICULUM WRITING TEAM:

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DATE OF REVISION:

2007

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Building Construction Occupations Overall Philosophy of Vocational Education

The vocational educational program is directed to certain primary goals. These are the gainful employment of a student and the ability to perform a certain skilled craft at the entry level of the craft. The vocational education program deals primarily with the preparation of a student for a specifically skilled trade(s) in the world of work for one or more of four distinct and precise occupations.

The vocational industrial education program is not exclusively a day school program. It includes the training and retraining of workers in displaced or changing jobs or can be used for the sake of broadening ones saleable skills.

The vocational education school program also includes general subject matter that relates to the trade: such as, reading, writing, math and technical language for the trade.

The vocational student will be able to solve problems common to the industrial vocation. They will have developed required skills and knowledge in an industrial vocation so that after graduation they will be prepared for entry into the trade for which they have been trained.

Building Construction Occupations Statement of Course Philosophy for Secondary Education

The course in Building Construction Occupations will serve the needs of students who plan on entering the construction industry as apprentices or learners and those who can become better citizens in the community with the benefit of knowledge in the Building Trades. This course will offer an opportunity for students to develop skills, knowledge and attitudes most desirable for entering the construction industry.

Special emphasis will be placed on the development of good attitudes in employer-employee as well as fellow worker relationships, safety and a feeling for the dignity of work.

Through course arrangement and scheduling, students will be afforded an opportunity to progress at the rate at which they are most capable.

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Unit: Masonry

PA Standards: 13.1

13.2

13.3

13.4

Topics:	Skills:
Orientation <ul style="list-style-type: none">• Shop Layout• Shop Rules• Shop Requirements• Course Goals• Grading and Attendance• Competency Based Education	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
Activities:	Performance Assessments:
Lecture Demonstrations Perform specified competencies in Masonry Shop	Class Participation Class Attendance Shop Assessment <ul style="list-style-type: none">• Objective• Subjective Written Tests Skill Demonstration Tests

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Topics:	Skills:
Safety <ul style="list-style-type: none">• With hand tools• With power tools• With equipment• With clothing• Fire and electricity• As applied to conduct• With flammable liquids• Tool care and maintenance	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
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Topics:	Skills:
Application <ul style="list-style-type: none">• Tools and materials• Mix mortar• Lay stretcher• Build corner leads• Check elevations• Install anchor bolts• Crawl space construction• Basement construction• Brick veneer	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
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Topics:	Skills:
Masonry/Carpentry <ul style="list-style-type: none"> • Tools and materials • Clearing the site • Verify boundaries • Layout location of exterior perimeter • Square foundation layout • Set up transit • Level footer base grade • Shoot various heights 	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
Activities:	Performance Assessments:
Lecture Demonstrations Perform specified competencies in Masonry/Carpentry Shop	Class Participation Class Attendance Shop Assessment <ul style="list-style-type: none"> • Objective • Subjective Written Tests Skill Demonstration Tests

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Topics:	Skills:
Masonry/Carpentry <ul style="list-style-type: none">• Form footers and brace• Place leveling pins with transit• Pin footers with transit• Pour footers	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
Activities:	Performance Assessments:
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Topics:	Skills:
Floor Systems <ul style="list-style-type: none">• wood/steel beams• sill plates• joist headers; banding• floor joist• Stairwell openings• Cantilevers• deck bridging• plywood decking	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
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Topics:	Skills:
Stair systems <ul style="list-style-type: none"> • Measure • Calculate Rise & Run • Determine if a landing is needed • Layout stair stringer / Cut • Build a straight run stairwell • Build a stairway with a landing • Abide by UCC HB1654 	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
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Topics:	Skills:
<p>Wall Framing</p> <ul style="list-style-type: none"> • Read Blueprints • Layout/ chalk line deck for outside walls • Cut and layout sole and top plates • Fabricate corners • Fabricate partitions • Fabricate headers • Assemble window openings • Assemble door openings • Layout and assemble exterior walls <ul style="list-style-type: none"> ○ Install let-ins ○ Erect and brace • Layout and assemble interior walls <ul style="list-style-type: none"> ○ Erect and brace 	<p>Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area</p>
Activities:	Performance Assessments:
<p>Lecture Demonstrations Perform specified competencies in Carpentry Shop</p>	<p>Class Participation Class Attendance Shop Assessment <ul style="list-style-type: none"> • Objective • Subjective Written Tests Skill Demonstration Tests</p>

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Topics:	Skills:
Roof Systems <ul style="list-style-type: none"> • Layout ceiling joists • Install ceiling joists • Layout rafters <ul style="list-style-type: none"> ○ Cut and install rafters <ul style="list-style-type: none"> ▪ Common ▪ Hip ▪ Shed ▪ Gambrel • Install fascia • Install roof sheathing 	Students will perform all of the assigned tasks in the classroom and demonstrate an acceptable skill level in the shop area
Activities:	Performance Assessments:
Lecture Demonstrations Perform specified competencies in Carpentry Shop	Class Participation Class Attendance Shop Assessment <ul style="list-style-type: none"> • Objective • Subjective Written Tests Skill Demonstration Tests