Washington Township Public Schools
COURSE OF STUDY – CURRICULUM GUIDE

Course: Construction Technology II

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Description: Construction Technology 2 gives the student a chance to further explore the opportunities in the construction fields. Students will learn through lectures, demonstrations, hands-on assignments, design and research and development, problem solving, and using construction techniques and principles. This course is designed to introduce students to the various trades including Roofing Applications, Exterior Enclosure Treatments, Window and Door Installations, Finish Carpentry, and Job Estimating. During the year, students will take on the role of fabricator, lead carpenter, and job foreman in order to learn how to apply their skills to the construction process. Residential construction trades are demonstrated through the construction of various "in-house" projects such as a storage shed. Workplace readiness skills are consistently incorporated and reinforced into the daily procedures. The student's grade is based on test and quiz scores, homework assignments, class participation, daily class experiments and activities, and demonstration of other project and problem solving abilities. In order to take this course, the student needs to have passed the Construction Technology 1 course with a minimum of a 70% passing grade.

Jack McGee: *Interim Assistant Superintendent for Curriculum & Instruction*
Gretchen Gerber: *Director of Elementary Education*
Cleve Bryan: *Interim Director of Secondary Education*

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DEMONSTRABLE PROFICIENCIES

COURSE TITLE: Construction Technology II

I. CLASSWORK REQUIREMENTS

A. Keep an organized folder, complete with written notes, handouts, worksheets, assignments and examples of class work.
B. In order to use any machine all safety quizzes must be completed with a 100% or a retake will be given.
C. Students must be attentive and effectively following directions.
D. Students must exhibit responsibility by bringing a pencil to class every day.
E. Student resource materials should be legible, well organized, and attention to detail must be noted.
F. Short-term problem applications will be assigned when appropriate.
G. Follow all safety and clean-up rules.
H. Students will take periodic tests and quizzes including a midterm and final exam.
I. When needed students will be required to bring in supplemental funds for hardware, clock parts, etc.

II. ATTITUDE & BEHAVIOR

The student will demonstrate proper behavior as outlined in the school handbook. In addition to the general rules, special attention must be paid to safety in the classroom, following directions, listening skills, respect for others and their property, responsibility and proper work habits. Since there is a large amount of expensive and dangerous machinery in the classroom, appropriate student conduct is necessary to provide a quality and safe work environment. Students are expected to use tools, machines and computers for their intended use.

III. COURSE OBJECTIVES/OVERVIEW

A. **COURSE CONTENT**
1. Information
a. Basic knowledge of technological systems.
b. Knowledge and safe use of all tools, equipment and machines.
c. Basic knowledge of construction math and measurement.

B. SKILLS
1. Safety
2. Hand and Power Tools
3. Construction Math and Measurement
4. Roofing
6. Siding
7. Finish Carpentry
8. Estimating

C. APPRECIATION OF CONCEPTS

a. An appreciation for organization and orderliness of one's materials to enhance the expediency of performing a task.
b. An ability to analyze and reproduce select information.
c. The ability to adjust quickly to equipment, program, and procedure changes.
d. Increased awareness of the amount of planning and design that goes into the development, construction of any project.
e. The importance of selecting a career that is associated to personal interests.

IV. ATTENDANCE

Attendance: Refer to Board of Education Policy

V. GRADING PROCEDURE

A. Total Points- All assignments, projects, tests and quizzes will be given specific points
based on a level of work/time required. Students will earn points for fulfilling the requirement for each activity. A rubric will be provided prior to each assignment/activity so that each student will know their value. Student marking period grades will be based on the points earned divided by the total points assigned. The percentage of points earned will be the student's marking period grade.

B. Grading Criteria-

1. Class Participation
2. Class Work and Home Work
3. Tests and Quizzes
4. Individual Project Work
5. Group Project Work (consist of the final performance of your group's ability to meet requirements)

Semester 1 Grade (S1) is calculated: (50% of Y1) MP1=20%, MP2= 20%, Mid-term(X1) exam= 10%

Semester 2 Grade (S2) is calculated: (50% of Y1) MP3= 20%, MP4= 20%, Final (X2) exam = 10%

Final Grade (Y1) is calculated: S1 + S2 = Y1

MAJOR UNITS OF STUDY

Course Title: Construction Technology II

I. Introduction to Course and Room Procedures
II. Shop and Occupational Safety Skills-Review
III. Hand and Power Tools-Review
IV. Roofing Applications
V. Exterior Enclosure Treatments
VI. Window and Door Installations
VII. Stair Construction
VIII. Job Estimating

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 1 OVERVIEW** **Unit Title:** Introduction to Course and Room Procedures

Unit Description and Objectives:

Students are given a tour of the facilities with a higher emphasis on safety. They are re-introduced to the resources at hand for the process of design and woodworking. An overview of the course is presented with emphasis on learning activities and types of issues that will be explored. Students will know policy and practice procedures in the event of an emergency. Basic classroom expectations regarding behavior and work ethic are discussed.

Essential Questions and Enduring Understandings:

Essential Questions:	Enduring Understandings/Generalizations Students will understand that:	Guiding Questions
1. What is the purpose of a facilities safety and health program?	1. The importance of following proper safety protocol	1.1 How should you dress when operating machinery in a shop? 1.2 What is the purpose of a "power cut-off switch?"
2. What is the purpose of facilities evacuation and lockdown protocol?	2. The district has a safety and evacuation program in place to keep them safe in a variety of different life threatening situations	2.1 Where does our class go during a lockdown? 2.2 What is the evacuation route for a fire drill?

