

# *Wallenpaupack Area School District*

**COURSE:** Home Maintenance and Repair

**GRADE LEVEL:** 10-12

**LENGTH OF COURSE:** 90days/1 Semester

**TEXT:** Modern Carpentry

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**COURSE DESCRIPTION:**

Home Maintenance and Repair is a hands-on intensive program intended for students who are not pursuing a career in the building trades. The student should want to obtain a working knowledge of home construction principles and theories while developing a skill level through manipulating materials and tools. The course is designed to include masonry, carpentry, wiring, and plumbing. Typical projects include masonry walls, pavers patio & walkways, rough framing, finish carpentry, simple and complex wiring circuits, and basic plumbing installations and repair.

**CURRICULUM WRITING TEAM:**

Kevin McCue

**DATE OF REVISION:**

2007

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Shop Safety

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
Orientation <ul style="list-style-type: none"><li>• Shop Layout</li><li>• Shop Rules</li><li>• Shop Requirements</li><li>• Course Goals</li><li>• Grading and Attendance</li><li>• Competency Based Education</li></ul>	Demonstrate knowledge of safety practices in the use of hand tools, power equipment, and in performing job tasks and procedures
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture Shop demonstration View Smart board presentation	Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Orientation

**PA Standards:** 13.1

13.2

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13.4

<b>Topics:</b>	<b>Skills:</b>
Shop Layout Shop Rules Shop Requirements Course Goals Grading and Attendance Competency Based Education	Cognitive and Manipulative Development Active listening strategies Drawing inferences Following directions
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture Shop demonstration View Smart board presentation	Oral Questioning Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Safety

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
Safety <ul style="list-style-type: none"><li>• With hand tools</li><li>• With power tools</li><li>• With equipment</li><li>• With clothing</li><li>• Fire and electricity</li><li>• As applied to conduct</li><li>• With flammable liquids</li><li>• Tool care and maintenance</li></ul>	Demonstrate knowledge of safety practices in the use of hand tools, power equipment, and in performing job tasks and procedures
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture Shop demonstration View Smart board presentation	Oral Questioning Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Masonry

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Application</p> <ul style="list-style-type: none"> <li>• Tools and materials</li> <li>• Mix mortar</li> <li>• Lay stretcher</li> <li>• Build corner leads</li> <li>• Check elevations</li> <li>• Install anchor bolts</li> <li>• Crawl space construction</li> <li>• Basement construction</li> <li>• Brick veneer</li> </ul>	<p>Understand how to lay out building lines            Identify and properly use the 3-4-5 method to lay out batter boards            Recognize and understand different foundation systems            Use tools and materials to properly lay out forms for footings            Identify and understand the components and proper application of concrete</p> <ul style="list-style-type: none"> <li>• Footings</li> <li>• Slabs</li> <li>• Walls</li> <li>• Floors</li> </ul> <p>Learn how to properly mix mud and lay it out with a trowel</p> <ul style="list-style-type: none"> <li>• Trowel work</li> <li>• Laying on block</li> </ul> <p>Understand the workings of concrete block walls</p> <ul style="list-style-type: none"> <li>• Measure and erect               <ul style="list-style-type: none"> <li>○ Corner leads</li> <li>○ Walls</li> </ul> </li> </ul>
<b>Activities:</b>	<b>Performance Assessments:</b>
<p>Lecture            View Smart board presentation            Board demonstrations            Open discussion            Class debate            Guided practice            Shop demonstration            Supervised shop work            Group projects and individual projects            Cooperative learning groups            Homework</p>	<p>Shop Observation            Quizzes            Oral Questioning            Written Test</p>

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Masonry

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
Pavers	Identify the differences in pavers Understand how to properly level and frame out for work sight Recognize the techniques for cutting and laying pavers
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework	Shop Observation Quizzes Oral Questioning Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Tools

