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Author of Course Guide
Joe Neff
New Milford’s Mission Statement

The mission of the New Milford Public Schools, a collaborative partnership of students, educators, family and community, is to prepare each and every student to compete and excel in an every-changing world, embrace challenges with vigor, respect and appreciate the worth of every human being, and contribute to society by providing instruction and dynamic curriculum, offering a wide range of valuable experiences, and inspiring students to pursue their dreams and aspirations.
Architectural Drafting I

This is a beginning course in drafting as it relates to residential architecture. Basic principles of drafting will be studied including proper use of instruments, templates, lines lettering, and dimensions. The construction of residential buildings is studied in detail from excavations to finishing materials. Principles of good house design are included. Each student will plan and draw a set of blueprints for a house, complete with specifications. Introduction to the basic functions of CAD (Computer-Aided Drafting) will also be explored. CAD applications and operational skills are developed across a variety of technical areas with emphasis on residential construction.
### Common Core State Standard Key

**Connecticut Technology Education Standards**  
Revised June, 2016

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>EKS.03.04</td>
<td>Knowledge and Skills</td>
<td>Arch.03</td>
<td>Architecture Technology</td>
</tr>
<tr>
<td>Arch.06.02</td>
<td>Architecture Technology</td>
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<tr>
<td>Arch.07.02</td>
<td>Architecture Technology</td>
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<tr>
<td>EKS.05</td>
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<td>Arch.08.02</td>
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<tr>
<td>Arch.06.01</td>
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<td>Architecture Technology</td>
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<td>CADD.02</td>
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<td>CADD.05.04</td>
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<td>CADD.05.08</td>
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<td>CADD.09</td>
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<td>CADD.04.07</td>
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<td>CADD.05.16</td>
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<td>CADD.05.03</td>
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<tr>
<td>Eks.08.02</td>
<td>Knowledge and Skills</td>
<td>EKS.07</td>
<td>Knowledge and Skills</td>
</tr>
<tr>
<td>EKS.08</td>
<td>Knowledge and Skills</td>
<td>CADD.02.10</td>
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<tr>
<td>Arch.07.02</td>
<td>Knowledge and Skills</td>
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## Pacing Guide

<table>
<thead>
<tr>
<th>UNIT #</th>
<th>TITLE</th>
<th>WEEKS</th>
<th>PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Architectural Drafting Fundamentals</td>
<td>1 week</td>
<td>8 - 10</td>
</tr>
<tr>
<td>2</td>
<td>Indoor Living Areas</td>
<td>1 week</td>
<td>11 - 13</td>
</tr>
<tr>
<td>3</td>
<td>Outdoor Living Area</td>
<td>1 week</td>
<td>14 - 16</td>
</tr>
<tr>
<td>4</td>
<td>Traffic Areas and Patterns</td>
<td>1 week</td>
<td>17 - 19</td>
</tr>
<tr>
<td>5</td>
<td>Kitchens</td>
<td>1 week</td>
<td>20 - 22</td>
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<tr>
<td>6</td>
<td>General Service Areas</td>
<td>1 week</td>
<td>23 – 25</td>
</tr>
<tr>
<td>7</td>
<td>Sleeping Areas</td>
<td>1 week</td>
<td>26 - 28</td>
</tr>
<tr>
<td>8</td>
<td>Designing Floor Plans</td>
<td>3 weeks</td>
<td>29 - 31</td>
</tr>
<tr>
<td>9</td>
<td>Drawing Floor Plans</td>
<td>10 weeks</td>
<td>32 - 34</td>
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**END of FIRST SEMESTER**
## START OF SECOND SEMESTER

<table>
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<th>TITLE</th>
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<td>10</td>
<td>Groundwork – AutoCAD</td>
<td>2 weeks</td>
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<td>11</td>
<td>Drawing Aids and Controls</td>
<td>2 weeks</td>
<td>39 - 41</td>
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<tr>
<td>12</td>
<td>Drawing and Editing</td>
<td>2 weeks</td>
<td>42 – 45</td>
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<tr>
<td>13</td>
<td>Text and Tables</td>
<td>1 week</td>
<td>46 - 48</td>
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<tr>
<td>14</td>
<td>Preparing and Printing a Drawing</td>
<td>1 week</td>
<td>49 - 51</td>
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<tr>
<td>15</td>
<td>Basic Dimensioning</td>
<td>2 weeks</td>
<td>52 - 54</td>
</tr>
<tr>
<td>16</td>
<td>Floor Plan – Window &amp; Door</td>
<td>2 weeks</td>
<td>55 - 57</td>
</tr>
<tr>
<td>17</td>
<td>Floor Plan - Furniture</td>
<td>2 weeks</td>
<td>58 - 60</td>
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<tr>
<td>18</td>
<td>Floor Plan - Electrical</td>
<td>2 weeks</td>
<td>61 - 63</td>
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<tr>
<td>19</td>
<td>Foundation Plan</td>
<td>2 weeks</td>
<td>64 – 66</td>
</tr>
<tr>
<td>20</td>
<td>Plot Plan</td>
<td>2 weeks</td>
<td>67 - 69</td>
</tr>
</tbody>
</table>
New Milford Public Schools

<table>
<thead>
<tr>
<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1: Architectural Drafting</td>
<td>Grade Level: 9-12</td>
</tr>
<tr>
<td>Fundamentals</td>
<td># of Weeks: 1 week</td>
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</tbody>
</table>

### Identify Desired Results

#### Common Core State Standards
- Apply data and measurements to solve problems. **EKS.03.04**
- Draw and sketch by hand to communicate ideas effectively. **Arch.06.02**
- Create effective working drawings, and presentation drawings. **Arch.07.02**

<table>
<thead>
<tr>
<th>Enduring Understandings</th>
<th>Essential Questions</th>
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<tbody>
<tr>
<td>Generalizations of desired understanding via essential questions (Students will understand that …)</td>
<td>Inquiry used to explore generalizations</td>
</tr>
<tr>
<td>- Students will understand how to:</td>
<td>- Why do we have different scales that we use in drawing plans?</td>
</tr>
<tr>
<td>o Measure and prepare drawings with different scales.</td>
<td>- Why are there two types of triangles?</td>
</tr>
<tr>
<td>o Draw with drafting instruments.</td>
<td>- Why do you use an erasing shield?</td>
</tr>
<tr>
<td>o Select and use appropriate types of paper and other drafting supplies.</td>
<td>- Why do we have both a t-square and triangles?</td>
</tr>
<tr>
<td>o Use time saving devices.</td>
<td>- Why do we need templates?</td>
</tr>
</tbody>
</table>

### Expected Performances

**What students should know and be able to do**

**Students will know the following:**
- How to use the different types of scales
- How to use guides for drawing straight lines
- How to use instruments for curved lines
- How to use drafting and lettering tools
- Understand the different types of papers and drawing surfaces
- How to use correction equipment
- How to use timesaving aids and devices for drafting

**Students will be able to do the following:**
- Use an Architect’s, Civil Engineer’s, and Metric scales
- Use a t-square, parallel slide, triangles, and a protractor
- Use a compass and dividers
- Use a French curve
- Be able to select the proper drafting pencil
- Use a erasing shield and brush
- Use a template, tapes, and overlays
- Select the proper paper (type and size)
- 

<table>
<thead>
<tr>
<th>Character Attribute(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perseverance</td>
</tr>
<tr>
<td>Cooperation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquire employability skills, including academic and technical skills, demonstrate positive attitudes toward work, including acceptance of the necessity of making a living and an appreciation of the social value and dignity of work.</td>
</tr>
</tbody>
</table>

### Develop Teaching and Learning Plan

#### Teaching Strategies:
- Teacher will lecture on the proper use of equipment.
- Teacher will lecture on the proper care of drafting equipment.
- Teacher will lecture on the proper technique used for lettering.
- Students will complete a handout on measuring.
- Students will complete a handout on using the equipment.
- Students will complete a handout on lettering.

#### Learning Activities:
- Draw the following four lines using a scale of $\frac{3}{4}'' = 1'-0''$
  - 5'-0''
  - 7'-6''
  - 9'-10''
  - 11'-3''
- Convert the following dimensions to millimeters: 5'-6'', 6'-8'', 12'-2'', 25'-11''.
- Practice drawing lines using all pencil grades on tracing paper and paper.
- Handout on the use of different scales.
- Handout on the proper use of drafting equipment.
- Handout on the proper technique for lettering.

### Assessments

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
<th>Other Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
</tbody>
</table>

**Goal:** Use an assortment of instruments and supplies to create a drawing.  
**Role:** Instructor/Teacher  
**Audience:** Students in Architectural Drafting I classes

- Completion of work sheets (measuring, equipment, and lettering).
- Unit quiz.
- Successful completion of the exercise on using the equipment (handout #1)
- Successful completion of the exercise
Situation: Students are given handouts to complete on use of equipment, measuring and proper lettering to show the teacher that they understand.

Product or Performance: Completion of handouts and worksheets

Standards for Success: Completion of worksheets and handouts.

on the proper technique of lettering.

Observation of student work (handout #2).

<table>
<thead>
<tr>
<th>Suggested Resources</th>
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<tbody>
<tr>
<td>Various handouts</td>
</tr>
<tr>
<td>Student worksheets</td>
</tr>
</tbody>
</table>
# Identify Desired Results

<table>
<thead>
<tr>
<th>Common Core State Standards</th>
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<tbody>
<tr>
<td>• Employ critical thinking skills independently and in teams to solve problems and make decisions. <strong>EKS.05</strong></td>
</tr>
<tr>
<td>• Identify, research, develop and explain architectural and construction plans, drawings, diagrams, and specifications. <strong>Arch.06.01</strong></td>
</tr>
</tbody>
</table>

## Expected Performances

**Students will know the following:**
- How to draw living area plans
  - Using an Open Plan
  - Using a Closed Plan
  - Using a Combined Plans
- Living Rooms
  - What its function
  - Where is it located
  - How to orient it to the rest of the house
  - What type of décor
  - Its size and shape
• Dining Room
  o What its function
  o Where is it located
  o How to orient it to the rest of the house
  o What type of décor
  o Its size and shape
• Family Room
  o What its function
  o Where is it located
  o How to orient it to the rest of the house
  o What type of décor
  o Its size and shape
• Recreation Rooms
  o What its function
  o Where its location
  o How to orient it to the rest of the house
  o What type of décor
  o Its size and shape
• Special Purpose Rooms
  o What its function
  o Where is it located
  o What type of décor
  o Its size and shape

Students will be able to do the following:
• Understand, design and draw a living area.
• Draw a living room
• Draw a dining room
• Draw a family room
• Draw a recreation room
• Draw a special purpose room
• Complete a floor plan of a house.