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit I- Introduction to Course and Room Procedures
Conceptual Lens:
Appropriate Time Allocation (# of Days)**:** 1 Week

Primary Content Standards referenced With Cumulative Progress Indicators

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
A. Classroom expectations 1. Behavior 2. Grading procedure 3. Attendance 4. Lateness 5. Housekeeping **B.** Review and build upon knowledge of Egress/Evacuation 1. Fire Drill 2. Evacuation 3. Lock-down 4. Intruder **C.** Review and build upon knowledge of tools of the lab 1. Work Benches/Vises 2. Measuring Tools	1. What the consequences of unexcused lateness are. 2. What the procedures are for making up work after being absent. 3. Where to go during a fire drill. 4. Where to go and what to do during any of the other emergencies. 5. Where the tools and storage cabinets are located. 6. The general	1. Explain what will happen on their third unexcused lateness of less than two minutes; of between 2 and 5 minutes; more than 5 minutes. 2. Locate the designated area(s) for all emergencies. 3. Locate tools and storage cabinets within the design lab. 4. Sit in their assigned seats. 5. Maintain their individual work area as well as the lab with regard to proper clean-up after each period as required. 6. State the various	1. Students go outside to observe the location of their designated area for a fire drill. 2. Students and teacher discuss the different emergencies and what to do and where to go under various circumstances. 3. Teacher demonstrates location of all storage areas and tool cabinets. 4. Teacher demonstrates clean-up procedures. 5. Teacher discusses grading and evaluative processes. 6. Teacher/student discussion of current and/or past issues and problems in the areas of woodworking and construction.	-Student Handbook -Textbook -Students will be given a copy of; • Course Proficiencies • General Safety Rules • Rules and Regulations of class(to be signed by student and parent)	9.3.12.AR 4 9.3.12.AR.B4 9.3.IT-SUP.2-3 9.3.ST-ET.4	8.2.a.1-3 8.2.b.1-6 8.2.c.1-3	**Formative Assessment:** 1. Safety Quiz **Summative Assessment** -Benchmark -Midterm

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
3. Hand Tools 4. Power Tools 5. Cabinets and Storage **D.** Review and build upon knowledge of Lab Layout **E.** Introduction to Course	layout of the lab as it relates to their assigned seat. 7. The procedures for maintaining a clean lab. 8. How activities are evaluated.	categories used in the grade breakdown.					

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
• Assist students in getting organized. • Give short directions. • Use drill exercises. • Give prompt cues during student performance. • Let students with poor writing skills use a computer. • Break assignments into small segments and assign only one segment at a time. • Demonstrate skills and have students model them. • Give prompt feedback. • Use continuous assessment to mark students' daily progress. • Prepare materials at varying levels of ability.	• Provide ample opportunities for creative behavior. • Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation. • Show appreciation for creative efforts • Respect unusual questions, ideas, and solutions. • Encourage students to test their ideas. • Provide opportunities and give credit for self-initiated learning. • Avoid overly detailed supervision and too much reliance on prescribed curricula. • Allow time for reflection. • Resist immediate and constant evaluation. • Avoid comparisons to other students.	• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways. • When possible, use pictures, photos, and charts. • Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class. • Give honest praise and positive feedback through your voice tones and visual articulation whenever possible. • Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English. • Integrate students' cultural background into class discussions. • Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: • Variation of time: adapting the time allotted for learning, task completion, or testing • Variation of input: adapting the way instruction is delivered • Variation of output: adapting how a student can respond to instruction • Variation of size: adapting the number of items the student is expected to complete • Modifying the content, process or product Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here. Teachers are encouraged to use the Understanding by Design Learning Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in	• Refer to page four in the Parent and Educator Guide to Section 504 to assist in the development of appropriate plans.

			learning opportunities. The framework can be viewed here www.udlguidelines.cast.org	

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 2 OVERVIEW** **Unit Title:** Shop and Occupational Safety Skills

Unit Description and Objectives:

This unit is imperative as a building block to safe learning and participation in the lab setting. Students will review and build upon prior knowledge of general safety rules, specific machine safety rules, personal safety issues, and working together in a safe class environment. The student will recall prior knowledge of OSHA guidelines and affects in the classroom and workplace.

Essential Questions and Enduring Understandings:

Essential Questions:	Enduring Understandings/Generalizations Students will understand that:	Guiding Questions
1. What are important work safety	1. Various skills are in demand by employers who require an understanding of both safety and tool	1.1 Identify situations that require eye

considerations?	operation.	protection. 1.2 Identify and describe the warming signs posted in the shop.
2. What are adverse effects of not complying to the OSHA inspection process?	2. Government regulations are in place to ensure a safe and healthy working environment.	2.1 What does OSHA stand for? 2.2 Describe safety precautions for working with ladders.

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit 2-Shop and Occupational Safety Skills
Conceptual Lens:
Appropriate Time Allocation (# of Days)**:** 3 Weeks

Primary Content Standards referenced With Cumulative Progress Indicators			
9.3.12.AC-CST.5	9.3.MN-HSE.1-7		
9.3.12.AC-CST.9			
9.3.MN.3			

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
A. Job Safety 1. Safety Regulations a. OSHA 2. Good House Keeping 3. Fire Prevention B. Personal Safety and Health 1. Responding to Emergencies 2. Hazards on the Job Site	1. The expectations of the student to maintain a safe working/learning environment. 2. Explanation of specific hand tool safety. 3. Explanation of specific machine safety.	1. Understand their role in the safe operation of the class. 2. Explain individual safety for specific hand tools. 3. Explain individual safety for specific pieces of shop machinery.	1. Students and teacher discuss the different emergencies and what to do and where to go under various circumstances 2. Describe safety precautions for working with ladders 3. Explain the importance of good house keeping	-Modern Carpentry Textbook *Chapter 1* -Projector -Computer -Handouts -Examples of safety signs throughout the classroom -Location of power switch	9.3.12.AC-CST.5 9.3.12.AC-CST.9 9.3.12.AC-MO.1 9.3.MN.3 9.3.MN-HSE.1-7	8.2.12.C.3 8.2.12.D.3 8.2.12.D.5	**Formative Assessment:** 1. General Shop Safety Quiz 2. Performance quiz on proper ladder usage **Summative Assessment** -Benchmark TEST

