



SPRINGFIELD PUBLIC SCHOOLS
ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Springfield Public Schools
Springfield, New Jersey 07081

Woodworking

Curriculum Guide

2022

This curriculum may be modified through varying materials, techniques, and strategies as per an individual student's IEP.

*Springfield Board of Education
Approved August 29, 2022*



SPRINGFIELD PUBLIC SCHOOLS
ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Springfield Public Schools Springfield, New Jersey

**Dr. Rachel Goldberg
Superintendent of Schools**

**Erica Scudero
Assistant Superintendent**

Curriculum Developed By:

**Steve Di Gangi
Industrial Arts Teacher**

Springfield Public Schools

Search. Learn. Serve.

EXTRACT OF THE MINUTES OF A MEETING OF THE BOARD OF EDUCATION OF THE TOWNSHIP OF SPRINGFIELD COUNTY OF UNION, NEW JERSEY AS RECORDED IN THE OFFICIAL MINUTE BOOK

Resolution: I25

Introduced By: Vice President Saha

Seconded By: Mr. Munoz

Adopted: August 29, 2022

Curriculum Adoption

To adopt the following curriculum and courses for the 2022-2023 school year:

- New High School Courses
 - Woodworking
- High School – 2022-2023 Dual Enrollment Agreement from Union College to include (2) course offerings*. The curriculum is provided by Union College and taught by our teachers.
 - Criminal Justice
 - Sociology
- New Middle School Courses
 - Financial Literacy
 - Study Skills
- New Middle School Elective Courses- *the curriculum for the electives was previously approved on (7/25)*
 - Creative Writing
 - Energy and Environment (PLTW)
 - Financial Literacy
 - Forensics
 - Introduction to Drama
 - Journalism
 - Mock Trial
 - Model UN
 - Mysteries of History
 - Project Citizen
 - Study Skills

* Pending approval of Dual Enrollment agreement with Union College

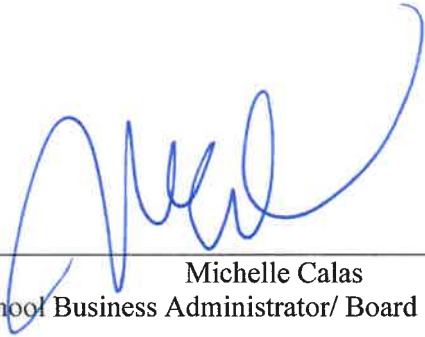
Michelle Calas, School Business Administrator/Board Secretary

(continued)

I, Michelle Calas, School Business Administrator/ Board Secretary of the Springfield Board of Education, hereby certify that the extract from the minutes of a meeting of the Board of Education duly called and held on August 29, 2022 has been compared by me with the original minute book of said Board of Education, and is a true, complete and exact copy thereof, as far as the same relates to the subject matter to on said extract.

In WITNESS THEREOF, I have hereunto set my hand and seal of the Springfield Board of Education, this 30th day of August 2022.

SEAL



Michelle Calas
School Business Administrator/ Board Secretary



Unit Overview Template

Content Area:	Practical Arts	Grade Level:	9-12	Unit Title:	Safety
Unit Summary: Students will develop an understanding of the general safety rules as well as hand & power tool safety & machine safety					
Primary Interdisciplinary Connections:					
21st Century Themes ☐ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ ICT Literacy ☒ Information Literacy ☒ Life and Career Skills Communication and Collaboration ☒ Media Literacy					
Unit Rationale: This unit will set a foundation for a positive mindset and respect of the power of woodworking tools. Students will create a safe and positive work environment for both them and fellow classmates.					
Career Readiness (Standard 9): 9.2, 9.4					

Learning Targets

Standards: VPA 1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4, SEL.PK-12.5	
Content Statements: Anchor Standard 2: Organizing and developing ideas. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making Core Idea: Innovative ideas or innovation can lead to career opportunities. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices.	
CPI#:	Cumulative Progress Indicator (CPI):
1.5.12prof.Cr2b	Explain how traditional and nontraditional materials may impact human health and the environment and demonstrate safe handling of materials, tools, and equipment.
9.4.12.CI.2:	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
SEL.PK-12.1.1	Recognise one's feelings and thoughts
SEL.PK-12.2.1	Understand and practice strategies for managing one's own emotions, thoughts and behaviors
SEL.PK-12.3.4	Demonstrate an awareness of the expectations for social interactions in a variety of settings
SEL.PK-12.4.3	Evaluate personal, ethical, safety and civic impact of decisions
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others



Unit Essential Questions:

- How do artists work?
- How do artists and designers determine whether a particular direction in their work is effective?
- How do artists and designers learn from trial and error?
- How do artists and designers care for and maintain materials, tools, and equipment?
- Why is it important for safety and health to understand and follow correct procedures in handling materials, tools, and equipment?
- What responsibilities come with the freedom to create?
- How do objects, places, and design shape lives and communities?
- How do artists and designers determine goals for designing or redesigning objects, places, or systems?
- How do artists and designers create works of art or design that effectively communicate?

