Introduction to Woodworking Overview

Content Area: **Technology Literacy**
Course(s): **INTRODUCTION TO WOODWORKING**
Time Period:
Length: **90 Days**
Status: **Published**

Cover

EAST BRUNSWICK PUBLIC SCHOOLS

East Brunswick New Jersey

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Course Adoption: 4/21/1986

Curriculum Adoption: 4/21/1986

Date of Last Revision Adoption: 9/1/2017

Course Overview

Course Description:

At some point in your life, you will own your own condo, apartment or home. The skills you will learn from this course will provide you with the basic skills needed to make common repairs. These skills may also help save money normally spent on outside contractors. This course provides an overview of the various systems, materials, tools, and equipment used in manufacturing wood products found in the common home. Students have the opportunity to construct finely crafted projects that they are proud to display. Instruction includes information about the new technologies being used in the design, construction and assembly of their projects as well as how to read and work from blueprints, estimate costs, utilize hand and power tools and various wood finishes.

COURSE SCOPE AND SEQUENCE

Sequential Unit Description	Associated CPI's to be Achieved	Marking Period Guide	Other Pacing Guide References	Proficiency (Summative) Assessments
UNIT 1 Introduction to Woods • Parts of a tree • Harvesting trees • Drying lumber	8.2.2.D.4 Identify the resources needed to create technological products or systems. 8.2.12.D.5 Explain how material processing impacts the quality of engineered and fabricated products. 8.2.2.E.1 List and demonstrate the steps to an everyday task.	.	2 Days	• Practical test

	9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety. 9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			
UNIT 2 Introduction to Working Drawings • Relationship of views • Reading dimensions • Measuring	8.2.5.D.3 Follow step by step directions to assemble a product or solve a problem. 9.3.12.AG-NR.4 Demonstrate responsible management procedures and techniques to protect or maintain natural resources. 9.3.12.AC.1 Use vocabulary, symbols and	1	2 Days	• Practical test • Individual projects

		formulas common to architecture and construction. 9.3.12.AC.6 Read, interpret and use technical drawings, documents and specifications to plan a project. 8.2.8.C.4 Identify the steps in the design process that would be used to solve a designated problem 8.2.8.C.5.a Create a technical sketch of a product with materials and measurements labeled. 8.2.2.D.4 Identify the resources needed to create technological products or systems. 8.2.2.E.1 List and demonstrate the steps to an everyday	1	2 Days	• Individual Bill of Material

UNIT 3 Bill of Material

- Board foot
- Unit cost
- Finishing material
- Total cost

		task.			
		9.3.12.AC.6 Read, interpret and use technical drawings, documents and specifications to plan a project.			
		9.3.12.AG.3 Examine and summarize the importance of health, safety and environmental management systems in AFNR businesses.			
UNIT 4 Introduction to Shop Safety • Common sense safety rules • Specific hand tool safety • Protective Devices • Emergency situations • Power Tool Safety		9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety.	1	2 Days	• Safety test • Teacher observation
		9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			

UNIT 5 Hand Tools • Layout tools • Holding tools • Boring tools • Drilling tools	8.2.2.D.4 Identify the resources needed to create technological products or systems. 8.2.2.D.5 Identify how using a tool (such as a bucket or wagon) aids in reducing work. 8.2.5.D.5 Describe how resources such as material, energy, information, time, tools, people and capital are used in products or systems. 9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety. 9.3.12.AC-CST.9 Safely use and maintain appropriate tools,	1	2 days	• Test	

		machinery, equipment and resources to accomplish construction project goals. 8.2.2.D.4 Identify the resources needed to create technological products or systems. 8.2.2.D.5 Identify how using a tool (such as a bucket or wagon) aids in reducing work. 8.2.5.D.5 Describe how resources such as material, energy, information, time, tools, people and capital are used in products or systems. 9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite			
UNIT 6 Cutting Tools • Rough cut saws – cross cut, rip, back saw, dove tail • Blades • Chisels • Driving			1	2 days	• Teacher observation • Worksheets/quiz

	safety. 9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			
UNIT 7 Woodworking Joints and Their Properties • Dado • Rabbet • Butt • Screw reinforcement • E. Mortise and Tenon	8.2.8.C.4 Identify the steps in the design process that would be used to solve a designated problem 8.2.12.D.5 Explain how material processing impacts the quality of engineered and fabricated products. 9.3.12.AC.6 Read, interpret and use technical drawings, documents and specifications to plan a project.	1	2 days	• Student demonstration of at least 3 joints