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
a. Falls and Falling Objects b. Electrical Hazards c. Preventing Tool Injury d. Lifting and Carrying Objects e. Personal Protective Equipment	4. Explanation of who and what OSHA is - Occupational safety and Health Act. 5. Proper room clean-up procedures.	4. Explain what OSHA does for individuals and working organizations. 5. Explain the plan for room clean-up.	4. Discuss safety precautions around moving machinery 5. Identify conditions that require safety protections 6. List the common hazardous materials 7. State reasons for Materials Safety Data Sheet				-Midterm EXAM -Final Exam

Topics/Concepts (Incl. time / # days per topic)	**Critical Content (Students Will Know:)**	**Skill Objectives (Students Will Be Able To:)**	**Instructional/Learning Activities & Interdisciplinary Connections**	**Instructional Resources**	**Technology & 21st C Skills Integration (Specify)**	**NJSLS w/ CPI Reference**	**Evaluation/ Assessment:**

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
• Assist students in getting organized. • Give short directions. • Use drill exercises. • Give prompt cues during student performance. • Let students with poor writing skills use a computer. • Break assignments into small segments and assign only one segment at a time. • Demonstrate skills and have students model them. • Give prompt feedback. • Use continuous assessment to mark students' daily progress. • Prepare materials at varying levels of ability.	• Provide ample opportunities for creative behavior. • Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation. • Show appreciation for creative efforts • Respect unusual questions, ideas, and solutions. • Encourage students to test their ideas. • Provide opportunities and give credit for self-initiated learning. • Avoid overly detailed supervision and too much reliance on prescribed curricula. • Allow time for reflection. • Resist immediate and constant evaluation. • Avoid comparisons to other students.	• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways. • When possible, use pictures, photos, and charts. • Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class. • Give honest praise and positive feedback through your voice tones and visual articulation whenever possible. • Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English. • Integrate students' cultural background into class discussions. • Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: • Variation of time: adapting the time allotted for learning, task completion, or testing • Variation of input: adapting the way instruction is delivered • Variation of output: adapting how a student can respond to instruction • Variation of size: adapting the number of items the student is expected to complete • Modifying the content, process or product Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here. Teachers are encouraged to use the Understanding by Design Learning	• Refer to page four in the Parent and Educator Guide to Section 504 to assist in the development of appropriate plans.

			Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in learning opportunities. The framework can be viewed here www.udlguidelines.cast.org	

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 3 OVERVIEW** **Unit Title:** Hand and Power Tools-Review

Unit Description and Objectives:

This unit is designed for the purpose of building understanding of both shop hand tools and portable power tools used during the duration of the course. A formal understanding is necessary for the student to know what tool to use, how to use the tool, and what results should be expected with the proper tool usage. Emphasis is placed on portable power tools and the evolution they have engineered in the building and construction fields. These new tools have created a need for more advanced training and understanding of the construction methods used in the job arena today.

Essential Questions and Enduring Understandings:

Essential Questions:	**Enduring Understandings/Generalizations** **Students will understand that:**	**Guiding Questions**
1. How do you determine which tools are most appropriate for a particular task?	1. Tools have specific functions and methods for usage	1. What are some of the hand tools commonly used in processing and production? 1.2 How do you decide what tool to use for a particular project?
2. What are the safety hazards when working with portable power tools	2. Tools have specific functions and methods for usage	2.1 Why are safety glasses required when working in the lab?
3. How do you determine which stationary power tool is the best one for a particular task	3. Stationary power tools require much more maintenance than other types of tools in order to function optimally	3.1 How would you clean up after using a table saw

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit 3- Hand and Power Tools
Conceptual Lens:
Appropriate Time Allocation (# of Days)**:** 6 Weeks

Primary Content Standards referenced With Cumulative Progress Indicators
9.1.12.F.1
9.3.12.D(1).2-4
9.3.12.E.2

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
Students will deepen their understanding in the following areas. A. Hand Saws 1. Crosscut saw 2. Rip saw 3. Back saw 4. Coping saw 5. Hack saw B. Shaping tools 1. Planes a. Jack plane b. Block plane c. Router plane d. Rabbet plane 2. Files a. Half-round b. Square c. Round 3. Chisels C. Assembling tools 1. Hammers a. Claw hammer b. Ripping hammer c. Framing hammer 2. Nail sets 3. Screw drivers 4. Nail guns a. Brad nail gun b. Finish nail gun	1. How to identify the different hand tools that are used for cutting 2. The difference between each type of hand tool and their uses. 3. How to compare and contrast various types of planes 4. How to differentiate between the various types of files. 5. How to differentiate between the various types hammers used to carpentry and woodworking.	*Students will deepen their understanding in the following areas.* 1. Properly usage of each hand tool. 2. Correctly carry each tool throughout the classroom. 3. Properly sharpen the chisel to a 30 degree angle. 4. Insert a screw using a screw driver. 5. Make a rabbet and dado joint with a chisel. 6. Remove a nail using a claw hammer. 7. Point out the differences between each layout tool and give a brief description of their uses.	1. Lecture and class discussions. 2. Demonstrations on how to properly use each tool. 3. Practical labs 4. Students will make a rabbet, miter, and dado joint using hand tools. 5. Selecting appropriate tool for the task at hand. 6. Reading assignments on hand tool usage and safety	-Textbook -Projector -Computer -Handouts -Examples of each type of hand tool -Examples of projects made by hand tools	9.1.12.F.1 9.3.12.D(1).2-4 9.3.12.E.2 9.3.12.E.15 9.3.12.E.26 9.3.12.E.30 9.3.12.E.32	8.2.12.D.1 8.2.12.D.3 8.2.12.D.5	**Formative Assessment:** 3. Safety quiz on hand tool usage. 4. Performance test on hand tool selection and proper usage. 5. Identification Quiz **Summative Assessment** -Benchmark TEST -Midterm EXAM -Final Exam

