Name of Course: Home Repair and Maintenance  
Grade Level: 9-12  
Department: Industrial Technology and Engineering  
Instructional Time: 180 days  
Length of Course: 30 cycles  
Period Per Cycle: 6 cycles  
Length of Period: 43 minutes

Texts and Resources:  
- Home Repair and Maintenance  
- Fine Homebuilding Magazine  
- Field trips  
- Field experiences  
- Shop Projects  
- Home Improvement Video tape series  
- Web sites

Assessments:  
- Individual Projects  
- Group Projects  
- Chapter Questions

- Tests and Quizzes  
- Rubrics  
- Self evaluation  
- Teacher conferences  
- Demonstrations  
- Notebooks  
- Shop operation and procedures  
- Exhibiting safe shop Practices
# Course Plan

**Course Name:** Home Repair and Maintenance  
**Unit:** Shop Safety  
**Time Line:** Five Cycles

<table>
<thead>
<tr>
<th>Essential Content/ Essential Questions</th>
<th>Performance Objectives</th>
<th>Standards/Anchors</th>
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</table>
| General Safety                          | • Tell why safety is really attitude  
• Discuss common woodshop hazards and how to prevent problems.  
• Describe different types of personal safety gear and tell their purpose.  
• Describe how to set up a safe workshop.  
• Discuss the use of first aid for common workshop injuries. | 3.7.10 A  
3.7.12 A |
| Fire Safety                             | • Identify possible fire hazards within the workshop  
• Identify and discuss how to properly use a fire extinguisher  
• Explain the proper steps to take in the event of an actual fire in the workshop. | 3.7.10 A  
3.7.12 A |
| Machine Safety and Operation (Major Machines) | • Identify and discuss general machine safety rules  
• Identify and understand the safety rules and operating procedures for the planer  
• Identify and understand the safety rules and operating procedures for the jointer  
• Identify and understand the safety rules and operating procedures for the table saw  
• Identify and understand the safety rules and operating procedures for the radial arm saw  
• Identify and understand the safety rules and operating procedures for the band saw  
• Identify and understand the safety rules and operating procedures for the shaper | 3.7.10 A  
3.7.12 A |

Hamburg Area School District
## Course Plan

(Industrial Technology and Engineering)

### Course Name: Home Repair and Maintenance

### Unit: Home Safety

### Time Line: One Cycle

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<tr>
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</table>
| The causes of accidents and how to prevent them                                                      | • Describe a common myth about accidents  
• State what type of work habits promote safety  
• Explain the possible hazards of working with ladders and tools, electrical devices and chemicals  
• List some of the more common safety aids everyone should have in the home                                | 3.7.10 A  
3.7.12 A                                                                                           |
## Course Plan
(Industrial Technology and Engineering)

**Course Name:** Home Repair and Maintenance  
**Unit:** Basic Hand Tools  
**Time Line:** Two Cycles

<table>
<thead>
<tr>
<th>Essential Content/ Essential Questions</th>
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</table>
| Hand Tools and their uses              | • Recognize tools used for measuring  
• Recognize tools used for cutting  
• Recognize tools used for fastening  
• Recognize tools used for drilling and other jobs  
• Choose the proper tool for a specific application  
• Decide on a program of tool storage, upkeep, and labeling | 3.7.10 A  
3.7.12 A  
3.7.10 B  
3.7.12 B |

**Hamburg Area School District**
## Course Plan

(Industrial Technology and Engineering)

