

A Winning Skill Set in the Landscape Industry

Subject Area: English and AVID

Grade Level: 7/8

Date: 8/4/14

Abstract Lesson Overview:

This lesson introduces students to a side of the construction industry that is vital, yet often overlooked. Throughout the lesson, students will learn valuable skills that are not only used in the construction industry, but within the business world as a whole. This lesson will put the student on the side of the landscape engineer and business owner. Further, this lesson teaches and reinforces a range of skills from using technology to advertise, organize and categorize to making, coloring, and stamping concrete. They will also reinforce soft communication skills, written communication skills, and gain the ability to read blue prints and follow construction specifications.

Instructional Materials Needed:

Technology and internet programs

- Prezi (Used only by me in introducing lesson)
- Microsoft Excel
- Microsoft Word
- Wix

Tangible Resources

- Ready Mix concrete
- Concrete coloring
- Concrete stamp
- Lego manipulative
- Construction scaled board

Instructional Materials Provided

- Ready Mix concrete
- Concrete coloring
- Concrete stamp
- Lego manipulative
- Construction scaled board
- Microsoft Excel
- Microsoft Word
- Wix

Expected Student Outcomes:

- Students will learn how to use Microsoft excel spreadsheets to make an inventory sheet
- Students will learn how to use Microsoft word to write a segment for their webpage. This includes use of appropriate diction, active voice, peer editing, and revision in developing the content on their webpage
- Students will learn how to read construction blue prints and specs
- Students will reinforce their communication skills by presenting their project both in class and at the BIA banquet showcase.
- Students will learn how to make, color, and stamp concrete
- Students will learn advertising techniques and learn how to build a webpage using Wix
- Students will learn how to be contributing members in a group project
- Students will learn how to properly care for tools and instruments and follow safety measures during lab
- Students will learn how to compute cost of a construction project and make appropriate and accurate bids

Student Deliverables

- Cornell Note taking paper
- Student presentation rubrics
- Concrete creation instructions checklist
- Blue print and Specs worksheet
- Webpage creation steps handout
- Website page criteria handout
- Introduction to concrete literature
- Project Bid worksheet

- Construction Unit Quiz

Duration of Lesson:

This lesson is designed to take between six and eight days.

Culminating Activity and/or Assessment:

For the culminating activity, students will be given the option of presenting their project in class or at the BIA annual banquet. Students will be charged with presenting their outdoor living space design and explaining the various activities that lead to its successful completion. Further, throughout the lesson, students will be tasked with completing several "Check for understanding" activities to demonstrate their knowledge. The criteria upon which my students will be graded is as follows: Successful completion of concrete design and coloring, +75% accuracy on bidding handout, +75% grade on "Analyzing Specs" handout, degree of participation in group project, successful completion of webpage and individually assigned page, and successful creation of inventory sheet.

Enrichment Suggestions:

This lesson can be extended in several ways including:

Media

1. Before starting the unit, show the students one or more episodes of "Yard Crashers," or "Turf Wars."
2. Assign groups the task of creating additional pages on their website.
3. Assign each group the task of using Microsoft Excel to create a procedures list for making concrete safely. This list can include the safety tools, appropriate attire, and recommended behaviors when working in a lab setting.
4. Students can use the program "Sketch Up" to design a "3D" computer generated model before making a real to life scale model.

Task

1. Assign fewer students in each group, thus increasing the work load of each group member.
2. Provide additional practice and give additional opportunities for students to learn how to bid projects and how to read specifications.

Guest Speakers and real world experience

1. Bring in guest speakers from the landscaping industry.
2. Provide students with the opportunity to work as interns at landscape design companies.

Additional Resources

- wix.com
- www.diynetwork.com/yard-crashers/show
- www.diynetwork.com/turf-war/show/
- www.sketchup.com

CTE Pathway Standards

Building, Trade, and construction industry standards
Communication Standards

2.3 Written and Oral English Language Conventions

Specific applications of English Language Conventions standards (grades nine and ten):

(1.4) Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization.

1.3) Organize information to achieve particular purposes by matching the message, vocabulary, voice modulation, expression, and tone to the audience and purpose.

1.4) Prepare a speech outline based upon a chosen pattern of organization, which generally includes an introduction; transitions, previews, and summaries; a logically developed body; and an effective conclusion.