Unit Enduring Understandings:

- Artists and designers experiment with forms, structures, materials, concepts, media, and art-making approaches.
- Artists and designers balance experimentation and safety, freedom and responsibility while developing and creating artworks.
- People create and interact with objects, places, and design that define, shape, enhance, and empower their lives.

Unit Learning Targets:

Students will....

- Be able to identify and explain the importance of the safety rules associated with general and machine safety.
- Be able to identify unsafe conditions in the lab and remedy them.
- Understand and demonstrate proper safety techniques when operating hand and power tools.
- Be able to identify their rights to a safe working environment.

Evidence of Learning

Summative Assessment: 1 day

Equipment Needed: Hand and power tools, computers, projector

Teacher Resources: Safety booklets, internet resources, you tube, teacher made assessments

Formative Assessments:

- Class participation
- Observation
- Written assessments
- Safety charts



Lesson Plans

Lesson	Time Frame
Lesson 1 General Safety	3 days
Lesson 2 Tool Safety	5 days
Lesson 3 Materials	2 days

Teacher notes:

Students must pass written safety tests before they can work in the shop

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://www.nj.gov/education/sboe/>

<https://www.nj.gov/education/standards/clicks/>

<https://www.nj.gov/education/standards/vpa/Index.shtml>



Lesson Plan 1 Template

Content Area: Practical Arts Lesson Title: General Safety Time Frame: 3 Days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: Career readiness, Industrial Arts, Manufacturing, Health & Safety, Visual and Performing Arts

Integration of Technology: Internet, local network, OnCourse, Microsoft Word, Projector

Equipment Needed: Safety charts, various safety equipment, computers

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Generate a list of potential general safety rules in a small group setting. • Generate a list of actual general safety rules in a large group setting. • Identify and explain the importance of each rule.	Lesson Sequence 1. Work in small groups to generate potential lists using word processing software. 2. Work in a large group to create the first list and add any missing rules. 3. Identify the importance of each rule. 4. Drop box list to teacher over local network. 5. Written assessment	• Class participation • Assessment of activity lists • Formal written assessment
Differentiation: Work independently, small groups, open ended activities, written and oral participation, modified assessments		
Resources Provided: • High School Woodshop General Safety • General Safety Rules for a High School Wood Shop • Class notes		



Lesson Plan 2 Template

Content Area: Practical Arts Lesson Title: Tool Safety Time Frame: 5 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: Career readiness, Industrial Arts, Manufacturing, Health & Safety, Visual and Performing Arts

Integration of Technology: Internet, local network, OnCourse, Microsoft Word, Projector

Equipment Needed: Safety charts, various safety equipment, various tools, computers

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Generate a list of safety rules for each tool • Understand the importance of each rule • Safely use each tool	Lesson Sequence 1. Work in large group to create list of rules for each tool 2. Identify the importance of each rules 3. Drop box list to teacher over local network. 4. Written assessment	• Class participation • Assessment of activity lists • Formal written assessment
Differentiation: Work independently, small groups, open ended activities, written and oral participation, modified assessments		
Resources Provided: • Tool Safety • Hand Tools - Safety and Technique Safe Training Video Workshop Safetycare Free • Class notes		



Lesson Plan 3 Template

Content Area: Practical Arts Lesson Title: Materials Time Frame: 2 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: Career readiness, Industrial Arts, Manufacturing, Visual and Performing Arts

Integration of Technology: Internet, local network, OnCourse, Microsoft Word, projector

Equipment Needed: Computers, various types of wood

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Identify the two categories of trees - Describe characteristics of both types - Identify types of manufactured lumber	Lesson Sequence - Lesson on deciduous and coniferous trees - Generate a list of characteristics and various types - Generate a list of manufactured lumber	- Class participation - Assessment of activity lists - Formal written assessment
Differentiation: Work independently, small groups, open ended activities, written and oral participation, modified assessments		
Resources Provided: - Class notes  How to Identify Hardwoods and Softwoods Ask This Old House		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	x		
Allow for student choice		x	
Provide scaffolding for acquiring targeted knowledge/skills		x	
Integrate global perspectives	x		
Integrate 21st century skills		x	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		x	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	x		
Are varied to address different student learning styles and preferences		x	
Are differentiated based on student needs		x	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		x	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	x		
Provide opportunities for student reflection and self- assessment		x	
Provide data to inform and adjust instruction to better meet the varying needs of learners		x	

Curriculum Design Template

Content Area: Practical Arts	Grade Level: 9-12	Unit Title: Safety
Created: Steve Di Gangi	Board Approved on:	Type Here