### Course Name: Home Repair and Maintenance

**Unit: Materials**

**Time Line: Two Cycles**

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<tr>
<th>Essential Content/ Essential Questions</th>
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</table>
| Fasteners, related hardware, and adhesives | • Recognize and name some common fasteners  
• Choose the proper hardware for the job at hand  
• Produce strong joints between materials  
• Show and exhibit knowledge of safe work methods | 3.7.10 A  
3.7.12 A |
| Lumber and Building Materials          | • List common hardwood and softwood species  
• Describe several ways in which boards are sawn from a log  
• List and identify the dressed sizes for the most common lumber used  
• Read and decode the grade marking/indicators on lumber and plywood  
• Choose proper wood types and grades for interior and exterior use  
• Request woodwork items by proper names  
• Choose wood products by cost and quality | 3.7.10 A  
3.7.12 A |
<table>
<thead>
<tr>
<th>Essential Content/ Essential Questions</th>
<th>Performance Objectives</th>
<th>Standards/Anchors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Parts of the House</td>
<td>• Define terms used for the materials, masonry units, and wood frame members found in each of the major house structures&lt;br&gt;• Locate studs and other frame components when you need to mount items or do remodeling&lt;br&gt;• Recognize a job that is beyond your abilities</td>
<td>3.6.10 B&lt;br&gt;3.6.10 C&lt;br&gt;3.612 C</td>
</tr>
<tr>
<td>Exterior Wall Coverings</td>
<td>• List the types of siding and facing used on exterior walls&lt;br&gt;• Explain how to repair split or decayed wood siding&lt;br&gt;• Describe how repair brick or stone facing&lt;br&gt;• Do some simple repair jobs</td>
<td>3.7.10 A&lt;br&gt;3.7.12 A&lt;br&gt;3.7.10 B&lt;br&gt;3.7.12 B</td>
</tr>
<tr>
<td>Roof Covering and Gutter Repair</td>
<td>• List and identify the many types of roof covering materials&lt;br&gt;• State which roof types should only be repaired by an experienced roofer&lt;br&gt;• Describe how to begin applying a row of shingles for each type of roof&lt;br&gt;• Calculate shingle amounts required for a specific job&lt;br&gt;• Plan shingle and flashing work&lt;br&gt;• Recall rules for cleaning and painting gutters&lt;br&gt;• Do some simple layouts and application</td>
<td>3.7.10 A&lt;br&gt;3.7.12 A&lt;br&gt;3.7.10 B&lt;br&gt;3.7.12 B</td>
</tr>
</tbody>
</table>
## Hamburg Area School District
## Course Plan
## (Industrial Technology and Engineering)

**Course Name:** Home Repair and Maintenance  
**Unit:** The Exterior House  
**Time Line:** Five Cycles

<table>
<thead>
<tr>
<th>Essential Content/ Essential Questions</th>
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</tr>
</thead>
</table>
| Doors and Windows                      | • Identify solid and hollow core doors  
  • Decide which door hinge is causing each binding problem  
  • Describe hoe to hang a new door  
  • Explain how a lock is installed  
  • List some types of windows  
  • State the procedure for reglazing or for replacing glass  
  • Discuss and make screen repair steps | 3.7.10 A  
  3.7.12 A  
  3.7.10 B  
  3.7.12 B |
### Hamburg Area School District

**Course Plan**

*(Industrial Technology and Engineering)*

**Course Name:** Home Repair and Maintenance  
**Unit:** The Interior House  
**Time Line:** Four Cycles

<table>
<thead>
<tr>
<th>Essential Content/ Essential Questions</th>
<th>Performance Objectives</th>
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</table>
| Interior Walls and Ceilings            | • Recognize various types of wall and ceiling materials  

• List the necessary repair steps for holes and cracks in walls  

• Describe how to solve ceramic tile problems  

• List the methods to fasten wood paneling and gypsum board  

• Describe hanging devices for suspended ceilings | 3.7.10 A  

3.7.12 A  

3.7.10 B  

3.7.12 B |
| Floor Coverings                         | • List the layers of underlayment required for each type of floor  

• Describe the precision of smoothness needed under a floor material  

• Lay out guidelines to place resilient tile  

• List common methods to eliminate floor squeaks  

• Recall a method to fix a sagging floor | 3.7.10 A  

3.7.12 A  

3.7.10 B  

3.7.12 B |
| Cabinets                               | • Recognize cabinet and furniture styles  

• List features of wood, metal, and plastic surfaces or shaped items  

• Describe how to install a plastic laminate  

• List the purposes of the many hinges and catches  

• State some methods of adjusting hinges, catches, and drawer guides  

• Recall steps for wood frame repair of cabinets  

• Make designs for efficient kitchens | 3.7.10 A  

3.7.12 A  

3.7.10 B  

3.7.12 B |
### Essential Content/ Essential Questions

**Paints and Decorating**

- State the purpose of flagging on the brush
- Choose the proper brush for either latex paint or oil based paints
- Choose rollers by thickness of cover type and material
- List the order for painting the various parts of a house
- Tell how to thin paint it or box it together
- Describe the proper patterns for spray painting
- Plan both trim work and work on large surfaces
- Describe how hot, cold, and foggy weather cause paint problems
- Prepare or prime metal for painting

### Performance Objectives

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>3.7.10 A</td>
</tr>
<tr>
<td>3.7.12 A</td>
</tr>
<tr>
<td>3.7.10 B</td>
</tr>
<tr>
<td>3.7.12 B</td>
</tr>
</tbody>
</table>

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Hamburg Area School District
Course Plan
(Industrial Technology and Engineering)