<table>
<thead>
<tr>
<th>Character Attribute(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Courage</td>
</tr>
<tr>
<td>• Honesty</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Competencies</th>
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<tbody>
<tr>
<td>• Students will demonstrate technical knowledge and skills, including planning, designing, organizing, coordinating, and constructing.</td>
</tr>
<tr>
<td>• Use basic drafting tools.</td>
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</table>

<table>
<thead>
<tr>
<th>Develop Teaching and Learning Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching Strategies:</strong></td>
</tr>
<tr>
<td>• Teacher will lecture on the proper features of an indoor living area.</td>
</tr>
<tr>
<td>• Students will design a living area</td>
</tr>
<tr>
<td><strong>Learning Activities:</strong></td>
</tr>
<tr>
<td>• Students will draw:</td>
</tr>
<tr>
<td>o Draw a simple sketch of a living room</td>
</tr>
<tr>
<td>Performance Task(s)</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
</tr>
</tbody>
</table>

**Goal:** Understand how to design a living area for a residential home.

**Role:** Instructor/Teacher

**Audience:** Students in Arch I classes

**Situation:** Using graph paper, students are to complete a rough draft of a living area they have designed. The teacher will discuss with each student their design.

**Product or Performance:** Handouts, graph paper, worksheet and home plan books.

**Standards for Success:** Completion of rough draft of a living area

**Suggested Resources**


**Assessments**

- Draw a simple sketch of a dining room
- Draw a simple sketch of a family room
- Draw a simple sketch of a recreation room
- Draw a simple sketch of a special purpose room.

- Sketches of various living area rooms to be turned in and graded:
  - Living room
  - Dining room
  - Family room
  - Recreation room
  - Special purpose
- Unit quiz
- Completion of a FLOOR PLAN (rough draft)
### New Milford Public Schools

**Committee Member(s):** Joe Neff  
**Unit 3:** Outdoor Living Areas  
**Course/Subject:** Architectural Drafting I  
**Grade Level:** 9-12  
**# of Weeks:** 1 week

<table>
<thead>
<tr>
<th>Identify Desired Results</th>
<th>Essential Questions</th>
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<tr>
<td><strong>Common Core State Standards</strong></td>
<td><strong>Generalizations of desired understanding via essential questions</strong></td>
</tr>
<tr>
<td>Employ appropriate media to communicate concepts and designs. Arch.07</td>
<td>Students will understand how to:</td>
</tr>
<tr>
<td>Research and collect data that relates to architectural drafting and design. Arch.08.01</td>
<td>o Design and sketch a porch, patio, and lanai</td>
</tr>
<tr>
<td></td>
<td>o Design and sketch a swimming pool</td>
</tr>
<tr>
<td></td>
<td>o Calculate the area and volume of swimming pools</td>
</tr>
<tr>
<td></td>
<td>• What is the function of porches and why do we need one?</td>
</tr>
<tr>
<td></td>
<td>• What is the difference between a porch, patio and a lanai?</td>
</tr>
<tr>
<td></td>
<td>• How do you calculate the area and volume of a 28' round pool?</td>
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<table>
<thead>
<tr>
<th>Expected Performances</th>
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<tbody>
<tr>
<td><strong>What students should know and be able to do</strong></td>
</tr>
<tr>
<td>Students will know the following:</td>
</tr>
<tr>
<td><strong>Porches</strong></td>
</tr>
<tr>
<td>o Its function and types</td>
</tr>
<tr>
<td>o Where it is located</td>
</tr>
<tr>
<td>o What its décor</td>
</tr>
<tr>
<td>o Its size and shape</td>
</tr>
<tr>
<td><strong>Patos</strong></td>
</tr>
<tr>
<td>o Its function and type</td>
</tr>
<tr>
<td>o Where is it located</td>
</tr>
<tr>
<td>o What its décor</td>
</tr>
<tr>
<td>o Its size and shape</td>
</tr>
<tr>
<td><strong>Lanais</strong></td>
</tr>
<tr>
<td>o Its function</td>
</tr>
<tr>
<td>o Where its located</td>
</tr>
<tr>
<td>o What is décor</td>
</tr>
<tr>
<td>o Its size and shape</td>
</tr>
<tr>
<td><strong>Swimming pools</strong></td>
</tr>
<tr>
<td>o Its function</td>
</tr>
</tbody>
</table>
- Its location and orientation to the house and compass direction
- How it's constructed
- Be able to calculate its sizes
- Its safety devices
- Proper pool equipment

Students will be able to do the following:
- Understand, design and draw outdoor living areas
- Complete a floor plan of a living area and the outdoor living area.

### Character Attribute(s)
- Respect
- Responsibility

### Technology Competencies
- Evaluate ideas, proposals, and solutions to problems
- Identify, use and maintain measuring layouts and measuring tools

### Develop Teaching and Learning Plan

**Teaching Strategies:**
- Teacher will lecture on the proper functions of the outdoor living area.
- Teacher will handout house plan books for students to get ideas of different outdoor living areas.
- Using graph paper and their rough draft of their living area, complete an outdoor living area.
- Teacher will meet with each student and discuss their outdoor living area.

**Learning Activities:**
- From catalogs, newspapers and magazines, cut out pictures of porch furniture that you particularly like.
- Plan a porch and/or patio from a house of your own design. Sketch the basic outline and the facilities
- Draw a simple sketch of a porch
- Draw a simple sketch of a patio
- Draw a simple sketch of a lanais
- Design and draw a swimming pool
- Complete a rough draft of an outdoor living area

### Assessments

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**Goal:** Understand how to design an outdoor living area for a residential home.

**Role:** Instructor/Teacher

- Sketches of various outdoor living areas with swimming pool to be turned in and graded. (5 different sketches)
- Unit quiz
- Completion of floor plan (rough draft)
Audience: Students in Arch I classes
Situation: Using graph paper, students are to complete a rough draft of an outdoor living area they have designed. The teacher will discuss with each student their design.
Product or Performance: Handouts, graph paper, worksheet, and home plan books.
Standards for Success: Completion of rough draft of an outdoor living area

**Suggested Resources**

- Various handouts
- Student worksheets
New Milford Public Schools

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<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
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<tr>
<td>Unit 4: Traffic Areas and Patterns</td>
<td>Grade Level: 9-12</td>
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<td></td>
<td># of Weeks: 1 week</td>
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</table>

### Identify Desired Results

**Common Core State Standards**

- Create ideas, proposals, and solutions to problems. **EKS.05.04**
- Demonstrate an understanding of regulations in architectural design. **Arch.03**

### Enduring Understandings

Generalizations of desired understanding via essential questions
(Students will understand that …)

- **Students will understand:**
  - How to determine the effectiveness of a traffic pattern in a house
  - How to plan hallways that function efficiently.
  - Guidelines for designing stairs.
  - How to calculate the correct space needed for stairways and stairwells
  - The kinds and functions of entrances.
  - Guidelines for entrance design.
  - How to design a foyer and entry.

### Essential Questions

Inquiry used to explore generalizations

- Why do we need a smooth traffic pattern?
- What is function of a hallway and how do we calculate how much we need?
- Why do we need different types of stairs?
- Why is an entrance area important to a good house design?
- What factor do we need to take into consideration when designing an efficient foyer and entry hall?

### Expected Performances

What students should know and be able to do

- What are traffic patterns and how they are used
- What are the purpose of halls and where they should go
- Different types of stairs
  - Materials and lighting used for stairs
  - Shapes and size of stairs
- Different types of entrances
  - What is its function and different types
  - Where it should be located
Students will be able to do the following:

- Understand, design and draw traffic areas and patterns.
- Draw a rough sketch of a hallway for their floor plan
- Draw a rough sketch of the type and style of stairs they are going to use
- Draw a rough sketch of the entrance
- Add these traffic patterns to their rough draft of the floor plan.
- Complete a floor plan of a house.

**Character Attribute(s)**

- Honesty
- Perseverance

**Technology Competencies**

- Employ critical thinking skills independently and in teams to solve problems and make decisions
- Guide individuals through the process of recognizing concerns and making informed decisions

### Develop Teaching and Learning Plan

**Teaching Strategies:**

- Teacher will lecture on the proper functions of the traffic patterns needed for a home.
- Teacher will handout house plan books for students to get ideas of different traffic patterns, hallways, stairs and entrances.
- Using graph paper and their rough draft of their floor plan, complete the traffic areas needed for their home.
- Teacher will meet with each student and discuss their traffic patterns.

**Learning Activities:**

- Sketch the floor plan of a home of your design. Plan the most efficient traffic pattern by tracing the route of your daily routine.
- Sketch a plan view of a stair system.
- Why do we need different types of stairs?
- Draw a foyer to the plan of a house you are designing.
- Draw a simple sketch of hallway.
- Draw a simple sketch of a stairwell.
- Draw a simple sketch of an entrance.
- Add all of these traffic patterns to their floor plan.

### Assessments

**Performance Task(s)**

- Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)

**Other Evidence**

- Application that is functional in a classroom context to evaluate student achievement of desired results

- Sketches of various traffic patterns to
Goal: Understand how to design traffic areas and patterns for a residential home.

Role: Instructor/Teacher

Audience: Students in Arch I classes

Situation: Using graph paper, students are to complete a rough draft of traffic areas and patterns they have designed. The teacher will discuss with each student their design.

Product or Performance: Handouts, graph paper, worksheet and home plan books.

Standards for Success: Completion of rough draft of traffic areas and patterns added to their floor plan.

be turned in and graded (5 sketches of traffic patterns).