		9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			
UNIT 8 Stationary Machines • Jointer • Band saw • Belt sander • Disk sander • Lathe • Jig saw/scroll saw • Spindle sander • Drill press • Router • Biscuit joiner • Table saw		8.2.2.D.4 Identify the resources needed to create technological products or systems. 8.2.2.D.5 Identify how using a tool (such as a bucket or wagon) aids in reducing work. 8.2.5.D.5 Describe how resources such as material, energy, information, time, tools, people and capital are used in products or	1	4 days	• Safety test • Student proficiency demonstration

		systems. 9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety. 9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			
UNIT 9 Portable Power tools • Belt sander • Finishing sanders • Drill • Screw gun • Air gun		8.2.2.D.4 Identify the resources needed to create technological products or systems. 8.2.2.D.5 Identify how using a tool (such as a bucket or wagon) aids in reducing work. 8.2.5.D.5 Describe how resources such as	2	3 Days	• Safety test • Student proficiency demonstration

		material, energy, information, time, tools, people and capital are used in products or systems. 9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety. 9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			
UNIT 10 Abrasives • Aluminum oxide • Flint • Silicon carbide • Garnet		8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product. 8.2.12.C.2 Analyze a product and how it has changed or	2	1 day	• Test

might change over time to meet human needs and wants.

8.2.12.C.3 Analyze a product or system for factors such as safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, and human factors engineering (ergonomics).

8.2.12.D.5 Explain how material processing impacts the quality of engineered and fabricated products.

9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety.

	9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			
UNIT 11 Adhesives • Polyvinyl Glue • Epoxy • Aliphatic resin • Gorilla Glue • Resorcinol Glue	8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product. 8.2.12.C.2 Analyze a product and how it has changed or might change over time to meet human needs and wants. 8.2.12.C.3 Analyze a product or system for factors such as safety, reliability, economic considerations, quality control, environmental concerns,	2	1 Day	• Teacher test • Individual project

		manufacturability, maintenance and repair, and human factors engineering (ergonomics). 8.2.12.D.5 Explain how material processing impacts the quality of engineered and fabricated products. 9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety. 9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.			
UNIT 12 Clamping Tools • Quick connect clamp		8.2.2.D.4 Identify the resources	2	1 day	• Individual project

- Jorgensen clamp
- Bar clamp
- C clamp
- Miter clamp
- Frame clamp
- Band clamp

needed to create technological products or systems.

8.2.2.D.5 Identify how using a tool (such as a bucket or wagon) aids in reducing work.

8.2.5.D.5 Describe how resources such as material, energy, information, time, tools, people and capital are used in products or systems.

9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety.

9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction

		project goals.			
UNIT 13 Finishing Materials and Applicators • Stain • Clear finish • Oil finish • Brush • Spray		8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product. 8.2.12.C.2 Analyze a product and how it has changed or might change over time to meet human needs and wants. 8.2.12.C.3 Analyze a product or system for factors such as safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, and human factors engineering (ergonomics). 8.2.12.D.5 Explain	2	1 day	• Individual project

	how material processing impacts the quality of engineered and fabricated products. 9.3.12.AC-CST.5 Apply practices and procedures required to maintain jobsite safety. 9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.				
UNIT 14 Shop Maintenance • Machine care and cleaning • Sharpening • Dust collection system • Project storage	8.2.12.C.3 Analyze a product or system for factors such as safety, reliability, economic considerations, quality control, environmental concerns, manufacturability,	1 and 2	Throughout course	• Student demonstration	

maintenance and repair, and human factors engineering (ergonomics).

9.3.12.AG.3 Examine and summarize the importance of health, safety and environmental management systems in AFNR businesses.

9.3.12.AG.3 Examine and summarize the importance of health, safety and environmental management systems in AFNR businesses.

9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.

