

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

Superintendent of Schools

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Course Adoption: 4/21/1986

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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	Associate d CPI's to be Achieved	Mar king Peri od Gui de	Other Pacin g Guide Refere nces	Proficiency (Summative) Assessments
UNIT 1 Introduction to Woods	8.2.2.D.4 Identify the resources needed to create technolog ical products or systems.			
<ul style="list-style-type: none"> • Parts of a tree • Harvesting trees • Drying lumber 	8.2.12.D.5 Explain how material processin g impacts the quality of engineere d and fabricated products.		2 Days	• Practical test
	8.2.2.E.1 List and			

demonstrate the steps to an everyday task.

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.

8.2.5.D.3
Follow step by step directions to assemble a product or solve a problem.

9.3.12.AG-NR.4

UNIT 2 Introduction to Working Drawings

- Relationship of views
- Reading dimensions
- Measuring

1

2
Days

- Practical test
- Individual projects

Demonstrate responsible management procedures and techniques to protect or maintain natural resources.

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.

8.2.8.C.4 Identify the steps in the design process that would be used to solve a

UNIT 3 Bill of Material

- Board foot
- Unit cost
- Finishing material

1

2 Days

- Individual Bill of Material

- Total cost

designate
d problem

8.2.8.C.5.
a Create
a
technical
sketch of
a product
with
materials
and
measurem
ents
labeled.

8.2.2.D.4
Identify
the
resources
needed to
create
technolog
ical
products
or
systems.

8.2.2.E.1
List
and
demonstra
te the
steps to
an
everyday
task.

9.3.12.AC
.6
Read,
interpret
and use
technical
drawings,
document
s and
specificati
ons to
plan a
project.

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

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.

8.2.2.D.4

UNIT 4 Introduction to Shop Safety

- Common sense safety rules
- Specific hand tool safety
- Protective Devices
- Emergency situations
- Power Tool Safety

UNIT 5 Hand Tools

1 2 Days

1 2 days

- Safety test
- Teacher observation

- Test

- Layout tools
- Holding tools
- Boring tools
- Drilling tools

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,
machiner
y,
equipmen
t and
resources
to
accomplis
h
constructi
on project
goals.

8.2.2.D.4
Identify
the
resources
needed to
create
technolog
ical
products
or
systems.

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

8.2.5.D.5
Describ
e how
resources
such as
material,

UNIT 6 Cutting Tools

- Rough cut saws – cross cut, rip, back saw, dove tail
- Blades
- Chisels
- Driving

1 2 days

- Teacher
observati
on
- Workshe
ets/quiz

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 7 Woodworking Joints and Their Properties

- Dado
- Rabbet
- Butt

8.2.8.C.4
Identify the steps in the design process that would be

1 2 days

- Student demonstration of at least 3 joints

- Screw reinforcement
- E. Mortise and Tenon

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.

9.3.12.AC-CST.9

Safely use and maintain appropriate tools, 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

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

1 4 days

- Safety test
- Student proficiency demonstration

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.

8.2.2.D.4
Identify the resources needed to create technological products or systems.

8.2.2.D.5 2
Identify how using a tool (such as a bucket or wagon) aids in reducing work.

8.2.5.D.5
Describe how

UNIT 9 Portable Power tools

- Belt sander
- Finishing sanders
- Drill
- Screw gun
- Air gun

- Safety test
- Student proficiency demonstration

3
Days

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.

- Aluminum oxide
- Flint
- Silicon carbide
- Garnet

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

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

8.2.2.C.1
Brainstorm ideas on how to solve a problem or build a

1 Day

- Teacher test
- Individual project

- Aliphatic resin
- Gorilla Glue
- Resorcinol Glue

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 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.

8.2.2.D.4
Identify the resources needed to create technological products or systems.

8.2.2.D.5

UNIT 12 Clamping Tools

- Quick connect clamp
- Jorgensen clamp
- Bar clamp
- C clamp
- Miter clamp

2 1 day

- Individual project

- Frame clamp
- Band clamp

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.

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,

UNIT 13 Finishing Materials and Applicators

- Stain
- Clear finish
- Oil finish
- Brush
- Spray

- Individual project

2 1 day

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

constructi
on project
goals.

8.2.12.C.3

Analyze
a product
or system
for factors
such as
safety,
reliability,
economic
considerat
ions,
quality
control,
environm
ental
concerns,
manufact
urability,

maintenan
ce and
repair,
and
human
factors
engineeri
ng
(ergonomi
cs).

1 Throu
and ghout
2 course

- Student
demonst
ration

UNIT 14 Shop Maintenance

- Machine care and cleaning
- Sharpening
- Dust collection system
- Project storage

9.3.12.A

G.3

Examin
e and
summariz
e the
importanc
e of
health,
safety and
environm
ental
managem
ent
systems
in AFNR
businesses

s.

9.3.12.A

G.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

1 and 2 Throughout course

- Student discussion
- Presentation by students

and
capital are
used in
products
or
systems.

9.2.4.A.4
Expl
ain why
knowledg
e and
skills
acquired
in the
elementar
y grades
lay the
foundatio
n for
future
academic
and career
success.

9.2.12.C.3
Identi
fy
transferab
le career
skills and
design
alternate
career
plans.

9.3.12.A
G.5
Describ
e career
opportunit
ies and
means to
achieve
those
opportunit
ies in
each of
the
Agricultur
e, Food &
Natural

Resources
Career
Pathways.

9.3.12.AC
-CST.9
Safely use
and
maintain
appropriate
tools,
machiner
y,
equipmen
t and
resources
to
accomplis
h
constructi
on 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.