- Unit quiz
- Completion of a FLOOR PLAN (rough draft)

Suggested Resources

- Various handouts
- Student worksheets
## Identify Desired Results

### Common Core State Standards

- Research, plan, and design functional structure. **Arch.05**
- Utilize commercial and residential suggestions and specifications to create functional floor plans. **Arch.05.03**

### Enduring Understandings

Generalizations of desired understanding via essential questions

(Students will understand that …)

- Students will be able to:
  - Apply guidelines to efficient kitchen design
  - Determine the best shape, size, and location for the kitchen.
  - Plan and draw a work triangle for a kitchen
  - Sketch small and large kitchens of some basic kitchen shapes

### Essential Questions

Inquiry used to explore generalizations

- List the six types of kitchen shapes and give at least one advantage and one disadvantage of each.
- Why do we need to design an efficient kitchen style?
- What is a work triangle?
- Name the major appliances in the kitchen?

### Expected Performances

What students should know and be able to do

Students will know the following:

- Kitchen Design and Considerations
  - What is its function
  - Name the various styles and types of kitchens
  - What type of décor
  - Its size and shape
  - Proper kitchen planning guidelines

Students will be able to do the following:

- Understand, design and draw a kitchen.
- Know what are the advantages and disadvantages of each kitchen style.
- Complete a floor plan of a house.

### Character Attribute(s)

- Cooperation
- Responsibility
### Technology Competencies

- Students will demonstrate technical knowledge and skills, including planning, designing, organizing, coordinating, and drawing.
- Will assure that the student accept personal responsibility for production and quality.

### Develop Teaching and Learning Plan

<table>
<thead>
<tr>
<th>Teaching Strategies</th>
<th>Learning Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher will lecture on the different types of kitchens and the pros and cons of each.</td>
<td>Sketch a family kitchen using any of the six kitchen types.</td>
</tr>
<tr>
<td>Teacher will handout house plan books for students to get ideas of different styles of kitchens.</td>
<td>Sketch a floor plan of the kitchen in your own home.</td>
</tr>
<tr>
<td>Using graph paper and their rough draft of their floor plan, complete the kitchen needed for their home.</td>
<td>Draw simple sketches of the six different kitchen styles.</td>
</tr>
<tr>
<td>Teacher will meet with each student and discuss their kitchen plan.</td>
<td>Decide which kitchen design best fits your house plan.</td>
</tr>
<tr>
<td></td>
<td>Add the kitchen plan you have chosen to your rough draft of your floor plan</td>
</tr>
</tbody>
</table>

### Assessments

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
<th>Other Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
</tbody>
</table>

Goal: Understand the different styles of kitchens.

Role: Instructor/Teacher

Audience: Students in Arch I classes

Situation: Using graph paper, students are to complete a rough draft of the kitchen style they have designed. The teacher will discuss with each student their design.

Product or Performance: Handouts, graph paper, worksheet and home plan books.

Standards for Success: Completion of rough draft of a kitchen and add to their

- Sketches of the six different layouts for a kitchen to be turned in and graded.
- Completion of a FLOOR PLAN (rough draft)
floor plan.

<table>
<thead>
<tr>
<th><strong>Suggested Resources</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Various handouts</td>
</tr>
<tr>
<td>Student worksheets</td>
</tr>
</tbody>
</table>
# New Milford Public Schools

<table>
<thead>
<tr>
<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 6: General Service Areas</td>
<td>Grade Level: 9-12</td>
</tr>
<tr>
<td></td>
<td># of Weeks: 1 week</td>
</tr>
</tbody>
</table>

## Identify Desired Results

### Common Core State Standards

- Select and organize appropriate examples that demonstrate knowledge, skills and experience. **Arch.08.02**
- Produce preliminary designs, final sketches and presentation drawings. **Arch.05.02**

## Enduring Understandings

**Generalizations of desired understanding via essential questions**

(Students will understand that …)

- Students will understand how to:
  - Determine what kinds of equipment are included in a utility room
  - Evaluate the best location for a utility room
  - Sketch a garage and a carport
  - Design storage facilities for a garage
  - Design a sketch storage facilities

## Essential Questions

**Inquiry used to explore generalizations**

- What is the function of a utility room?
- Why is a garage important to good house design?
- Explain the proper layout for a storage area.
- How much storage space is needed in a home?

## Expected Performances

**What students should know and be able to do**

Students will know the following:

- What are utility rooms
  - What is the function
  - Where it should be located
  - Its style and décor
  - Its size and shape

- What is the function of garages and carports
  - What is the function
  - Where should it be located
  - Its size and décor

- What are driveways and why do we need one.

- What are workshops
Students will be able to do the following:

- Understand, design and draw general service areas
  - Draw a rough draft of a utility room
  - Draw a rough draft of a garage / carport
  - Draw a rough draft of a driveway
  - Draw a rough draft workshop
  - Draw a rough draft of a storage area
- Add the general service area to the rough draft of their FLOOR PLAN.

### Character Attribute(s)
- Integrity
- Perseverance

### Technology Competencies
- Students will demonstrate appropriate employability traits and skills, including team work, custom service, responsibility, adaptability and persistence.

### Develop Teaching and Learning Plan

**Teaching Strategies:**
- Teacher will lecture on the different types of general service areas and the pros and cons of each.
- Teacher will handout house plan books for students to get ideas of different types of general service areas.
- Using graph paper and their rough draft of their floor plan, complete the general service areas needed for their home.
- Teacher will meet with each student and discuss their general service areas.

**Learning Activities:**
- Design a utility room including a complete laundry facility
- Design a full double garage and driveway for the house you designed
- Design a work area for the house you are planning.
- Add storage facilities to your house
- Draw a simple sketch of a utility room
- Draw a simple sketch of a garage and a carport
- Draw a simple sketch of a driveway
- Draw a simple sketch of a workshop and a storage area.

### Assessments

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
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</thead>
<tbody>
<tr>
<td>Authentic application to evaluate student achievement of</td>
<td>Application that is functional in a classroom context to</td>
</tr>
<tr>
<td>desired results designed according to GRASPS (one per marking period)</td>
<td>evaluate student achievement of desired results</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>. Goal: Understand the different styles of general service areas. Role: Instructor/Teacher Audience: Students in Arch I classes Situation: Using graph paper, students are to complete a rough draft of the general service areas. The teacher will discuss with each student their design. Product or Performance: Handouts, graph paper, worksheet and home plan books. Standards for Success: Completion of rough draft of general service areas and add to their floor plan.</td>
<td>• Sketches of a utility room, garage and a carport, driveway, workshop and a storage area to be turned in and graded (2 of each area). • Completion of a FLOOR PLAN (rough draft)</td>
</tr>
</tbody>
</table>

**Suggested Resources**

- One-Story Homes, Tucson, Arizona: Home Planners, 1997
- Traditional Homes, Tucson, Arizona: Home Planners, 1997
- Various handouts
- Student worksheets
# Identify Desired Results

## Common Core State Standards
- Research and collect data that relates to architectural drafting and design. **Arch.08.01**
- Research, plan and design functional structure. **Arch.05**

## Enduring Understandings
Generalizations of desired understanding via essential questions (Students will understand that …)

- Students will understand how to:
  - Plan and draw bedrooms for a sleeping area
  - Plan and draw baths appropriate to the size and arrangement of the floor plan
  - Design an efficient bath

## Essential Questions
Inquiry used to explore generalizations

- Why are bedrooms important in a home?
- What determines how many bedrooms are in a house?
- Why does the master bedroom have an adjacent bathroom?
- How do you determine how many bathrooms are in a home?
- How would you decide what is an efficient bathroom?

## Expected Performances
What students should know and be able to do

Students will know the following:
- What are bedrooms
  - What is the function
  - Where they are located
  - What type of décor
  - Its size and shape
- What are baths
  - What is the function
  - Where are they located
  - Its décor
  - Its size and shape

Students will be able to do the following:
- Understand, design and draw sleeping areas with baths
- Complete a floor plan of a house
### Character Attribute(s)

- Honesty
- Courage

### Technology Competencies

- Demonstrate attitudes and habits, including pride in good workmanship, dependability and regular attendance, that are valued in the workplace
- Explore career and postsecondary educational opportunities through performance-based learning experiences

### Develop Teaching and Learning Plan

#### Teaching Strategies:
- Teacher will lecture on the different types of sleeping areas and the pros and cons of each.
- Teacher will handout house plan books for students to get ideas of different types of sleeping areas.
- Using graph paper and their rough draft of their floor plan, complete the sleeping areas needed for their home.
- Teacher will meet with each student and discuss their sleeping areas.

#### Learning Activities:
- Design a bedroom, 100 sq.ft. in size, for a six-year-old child.
- Design a master bedroom with an adjoining bath
- Plan the bedroom areas for the home you are designing
- Draw a plan with a master bath and a central bath
- Draw a simple sketch of a master bedroom and bath
- Draw a simple sketch of a bedroom
- Draw a simple sketch of a central bath

### Assessments

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
</tbody>
</table>

- **Goal:** Understand the different styles of sleeping areas.
- **Role:** Instructor/Teacher
- **Audience:** Students in Arch I classes
- **Situation:** Using graph paper, students are to complete a rough draft of the sleeping areas. The teacher will discuss with each student their design.

- **Sketches of sleeping areas to be turned in and graded (5 different sleeping areas)**
- **Sketches of various types of baths, both master and centrally located to be turned in and graded. (3 sketches)**
- **Completion of a FLOOR PLAN (rough draft)**
<table>
<thead>
<tr>
<th>Product or Performance: Handouts, graph paper, worksheet and home plan books. Standards for Success: Completion of rough draft of sleeping areas and add to their floor plan.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suggested Resources</strong></td>
</tr>
<tr>
<td>• One-Story Homes. Tucson, Arizona: Home Planners, 1997</td>
</tr>
<tr>
<td>• Traditional Homes. Tucson, Arizona: Home Planners, 1997</td>
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<tr>
<td>• Various handouts</td>
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<td>• Student worksheets</td>
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New Milford Public Schools

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<tr>
<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 8: Designing Floor Plans</td>
<td>Grade Level: 9-12</td>
</tr>
<tr>
<td></td>
<td># of Weeks: 2 weeks</td>
</tr>
</tbody>
</table>

**Identify Desired Results**

<table>
<thead>
<tr>
<th>Common Core State Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Demonstrate an understanding of regulations in architectural design. <strong>Arch.03</strong></td>
</tr>
<tr>
<td>• Research and identify regulations and codes that are needed to establish a legal and safe design. <strong>Arch.03.01</strong></td>
</tr>
</tbody>
</table>

**Enduring Understandings**

Generalizations of desired understanding via essential questions (Students will understand that …)

- Students will understand and be able to:
  - Gather information from a client (teacher) that is needed to design a set of house plans
  - Analyze a building site
  - Draw floor plans

**Essential Questions**

Inquiry used to explore generalizations

- List the steps necessary to design a residence.
- Prepare a situations statement and set goals and objectives for the house you are designing.
- Explain the proper building site for your house.

