

# Woodworking Machines- Oscillating Spindle Sander

Content Area: **Business**  
Course(s): **Woodshop**  
Time Period: **Second Marking period**  
Length: **10 Weeks**  
Status: **Published**

## Unit Overview

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The oscillating spindle sander is perfect for sanding curves and irregular shaped edges both outside and inside of the work piece.

## STAGE 1- DESIRED RESULTS

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### 2014 NJCCCS - 21st Century Life and Careers

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ARCH.9-12.1	Design/Pre-Construction
ARCH.9-12.2	Construction
ARCH.9-12.3	Maintenance and Operations
ARCH.9-12.9.4.12.B.(1).1	Demonstrate communication skills and strategies that are used to work effectively with potential clients and others.
ARCH.9-12.9.4.12.B.(1).2	Employ appropriate representational media to communicate concepts and design.
ARCH.9-12.9.4.12.B.(1).3	Integrate structural, environmental, safety, building envelope, and building service systems in the design of buildings and structures.
ARCH.9-12.9.4.12.B.(1).4	Review traditional project phases and various roles within them to plan for and implement phases within a project.
ARCH.9-12.9.4.12.B.(1).5	Evaluate and select suitable environmental impact practices to enhance project acceptance and quality.
ARCH.9-12.9.4.12.B.(1).6	Appreciate the diversity of needs, values, and social patterns in project design to appropriately meet client needs.
ARCH.9-12.9.4.12.B.(1).7	Identify objective construction guidelines for the accommodation of people with different physical abilities to meet accessibility requirements.
ARCH.9-12.9.4.12.B.(1).8	Employ basic methods of data collection and analysis to provide information for projects.
ARCH.9-12.9.4.12.B.(1).9	Develop technical drawings drafted by hand and computer-generated plans to design structures.
ARCH.9-12.9.4.12.B.(1).10	Demonstrate understanding of principles, conventions, standards, applications, and restrictions pertaining to the manufacture and use of construction materials, components, and assemblies, and incorporate this understanding into project design.
ARCH.9-12.9.4.12.B.(1).11	Apply basic organizational, spatial, structural, and constructional principles to the design of interior and exterior space so that design plans are effective.
ARCH.9-12.9.4.12.B.(2).1	Describe contractual relationships established among all parties involved in the building