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
• Assist students in getting organized. • Give short directions. • Use drill exercises. • Give prompt cues during student performance. • Let students with poor writing skills use a computer. • Break assignments into small segments and assign only one segment at a time. • Demonstrate skills and have students model them. • Give prompt feedback. • Use continuous assessment to mark students' daily progress. • Prepare materials at varying levels of ability.	• Provide ample opportunities for creative behavior. • Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation. • Show appreciation for creative efforts • Respect unusual questions, ideas, and solutions. • Encourage students to test their ideas. • Provide opportunities and give credit for self-initiated learning. • Avoid overly detailed supervision and too much reliance on prescribed curricula. • Allow time for reflection. • Resist immediate and constant evaluation. • Avoid comparisons to other students.	• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways. • When possible, use pictures, photos, and charts. • Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class. • Give honest praise and positive feedback through your voice tones and visual articulation whenever possible. • Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English. • Integrate students' cultural background into class discussions. • Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: • Variation of time: adapting the time allotted for learning, task completion, or testing • Variation of input: adapting the way instruction is delivered • Variation of output: adapting how a student can respond to instruction • Variation of size: adapting the number of items the student is expected to complete • Modifying the content, process or product Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here. Teachers are encouraged to use the Understanding by Design Learning Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in	• Refer to page four in the Parent and Educator Guide to Section 504 to assist in the development of appropriate plans.

			learning opportunities. The framework can be viewed here www.udlguidelines.cast.org	

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 4 OVERVIEW** **Unit Title:** Roofing Applications

Unit Description and Objectives:

This unit is designed to introduce the student to the task of roofing. Different methods of shingling will be demonstrated and practiced. The process of "booking" shingles will be explained and mastered. Other types of roofing such as hot rolled, rubber, torched down, slate, metal raised-seam, and copper roofing will be explained. Estimating size and amount of needed materials will also be touched on. Students will learn the importance of making sure shingles are installed correctly. There will be opportunities for students to get a hands-on look at installing a roof on a shed.

Essential Questions and Enduring Understandings:

Essential Questions:	Enduring Understandings/Generalizations Students will understand that:	Guiding Questions
1. Explain the different types of roofing products?	1.1 The choice of a roofing surface is important to the appearance and value of a house. 1.2 The method of applying shingles varies with types of shingles.	1.1 What are the different types of roof shingle? 1.2 What is an advantage of one from another? 1.3 Why is the proper estimating technique important for ordering supplies and

		materials?
2. Why is the choice of roofing surface important, and how can it increase the appearance and value of a house?	2.1 Some roofing types are impractical for some types of homes. 2.2 Cost is sometimes a factor in roofing materials choice.	2.1 How are rubber roofing and torched down roofing applied? 2.2 Under what circumstances is a hot roof used? 2.3 When would a raised-seam roof be practical or aesthetically sound?

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit 4-Roofing Applications
Conceptual Lens:
Appropriate Time Allocation (# of Days)**:** 6 Weeks

Primary Content Standards referenced With Cumulative Progress Indicators			
9.3.12.AC-CST.9			
9.3.MN-HSE.1-7			

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
A. Types of Roofing Products 1. Roofing Nails 2. Felt Paper 3. Tack Stapler 4. Chalk Line 5. Flashing 6. Fascia Board 7. Rubber Roofing 8. Ridge Vent 9. Copper Roofing 10. Shingles a. Three Tab b. Dimensional c. Torch Down d. Slate e. Cedar B. Roofing Installation 1. Safety a. Handling Materials b. Ladder Set- up c. Harness Set-up d. Power/Hand tool Safety 2. Methods of laying shingles 3. Roof Valleys 4. Edge, Pipe and Chimney Flashing.	1. The difference in types of shingles- three tab, architectural, and designer. 2. The proper technique for estimating cost and materials for shingles and sheathing. 3. The differences in various types of applied roofing substances. 4. The conditions that various types of roofs are recommended for usage. 5. The proper method for shingle application called “booking”.	1. Apply shingles to roof using proper build-up technique called “booking”. 2. Illustrate to proper method for estimating roof area and shingle usage. 3. Demonstrate the proper nailing pattern and technique for shingle application. 4. Illustrate a knowledge a different types of roofing surfaces and their prescribed uses.	1. Lecture and class discussions. 2. Demonstrations on how to safely install roofing material 3. Practical labs 4. Selecting appropriate roofing material for the task at hand. 5. Reading assignments on roofing applications	-Modern Carpentry Textbook *Chapters 4 and 5* -Projector -Computer -Handouts -Examples of different types of roofing materials -Roofing supplies for classroom shed	9.3.12.AC-CST.9 9.3.MN-HSE.1-7 9.3.MN.3 9.3.MN-MIR.2-3 9.3.MN-MIR.5 9.3.MN-PRO.5	8.2.12.C.3 8.2.12.C.4	**Formative Assessment:** 1. Safety quiz on proper ladder set-up. 2. Performance test on roofing application. 3. Identification Quiz on roofing materials. **Summative Assessment** -Benchmark TEST -Midterm EXAM -Final Exam