**PA Standards:** 13.1  
13.2  
13.3  
13.4

<b>Topics:</b>	<b>Skills:</b>
Hand tools	Know hand tool safety Understand how to properly use measuring and layout tools <ul style="list-style-type: none"> <li>• Squares</li> <li>• Marking Gauges</li> <li>• Leveling Instruments</li> <li>• Measuring tools</li> </ul> Understand how to properly use and identify cutting tools <ul style="list-style-type: none"> <li>• Saws</li> <li>• Planing Smoothing and Shaping tools</li> <li>• Drilling and boring tools</li> <li>• Fastening tools and their components</li> <li>• Prying and clamping tools</li> </ul> Understand how to properly store tools Identify proper care and maintenance of tools
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework	Shop Observation Quizzes Oral Questioning Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Tools

**PA Standards:** 13.1  
13.2  
13.3  
13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Power Tools</p>	<p>Know power tool safety Understand how to properly use and identify power tools Identify electrical/shock safety Understand how to properly use and identify</p> <ul style="list-style-type: none"> <li>• Circular saw</li> <li>• Saber saw</li> <li>• Chain saws</li> <li>• Compound Miter</li> <li>• Table Saws</li> <li>• Portable drills</li> <li>• Rotary hammer</li> <li>• Hammer</li> <li>• Power planes</li> <li>• Routers</li> <li>• Joiners</li> <li>• Sanders               <ul style="list-style-type: none"> <li>○ Orbital</li> <li>○ Drum</li> <li>○ Disc</li> </ul> </li> </ul>
<b>Activities:</b>	<b>Performance Assessments:</b>
<p>Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework</p>	<p>Shop Observation Quizzes Oral Questioning Written Test</p>

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Framing

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Floor Framing</p> <ul style="list-style-type: none"> <li>• Sub-floor</li> </ul>	<p>Understand and recognize proper techniques for framing</p> <ul style="list-style-type: none"> <li>• Girders and beams               <ul style="list-style-type: none"> <li>○ Calculate the size for girders</li> </ul> </li> <li>• Posts and columns</li> </ul> <p>Recognize how to frame over girders and beams</p> <p>Explain proper sill construction</p> <ul style="list-style-type: none"> <li>• Installation</li> </ul> <p>Determine how to lay out floor joists</p> <ul style="list-style-type: none"> <li>• Know how to cut floor joists</li> <li>• Understand how to install joists</li> <li>• Bridging</li> </ul> <p>Understand proper framing openings</p> <p>Interpret special framing problems</p> <p>Know how to lay out sub-floors</p> <ul style="list-style-type: none"> <li>• Plywood</li> <li>• Glued floor system</li> </ul>
<b>Activities:</b>	<b>Performance Assessments:</b>
<p>Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework</p>	<p>Shop Observation Quizzes Oral Questioning Written Test</p>

# *Wallenpaupack Area School District*

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Framing

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Walls Ceiling Framing</p>	<p>Understand and identify the parts of a wall</p> <ul style="list-style-type: none"> <li>• Plates</li> <li>• Studs</li> <li>• Corners</li> <li>• Bracing</li> </ul> <p>Comprehend how to build partition intersections</p> <p>Explain and calculate rough openings</p> <ul style="list-style-type: none"> <li>• Windows</li> <li>• Doors</li> </ul> <p>Be familiar with proper plate layout</p> <p>Know how to erect wall sections</p> <p>Understand how to properly install Wall Sheathing</p> <p>Describe and apply the basics of ceiling framing</p>
<b>Activities:</b>	<b>Performance Assessments:</b>
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# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Framing

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Roof Framing</p>	<p>Understand how to properly use and identify different roof types</p> <ul style="list-style-type: none"> <li>• Gable</li> <li>• Hip</li> <li>• Gambrel</li> <li>• Flat</li> <li>• Shed</li> <li>• Mansard</li> </ul> <p>Know the different parts of a roof</p> <ul style="list-style-type: none"> <li>• Rafters               <ul style="list-style-type: none"> <li>○ Common, Hip, Valley</li> </ul> </li> <li>• Jacks               <ul style="list-style-type: none"> <li>○ Hip, Valley, Cripple</li> </ul> </li> </ul> <p>Determine slope and pitch            Calculate rafter dimensions            Know how to lay out common rafters</p>
<b>Activities:</b>	<b>Performance Assessments:</b>
<p>Lecture            View Smart board presentation            Board demonstrations            Open discussion            Class debate            Guided practice            Shop demonstration            Supervised shop work            Group projects and individual projects            Cooperative learning groups            Homework</p>	<p>Shop Observation            Quizzes            Oral Questioning            Written Test</p>