**Expected Performances**

What students should know and be able to do

Students will know the following:

- Understand proper floor plan development
- Know the proper design process
  - Be able to define the project
  - Be able to develop a conceptual design
  - Be able to evaluating the design
  - Understand design development
- Understand proper functional space planning
  - Be able to plan space for rooms and areas
  - Be able to draw floor plan drawings
- Be able to develop plans to accommodate special needs

Students will be able to do the following:

- Develop basic floor plans
- Begin to draw the final set of house plans
<table>
<thead>
<tr>
<th>Character Attribute(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perseverance</td>
</tr>
<tr>
<td>Integrity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will demonstrate technical knowledge and skills, including planning, designing, organizing, coordinating, constructing and maintaining Construction Technologies and Design</td>
</tr>
</tbody>
</table>

### Develop Teaching and Learning Plan

#### Teaching Strategies:
- Teacher will lecture on the proper way to begin drawing floor plans. Explain how to put together all of their rough drafts to complete a final floor plan.
- Teacher will explain the basic requirements needed for the house they are designing.
- Using drafting paper and their rough draft of their floor plan, begin to organize plans.
- Teacher will meet with each student and discuss their overall plans.

#### Learning Activities:
- Organize all of the rough drafts and put into a basic set of house plans:
  - Rough draft – Window/Door plan
  - Rough draft – Electrical plan
  - Rough draft – Furniture plan
  - Rough draft – Foundation plan
  - Rough draft – Plot plan
  - Rough draft – Schedule sheet
  - Rough draft – Wall Section
  - Rough draft – Cover sheet
- Begin to develop floor plans

### Assessments

<table>
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<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
</tbody>
</table>

**Goal:** Completion of a set of house plans.

**Role:** Instructor/Teacher

**Audience:** Students in Arch I classes

**Situation:** Using all of their rough drafts, the students are to begin to organize their plans. Teacher will meet to discuss their final rough draft of their floor plan.

**Product or Performance:** Handouts, graph paper, worksheet and home plan books.

**Standards for Success:** Organization of their final set of floor plans.

**Begin to complete of a set of house plans.**

**Organize the rough drafts.**
<table>
<thead>
<tr>
<th><strong>Suggested Resources</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Various handouts</td>
</tr>
<tr>
<td>Student worksheets</td>
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</table>
# New Milford Public Schools

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<tr>
<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 9: Drawing Floor Plans</td>
<td>Grade Level: 9-12</td>
</tr>
<tr>
<td></td>
<td># of Weeks: 10 weeks</td>
</tr>
</tbody>
</table>

## Identify Desired Results

### Common Core State Standards
- Develop technical drawings drafted by hand and computer-aided drafting and design. **Arch.06**
- Convey information using multi-dimensional drawings. **Arch.07.01**

## Enduring Understandings

Generalizations of desired understanding via essential questions
(Students will understand that …)

### Essential Questions
Inquiry used to explore generalizations

- What is the proper sequence for drawing floor plans and why do we have one?
- Why are we drawing a set of house plan?
  - Window/Door floor plan
  - Electrical plan
  - Furniture plan
  - Foundation plan
  - Plot plan
  - Wall section
  - Cover sheet
  - Schedules

## Expected Performances

What students should know and be able to do

- Different types of floor plans
- Understand the different types of floor plan symbols
- Know the steps in drawing floor plans
- Know how to complete the following floor plans
  - Window/Door floor plan
  - Electrical floor plan
  - Furniture plan
  - Foundation plan
  - Plot plan
  - Wall section
  - Cover sheet
Students will be able to do the following:

- Draw a FLOOR PLAN
- Draw a FOUNDATION PLAN
- Draw an ELECTRICAL PLAN
- Draw a FURNITURE PLAN
- Draw a PLOT PLAN
- Draw a WALL SECTION
- Draw a COVER SHEET
- Draw a SCHEDULE SHEET

Character Attribute(s)

- Respect
- Integrity

Technology Competencies

- Employ critical thinking skills to solve problems and make decisions
- Evaluate alternatives using a variety of problem-solving and critical thinking skills

Develop Teaching and Learning Plan

Teaching Strategies:

- Teacher will lecture on the proper way to draw floor plans. Explain how to put together all of their rough drafts to complete a final floor plan.
- Teacher will explain the proper size paper and scale used for each drawing.
- Using drafting paper and their rough draft of their floor plan, begin to draw a full set of house plans.
- Teacher will meet with each student and discuss their overall plans and make sure that they understand the assignment.

Learning Activities:

- Draw a complete set of house plans
  - Window/Door floor plan
  - Electrical plan
  - Furniture plan
  - Foundation plan
  - Plot plan
  - Wall section
  - Cover sheet
  - Schedules

Assessments

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
<th>Other Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: Completion of a set of house plans. Role: Instructor/Teacher Audience: Students in Arch I classes</td>
<td>Completion of a set of house plans</td>
</tr>
</tbody>
</table>
Situation: Using all of their rough drafts, the students are to begin to draw their plans. Teacher will meet to discuss their final rough draft of their floor plan and make sure they understand the assignment.

Product or Performance: Handouts, graph paper, worksheet and home plan books.

Standards for Success: Completion of their final set of floor plans.

**Suggested Resources**

- Various handouts
- Student worksheets

END of FIRST SEMESTER
START OF SECOND SEMESTER
New Milford Public Schools

<table>
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<tr>
<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
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</thead>
<tbody>
<tr>
<td>Unit 10: Groundwork – AutoCAD</td>
<td>Grade Level: 9-12</td>
</tr>
<tr>
<td></td>
<td># of Weeks: 2 weeks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identify Desired Results</th>
<th>Common Core State Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Analyze the use of current CADD design technology. <strong>CADD.02</strong></td>
<td></td>
</tr>
<tr>
<td>• Identify basic geometric elements (e.g., line, circle, rectangle, sphere and cube). <strong>CADD.04</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enduring Understandings</th>
<th>Essential Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalizations of desired understanding via essential questions (Students will understand that …)</td>
<td>Inquiry used to explore generalizations</td>
</tr>
<tr>
<td>• Exploring AutoCAD by understanding the following commands:</td>
<td></td>
</tr>
<tr>
<td>o How to start AutoCAD</td>
<td></td>
</tr>
<tr>
<td>o Be able to view details</td>
<td></td>
</tr>
<tr>
<td>o Be able to exiting AutoCAD</td>
<td></td>
</tr>
<tr>
<td>• Be able to use the user interface</td>
<td></td>
</tr>
<tr>
<td>o Be able to use Pull-Down Menus</td>
<td></td>
</tr>
<tr>
<td>o Be able to use the Toolbars</td>
<td></td>
</tr>
<tr>
<td>o Be able to use the Tools palettes</td>
<td></td>
</tr>
<tr>
<td>• Understand the Command Entry</td>
<td></td>
</tr>
<tr>
<td>o Be able to create and save a Drawing File</td>
<td></td>
</tr>
<tr>
<td>o Be able to opening a drawing</td>
<td></td>
</tr>
<tr>
<td>• Understand the basic objects</td>
<td></td>
</tr>
<tr>
<td>o Be able to create circles</td>
<td></td>
</tr>
<tr>
<td>o Be able to create arcs</td>
<td></td>
</tr>
<tr>
<td>o Draw ellipses</td>
<td></td>
</tr>
<tr>
<td>o Draw donuts</td>
<td></td>
</tr>
<tr>
<td>o Be able to draw rectangles</td>
<td></td>
</tr>
<tr>
<td>o Be able to draw polygons</td>
<td></td>
</tr>
<tr>
<td>• How do you start AutoCAD?</td>
<td></td>
</tr>
<tr>
<td>• How do you exit AutoCAD?</td>
<td></td>
</tr>
<tr>
<td>• How do you move a toolbar?</td>
<td></td>
</tr>
<tr>
<td>• What is a cascading menu?</td>
<td></td>
</tr>
<tr>
<td>• What appears when you rest the pointer on a button contained in a toolbar?</td>
<td></td>
</tr>
<tr>
<td>• Explain the purpose of the DONUT command?</td>
<td></td>
</tr>
</tbody>
</table>
What students should know and be able to do

Students will know the following:
- How to start AutoCAD
- How to preview drawing files
- Exit AutoCAD
- Be able to navigate AutoCAD’s pull-down menus
- Be able to display and reorganize docked and floating toolbars
- Be able to describe the functions of the Tools Palette
- Create, save and open an AutoCAD drawing file
- Be able to enter commands using the keyboards and toolbars
- Be able to reenter commands
- Create curved objects such as circles, arcs, ellipses, and donuts
- Create rectangles and other types of regular polygons

Students will be able to do the following:
- Start AutoCAD
- Open a drawing file
- Exit AutoCAD
- Use the pull-down menus
- Know the difference between floating and docked toolbars
- Use the tools palette
- Be able to create and save a drawing file
- Be able to open a drawing file
- Be able to enter a command
- Understand the pick buttons on a toolbar
- Reenter the last command

Character Attribute(s)
- Perseverance
- Cooperation

Technology Competencies
- Identify, describe, and utilize the basic hardware and operating systems used in CADD

Develop Teaching and Learning Plan

<table>
<thead>
<tr>
<th>Teaching Strategies:</th>
<th>Learning Activities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher lectures on the proper commands needed to create a simple drawing</td>
<td>Students will practice commands using the keyboard.</td>
</tr>
<tr>
<td>Teacher uses the data projector to show the students the various commands needed to draw a simple drawing</td>
<td>Students will practice using their pointing device.</td>
</tr>
<tr>
<td>Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture,</td>
<td>Students will use the Select File Dialog</td>
</tr>
<tr>
<td></td>
<td>Using the Coordinate display to locate the position of various (X, Y) points in the drawing.</td>
</tr>
<tr>
<td></td>
<td>Completion of drawings #1 - #5</td>
</tr>
</tbody>
</table>
students begin work on completing their drawings.