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
• Assist students in getting organized. • Give short directions. • Use drill exercises. • Give prompt cues during student performance. • Let students with poor writing skills use a computer. • Break assignments into small segments and assign only one segment at a time. • Demonstrate skills and have students model them. • Give prompt feedback. • Use continuous assessment to mark students' daily progress. • Prepare materials at varying levels of ability.	• Provide ample opportunities for creative behavior. • Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation. • Show appreciation for creative efforts • Respect unusual questions, ideas, and solutions. • Encourage students to test their ideas. • Provide opportunities and give credit for self-initiated learning. • Avoid overly detailed supervision and too much reliance on prescribed curricula. • Allow time for reflection. • Resist immediate and constant evaluation. • Avoid comparisons to other students.	• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways. • When possible, use pictures, photos, and charts. • Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class. • Give honest praise and positive feedback through your voice tones and visual articulation whenever possible. • Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English. • Integrate students' cultural background into class discussions. • Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: • Variation of time: adapting the time allotted for learning, task completion, or testing • Variation of input: adapting the way instruction is delivered • Variation of output: adapting how a student can respond to instruction • Variation of size: adapting the number of items the student is expected to complete • Modifying the content, process or product Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here. Teachers are encouraged to use the Understanding by Design Learning Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in learning opportunities. The framework can be viewed here www.udlguidelines.cast.org	• Refer to page four in the Parent and Educator Guide to Section 504 to assist in the development of appropriate plans.

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 5 OVERVIEW** **Unit Title:** Exterior Enclosure Treatments

Unit Description and Objectives:
This unit will introduce students to the procedures involved in enclosing and finishing the exterior of a home or enclosure. Various types of materials will be discussed such as plywood, OSB (oriented strand board), Texture 1-11, aluminum siding, vinyl siding, and stucco. Students will also get an opportunity to work with and install several different types of exterior enclosure treatments. Materials estimation including overage and cost estimation will be covered.

Essential Questions and Enduring Understandings:

Essential Questions:	**Enduring Understandings/Generalizations** **Students will understand that:**	**Guiding Questions**
1. Why is vinyl siding an attractive alternative for homeowners to finish their exteriors?		1.1 Is aluminum siding as popular as it once was as an exterior finish? 1.2 What is the difference between a brick veneer and a brick house? 1.3 Is stucco a permanent or a temporary

	1.1 The exterior finish of any house or project is the contractor is judged. 1.2 Aesthetics is a fundamental priority in any exterior job.	finish?
2. What are all of the elements that go into exterior enclosure treatments/	2.1 Some exterior finishes are more cost effective than others. 2.1 Every type of exterior finish has its' own particular method of being worked with.	2.1 When would plywood be used rather OSB for an enclosure? 5.2 Is Texture 1-11 a durable exterior finish? 2.3 Some exterior finishes are more for aesthetics then functionality.

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit 5-Exterior Enclosure Treatments
Conceptual Lens:
Appropriate Time Allocation (# of Days)**:** 6 Weeks

Primary Content Standards referenced With Cumulative Progress Indicators			
9.3.12.AC-CST.9	9.3.MN-MIR.2-3		
9.3.MN-HSE.1-7	9.3.MN-MIR.5		
9.3.MN.3			

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
A. Types of Exterior Enclosure Treatments 1. OSB Plywood 2. T1-11 3. House Wrap Insulation 4. Vinyl Siding 5. Aluminum Siding 6. Brick Veneer 7. Stucco 8. Stone Masonry B. Installation 1. Safety a. Ladder Set up b. Scaffolding set up c. Machine Safety 2. Proper way to install OSB and T1-11 3. Proper way to install vinyl siding a. Starter strips b. J-Channel c. Window and door capping d. Siding	1. The different types and grades of plywood and what is acceptable for exterior usage. 2. The appropriate usage of OSB. 3. Why Tyvek is important and how is it used? 4. The proper way to install solid vinyl siding. 5. When it is acceptable to install T1-11. 6. The acceptable method to installing brick veneer and stucco.	1. Differentiate between plywood and OSB in its' application and usage. 2. Understand why Tyvek is an important factor in the pre-installation of vinyl, aluminum, and T1-11. 3. Install both vinyl and aluminum siding true, level, and correctly. 4. Install Texture1-11 true, level, and correctly. 5. Understand the proper preparation, installation, and care of stucco and brick veneer wall covering.	1. Lecture and class discussions. 2. Demonstrations on how to safely cut and install siding 3. Practical labs 4. Selecting appropriate material for the style of the house. 5. Reading assignments on exterior enclosure treatments.	-Modern Carpentry Textbook *Chapters 4 and 5* -Projector -Computer -Handouts -Examples of different types of siding materials -Siding supplies for classroom shed	9.3.12.AC-CST.9 9.3.MN-HSE.1-7 9.3.MN.3 9.3.MN-MIR.2-3 9.3.MN-MIR.5 9.3.MN-PRO.5	8.2.12.C.3 8.2.12.C.4	**Formative Assessment:** 1. Safety quiz on proper ladder set-up. 2. Performance test on siding application. 3. Identification Quiz on siding materials. **Summative Assessment** -Benchmark TEST -Midterm EXAM -Final Exam

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
• Assist students in getting organized. • Give short directions. • Use drill exercises. • Give prompt cues during student performance. • Let students with poor writing skills use a computer. • Break assignments into small segments and assign only one segment at a time. • Demonstrate skills and have students model them. • Give prompt feedback. • Use continuous assessment to mark students' daily progress. • Prepare materials at varying levels of ability.	• Provide ample opportunities for creative behavior. • Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation. • Show appreciation for creative efforts • Respect unusual questions, ideas, and solutions. • Encourage students to test their ideas. • Provide opportunities and give credit for self-initiated learning. • Avoid overly detailed supervision and too much reliance on prescribed curricula. • Allow time for reflection. • Resist immediate and constant evaluation. • Avoid comparisons to other students.	• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways. • When possible, use pictures, photos, and charts. • Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class. • Give honest praise and positive feedback through your voice tones and visual articulation whenever possible. • Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English. • Integrate students' cultural background into class discussions. • Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: • Variation of time: adapting the time allotted for learning, task completion, or testing • Variation of input: adapting the way instruction is delivered • Variation of output: adapting how a student can respond to instruction • Variation of size: adapting the number of items the student is expected to complete • Modifying the content, process or product Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here. Teachers are encouraged to use the Understanding by Design Learning Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all	• Refer to page four in the Parent and Educator Guide to Section 504 to assist in the development of appropriate plans.