	process to ensure successful build of a project.
ARCH.9-12.9.4.12.B.(2).2	Describe submittal approval procedures that ensure effective flow of information in the construction process.
ARCH.9-12.9.4.12.B.(2).3	Evaluate construction subcontracts and describe their relationship to construction projects.
ARCH.9-12.9.4.12.B.(2).4	Identify project turnover procedures needed to successfully manage construction projects.
ARCH.9-12.9.4.12.B.(2).5	Plan building in accordance with contracts to meet budget and schedule.
ARCH.9-12.9.4.12.B.(2).6	Describe testing and inspection procedures used to ensure successful completion of construction projects.
ARCH.9-12.9.4.12.B.(2).7	Assess the purpose for scheduling as it relates to successful completion of construction projects.
ARCH.9-12.9.4.12.B.(2).8	Identify closeout procedures needed to effectively complete construction projects.
ARCH.9-12.9.4.12.B.(2).9	Demonstrate understanding of risk management principles and other strategies and tactics used to maintain, increase, or decrease risk.
ARCH.9-12.9.4.12.B.(2).10	Create a jobsite safety program to ensure safe practices and procedures.
ARCH.9-12.9.4.12.B.(2).11	Recognize and employ universal construction signs and symbols to function safely.
ARCH.9-12.9.4.12.B.(2).12	Describe procedures for jobsite security to prevent liability.
ARCH.9-12.9.4.12.B.(2).13	Create a classroom and/or jobsite environmental program.
ARCH.9-12.9.4.12.B.(2).14	Manage relationships with teachers and classmates to successfully complete a construction project.
ARCH.9-12.9.4.12.B.(2).15	Demonstrate knowledge of proper changeover procedures for successful completion of a construction project.
ARCH.9-12.9.4.12.B.(2).16	Examine building systems and components to evaluate their usefulness to construction projects.
ARCH.9-12.9.4.12.B.(2).17	Use craft skills to meet or exceed teacher and/or employer expectations.
ARCH.9-12.9.4.12.B.(3).1	Recognize and employ universal construction signs and symbols to function safely.
ARCH.9-12.9.4.12.B.(3).2	Use troubleshooting procedures when solving a maintenance problem to maintain project.
ARCH.9-12.9.4.12.B.(3).3	Apply construction skills when completing classroom projects and/or repairing, restoring, or renovating existing worksite structures to ensure long-term use of buildings and structures.
ARCH.9-12.9.4.12.B.(3).4	Evaluate and assess an existing structure to determine the repairs or renovations required to restore operation of the structure.
ARCH.9-12.9.4.12.B.(3).5	Plan and practice preventive maintenance activities to service existing structures.
ARCH.9-12.9.4.12.B.(3).6	Assess and evaluate operational systems to achieve smooth operation of facilities.
ARCH.9-12.9.4.12.B.1	Demonstrate language arts knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
ARCH.9-12.9.4.12.B.2	Demonstrate mathematics knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
ARCH.9-12.9.4.12.B.3	Demonstrate science knowledge and skills required to pursue the full range of postsecondary education and career opportunities.
ARCH.9-12.9.4.12.B.4	Perform math operations, such as estimating and distributing materials and supplies, to complete classroom/workplace tasks.
ARCH.9-12.9.4.12.B.5	Apply principles of physics, as they relate to worksite/jobsite situations, to work with materials and load applications.
ARCH.9-12.9.4.12.B.6	Select and employ appropriate reading and communication strategies to learn and use

technical concepts and vocabulary in practice.

ARCH.9-12.9.4.12.B.7	Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication.
ARCH.9-12.9.4.12.B.8	Locate, organize, and reference written information from various sources to communicate with others.
ARCH.9-12.9.4.12.B.9	Evaluate and use information resources to accomplish specific occupational tasks.
ARCH.9-12.9.4.12.B.10	Use correct grammar, punctuation, and terminology to write and edit documents.
ARCH.9-12.9.4.12.B.11	Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.
ARCH.9-12.9.4.12.B.12	Interpret verbal and nonverbal cues/behaviors to enhance communication.
ARCH.9-12.9.4.12.B.13	Apply active listening skills to obtain and clarify information.
ARCH.9-12.9.4.12.B.14	Develop and interpret tables, charts, and figures to support written and oral communications.
ARCH.9-12.9.4.12.B.15	Listen to and speak with diverse individuals to enhance communication skills.
ARCH.9-12.9.4.12.B.16	Exhibit public relations skills in order to increase internal and external customer satisfaction.
ARCH.9-12.9.4.12.B.17	Use vocabulary and visual cues commonly used in design and construction to communicate successfully.
ARCH.9-12.9.4.12.B.18	Employ critical thinking skills (e.g., analyze, synthesize, and evaluate) independently and in teams to solve problems and make decisions.
ARCH.9-12.9.4.12.B.19	Employ critical thinking and interpersonal skills to resolve conflicts.
ARCH.9-12.9.4.12.B.20	Identify, write, and monitor performance goals to guide progress in assigned areas of responsibility and accountability.
ARCH.9-12.9.4.12.B.21	Conduct technical research to gather information necessary for decision-making.
ARCH.9-12.9.4.12.B.22	Create and implement project plans to accomplish realistic planning in design and construction situations, considering available resources and requirements of a project/problem.
ARCH.9-12.9.4.12.B.23	Describe how design and construction project plans and schedules respond to unexpected events and conditions.
ARCH.9-12.9.4.12.B.38	Examine all factors affecting the project planning process.
ARCH.9-12.9.4.12.B.40	Demonstrate knowledge of personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.
ARCH.9-12.9.4.12.B.41	Demonstrate knowledge of employee rights and responsibilities and employers' obligations to maintain workplace safety and health.
ARCH.9-12.9.4.12.B.42	Identify emergency procedures that are necessary to provide aid in workplace accidents.
ARCH.9-12.9.4.12.B.43	Identify response techniques to create a disaster and/or emergency response plan.
ARCH.9-12.9.4.12.B.44	Explain health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance.
ARCH.9-12.9.4.12.B.46	Assess and describe the types and sources of hazards to ensure a safe environment.
ARCH.9-12.9.4.12.B.52	Employ mentoring skills to assist others.
ARCH.9-12.9.4.12.B.53	Establish specific goals to manage project assignments in a timely manner.
ARCH.9-12.9.4.12.B.54	Apply ethical reasoning to a variety of situations in order to make ethical decisions.
ARCH.9-12.9.4.12.B.55	Interpret and explain written organizational policies and procedures that help workers perform their tasks according to employer rules and expectations.