- Problem-Based Learning is a method that challenges students to “learn to learn” by working in groups to seek solutions to problems. The students will work in groups to complete the drawings assigned. (#1 - #5)
- Teacher will hand out drawing #1 to the group. When the drawing is finished, the teacher will check the drawing and then the students can move onto the next drawing.

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<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
</tr>
<tr>
<td>Goal: Enable students to create a basic 2D drawing in AutoCAD</td>
</tr>
<tr>
<td>Role: Instructor/Teacher</td>
</tr>
<tr>
<td>Audience: Students in Basic AutoCAD classes</td>
</tr>
<tr>
<td>Situation: Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing.</td>
</tr>
<tr>
<td>Product: Correct completion of 2D and 3D drawings (#1 - #40-1/2 semester)</td>
</tr>
<tr>
<td>Standards for Success: Completion of drawings #1-#40 (1/2 semester) using departmental rubrics.</td>
</tr>
<tr>
<td>• Students will learn how to start AutoCAD by completing drawing #1.</td>
</tr>
<tr>
<td>• Students will learn the basic layout of the AutoCAD screen by completing handout #1.</td>
</tr>
<tr>
<td>• Students will learn how to use the command line and keyboard with AutoCAD by completing drawing #2.</td>
</tr>
</tbody>
</table>
Students will be able to exit AutoCAD by shutting down the program.
- Self Check: Getting Started with AutoCAD (7 questions)
- Completion of drawings #1 - #5
- Observation of student work
- Unit quiz

<table>
<thead>
<tr>
<th>Suggested Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>AutoCAD software</td>
</tr>
<tr>
<td>Student worksheets</td>
</tr>
<tr>
<td>Handouts</td>
</tr>
</tbody>
</table>
New Milford Public Schools

<table>
<thead>
<tr>
<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 11: Drawing Aids and Controls</td>
<td>Grade Level: 9-12</td>
</tr>
<tr>
<td></td>
<td># of Weeks: 2 weeks</td>
</tr>
</tbody>
</table>

### Identify Desired Results

**Common Core State Standards**

- Utilize measurement and annotation systems as they apply to CADD technology design. **CADD.03**
- Describe the process for setting and manipulating drawing elements. **CADD.05.08**

### Enduring Understandings

**Generalizations of desired understanding via essential questions**

(Students will understand that …)

- Students will understand how to use Object Snap
  - Use running Object Snaps
  - Be able to specify Object Snaps
  - Know the Object Snap Settings
- Be able to use the helpful drawing features
  - Use the Coordinate Display
  - Know how to use the Ortho Mode
  - Be able to track time
- Be able to use the construction aids
  - Be able to use Snap Grid
  - Draw construction lines
  - Draw rays
- Use the Zoom command
  - Use to take a Closer Look

### Essential Questions

**Inquiry used to explore generalizations**

- Why do we need to know the Coordinate Display?
- Explain how the Zoom command works?
- Explain the purpose of the Object Snap command?
- Why is the coordinate display so important?

### Expected Performances

**What students should know and be able to do**

Students will know the following:

- How to set and use running object snap modes
- Be able to apply object snaps that are not currently turned on
- Be able to change object snap setting to increase productivity
- Be able to use the QUICK SETUP wizard
- Be able to use and change the display of coordinate information
- Be able to set and use AutoCAD’s visual grid system
- Be able to zoom in on portions of a drawing to view or add details

Students will be able to do the following:
- Use the alignment grid and Snap grid
- Draw Construction lines and Rays
- Understand Orthographic Projection
- Methods of Zooming

<table>
<thead>
<tr>
<th>Character Attribute(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respect</td>
</tr>
<tr>
<td>Integrity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explore career and postsecondary educational opportunities through performance-based learning experiences</td>
</tr>
<tr>
<td>Operate a personal computer using the AutoCAD software</td>
</tr>
</tbody>
</table>

### Develop Teaching and Learning Plan

**Teaching Strategies:**
- Teacher lectures on the proper commands needed to create a simple drawing
- Teacher uses the data projector to show the students the various commands needed to draw a simple drawing
- Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.
- Problem-Based Learning is a method that challenges students to “learn to learn” by working in groups to seek solutions to problems. The students will work in groups to complete the drawings assigned. (#6 - #9)
- Teacher will hand out drawing #6 to the students, then the teacher will check the drawing and the students can move onto the next drawing.

**Learning Activities:**
- Completion of drawings #6 - #9
- Students will be able draw with GRID, and SNAP
- Students will be able view a drawing with Zoom and PAN
- Students will be able undo commands
- Students will be able save your work
- Students will be able exit AutoCAD
- Self Check: Drawing Aides with AutoCAD (10 questions)

### Assessments
**Performance Task(s)**

<table>
<thead>
<tr>
<th>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</th>
</tr>
</thead>
</table>

**Goal:** Enable students to create a basic 2D drawing in AutoCAD

**Role:** Instructor/Teacher

**Audience:** Students in Basic AutoCAD classes

**Situation:** Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing by using the proper commands.

**Product:** Correct completion of 2D drawings (#6 - #9)

**Standards for Success:** Completion of drawings #6-#9 using departmental rubrics.

**Other Evidence**

| Application that is functional in a classroom context to evaluate student achievement of desired results |

- Students will be able draw with GRID, and SNAP by completing drawing #6.
- Students will be able view a drawing with Zoom and PAN by completing drawing #7.
- Students will be able undo commands by completing drawing #8.
- Students will be able save your work by drawing and saving drawing #9.
- Students will be able exit AutoCAD.
- Self Check: Drawing Aides with AutoCAD (10 questions)
- Completion of drawings #6 - #9
- Observation of student work
- Unit quiz

**Suggested Resources**

- AutoCAD software
- Student worksheets
- Handouts
## Identify Desired Results

### Common Core State Standards

- Utilize measurement and annotation systems as they apply to CADD technology design. **CADD.03**
- Use the concepts of geometric construction in the development of design drawings. **CADD.05.04**

### Enduring Understandings

Generalizations of desired understanding via essential questions

(Students will understand that …)

<table>
<thead>
<tr>
<th>Enduring Understandings</th>
<th>Essential Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand how to:</td>
<td>What is the purpose of FILL, and how is it used?</td>
</tr>
<tr>
<td>o Draw solid and curved objects</td>
<td>Explain a polyline?</td>
</tr>
<tr>
<td>o Draw solid shapes</td>
<td>What is the function of the CHAMFER command?</td>
</tr>
<tr>
<td>o Draw polylines</td>
<td>How do you set the fillet radius?</td>
</tr>
<tr>
<td>o Draw spline curves</td>
<td>What is the purpose of the PROPERTIES palette?</td>
</tr>
<tr>
<td>Will be able to add and alter objects</td>
<td>Name two types of arrays?</td>
</tr>
<tr>
<td>o Be able to create chamfers</td>
<td>Explain the purpose of the STRECH command?</td>
</tr>
<tr>
<td>o Be able to breaking objects</td>
<td>Explain the purpose of the TRIM command?</td>
</tr>
<tr>
<td>o Be able to create fillets and rounds</td>
<td>Explain why hatch patterns are important?</td>
</tr>
<tr>
<td>o Be able to offset objects</td>
<td>Be able to stretch objects</td>
</tr>
<tr>
<td>Be able to moving and duplicate objects</td>
<td>Be able to scale objects</td>
</tr>
<tr>
<td>o Be able to changing object properties</td>
<td>Be able to rotate objects</td>
</tr>
<tr>
<td>o Be able to move objects</td>
<td>Be able to trim objects</td>
</tr>
<tr>
<td>o Be able to copying objects</td>
<td>Be able to be extending objects</td>
</tr>
<tr>
<td>o Be able to mirror objects</td>
<td>Be able to Hatch and Sketch</td>
</tr>
<tr>
<td>Be able to modify and maneuver objects</td>
<td>o Be able to use the hatch command</td>
</tr>
</tbody>
</table>
Expected Performances
What students should know and be able to do

Students will know the following:
- Produce solid-filled objects
- Create and edit polylines
- Create chamfer corners
- Offset lines and circles
- Create and edit multilines
- Change an object’s properties
- Move and Copy objects
- Mirror objects and parts around an axis
- Produce rectangular and polar arrays
- Stretch objects to change their overall shape
- Rotate objects to exact angles
- Trim and extend multilines
- Hatch objects

Students will be able to do the following:
- Draw solid objects and polylines
- Draw spline curves
- Create chamfers and fillets
- Break and offset objects
- Change object’s properties
- Copy, rotate, mirror and move objects
- Create polar and rectangular arrays
- Scale, stretch, trim and extend lines
- Hatch objects
- Edit a hatch

Character Attribute(s)
- Perseverance
- Cooperation

Technology Competencies
- Accept personal responsibility for production and quality
- Respond constructively to constructive criticism

Develop Teaching and Learning Plan

<table>
<thead>
<tr>
<th>Teaching Strategies:</th>
<th>Learning Activities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher lectures on the proper commands needed to create a simple drawing</td>
<td>Completion of drawings #10 - #13</td>
</tr>
<tr>
<td>Teacher uses the data projector to show the students the various</td>
<td>Students will be able draw solid, curved, polylines and splines.</td>
</tr>
<tr>
<td></td>
<td>Students will be able to add and alter drawings.</td>
</tr>
</tbody>
</table>
commands needed to draw a simple drawing
• Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.
• Problem-Based Learning is a method that challenges students to "learn to learn" by working in groups to seek solutions to problems. The students will work in groups to complete the drawings assigned. (#10 - #13)
• Teacher will hand out drawing #10 to the students, then the teacher will check the drawing and the students can move onto the next drawing.