			learners can access and participate in learning opportunities. The framework can be viewed here www.udlguidelines.cast.org	

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 6 OVERVIEW** **Unit Title:** Window and Door Installations

Unit Description and Objectives:
This unit will introduce students to residential windows and doors. The basic types of windows and doors will be covered. Students will learn how these units are manufactured and ways in which they can help with energy efficiency will be discussed. Students will also learn how to measure, install and apply trim to windows and doors.

Essential Questions and Enduring Understandings:

Essential Questions:	**Enduring Understandings/Generalizations** **Students will understand that:**	**Guiding Questions**
1. What is the proper procedure for installing a window?	1.1 Windows that have two sashes are called double-hungs. 1.2 The difference between exact size and rough opening is about ½".	1.1 What is R-Value? 1.2 What is used to fasten a window keeper to a sash? 1.3 Why is extra support important for bow and bay windows?

2. What is the proper procedure for installing a door?	2.1 Doors that come with a frame are called prehungs. 2.2 The outside trim on a door is call brick molding.	2.1 The sliding glass door that does not move is called? 2.2 Does come in what common widths? 2.3 What do the terms plumb, level and square mean?

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit 6-Window and Door Installations
Conceptual Lens:
Appropriate Time Allocation (# of Days): 6 Weeks

Primary Content Standards referenced With Cumulative Progress Indicators			
9.3.12.AC-CST.9			
9.3.MN-HSE.1-7			
9.3.MN.3			

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
A. Windows 1. Types of Windows a. Sliding windows b. Casement windows c. Picture windows d. Double Windows e. Hopper and Awning windows f. New construction g. Replacement windows 2. Energy Efficiency a. Low-E Glass b. Double and triple paned glass 3. Installing windows a. Measuring b. Ordering	1. The standards for window and door fabrication 2. How to interpret a window schedule 3. The procedures for installing a new construction window. 4. The procedures for installing a replacement window. 5. The procedure for installing a bay or bow window. 6. The technical terms associated with windows and doors.	1. Identify the various types of windows. 2. Explain how energy efficient windows affect heat resistance. 3. Explain how window frames are adjusted for wall thickness 4. Calculate rough openings. 5. Describe the procedure for installing a sliding glass patio door. 6. Select appropriate door hardware. 7. Prepare a rough opening for installation of a door or window. 8. Install a prehung interior door. 9. Install a lockset 10. Install a set of hinges. 11. Properly insulate and trim a window and door.	1. Lecture and class discussions. 2. Demonstrations on how to safely install a window and door 3. Practical labs 4. Selecting appropriate type of window and door for the style of the house. 5. Reading assignments on windows and doors	-Modern Carpentry Textbook -Projector -Computer -Handouts -Examples of different types doors and windows -Door and windows for classroom shed	9.3.12.AC-CST.9 9.3.MN-HSE.1-7 9.3.MN.3 9.3.MN-MIR.2-3 9.3.MN-MIR.5 9.3.MN-PRO.5	8.2.12.C.3 8.2.12.C.4	**Formative Assessment:** 1. Safety quiz on pneumatic nail gun 2. Performance test door and window installation 3. Identification Quiz on types of windows and doors. **Summative Assessment** -Benchmark TEST -Midterm EXAM -Final Exam

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
windows c. With flange d. Without flange B. Doors 1. Exterior doors a. Steel b. Smooth fiberglass c. Textured fiberglass d. Double door e. Sliding patio door 2. Interior doors a. Pre-hung door b. Sliding door c. Bi-fold door d. Pocket Door 3. Door Installation a. Measuring b. Ordering c. Right Hinge/Left Hinge d. Shimming e. Plumb, level and square f. Handle set g. Trim							

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
• Assist students in getting organized. • Give short directions. • Use drill exercises. • Give prompt cues during student performance. • Let students with poor writing skills use a computer. • Break assignments into small segments and assign only one segment at a time. • Demonstrate skills and have students model them. • Give prompt feedback. • Use continuous assessment to mark students' daily progress. • Prepare materials at varying levels of ability.	• Provide ample opportunities for creative behavior. • Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation. • Show appreciation for creative efforts • Respect unusual questions, ideas, and solutions. • Encourage students to test their ideas. • Provide opportunities and give credit for self-initiated learning. • Avoid overly detailed supervision and too much reliance on prescribed curricula. • Allow time for reflection. • Resist immediate and constant evaluation. • Avoid comparisons to other students.	• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways. • When possible, use pictures, photos, and charts. • Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class. • Give honest praise and positive feedback through your voice tones and visual articulation whenever possible. • Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English. • Integrate students' cultural background into class discussions. • Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: • Variation of time: adapting the time allotted for learning, task completion, or testing • Variation of input: adapting the way instruction is delivered • Variation of output: adapting how a student can respond to instruction • Variation of size: adapting the number of items the student is expected to complete • Modifying the content, process or product Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here. Teachers are encouraged to use the Understanding by Design Learning	• Refer to page four in the Parent and Educator Guide to Section 504 to assist in the development of appropriate plans.

			Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in learning opportunities. The framework can be viewed here www.udlguidelines.cast.org	

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 7 OVERVIEW** **Unit Title:** Stair Construction

Unit Description and Objectives:
The purpose of this unit is to familiarize and enable students to use the standards associated with stair installation. Students should be made aware of the importance of installation specifications that meet the manufacturers' installation specifications.

Essential Questions and Enduring Understandings:

Essential Questions:	**Enduring Understandings/Generalizations** **Students will understand that:**	**Guiding Questions**
1. Why is construction terminology an	1.1 A set a stairs is a complicated unit to	1.1 What are the important factors in

important factor for the successful completion?	make from the initial measurements. 1.2 Knowledge of materials is important when choosing lumber for the stair parts.	planning a staircase? 1.2 Why is the choice of materials important?
2. Why are all sources of knowledge required to successfully complete this task?	2.1 Mathematics knowledge is crucial in this operation. 2.2 Why is it important for the plumb cuts to be lined up properly?	2.1 What is the rise? 2.2 What is the run?

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit 7-Stair Construction
Conceptual Lens:
Appropriate Time Allocation (# of Days)**:** 6 Weeks

Primary Content Standards referenced With Cumulative Progress Indicators			

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
A. Stair Terminology 1. Rise 2. Run 3. Stringer 4. Tread 5. Riser 6. Nosing 7. Cleat B. Dimensioning and Measurement Parameters 1. Stringer Layout 2. Riser Layout 3. Tread Layout 4. Assembly Rationale 5. Materials Inspection 6. Mathematic a. Formulas and Computations	1. The appropriate material to be used as the stair stringer. 2. The proper method to measure and layout staircase or stairs. 3. How the riser and tread combine to form a step. 4. The proper method of assembling completed stringers and steps to form a staircase. 5. What safety requirements must be met for the installation of a set of stairs? 6. What is the proper technique for installation of a set of stair? 7. What is the maximum and minimum code for rise and run standards. 8. When are handrails	1. Configure a set of stairs to fit into a rough opening. 2. Determine the proper choice of materials to use in staircase construction. 3. Understand the relationship of tread to riser and the guidelines to follow per building code. 4. Cut treads and risers to size to fit the stringer layout. 5. Properly attach the stairs or staircase in the rough opening. 6. Create a work plan for the installation of a set of straight stairs based on a template. 7. Calculate a proper rise over run ratio given a set stairway height and design a template for its installation. 8. Create and assemble a complete stair assembly.	1. Lecture and class discussions. 2. Demonstrations on how to construct a set of stairs 3. Equations; Rise/Run=Slope 4. Practical labs 5. Selecting appropriate size lumber according to the length of the stairs 6. Reading assignments stair construction	-Modern Carpentry Textbook -Projector -Computer -Handouts -Examples of stairs -Lumber -Hand tools -Power tools	9.3.12.AC-CST.9 9.3.MN-HSE.1-7 9.3.MN.3 9.3.MN-MIR.2-3 9.3.MN-MIR.5 9.3.MN-PRO.5	8.2.12.C.3 8.2.12.C.4	**Formative Assessment:** 1. Safety quiz on circular saw. 2. Performance test on cutting a stringer. 3. Math quiz on slope layout. **Summative Assessment** -Benchmark TEST -Midterm EXAM -Final Exam

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
	required? 9. What is the standard width of treads?						

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
• Assist students in getting organized. • Give short directions. • Use drill exercises. • Give prompt cues during student performance. • Let students with poor writing skills use a computer. • Break assignments into small segments and assign only one segment at a time. • Demonstrate skills and have students model them. • Give prompt feedback. • Use continuous assessment to mark students' daily progress. • Prepare materials at varying levels of ability.	• Provide ample opportunities for creative behavior. • Create assignments that call for original work, independent learning, critical thinking, problem solving, and experimentation. • Show appreciation for creative efforts • Respect unusual questions, ideas, and solutions. • Encourage students to test their ideas. • Provide opportunities and give credit for self-initiated learning. • Avoid overly detailed supervision and too much reliance on prescribed curricula. • Allow time for reflection. • Resist immediate and constant evaluation. • Avoid comparisons to other students.	• Use a slow, but natural rate of speech; speak clearly; use shorter sentences; repeat concepts in several ways. • When possible, use pictures, photos, and charts. • Corrections should be limited and appropriate. Do not correct grammar or usage errors in front of the class. • Give honest praise and positive feedback through your voice tones and visual articulation whenever possible. • Encourage students to use language to communicate, allowing them to use their native language to ask/answer questions when they are unable to do so in English. • Integrate students' cultural background into class discussions. • Use cooperative learning where students have opportunities to practice expressing ideas without risking language errors in front of the entire class.	Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include: • Variation of time: adapting the time allotted for learning, task completion, or testing • Variation of input: adapting the way instruction is delivered • Variation of output: adapting how a student can respond to instruction • Variation of size: adapting the number of items the student is expected to complete • Modifying the content, process or product Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here. Teachers are encouraged to use the Understanding by Design Learning Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in learning opportunities. The framework can be viewed here www.udlguidelines.cast.org	• Refer to page four in the Parent and Educator Guide to Section 504 to assist in the development of appropriate plans.

UNIT OVERVIEW

Course Title: Construction Technology II

Unit #: **UNIT 8 OVERVIEW** **Unit Title:** Job Estimating

Unit Description and Objectives:
The purpose of this unit is to introduce estimating. Students will learn the importance of estimating a job correctly. A well estimated job will greatly increase profit margins.