Course Name: Home Repair and Maintenance
Unit: The Interior House

Time Line: Four Cycles
### Essential Content/ Essential Questions

- Concrete, Masonry, and Fireplace maintenance

### Performance Objectives

- State the components of concrete
- Describe how to mix concrete and mortar for common uses
- Compute the amount of concrete needed for a particular job
- Describe how to pour and finish concrete
- Identify the steps and procedures for repairing holes and cracks in concrete and masonry
- List the steps for laying brick/block
- Describe chemical or physical cleaning methods for masonry surfaces
- Describe how to maintain metal fireplace and chimney units
- Describe how to prepare for working with stone

### Standards/Anchors

- 3.7.10 A
- 3.7.12 A
- 3.7.10 B
- 3.7.12 B

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**Course Name:** Home Repair and Maintenance  
**Unit:** Masonry  
**Time Line:** Two Cycles
Hamburg Area School District  
Course Plan  
(Industrial Technology and Engineering)

**Course Name:** Home Repair and Maintenance  
**Unit:** Plumbing  
**Time Line:** Two Cycles

<table>
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<tr>
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</table>
| Potable Water System                    | • Choose the type of pipe and fittings for a job  
  • Calculate lengths of pipes with fitting allowances  
  • Describe how to solder copper pipe  
  • Describe how to join PVC pipe and fittings  
  • Recognize different types of faucets with and without washers  
  • List faucet repairs a home mechanic can fix  
  • Give the cause of water hammer  
  • Repair minor leaks  
  • Discuss how to care for and maintain a water softener | 3.7.10 A  
  3.7.12 A  
  3.7.10 B  
  3.7.12 B |
## Electrical Distribution System

<table>
<thead>
<tr>
<th>Essential Content/ Essential Questions</th>
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<tbody>
<tr>
<td>Electrical Distribution System</td>
<td>- Read a watt-hour meter</td>
<td>3.7.10 A</td>
</tr>
<tr>
<td></td>
<td>- Calculate current, voltage, and resistance</td>
<td>3.7.12 A</td>
</tr>
<tr>
<td></td>
<td>- Be able to choose wiring sizes</td>
<td>3.7.10 B</td>
</tr>
<tr>
<td></td>
<td>- Sketch common circuits with duplex outlets</td>
<td>3.7.12 B</td>
</tr>
<tr>
<td></td>
<td>- Determine the safety of a circuit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Use a neon test light</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Know when to use a fish wire</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Attach a wire to a screw terminal properly</td>
<td></td>
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</tbody>
</table>
## Hamburg Area School District
### Course Plan
(Industrial Technology and Engineering)

**Course Name:** Home Repair and Maintenance  
**Unit:** HVAC  
**Time Line:** Two Cycles

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</table>
| **Heating**                           | • Bleed air from a radiator  
• Adjust the primary air ration for a gas burner  
• Replace air and fuel filters and clean the electric ignition for an oil burner  
• State the requirements for wood stove clearances  
• Reduce corrosive oxides in solar collectors  
• Understand the laws of conduction and convection  
• Understand radiation and the vibration of molecules  
• Identify types of home heating furnaces and systems  
• Plan and calculate the necessary heating capacity needed for a building size required | 3.7.10 A  
3.7.12 A  
3.7.10 B  
3.7.12 B |

| **Cooling**                           | • Specify the size of fans and vents needed for adequate cooling in a desired space  
• Tell how to install a ceiling or wall-mounted fan  
• Plan and calculate the cooling capacity needed for a building size required  
• State some of the principles of air conditioners  
• List some do’s and don’ts for air conditioner operation  
• Understand fan rating and CFM  
• Understand BTU and SEER | 3.7.10 A  
3.7.12 A  
3.7.10 B  
3.7.12 B |
### Hamburg Area School District
#### Course Plan
(Industrial Technology and Engineering)

**Course Name:** Home Repair and Maintenance  
**Unit:** Furniture  
**Time Line:** Four Cycles

<table>
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</table>
| Repairing and Refurbishing Furniture   | • Describe how to remove finishes without causing damage  
• Describe how to use finish removers on curved and irregular shaped surfaces  
• List some methods of repairing or regluing dowel type joints  
• Choose a proper glue for the project application  
• Explain the steps for repairing dents and holes in furniture  
• List types of repairs using wood blocks, wedges, and also metal brackets  
• Describe how to conceal fasteners and metal reinforcements | 3.7.10 A  
3.7.12 A  
3.7.10 B  
3.7.12 B |

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