• Students will be able move, offset, mirror, and stretch, rotate and trim objects.
• Students will be able hatch.
• Self Check: Drawing and Editing with AutoCAD (12 questions)

Completion of drawings #10 - #13

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
<th>Other Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
</tbody>
</table>

Goal: Enable students to create a basic 2D drawing in AutoCAD
Role: Instructor/Teacher
Audience: Students in Basic AutoCAD classes
Situation: Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing using the proper drawing and editing commands.
Product: Correct completion of 2D drawings (#10 - #13)
Standards for Success: Completion of drawings #10-#13 using departmental

• Completion of drawings #10 - #13
• Students will be able draw solid, curved, polylines and splines by completing drawing #10
• Students will be able to add and alter drawings by completing drawing #11.
• Students will be able move, offset, mirror, stretch, rotate and trim objects by completing drawing #12.
• Students will be able hatch by completing drawing #13.
• Self Check: Drawing and Editing with AutoCAD (12 questions)
• Observation of student work
• Unit quiz
rubrics.

<table>
<thead>
<tr>
<th>Suggested Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>- AutoCAD software</td>
</tr>
<tr>
<td>- Student worksheets</td>
</tr>
<tr>
<td>- Handouts</td>
</tr>
</tbody>
</table>
Committee Member(s): Joe Neff
Unit 13: Text and Tables

Course/Subject: Architectural Drafting I
Grade Level: 9-12
# of Weeks: 1 week

Identify Desired Results

Common Core State Standards

- Identify various symbols to interpret and read technical drawings. CADD.09
- Interpret drawings, pictures, and symbols. CADD.09.03

Enduring Understandings
Generalizations of desired understanding via essential questions
(Students will understand that …)

Essential Questions
Inquiry used to explore generalizations

- Students will understand how to:
  - Use notes and specifications
    - Understand different types of text
    - Understand how to import text
    - Format text
    - Use different text styles and fonts
  - Text edit and use spell check
    - Be able to edit text
    - Create special characters
  - Use tables
    - Be able to create tables
    - Edit tables

- What might be benefit of using the MTEXT command?
- What is the purpose of a title block?
- Why might a character map be helpful?
- What is a table in AutoCAD?
- What command do you enter to create a new text style?

Expected Performances
What students should know and be able to do

Students will know the following:
- Be able to create and edit text
- Be able to specify the position of text
- Be able to create and use new text styles
- Be able to edit text
- Be able to create special characters
- Be able to find and replace text
- Use AutoCAD’s spell checker
- Be able to create a table
- Be able to apply styles to tables
- Edit tables

Students will be able to do the following:
- Use different types of text
- Import text in a drawing
- Format text
- Apply text in drawings
- Edit text
- Create special characters
- Find and replace text
- Use AutoCAD’s spell checker

<table>
<thead>
<tr>
<th>Character Attribute(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Compassion</td>
</tr>
<tr>
<td>• Honesty</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Explore career and postsecondary educational opportunities through performance-based learning experience</td>
</tr>
<tr>
<td>• Identify resources to complete a job task</td>
</tr>
</tbody>
</table>

### Develop Teaching and Learning Plan

#### Teaching Strategies:
- Teacher lectures on the proper commands needed to create a simple drawing
- Teacher uses the data projector to show the students the various commands needed to draw a simple drawing
- Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.
- Problem-Based Learning is a method that challenges students to "learn to learn" by working in groups to seek solutions to problems. The students will work in groups to complete the drawings assigned. (#14 - #18)
- Teacher will hand out drawing #14 to the students, then the teacher will check the drawing and the students can move onto the next drawing.

#### Learning Activities:
- Completion of drawings #14 - #18
- Students will be able insert different types of text.
- Students will be able to format text.
- Students will be able apply text to drawings.
- Students will be able to edit text
- Students will be able to use spellchecker.
- Self Check: Text and Tables (15 questions)

### Assessments

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
<th>Other Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
<tr>
<td>(one per marking period)</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>Goal:</strong> Enable students to create a basic 2D drawing in AutoCAD</td>
<td><strong>Product:</strong> Completion of drawings #14 - #18</td>
</tr>
<tr>
<td><strong>Role:</strong> Instructor/Teacher</td>
<td></td>
</tr>
<tr>
<td><strong>Audience:</strong> Students in Basic AutoCAD classes</td>
<td></td>
</tr>
<tr>
<td><strong>Situation:</strong> Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing using Texts and Tables.</td>
<td><strong>Students will be able apply text to drawings by completing drawing #15.</strong></td>
</tr>
<tr>
<td><strong>Product:</strong> Correct completion of 2D drawings (#14 - #18)</td>
<td><strong>Students will be able to edit text by completing drawing #16</strong></td>
</tr>
<tr>
<td><strong>Standards for Success:</strong> Completion of drawings #14 - #18 using departmental rubrics.</td>
<td><strong>Students will be able to use spellchecker by completing drawing #18.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Self Check: Text and Tables (15 questions)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Observation of student work</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Unit quiz</strong></td>
</tr>
</tbody>
</table>

**Suggested Resources**

- AutoCAD software
- Student worksheets
- Handouts

**New Milford Public Schools**
### Identify Desired Results

**Common Core State Standards**

- Identify the hardware requirements of a given CADD software package. **CADD.04.07**
- Export and import images/files in a variety of file formats. **CADD.02.08**
- Scale and print hard copy of output device. **CADD.05.16**

### Enduring Understandings

**Generalizations of desired understanding via essential questions**

*(Students will understand that …)*

- Students will understand how to:
  - Set up a drawing
    - Use a template file
    - Use an initial template setup
  - Use layers and linetypes
    - Be able to create new layers
    - Be able to working with layers
    - Be able to working with objects
  - Plot and Print
    - Be able to previewing a plot
    - Plot a Drawing

**Essential Questions**

Inquiry used to explore generalizations

- Explain the purpose and value of template files?
- Why do we need different types of layers?
- What is the purpose of locking a layer?
- Explain why a plot preview is useful?

### Expected Performances

**What students should know and be able to do**

**Students will know the following:**

- Explain the purpose of a template file and list settings that are commonly included
- Choose the appropriate unit of measurement for a drawing
- Determine the appropriate sheet size and drawing scale
- Be able to create new layers
- Use layers to control the appearance of objects
- Change an object’s properties
- Preview a plot
- Adjust plotter settings
- Plot an AutoCAD drawing to scale

**Students will be able to do the following:**

- Use template files
- Initial template setup
- Create new layers
- Assign colors
- Assign linetypes
- Work with layers
- Lock layers
- Preview a plot
- Plot a drawing

### Character Attribute(s)
- Cooperation
- Honesty

### Technology Competencies
- Demonstrate attitudes toward work, including acceptance of the necessity of making a living and an appreciation of the social value and dignity of work

### Develop Teaching and Learning Plan

#### Teaching Strategies:
- Teacher lectures on the proper commands needed to create a simple drawing
- Teacher uses the data projector to show the students the various commands needed to draw a simple drawing
- Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.
- Problem-Based Learning is a method that challenges students to “learn to learn” by working in groups to seek solutions to problems. The students will work in groups to complete the drawings assigned. (#19 - #22)
- Teacher will hand out drawing #22 to the students, then the teacher will check the drawing and the students can move onto the next drawing.

#### Learning Activities:
- Completion of drawings #19 - #22
- Students will be able insert different types of templates.
- Students will be able to create new layers.
- Students will be able add colors and change linetypes.
- Students will be able to preview a plot.
- Students will be able to plot a drawing.
- Self Check: Preparing to print a drawing. (12 questions)

### Assessments

#### Performance Task(s)
Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)

#### Goal:
Enable students to create a basic 2D drawing.

#### Other Evidence
Application that is functional in a classroom context to evaluate student achievement of desired results

- Students will be able insert different types of templates by completing drawing #19.
drawing in AutoCAD
Role: Instructor/Teacher
Audience: Students in Basic AutoCAD classes
Situation: Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing and plot it correctly.
Product: Correct completion of 2D drawings (#19 - #22)
Standards for Success: Completion of drawings #19-#22 using departmental rubrics.

Students will be able to create new layers by completing drawing #20.
Students will be able add colors and change linetypes by completing drawing #21.
Students will be able to preview a plot by completing drawing #22.
Students will be able to plot a drawing by plotting drawing #22.
Self Check: Preparing to print a drawing (12 questions).
Completion of drawings #19 - #22
Observation of student work
Unit quiz

Suggested Resources
- AutoCAD software
- Student worksheets
- Handouts

New Milford Public Schools

Committee Member(s): Joe Neff
Unit 15: Basic Dimensioning
Course/Subject: Architectural Drafting I
Grade Level: 9-12
# of Weeks: 2 weeks
Common Core State Standards

- Understand the commands and concepts necessary for producing drawings through traditional or computer-aided means. **CADD.05.01**
- Differentiate the various techniques for viewing objects. **CADD.05.03**

<table>
<thead>
<tr>
<th><strong>Enduring Understandings</strong></th>
<th><strong>Essential Questions</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalizations of desired understanding via essential questions (Students will understand that …)</td>
<td>Inquiry used to explore generalizations</td>
</tr>
<tr>
<td>• Students will understand how to: Use basic dimensioning</td>
<td>• How do you specify a text style for dimension text?</td>
</tr>
<tr>
<td>o Set the dimension text style</td>
<td>• Which dimension button do you use to dimension fillets, rounds, and holes? Explain when you would use each button.</td>
</tr>
<tr>
<td>o Dimension linear dimensions</td>
<td>• What does a jog on a radius dimension represent?</td>
</tr>
<tr>
<td>o Dimension round features</td>
<td></td>
</tr>
<tr>
<td>o Dimension angles</td>
<td></td>
</tr>
<tr>
<td>o Dimension arcs</td>
<td></td>
</tr>
<tr>
<td>• Use other types of dimensioning</td>
<td></td>
</tr>
</tbody>
</table>

Expected Performances

What students should know and be able to do

Students will know the following:

- How to set up a text style for dimensions
- How to produce linear dimensions using dimensioning commands and shortcuts
- How to dimension round shapes, curves, and holes
- How to dimension angles
- How to determine the need for and use baseline and ordinate dimensioning when appropriate

Students will be able to do the following:

- Set the dimension text style
- Create linear dimensions
- Dimension round features
- Dimension angles
- Dimension arcs
- Use other types of dimensioning

Character Attribute(s)

- Integrity
- respect

Technology Competencies

- Explore career and postsecondary educational opportunities through performance-based learning experiences
- Manage data and utilize problem-solving skills to make reasoned decisions about employment, societal, political and economic issues

Develop Teaching and Learning Plan

Teaching Strategies: | Learning Activities:
• Teacher lectures on the proper commands needed to create a simple drawing  
• Teacher uses the data projector to show the students the various commands needed to draw a simple drawing  
• Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.  
• Problem-Based Learning is a method that challenges students to “learn to learn” by working in groups to seek solutions to problems. The students will work in groups to complete the drawings assigned. (#20 - #24)  
Teacher will hand out drawing #20 to the students, then the teacher will check the drawing and the students can move onto the next drawing.  