Essential Questions and Enduring Understandings:

Essential Questions:	**Enduring Understandings/Generalizations** **Students will understand that:**	**Guiding Questions**
1. Why is it important to have an accurate estimate?	1. Estimate need to be as accurate as possible	1.1 Why is it important to add 10% to the size of the work area? 1.2 How many sq.ft. does one gallon of paint

		cover
2. What is the difference between stick estimating and unit cost?	2. Estimates help you find out the cost of materials and labor.	2.1 Why is it important to deliver an estimate to the client as quickly as possible 2.2 What is the typical labor cost to install a pre-hung door?

CURRICULUM UNIT PLAN

Course Title/Grade: Construction Technology II / 9-12
Unit Number/Title: Unit 8-Job Estimating
Conceptual Lens:
Appropriate Time Allocation (# of Days)**:** 6 Weeks

Primary Content Standards referenced With Cumulative Progress Indicators			

Topics/Concepts (Incl. time / # days per topic)	Critical Content (Students Will Know:)	Skill Objectives (Students Will Be Able To:)	Instructional/Learning Activities & Interdisciplinary Connections	Instructional Resources	Technology & 21st C Skills Integration (Specify)	NJSLS w/ CPI Reference	Evaluation/ Assessment:
A. Stick Estimating 1. List all the various parts of the job. 2. Amount of hours to complete the job. 3. List the materials needed for the job. 4. List each sub-contractors being used. 5. Others items such as rentals, permits, etc. 6. Put a cost to each item on the list. 7. Add the items together-be sure to double check your math. B. Unit Cost Estimating 1. Compile all the assemblies for job 2. Attach a unit cost to each assembly 3. Total the number and double check the math.	1. The various types of estimating 2. The difference between direct cost and indirect cost. 3. How to draw a simple critical path diagram. 4. How to use an estimating book. 5. How to use computerized bid systems	1. Find the area of any given space. 2. Find the number of 2x4's and plywood according to the square footage of any space. 3. Properly fill out a bid sheet. 4. Calculate the amount of paint needed for any given area. 5. Figure out the cost of tile, carpet, hardwood floor, etc., for any given space. 6. Figure out accurate labor cost for any given job.	1. Lecture and class discussions. 2. Demonstrations on how to fill out a bid sheet 3. Equations; Square Footage 4. Selecting appropriate labor cost for the job at hand. 5. Reading assignments on estimating.	-Modern Carpentry Textbook -Projector -Computer -Handouts -Examples of estimates and bid sheets	9.3.12.AC-CST.9 9.3.MN-HSE.1-7 9.3.MN.3 9.3.MN-MIR.2-3 9.3.MN-MIR.5 9.3.MN-PRO.5	8.2.12.C.3 8.2.12.C.4	**Formative Assessment:** 1. Math Quiz-Estimating **Summative Assessment** -Benchmark TEST -Midterm EXAM -Final Exam

Unit Modifications for Special Population Students:

Struggling Learners	Gifted and Talented Students (Challenge Activities)	English Language Learners	Learners with an IEP	Learners with a 504
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CROSS-CONTENT STANDARDS ANALYSIS

Course Title: Construction Technology II **Grade:** 10-12

Unit Title:	Visual and Performing Arts	Comp. Health & Physical Ed.	Language Arts Literacy	Mathematics	Science	Social Studies	World Languages	Tech. Literacy	Career Education/ Consumer, Family & Life Skills
Introduction to Course and Room Procedures			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6 C.2,3	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5 9.3.12.0.(1).7 9.3.12.0.(1).9 9.3.12.0.(1).12 9.3.12.0.(2).4 9.3.12.0.(2).5 9.3.12.0.(2).6 9.3.12.0.38 9.3.12.0.40 9.3.12.0.44 9.3.12.0.55 9.3.12.0.57 9.3.12.0.60
Shop and Occupational Safety Skills-Review			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5 9.3.12.0.17 9.3.12.0.18 9.3.12.0.19

								C.2,3	9.3.12.0.20 9.3.12.0.21
Hand and Power Tools-Review			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6 C.2,3	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5
Roofing Applications			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6 C.2,3	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5
Exterior Enclosure Treatments Hand and Power Tools			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6 C.2,3	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5 9.4.12.0.(1).3
Window and Door Installations Rough Framing			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6 C.2,3	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5 9.3.12.0.(1).5 9.3 .12.0.(1).6
Stair Construction Interior Enclosure Treatments			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6 C.2,3	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5
Job Estimating			NJSLS: Gr.11-12, RST 1, RST 3, RST 4, RST 8, RST 10 NJSLS: Gr.11-12, WHST 1.a, WHST 1.c, WHST 6, WHST 10	N-Q,1-3				8.1, A.1,3, 6,8 B.2,5, 6,11 8.2, A.2,3 B.1,3, 4,6	9.1, A.1-5 B.1,2, 4,5 9.2, F.1-5

								C.2,3	

***All content areas may not be applicable in a particular course.**

Washington Township Public Schools
Department of Student Personnel Services

CURRICULUM MODIFICATION

The regular curriculum is modified for Special Education students enrolled in both self-contained and resource center classes.

Each special education student has in Individualized Educational Plan (IEP) that details the specific accommodations, modifications, services, and support needed to level the playing field. This will enable that student to access the curriculum to the greatest extent possible in the least restrictive environment. These include:

- Variation of time: adapting the time allotted for learning, task completion, or testing
- Variation of input: adapting the way instruction is delivered
- Variation of output: adapting how a student can respond to instruction
- Variation of size: adapting the number of items the student is expected to complete
- Modifying the content, process or product

Additional resources are outlined to facilitate appropriate behavior and increase student engagement. The most frequently used modifications and accommodations can be viewed here.

Teachers are encouraged to use the Understanding by Design Learning Guidelines (UDL). These guidelines offer a set of concrete suggestions that can be applied to any discipline to ensure that all learners can access and participate in learning opportunities. The framework can be viewed here www.udlguidelines.cast.org