ARCH.9-12.9.4.12.B.56	Recognize legal and ethical relationships between employees and employers to establish workplace/jobsite rules, regulations, and guidelines in a design and/or construction setting.
ARCH.9-12.9.4.12.B.57	Read regulations and contracts to ensure ethical and safety elements are observed.
ARCH.9-12.9.4.12.B.58	Identify and summarize ethical and legal standards to avoid conflicts of interest in a design and/or construction setting.
ARCH.9-12.9.4.12.B.72	Employ information management techniques and strategies to assist in decision-making.
ARCH.9-12.9.4.12.B.73	Employ planning and time management skills and tools to enhance results and complete work tasks.
ARCH.9-12.9.4.12.B.74	Read, interpret, and use technical drawings, documents, and specifications to plan a project.
ARCH.9-12.9.4.12.B.75	Use and maintain appropriate tools, machinery, equipment, and resources to accomplish project goals.
	Technical knowledge and skills play a role in all careers within the cluster and pathway.
	All clusters rely on effective oral and written communication strategies for creating, expressing, and interpreting information and ideas that incorporate technical terminology and information.
	Critical and creative thinking strategies facilitate innovation and problem-solving independently and in teams.
	Legal responsibilities, professional ethics, and codes of conduct affect management practices, business performance, and regulatory compliance, as well as the confidence of customers, business partners, and investors.

## Career Ready Practices

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CAEP.9.2.12.C	Career Preparation
CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.2	Modify Personalized Student Learning Plans to support declared career goals.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.4	Analyze how economic conditions and societal changes influence employment trends and future education.
CAEP.9.2.12.C.5	Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures.
CAEP.9.2.12.C.6	Investigate entrepreneurship opportunities as options for career planning and identify the knowledge, skills, abilities, and resources required for owning and managing a business.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.
CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.
CAEP.9.2.12.C.9	Analyze the correlation between personal and financial behavior and employability.

## 9.2 Career Awareness, Exploration, and Preparation

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CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.

CAEP.9.2.12.C.2	Modify Personalized Student Learning Plans to support declared career goals.
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CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.
CAEP.9.2.12.C.9	Analyze the correlation between personal and financial behavior and employability.

## 9.3 Career & Technical Education

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9.3.12.AC	Architecture & Construction
9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.4	Evaluate the nature and scope of the Architecture & Construction Career Cluster and the role of architecture and construction in society and the economy.
9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-CST	Construction
9.3.12.AC-CST.1	Describe contractual relationships between all parties involved in the building process.
9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.3	Implement testing and inspection procedures to ensure successful completion of a construction project.
9.3.12.AC-CST.4	Apply scheduling practices to ensure the successful completion of a construction project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.6	Manage relationships with internal and external parties to successfully complete construction projects.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase of a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES	Design/Pre-Construction