<table>
<thead>
<tr>
<th>Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performance Task(s)</strong></td>
</tr>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
</tr>
</tbody>
</table>
| **Goal:** Enable students to create a basic 2D drawing in AutoCAD  
**Role:** Instructor/Teacher  
**Audience:** Students in Basic AutoCAD classes  
**Situation:** Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing using basic dimensioning. | **Completion of drawings #20 - #24**  
**Students will be able to dimension text by completing drawing #20.**  
**Students will be able to create linear dimensions by completing drawing #21.**  
**Students will be able to dimension round features by completing drawing #22.**  
**Students will be able to dimension angles by completing drawing #23.**  
**Students will be able to dimension arcs by completing drawing #24.**  
**Self Check: Basic Dimensioning. (15 questions)**  
**Observation of student work** |
Product: Correct completion of 2D drawings (#20 - #24)
Standards for Success: Completion of drawings #20-#24 using departmental rubrics.

<table>
<thead>
<tr>
<th>Suggested Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>• AutoCAD software</td>
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</tr>
<tr>
<td>• Handouts</td>
</tr>
</tbody>
</table>

New Milford Public Schools

Committee Member(s): Joe Neff
Unit 16: Drawing – Floor Plan Win/Door
Course/Subject: Architectural Drafting I
Grade Level: 9-12
# of Weeks: 2 weeks

Identify Desired Results

Common Core State Standards

- Identify various symbols to interpret and read technical drawings. **CADD.09**
- Demonstrate knowledge of basic arithmetic operations such as: addition, subtraction, multiplication, and division. **EKS.03.02**
<table>
<thead>
<tr>
<th>Enduring Understandings</th>
<th>Essential Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalizations of desired understanding via essential questions (Students will understand that …)</td>
<td>Inquiry used to explore generalizations</td>
</tr>
</tbody>
</table>

**Students will understand how to:**
- Insert groups (win/door) into a drawing
  - Be able to create a group
  - Be able to change a group property
  - Be able to tags win/doors
- Insert blocks (win/door) into a drawing
  - Be able to work with Blocks
  - Be able to use the Design Center and Tools Paletts
  - Insert blocks into a Drawing File
- Use the Symbol Library
- Be able to create a Library
- Be able to TAG all win/doors
- Be able to create a win/door schedule
- Plot the drawing

**Expected Performances**
What students should know and be able to do

**Students will know the following:**
- Be able to create a library of symbols and details for win/door plan
- Be able to insert symbols and details using a symbol library
- Insert layers, dimension styles, and other content from drawings using Design Center
- Tag all windows & doors.
- Create a window & door schedule
- Plot their drawing

**Students will be able to do the following:**
- Create a library using win/doors
- Use the symbol library
- Insert Blocks
- Tag all windows & doors
- Create a window & door schedule
- Plot their drawing

**Character Attribute(s)**
- Perseverance
- Responsibility

**Technology Competencies**
- Embrace work and career as part of their future
• Explore a range of careers and acquire specific knowledge or experience in the field of CADD

### Develop Teaching and Learning Plan

<table>
<thead>
<tr>
<th>Teaching Strategies:</th>
<th>Learning Activities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher lectures on the proper commands needed to create their Win/Door plan</td>
<td>Completion of drawing Win/Door</td>
</tr>
<tr>
<td>Teacher uses the data projector to show the students the various commands needed to draw a simple drawing</td>
<td>Using the Symbol Library, insert blocks into the drawing.</td>
</tr>
<tr>
<td>Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawing Win/Door.</td>
<td>Using Design Center, insert various symbols (win/doors) into the drawing.</td>
</tr>
<tr>
<td>Problem-Based Learning is a method that challenges students to “learn to learn” by working in groups to seek solutions to problems. The students will work in groups to complete the drawing Win/Door</td>
<td>Students will be able to create their own symbol library.</td>
</tr>
<tr>
<td>Students will use their Win/Door drawing to create the same drawing using AutoCAD. When the drawing is finished, the teacher will check the drawing and then the students can move onto the next drawing.</td>
<td>Tag all windows &amp; doors</td>
</tr>
<tr>
<td></td>
<td>Create a window &amp; door schedule.</td>
</tr>
<tr>
<td></td>
<td>Self Check: Groups and Details. (12 questions)</td>
</tr>
</tbody>
</table>

### Assessments

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
<th>Other Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
</tbody>
</table>

Goal: Enable students to create a basic 2D drawing in AutoCAD (Win/Door Plan)
Role: Instructor/Teacher
Audience: Students in Architectural Drafting I classes

• Completion of drawing Win/Door
• Using the Symbol Library, insert blocks into the drawing by completing drawing Win/Door.
• Using Design Center, insert various symbols into the drawing by completing drawing.
• Students will be able to create their
Situation: Students will use their drawings from first semester to complete the Win/Door to show the teacher they understand the basic command needed to complete the drawing using Groups and Details.  

Product: Correct completion of 2D drawing Win/Door  

Standards for Success: Completion of drawing Win/Door using departmental rubrics.  

- own symbol library by completing their window & door drawing  
- Create a window & door schedule..  
- Self Check: Groups and Details. (12 questions)  
- Observation of student work  
- Unit quiz

### Suggested Resources

- AutoCAD software  
- Student worksheets and hand draw drawing from first semester  
- Handouts

### New Milford Public Schools

Committee Member(s): Joe Neff  
Unit 17: Drawing a Furniture Plan  
Course/Subject: Architectural Drafting I  
Grade Level: 9-12  
# of Weeks: 2 weeks

### Identify Desired Results

Common Core State Standards  
- Demonstrate flexibility and willingness to learn new knowledge and skills.  
  EKS.08.02
• Construct charts/tables/graphs from functions and data. **EKS.03.06**

<table>
<thead>
<tr>
<th>Enduring Understandings</th>
<th>Essential Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalizations of desired understanding via essential questions</td>
<td>Inquiry used to explore generalizations</td>
</tr>
<tr>
<td>(Students will understand that …)</td>
<td></td>
</tr>
<tr>
<td>Students will understand how to:</td>
<td>• What is the advantage of having a furniture plan in your set of house plans?</td>
</tr>
<tr>
<td>• Draw an Furniture Plan using AutoCAD software</td>
<td>• What steps are needed to be able to tag your furniture?</td>
</tr>
<tr>
<td>o Set up a Furniture Plan</td>
<td>• Explain how to fill out your furniture schedule?</td>
</tr>
<tr>
<td>o Insert Furniture</td>
<td></td>
</tr>
<tr>
<td>o Be able Create a Furniture Tags</td>
<td></td>
</tr>
<tr>
<td>o Be able to load Furniture Schedule</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expected Performances</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What students should know and be able to do</td>
<td></td>
</tr>
<tr>
<td>Students will know the following:</td>
<td></td>
</tr>
<tr>
<td>• To be able to set up a drawing Furniture Plan</td>
<td></td>
</tr>
<tr>
<td>• To be able to create furniture</td>
<td></td>
</tr>
<tr>
<td>• To be able to use Design center to load furniture</td>
<td></td>
</tr>
<tr>
<td>• To be able to tag furniture</td>
<td></td>
</tr>
<tr>
<td>• To be able to load furniture schedule</td>
<td></td>
</tr>
<tr>
<td>• To be able to plot the drawing</td>
<td></td>
</tr>
<tr>
<td>Students will be able to do the following:</td>
<td></td>
</tr>
<tr>
<td>• Draw a Furniture Plan</td>
<td></td>
</tr>
<tr>
<td>• Properly tag all furniture</td>
<td></td>
</tr>
<tr>
<td>• Create a furniture schedule.</td>
<td></td>
</tr>
<tr>
<td>• Create a basic 2D drawing using their hand draw furniture planl</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Character Attribute(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Courage</td>
<td></td>
</tr>
<tr>
<td>• Compassion</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology Competencies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Students will demonstrate technical knowledge and skills, including planning, designing, organizing, coordinating, constructing and maintaining in the construction technologies and design</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Develop Teaching and Learning Plan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Strategies:</td>
<td>Learning Activities:</td>
</tr>
<tr>
<td>• Teacher lectures on the proper commands needed to create a furniture plan.</td>
<td>• Create a furniture plan using the computer.</td>
</tr>
<tr>
<td>• Teacher uses the data projector to show the students the various commands needed to draw a</td>
<td>• Be able to create furniture using blocks.</td>
</tr>
<tr>
<td></td>
<td>• Tag all furniture</td>
</tr>
<tr>
<td></td>
<td>• Create a furniture schedule.</td>
</tr>
</tbody>
</table>
Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their furniture plan.

Problem-Based Learning is a method that challenges students to “learn to learn” by working in groups to seek solutions to problems. The students will use their first semester drawings to complete their furniture plan using the computer.

<table>
<thead>
<tr>
<th>Performance Task(s)</th>
<th>Other Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</td>
<td>Application that is functional in a classroom context to evaluate student achievement of desired results</td>
</tr>
</tbody>
</table>

Goal: Enable students to create a furniture plan using the computer and AutoCAD
Role: Instructor/Teacher
Audience: Students in Architectural Drafting I classes
Situation: Students are to complete a furniture plan using the computer and the furniture plan they did first semester
Product: Correct completion of 2D furniture plan.
Standards for Success: Completion of furniture plan using departmental rubrics.