(1.5) Use precise language, action verbs, sensory details, appropriate and colorful modifiers, and the active rather than the passive voice in ways that enliven oral presentations.

(1.6) Use appropriate grammar, word choice, enunciation, and pace during formal presentations.

9.0 Leadership and Teamwork

Students understand effective leadership styles, key concepts of group dynamics, team and individual decision making, the benefits of workforce diversity, and conflict resolution:

9.1 Understand the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace settings.

9.2 Understand the ways in which pre-professional associations, such as SkillsUSA, and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.

9.3 Understand how to organize and structure work individually and in teams for effective performance and the attainment of goals.

9.4 Know multiple approaches to conflict resolution and their appropriateness for a variety of situations in the workplace.

9.5 Understand how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.

10.0 Technical Knowledge and Skills

Students understand the essential knowledge and skills common to all pathways in the Building Trades and Construction sector:

10.1 Understand construction processes and systems and their importance in construction technology.

10.3 Use, store, and allocate materials efficiently, and use space efficiently.

10.4 Understand the planning and design, construction, and servicing of structures and electromechanical systems in relation to construction activities.

10.6 Understand universal graphic conventions and symbols and technical manuals and specifications.

10.7 Understand the attributes of good design.

10.8 Understand the role of the construction industries sector in the California economy.

10.9 Understand the need to participate in sector-related professional improvement activities, SkillsUSA, other career technical education leadership and skill associations, and related career pathway specializations.

11.0 Demonstration and Application

Students demonstrate and apply the concepts contained in the foundation and pathway standards.

B. Engineering and Heavy Construction Pathway

The Engineering and Heavy Construction Pathway provides learning opportunities for students interested in preparing for careers in engineering and heavy industrial construction (roads, highways, subdivisions). The pathway includes instruction in the way in which these structures are built.

B1.0 Students understand and apply measurement systems in the planning and layout process used in the engineering and heavy construction industry:

B1.1 Identify design solutions to engineering and heavy construction problems.

B1.2 Calculate the required materials, such as soils, aggregate, asphalt, concrete, and pipe, for engineering and heavy construction applications.

B1.3 Understand the conversion of scaled blueprint measurements to full-size, on-site parameters.

B2.1 Use the common hand tools of the trade, such as rebar cutters, metal stud cutters/pliers, concrete floats/fresnoes, sheet metal cutters/pliers, saws, hammers, chisels, and wrenches, safely and appropriately.

B2.2 Maintain and care for common hand tools.

B3.0 Students understand the safe and appropriate use of portable power tools that are common to the engineering and heavy construction industry and are appropriate to the individual student's level:

B3.4 Understand the use of heavy equipment in engineering and heavy construction.

B4.1 Know how to read, understand, and construct projects accurately from commercial specifications and blueprints, ensuring compliance with state and local building codes.

B4.2 Understand how to estimate the cost of supplies and materials for an engineering and heavy construction project.

B5.0 Students understand the value and necessity of practicing occupational safety in the engineering and heavy construction laboratory or shop:

B5.4 Understand the importance of safety and safe work practices (e.g., fire safety, protective clothing) in the welding phases of engineering and heavy construction and the safe operation of heavy equipment (e.g., earth movers, graders, bulldozers).

B6.0 Students understand the variety of building phases, systems, and techniques used in engineering and heavy construction:

B6.2 Know the appropriate use of tools, processes, and materials in architectural design, project development, and engineering and heavy construction (e.g., structural, electrical, mechanical, and finish phases).

B8.0 Students understand career preparation and how it applies across all standards for students planning to enter and advance successfully in the engineering and heavy construction industry:

B8.1 Understand the careers that are available in the heavy construction industry, including careers in concrete masonry, ironworks, sheet metal sales and installation, plumbing, and construction technology.