9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.
9.3.12.AC-DES.2	Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
9.3.12.AC-DES.3	Describe the requirements of the integral systems that impact the design of buildings.
9.3.12.AC-DES.4	Apply building codes, laws and rules in the project design.
9.3.12.AC-DES.5	Identify the diversity of needs, values and social patterns in project design, including accessibility standards.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.7	Employ appropriate representational media to communicate concepts and project design.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.
9.3.12.AC-MO	Maintenance/Operations
9.3.12.AC-MO.1	Recognize and employ universal construction signs and symbols to function safely in the workplace.
9.3.12.AC-MO.2	Use troubleshooting procedures when solving a maintenance problem in buildings.
9.3.12.AC-MO.3	Apply construction skills when repairing, restoring or renovating existing buildings.
9.3.12.AC-MO.4	Determine work required to repair or renovate an existing building.
9.3.12.AC-MO.5	Plan and practice preventative maintenance activities to service existing buildings.
9.3.12.AC-MO.6	Maintain and inspect building systems to achieve safe and efficient operation of buildings.

## CCSS- Writing in Technical Subjects

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### Text Types and Purposes

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LA.11-12.	Text Types and Purposes
LA.11-12.CCSS.ELA-Literacy.CCRA.W.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
LA.11-12.CCSS.ELA-Literacy.CCRA.W.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
LA.11-12.CCSS.ELA-Literacy.CCRA.W.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.1	Write arguments focused on discipline-specific content.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.1a	Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.1b	Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both

LA.11-12.CCSS.ELA-Literacy.WHST.11-12.1c	claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.1d	Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.1e	Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.2a	Provide a concluding statement or section that follows from or supports the argument presented.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.2b	Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.2c	Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.2d	Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.2e	Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.2e	Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

## Production and Distribution of Writing

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LA.11-12.	Production and Distribution of Writing
LA.11-12.CCSS.ELA-Literacy.CCRA.W.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LA.11-12.CCSS.ELA-Literacy.CCRA.W.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
LA.11-12.CCSS.ELA-Literacy.CCRA.W.6	Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.6	Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

## Research to Build and Present Knowledge

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LA.11-12.	Research to Build and Present Knowledge
LA.11-12.CCSS.ELA-	Conduct short as well as more sustained research projects based on focused questions,

Literacy.CCRA.W.7	demonstrating understanding of the subject under investigation.
LA.11-12.CCSS.ELA-Literacy.CCRA.W.8	Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
LA.11-12.CCSS.ELA-Literacy.CCRA.W.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.7	Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.8	Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and over-reliance on any one source and following a standard format for citation.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.9	Draw evidence from informational texts to support analysis, reflection, and research.

## Range of Writing

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LA.11-12.	Range of Writing
LA.11-12.CCSS.ELA-Literacy.CCRA.W.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.10	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

## CCSS- Literacy in Technical Subjects

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## Key Ideas and Details

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LA.11-12.CCSS.ELA-Literacy.CCRA.R.1	Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
LA.11-12.CCSS.ELA-Literacy.CCRA.R.2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
LA.11-12.CCSS.ELA-Literacy.CCRA.R.3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
CCSS.ELA-Literacy.RST.11-12.1	Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
CCSS.ELA-Literacy.RST.11-12.2	Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.



CCSS.ELA-Literacy.RST.11-12.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
	Key Ideas and Details

## Craft and Structure

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LA.11-12.CCSS.ELA-Literacy.CCRA.R.4	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
LA.11-12.CCSS.ELA-Literacy.CCRA.R.5	Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
LA.11-12.CCSS.ELA-Literacy.CCRA.R.6	Assess how point of view or purpose shapes the content and style of a text.
CCSS.ELA-Literacy.RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.
CCSS.ELA-Literacy.RST.11-12.5	Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
CCSS.ELA-Literacy.RST.11-12.6	Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.
	Craft and Structure

## Integration of Knowledge and Ideas

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LA.11-12.CCSS.ELA-Literacy.CCRA.R.7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
LA.11-12.CCSS.ELA-Literacy.CCRA.R.8	Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
LA.11-12.CCSS.ELA-Literacy.CCRA.R.9	Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
CCSS.ELA-Literacy.RST.11-12.7	Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
CCSS.ELA-Literacy.RST.11-12.8	Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
CCSS.ELA-Literacy.RST.11-12.9	Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.
	Integration of Knowledge and Ideas

## Range of Reading and Level of Text Complexity

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LA.11-12.CCSS.ELA-Literacy.CCRA.R.10

Read and comprehend complex literary and informational texts independently and proficiently.