- Set up a furniture plan using their plan from first semester.
- Create and block tags for all furniture.
- Create furniture using Design Center
- Create a furniture schedule
- Completion of furniture plan.
- Observation of student work.
- Unit quiz

Suggested Resources
- AutoCAD software
New Milford Public Schools

Committee Member(s): Joe Neff
Unit 18: Drawing an Electrical Plan

Course/Subject: Architectural Drafting I
Grade Level: 9-12
# of Weeks: 2 weeks

Identify Desired Results

• Employ leadership skills to accomplish organizational goals and objectives.
  EKS.07
- Identify and demonstrate positive work behaviors and personal qualities needed to be employable. **EKS.08**

<table>
<thead>
<tr>
<th>Enduring Understandings</th>
<th>Essential Questions</th>
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<tbody>
<tr>
<td>Generalizations of desired understanding via essential questions (Students will understand that …)</td>
<td>Inquiry used to explore generalizations</td>
</tr>
<tr>
<td>• Students will understand how to: Draw Electrical Plan using the AutoCAD software o Create an electrical plan o Insert electrical symbols from Design Center o Set up Blocks for electrical symbols o Use Spline command o Change the size of your symbols o Change the linetype o Change the color</td>
<td>• Explain the steps used to insert electrical symbols into your drawing. • What is a spline? • How do you change the color of an object? • How do you create electrical blocks? • Describe the steps needed to change a linetype.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expected Performances</th>
<th>What students should know and be able to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will know the following:</td>
<td></td>
</tr>
<tr>
<td>• Be able to draw an Electrical Plan</td>
<td></td>
</tr>
<tr>
<td>• Be able to insert electrical symbols</td>
<td></td>
</tr>
<tr>
<td>• Use Design Center to upload electrical symbols</td>
<td></td>
</tr>
<tr>
<td>• Change the linetype</td>
<td></td>
</tr>
<tr>
<td>• Change the color of objects</td>
<td></td>
</tr>
<tr>
<td>• Change the sizes of objects</td>
<td></td>
</tr>
<tr>
<td>Students will be able to do the following:</td>
<td></td>
</tr>
<tr>
<td>• Draw an electrical plan</td>
<td></td>
</tr>
<tr>
<td>• Insert electrical symbols using Design Center</td>
<td></td>
</tr>
<tr>
<td>• Change a linetype</td>
<td></td>
</tr>
<tr>
<td>• Change the color of an object</td>
<td></td>
</tr>
<tr>
<td>• Change the size of objects</td>
<td></td>
</tr>
<tr>
<td>• Be able to plot the drawing</td>
<td></td>
</tr>
</tbody>
</table>

| Character Attribute(s) | |
|------------------------| |
| • Cooperation | |
| • Integrity | |

| Technology Competencies | |
|-------------------------| |
| • Explore career and postsecondary educational opportunities through performance-based learning experiences | |
| • Respond constructively to constructive criticism | |

| Develop Teaching and Learning Plan | |
|------------------------------------| |
| Teaching Strategies: | Learning Activities: |
| • Teacher lectures on the proper | • Create an Electrical Plan |
commands needed to create an Electrical Plan

- Teacher uses the data projector to show the students the various commands needed to draw an Electrical Plan
- Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.
- Students will complete their electrical plan using their electrical plan from first semester.

| Assessments |
|--------------|----------------|
| Performance Task(s) | Other Evidence |
| Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period) | Application that is functional in a classroom context to evaluate student achievement of desired results |
| Goal: Enable students to create an electrical plan in 2D using AutoCAD | Create an Electrical plan using the computer and their drawing from first semester. |
| Role: Instructor/Teacher | Create electrical Blocks using Design Center. |
| Audience: Students in Architectural Drafting I classes | Completion of an Electrical Plan. |
| Situation: Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing | Unit quiz |
| Product: Correct completion of Electrical Plan matching the one they did during first semester. | Standards for Success: Completion of drawings using departmental rubrics. |

Suggested Resources

- AutoCAD software
• Student worksheets and drawing from first semester
• Handouts

New Milford Public Schools

<table>
<thead>
<tr>
<th>Committee Member(s): Joe Neff</th>
<th>Course/Subject: Architectural Drafting I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 19: Drawing a Foundation Plan</td>
<td>Grade Level: 9-12</td>
</tr>
<tr>
<td></td>
<td># of Weeks: 2 weeks</td>
</tr>
</tbody>
</table>

Identify Desired Results

Common Core State Standards

• Create effective working drawings, and presentation drawings. **Arch.07.02**
• Revise a design and update finished drawings appropriately. **CADD.02.10**
<table>
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<td>Inquiry used to explore generalizations</td>
</tr>
</tbody>
</table>
| - Students will understand how to: Draw Foundation Plan using the AutoCAD software  
  - Create a Foundation plan  
  - Create foundation walls and footers  
  - Determine the location of the girder  
  - Locate lally columns  
  - Locations of concrete slabs  
  - Label features properly using a spline. | - Why do we need to draw a foundation plan?  
- What is a spline?  
- What is the difference between a footer and a foundation wall?  
- Explain how to locate the position of the girder/lally columns?  
- Describe the steps needed to label your drawing. |

<table>
<thead>
<tr>
<th>Expected Performances</th>
<th>What students should know and be able to do</th>
</tr>
</thead>
</table>

Students will know the following:
- Be able to draw a Foundation Plan  
- Be able to draw footers/foundation walls.  
- Use Design Center to upload symbols.  
- Determine the location of girder and lally columns.  
- Locate the position of concrete slabs.  
- Be able to use the spline command

Students will be able to do the following:
- Draw a foundation plan  
- Draw footers and foundation walls.  
- Upload foundation symbols  
- Locate girder and lally columns  
- Use the spline command  
- Be able to plot the drawing

<table>
<thead>
<tr>
<th>Character Attribute(s)</th>
</tr>
</thead>
</table>
| - Courage  
- Responsibility |

<table>
<thead>
<tr>
<th>Technology Competencies</th>
</tr>
</thead>
</table>
| - Manage the use of technology in the classroom for learning.  
- Use technologies to support student centered learning strategies for all students |

### Develop Teaching and Learning Plan

<table>
<thead>
<tr>
<th>Teaching Strategies:</th>
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</table>
| - Teacher lectures on the proper commands needed to create a Foundation Plan  
- Teacher uses the data projector to show the students the various commands needed to draw a Foundation Plan | - Create a Foundation Plan  
- Proper location of footers and foundation walls  
- Locate girder and lally columns  
- Upload foundation symbols  
- Use the spline command |
**Foundation Plan**
- Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.
- Students will complete their foundation plan using their foundation plan from first semester.

<table>
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<td><strong>Other Evidence</strong></td>
</tr>
</tbody>
</table>

**Goal:** Enable students to create a foundation plan in 2D using AutoCAD

**Role:** Instructor/Teacher

**Audience:** Students in Architectural Drafting I classes

**Situation:** Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing

**Product:** Correct completion of Foundation Plan matching the one they did during first semester.

**Standards for Success:** Completion of drawings using departmental rubrics.

- Create a Foundation plan using the computer and their drawing from first semester.
- Create foundation Blocks using Design Center.
- Completion of an Foundation Plan.
- Unit quiz

**Suggested Resources**
- AutoCAD software
- Student worksheets and drawing from first semester
- Handouts
New Milford Public Schools

Committee Member(s): Joe Neff
Unit 20: Drawing a Plot Plan

Course/Subject: Architectural Drafting I
Grade Level: 9-12
# of Weeks: 2 weeks

Identify Desired Results

Common Core State Standards

- Utilize CADD software to produce technical drawings and architectural proposals. Arch.06.03
- Employ appropriate media to communicate concepts and designs. Arch.07

Enduring Understandings
Generalizations of desired understanding via essential questions
(Students will understand that …)

Essential Questions
Inquiry used to explore generalizations
• Students will understand how to:
  Draw a Plot Plan using the AutoCAD software
  Draw the size of the house
  Determine setbacks depending upon size of property
  Locate all structures
  Show driveways and walkways
  Appropriate surface materials
  Label street
  Location of trees, shrubs, and other permanent structures
  Develop a planting key.

• Why do we need to draw a plot plan?
• Why do we have different setback measurements? Explain.
• How do we determine the size of our plot?
• Explain how to locate the position of driveways, walkways and sheds?
• Describe the steps needed to label your drawing.
• What is the importance of a planting key?

---

**Expected Performances**
What students should know and be able to do

Students will know the following:

• Be able to draw a plot Plan
• Be able to draw the size of your house (hatched).
• Use Design Center to upload symbols.
• Determine the location of your house and the different setbacks
• Locate all structures from the property line.
• Be able to label structures
• Develop a planting key

Students will be able to do the following:

• Draw a Plot plan
• Draw the size of your house (hatched).
• Upload Design Center symbols for a plot plan.
• Locate all structures.
• Locate location of driveways and walkways.
• Develop a planting key.
• Label all structures
• Be able to plot the drawing

---

**Character Attribute(s)**

• Cooperation
• Honesty

---

**Technology Competencies**

• Manage the use of technology in the classroom for learning.
• Apply problem solving strategies to issues involving teaching and learning with technology.

---

**Develop Teaching and Learning Plan**

**Teaching Strategies:**

• Teacher lectures on the proper commands needed to create a Plot Plan
• Teacher uses the data projector to show the students the various

**Learning Activities:**

• Create a Plot Plan
• Proper location of house, permanent structures and other features
• Locate driveways, walkways and
commands needed to draw a Plot Plan
- Teacher uses active learning to help the students complete their assignments. Using the computer and by listening to the lecture, students begin work on completing their drawings.
- Students will complete their Plot Plan using their foundation plan from first semester.

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<tr>
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<td><strong>Authentic application to evaluate student achievement of desired results designed according to GRASPS (one per marking period)</strong></td>
</tr>
</tbody>
</table>

Goal: Enable students to create a plot plan in 2D using AutoCAD
Role: Instructor/Teacher
Audience: Students in Architectural Drafting I classes
Situation: Students are given drawings to complete that show the teacher they understand the basic command needed to complete the drawing
Product: Correct completion of Plot Plan matching the one they did during first semester.
Standards for Success: Completion of drawings using departmental rubrics.

- Create a Plot plan using the computer and their drawing from first semester.
- Create Plot plan Blocks using Design Center.
- Completion of a Plot Plan.
- Unit quiz

<table>
<thead>
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<th>Suggested Resources</th>
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</table>
- AutoCAD software
- Student worksheets and drawing from first semester
- Handouts