UNIT 15 Occupations and Related Fields • Related jobs to the field of woodworking • Research local employment opportunities • Skills transferable to world of work	8.2.5.D.5 Describe how resources such as material, energy, information, time, tools, people and capital are used in products or systems. 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. 9.2.12.C.3 Identify transferable career skills and design alternate career plans. 9.3.12.AG.5 Describe career opportunities and means to achieve those opportunities in each of the Agriculture,	1 and 2	Throughout course	• Student discussion • Presentation by students	

	Food & Natural Resources Career Pathways.
	9.3.12.AC-CST.9 Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.

CONTENT FOCUS AREA AND COURSE NAME

Course Name: Introduction to Woodworking, #2341

Course Number	School Numbers	Course Level	Grads(s)	Credits	Min. Per Week	Elective/Required	Initial Course Adopted
2341	055	S	8-9	2.50	210	E	04/21/86

PRIMARY CONTENT AREA AND SECONDARY AREAS OF FOCUS

NJCCC Standard		NJCCC Standard	NJCCCS Standard	
1. Visual and Performing Arts		5. Science	9. 21st Century Life and Careers	P
2. Health and Physical Education	S	6. Social Studies		
3. Language Arts Literacy		7. World Languages		
4. Mathematics	S	8. Technology Literacy P		

Textbooks and Other Resources

WOOD: TECHNOLOGY AND PROCESS by John L. Feirer

Teacher created handouts

Instructional videos

Safety videos

Standards

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AG.3	Examine and summarize the importance of health, safety and environmental management systems in AFNR businesses.
9.3.12.AG.5	Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AG-NR.4	Demonstrate responsible management procedures and techniques to protect or maintain natural resources.
PFL.9.1.4.G.1	Describe how valuable items might be damaged or lost and ways to protect them.
PFL.9.1.8.E.6	Compare the value of goods or services from different sellers when purchasing large quantities and small quantities.
PFL.9.1.12.A.6	Summarize the financial risks and benefits of entrepreneurship as a career choice.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
TECH.8.1.5.D.3	Demonstrate an understanding of the need to practice cyber safety, cyber security, and cyber ethics when using technologies and social media.
TECH.8.2.2.C.1	Brainstorm ideas on how to solve a problem or build a product.
TECH.8.2.2.D.4	Identify the resources needed to create technological products or systems.
TECH.8.2.2.D.5	Identify how using a tool (such as a bucket or wagon) aids in reducing work.
TECH.8.2.2.E.1	List and demonstrate the steps to an everyday task.
TECH.8.2.5.D.3	Follow step by step directions to assemble a product or solve a problem.
TECH.8.2.5.D.5	Describe how resources such as material, energy, information, time, tools, people and capital are used in products or systems.
TECH.8.2.8.C.4	Identify the steps in the design process that would be used to solve a designated problem.
TECH.8.2.8.C.5a	Explain the interdependence of a subsystem that operates as part of a system.

TECH.8.2.12.C.2	Analyze a product and how it has changed or might change over time to meet human needs and wants.
TECH.8.2.12.C.3	Analyze a product or system for factors such as safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, and human factors engineering (ergonomics).
TECH.8.2.12.D.5	Explain how material processing impacts the quality of engineered and fabricated products.

Grading and Evaluation Guidelines

GRADING PROCEDURES

In terms of proficiency level the East Brunswick grades equate to:

A Excellent Advanced proficient

B Good Above average

C Fair Proficient

D Poor Minimally proficient

F Failing Partially Proficient

The final course proficiency grade will be on the students' performance based on the NJ Learning Standards for career and technical education and consumer, family and life skills. Students' individual grades will be based on four major areas: tests, project development, tool skills and project planning skills

COURSE EVALUATION PROCEDURES

Course achievement will be evaluated based on the percent of all pupils who achieve the minimum level of proficiency (final average grade) in the course. Student achievement levels above minimum proficiency will also be reported. Final grades, and where relevant mid-term and final exams, will be analyzed by staff for the total cohort and for sub-groups of students to determine course areas requiring greater support or modification.)

Other Details

63003 Industrial Arts

Industrial Arts courses expose students to the tools and machines that they may encounter in manufacturing-related occupations and enable them to develop the skills they need to use these tools in various applications. Course topics typically include (but are not limited to) drawing and planning, electricity, graphic arts, woodwork, leatherwork, metalwork, plastics, and power technology. These courses typically cover general

safety and career exploration as well.