CCSS.ELA-Literacy.RST.11-12.10

By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.

Range of Reading and Level of Text Complexity

## Essential Questions

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- How much of a margin of safety should be observed?
- What is the Oscillating Spindle Sander used for?
- What PPE should you wear for using the Oscillating Spindle Sander?

## Enduring Understanding

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Used for curves, irregular shapes, and straight cuts.

A 2" margin of safety should be observed.

Safety glasses or goggles, shop coat, dust mask.

## Students will know...

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How to *safely use the oscillating spindle sander for sanding curves, straight cuts, and internal sanding applications.*

## Students will be able to...

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- Demonstrate the safe use of the sander.
- Demonstrate the capability of the oscillating spindle sander.

## STAGE 2- EVIDENCE OF LEARNING

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## **Formative Assessment During Lesson**

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- 3- Minute Pause
- A-B-C Summaries
- Analogy Prompt
- Choral Response
- Debriefing
- Exit Card / Ticket
- Hand Signals
- Idea Spinner
- Index Card Summaries
- Inside-Outside Circle Discussion (Fishbowl)
- Journal Entry
- Misconception Check
- Observation
- One Minute Essay
- One Word Summary
- Portfolio Check
- Questions & Answers
- Quiz
- Self-Assessment
- Student Conference
- Think-Pair-Share
- Web or Concept Map

## **Authentic Assessments- Suggested**

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**Record of 80% grade on written test. Instructor observation of student progress and quality of project produced.**

**Instructor demonstration of the oscillating spindle sander. Video of the safe use of the sander. Scrap pieces of wood for student practice.**

## **Benchmark Assessments**

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## **STAGE 3- LEARNING PLAN**

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### **Instructional Map**

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- **Instructor demonstration**
- **Oscillating spindle sander safety and use video.**
- **Student study guide sheet.**
- **Scraps of wood for student practice.**

### **Modifications/Differentiation of Instruction**

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### **Modification Strategies**

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- Extended Time
- Frequent Breaks
- Highlighted Text
- Interactive Notebook
- Modified Test
- Oral Directions
- Peer Tutoring
- Preferential Seating
- Re-Direct
- Repeated Drill / Practice
- Shortened Assignments
- Teacher Notes
- Tutorials
- Use of Additional Reference Material
- Use of Audio Resources

### **Differentiation Strategies**

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## High Preparation Differentiation

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- Alternative Assessments
- Choice Boards
- Games and Tournaments
- Group Investigations
- Guided Reading
- Independent Research / Project
- Interest Groups
- Learning Contracts
- Leveled Rubrics
- Literature Circles
- Multiple Intelligence Options
- Multiple Texts
- Personal Agendas
- Project Based Learning (PBL)
- Stations / Centers
- Think-Tac-Toe
- Tiered Activities / Assignments
- Varying Graphic Organizers

## Low Preparation Differentiation

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- Choice of Book / Activity
- Cubing Activities
- Exploration by Interest (using interest inventories)
- Flexible Grouping
- Goal Setting With Student
- Homework Options
- Jigsaw
- Mini Workshops to Re-teach or Extend Skills
- Open-ended Activities
- Think-Pair-Share by Readiness, Interest, or Learning Style
- Use of Collaboration
- Use of Reading Buddies
- Varied Journal Prompts
- Varied Product Choice
- Varied Supplemental Materials
- Work Alone / Together

## **Horizontal Integration- Interdisciplinary Connections**

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## **Vertical Integration- Discipline Mapping**

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## **Additional Materials**

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