LESSON PLAN 12

**DYSART UNIFIED - CTE 2013-2014**

COURSE: **Architectural Design Drafting**

PROGRAM: **Signature Architecture Program**

TEACHER(S): **Scott Thomas, M.Ed., MCCTE, CD**

CURRICULUM UNIT/TITLE: Introduction to Architectural Design Drafting

LESSON TITLE: Legal Descriptions and Plot Plan Requirements (Applied Math)

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| **STANDARDS AND OBJECTIVES** | |
| CTE PROGRAM STANDARD - MEASUREMENT CRITERIA | 7.2a Interpret legal land descriptions and draft finished site plan |
| COMMON CORE STANDARDS | 4. CCSS.Math.Practice.MP4  Model with mathematics.  Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts, and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.  5. CCSS.Math.Practice.MP5  Use appropriate tools strategically.  Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. |
| OBJECTIVES | Lesson 12 - Legal Descriptions and Plot Plan Requirements (Applied Math)  Time Estimate: to be determined by student needs.  Lesson Objectives  • Identify (in Writing) places where legal descriptions are filed.  • Name the basic forms of legal property descriptions: metes and bounds, rectangular system, and lot and block. (Applied Math)  • Describe (in Writing) the metes and bounds system, know the typical units used, and understand how the point-of-beginning is used. (Applied Math)  • Explain (in Writing) the basic divisions of the rectangular system, including its relationship to base lines and meridians. (Applied Math)  • Define (in Writing) townships and sections. (Applied Math)  • Explain (in Writing) the lot and block system. (Applied Math)  • Enumerate the elements required for a plat and plot plan. (Applied Math)  • Describe (in Writing) how contour lines are used to graphically show the topography of a site.  • State (in Writing) how grading plans are used to indicate existing and proposed topography.  • Contrast (in Writing) how public and private sewage systems are drafted.  • List items needed to complete a site analysis plan.  • Use a checklist to determine the completeness of a subdivision plan.  • Define (in Writing) a planned unit development (PUD). |
| CHECKLIST OF ESSENTIAL CONTENT -IDEAS TO BE COVERED: (Lesson summary) | * Identify (in Writing) places where legal descriptions are filed.   • Name the basic forms of legal property descriptions: metes and bounds, rectangular system, and lot and block. (Applied Math)  • Describe (in Writing) the metes and bounds system, know the typical units used, and understand how the point-of-beginning is used. (Applied Math)  • Explain (in Writing) the basic divisions of the rectangular system, including its relationship to base lines and meridians. (Applied Math)  • Define (in Writing) townships and sections. (Applied Math)  • Explain (in Writing) the lot and block system. (Applied Math)  • Enumerate the elements required for a plat and plot plan. (Applied Math)  • Describe (in Writing) how contour lines are used to graphically show the topography of a site.  • State (in Writing) how grading plans are used to indicate existing and proposed topography.  • Contrast (in Writing) how public and private sewage systems are drafted.  • List items needed to complete a site analysis plan.  • Use a checklist to determine the completeness of a subdivision plan.  • Define (in Writing) a planned unit development (PUD). |

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| **LESSON CONTENT** | | |
| BELL WORK | None… | |
| KEY VOCABULARY | Site plan, utility lines, grade lines, existing grade lines, easements, public utilities. | |
| TEACHER ACTIONS/ACTIVITIES:  (include instructions with all resources) | | STUDENT ACTIONS/ACTIVITIES:  (include instructions with all resources) | |
| Lecture, Demonstration, Small Group Instruction, Individual Instruction  **Architecture: Residential Drafting and Design** by  Wm. Scott Thomas, M.Ed., MCCTE, CD, 11th Edition, Goodheart-Willcox Publisher, Inc. | | Sketches, Working Drawings, Hands-On Projects related to subject matter  **Architecture: Residential Drafting and Design** by  Wm. Scott Thomas, M.Ed., MCCTE, CD, 11th Edition, Goodheart-Willcox Publisher, Inc. | |

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| ALIGNED COMMON CORE ACTIVITY  (include instructions with all resources) | Model with mathematics. **Activities will vary in scope and complexity depending upon the needs of individual students…**  Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts, and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose. |
| CHECK FOR UNDERSTANDING - ASSESSMENT | Sketches, working drawings, tests, and quizzes  **“Assignment 1 / Project 1” to be used for Lesson Plans 2–30.… This is a long-term architectural assignment/assessment.** |
| CLOSURE ACTIVITY | Detailed Review of Lesson Materials and Subject Matter |

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| **LESSON RESOURCES** | |
| BOOKS/TEXTS  SUPPLEMENTALS  RESOURCES | **Architecture: Residential Drafting and Design** by Wm. Scott Thomas, M.Ed., MCCTE, CD, 11th Edition, Goodheart-Willcox Publisher, Inc. |
| HANDOUTS  ACTIVITIES  INSTRUCTIONS  RUBRICS | * Architectural sketches per subject matter * CAD design drawings * Manual technical sketching * AIA / IRC / UBC * Site plan examples * Plot plan examples * Topographic maps |
| SUPPLIES NEEDED | CAD stations, paper, fountain pen/pencil |
| NOTES | Assignments will vary in scope and complexity depending upon the needs of individual students.  The length of this lesson can and will vary depending upon student needs. |