Lesson Plan Relevance to Externship

During my externship at Winsol Groundworks I worked within many areas of operation. I spent many of my early hours working with media. I was tasked with critiquing the existing company website, making needed grammar and usage revisions, and helping to create a privacy policy statement. On the contrary, I also spent many hours doing field work. While working in the city of Lincoln, I assisted Nick Winn in the preconstruction activity of spray painting outlines in the dirt where cement and stone paved structures were to be erected. This entailed a careful adherence to the specifications laid out by *Standard Pacific Homes*. Further, I worked with Nick in the showroom counting inventory to determine product supply and ordering needs. Finally, I worked on the Woodside Church project. This project called for the removing of raised and unsafe cement within a high traffic walking path leading to the parking lot. Later, the space we demolished was filled with new cement that leveled the previously uneven pavement and created a safe walking path. Finally, I went to job sites to take measurements for bidding. Moreover, within my lesson, I provide opportunities for my students to gain some of the same skills that I used while working at Winsol Groundworks. Further, I gained experience working with the company website, assessing its effectiveness in advertising the company's offerings and editing and revising the websites content. My students will be making their own webpage, and adding content to each page, making sure to revise and edit their content. My students will also make, color, and design concrete using a method of stamping. They will eventually place mini structures on their concrete grid using spec's. Further, my students will learn how to make bids based on pre-established criteria. Finally, they will use Microsoft Excel to make inventory spreadsheets. My goal is to introduce my students to the skills and talents that are essential in the landscape design industry and broaden their knowledge of the construction industry and its viability as a career path.

Description of Activities

Activity Day One: Introduction to landscape and design

Ask students, what is landscaping and how does it improve a house aesthetically and functionally? This will lead to a discussion about landscaping. I will lead students to the discovery of how landscaping solves both the problem of functionality and beautification. At the close of our discussion, I will show students an episode of the show yard crashers. We will then debrief and discuss how the use of landscaping served to benefit the home owners.

Activity Day Two: The Landscape Design unit up close.

Show students a Prezi presentation featuring each aspect of what the classroom project will look like from start to finish. The first point will show a computer icon. Upon clicking on this icon, students will be lead to a video which explains how they will create a webpage showcasing their business. Next, students will be lead to a brick icon. Upon clicking on this icon students will view a video which features the creation of concrete. Finally, show a video of explanation as to how to use specs to inform how to build the model outdoor space. Bring in a model for students to view.

Activity Day Three: Making, coloring, and stamping concrete

Students will be assigned a group consisting of two other students. Students will report to their designated station and read the instructions for how to properly mix concrete, paying special attention to water/ready mix ratios. Students will put on aprons, goggles, and gloves. Students will discuss the steps and begin mixing concrete. Once concrete and coloring mix is thoroughly mixed, students will carefully pour contents into a tray. Once in tray, students will then stamp their concrete slab.

Activity Day Four: Understanding Blueprints and Specifications

I will ask, how contractors know how big, small, high, low, wide, or narrow to make a building. How would a contractor know how many rooms or what size rooms a home buyer wants for their custom home? I will then engage in a discussion on specifications and blue prints. Next, students will take notes on construction specifications and blue prints. I will then show an episode of "Yard Crashers" where construction workers use specifications to build an outdoor space. From this point, I will model using a set of blue prints to follow the specs as I create an outdoor space using manipulative. Students will receive a handout and

manipulative. They will practice placing the structures in the appropriate place based on their specifications.

Activity Day Five: Reading Blueprints and spec's

Each group will be assigned a set of blueprints. Each student within the group will be assigned the task of reading their specific spec document and placing structures on the grid in the correct location. Groups will be assigned a grade based on finishing the structure within the allotted time. (At this point the students should have completed their outdoor living space)

Activity Day 6-7: Creating a webpage (advertising)

Students will take notes, as I demonstrate how to use WIX to generate a webpage. After creating the first webpage, students will collaborate with me on creating a second webpage. Next, each group will decide on which type of company page in which to focus. Next, each student will be assigned a specific page on which to develop within the website. The students will then use Microsoft word to write the content that will be featured on their page. Each student will be assigned a user name and password for their WIX account. The website will include a home page, products page, and about us page.

Activity Day 8: Student Evaluations

Student Deliverables	1 Exceeds expectations	2 Meets Expectations	3 Approaches Expectations	4 Fails to Meet expectations
Concrete Coloring	Successfully followed each step in progression and mix, colored, and stamp concrete			Group failed to complete mix, color, or stamp concrete.
Bid Handout	Students achieved a score of 90% or better	Student achieved a score of 75% or better	Student achieved a score of 60%	Student achieved a score below 60%
Spec's Handout	Students achieved a score of 90%	Student achieved a score of 75%	Student achieved a score of 60%	Student achieved a score below 60%
Webpage	Student successfully completed their page on the site			Student failed to complete their portion of the webpage
Inventory Sheet	Student successfully created an inventory sheet			Student failed to create the inventory sheet