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Framing

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Windows Exterior Doors</p>	<p>Recognize the different types of windows Identify the different parts of a window Calculate and install jamb extensions Know how to install windows Recognize the different types of doors Identify the different parts of a door Understand how to install a pre-hung exterior door unit</p>
<b>Activities:</b>	<b>Performance Assessments:</b>
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# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Finishing

**PA Standards:** 13.1

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13.4

<b>Topics:</b>	<b>Skills:</b>
Interior Doors Trim	Recognize the different types of interior doors Identify the different parts of an interior door Know how to install an interior door frame Understand how to properly identify and install door casings Understand how to properly identify and install baseboard and base shoe
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework	Shop Observation Quizzes Oral Questioning Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Finishing

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
Stairs	Recognize the different types of stairs Identify the different parts of stairs Calculate stairwell framing Understand different stair design Know how to calculate stair dimensions <ul style="list-style-type: none"> <li>• Stairwell length</li> <li>• Stinger layout</li> <li>• Treads and risers</li> </ul> Identify different types of stringers
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework	Shop Observation Quizzes Oral Questioning Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Residential Wiring

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
Electrical Wiring <ul style="list-style-type: none"> <li>• Safety</li> <li>• Tools</li> <li>• Materials</li> <li>• Equipment</li> </ul>	Know electrical safety Understand how to properly use and identify electrical tools, equipment and materials Comprehend how electricity is produced Understand how electricity is distributed Understand basic electrical wiring theory
<b>Activities:</b>	<b>Performance Assessments:</b>
Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework	Shop Observation Quizzes Oral Questioning Written Test

# Wallenpaupack Area School District

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Residential Wiring

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Service Entrance Distribution Panels Installing Boxes Simple Circuits</p>	<p>Understand how to properly identify and install service entrance cable</p> <ul style="list-style-type: none"> <li>• Capacities</li> <li>• Codes</li> <li>• Lengths</li> <li>• Conduit</li> </ul> <p>Understand how to properly identify and install a distribution panel</p> <ul style="list-style-type: none"> <li>• 100/200 Amp</li> </ul> <p>Determine proper box size and location Know how to work with and the correct uses of different gauged Romex Understand how to properly identify and install simple circuits/branch circuits</p>
<b>Activities:</b>	<b>Performance Assessments:</b>
<p>Lecture View Smart board presentation Board demonstrations Open discussion Class debate Guided practice Shop demonstration Supervised shop work Group projects and individual projects Cooperative learning groups Homework</p>	<p>Shop Observation Quizzes Oral Questioning Written Test</p>

# *Wallenpaupack Area School District*

**Course:** Home Maintenance and Repair

**Grade Level:** 10-12

**Unit:** Residential Plumbing

**PA Standards:** 13.1

13.2

13.3

13.4

<b>Topics:</b>	<b>Skills:</b>
<p>Plumbing Systems</p>	<p>Know plumbing safety            Comprehend how to use plumbing tools            Identify plumbing materials            Understand how to properly identify and install simple plumbing systems</p> <ul style="list-style-type: none"> <li>• Water supply</li> <li>• Drainage, waste, venting</li> </ul> <p>Know how to connect pipes</p> <ul style="list-style-type: none"> <li>• Copper</li> <li>• PVC</li> <li>• PB</li> </ul> <p>Know how to install fixtures</p> <ul style="list-style-type: none"> <li>• Commode</li> <li>• Faucets</li> </ul>
<b>Activities:</b>	<b>Performance Assessments:</b>
<p>Lecture            View Smart board presentation            Board demonstrations            Open discussion            Class debate            Guided practice            Shop demonstration            Supervised shop work            Group projects and individual projects            Cooperative learning groups            Homework</p>	<p>Shop Observation            Quizzes            Oral Questioning            Written Test</p>