Unit Overview Template

Content Area:	Practical Arts	Grade Level:	9-12	Unit Title:	Project Design
Unit Summary: This unit will teach students how to design, measure, and layout a project					
Primary Interdisciplinary Connections:					
<u>21st Century Themes</u> ✕ Creativity and Innovation ✕ Critical Thinking and Problem Solving ✕ ICT Literacy ✕ Information Literacy ✕ Life and Career Skills □ Communication and Collaboration ✕ Media Literacy					
Unit Rationale: This unit teaches life skills such as measuring and marking					
Career Readiness (Standard 9): 9.2, 9.4					

Learning Targets

Standards:	VPA 1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4, SEL.PK-12.5
Content Statements:	Anchor Standard 1: Generating and conceptualizing ideas. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making Core Idea: Innovative ideas or innovation can lead to career opportunities. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices.
CPI#:	Cumulative Progress Indicator (CPI):
1.5.12.prof.Cr1b	Use multiple approaches to begin creative endeavors.
9.4.12.CI.2:	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12.prof.CR2b, 2.2.12.LF.8).
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
SEL.PK-12.1.1	Recognise one's feelings and thoughts
SEL.PK-12.2.1	Understand and practice strategies for managing one's own emotions, thoughts and behaviors
SEL.PK-12.3.4	Demonstrate an awareness of the expectations for social interactions in a variety of settings
SEL.PK-12.4.3	Evaluate personal, ethical, safety and civic impact of decisions
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others
Unit Essential Questions:	
- What conditions, attitudes, and behaviors support creativity and innovative thinking? - What factors prevent or encourage people to take creative risks?	



- How does collaboration expand the creative process?
- How does knowing the contexts, histories, and traditions of art forms help us create works of art and design?
- Why do artists follow or break from established traditions? How do artists determine what resources and criteria are needed to formulate artistic investigations?

Unit Enduring Understandings:

- Creativity and innovative thinking are essential life skills that can be developed.
- Artists and designers shape artistic investigations, following or breaking with traditions in pursuit of creative art-making goals.

Unit Learning Targets:

Students will....

- Be able to read a ruler
- Be able to read and draw various types of drawings
- Be able to design and layout a project

Evidence of Learning

Summative Assessment: 5 days

Equipment Needed: Computer, Photoshop, layout tools

Teacher Resources: Isometric grid, sample drawings, 3D models, YouTube, teacher made assignments

Formative Assessments:

- Observation
- Drawings
- Performance assessments



Lesson Plans

Lesson	Time Frame
Lesson 1 Reading a ruler	2 days
Lesson 2 Orthographic projection	5 days
Lesson 3 Isometric drawing	5 days

Teacher notes:

Reading a ruler is an essential life skill.

These drawing techniques are used professionally

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://www.nj.gov/education/sboe/>

<https://www.nj.gov/education/standards/clicks/>

<https://www.nj.gov/education/standards/vpa/Index.shtml>



Lesson Plan 1 Template

Content Area: Practical Arts Lesson Title: Reading a ruler Time Frame: 2 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Architecture, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse,

Equipment Needed: Computers, rulers

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Be able to read a ruler - Be able to measure - Be able to transfer lines accurately	Lesson Sequence - Lesson on reading a ruler - Practice worksheets - Formal assessment - Practical work	- Observation - Teacher made hand outs - Teacher made assessments
Differentiation: Work independently, small groups, large groups, open ended activities, written and oral participation, modified assessments		
Resources Provided: - How to Read an Inch Ruler or Tape Measure - How to Read a Tape Measure Like a PRO - Class notes		



Lesson Plan 2 Template

Content Area: Practical Arts Lesson Title: Orthographic Projection Time Frame: 5 days

Lesson Components

21st Century Themes

✗ Global Awareness □ Financial, Economic, Business and Entrepreneurial Literacy
 ✗ Civic Literacy ✗ Health Literacy

21st Century Skills

✗ Creativity and Innovation ✗ Critical Thinking and Problem Solving ✗ Information Literacy
 ✗ Life and Career Skills ✗ Communication and Collaboration ✗ Media Literacy ✗ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Architecture, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse, Photoshop

Equipment Needed: Computers, projector, 3D models

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand the function of an orthographic projection - Be able to draw the missing view - Be able to draw all three views	Lesson Sequence - Lesson on what orthographic projection is - Demonstrate how to draw missing sides - Students complete worksheet - Students draw all three sides in three separate views	- Observation - Teacher made worksheets - Final drawing
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - CDT G10/11 - First Angle Orthographic Projection Part 1 - Introduction to orthographic projection - Class notes		



Lesson Plan 3 Template

Content Area: Practical Arts Lesson Title: Isometric drawing Time Frame: 5 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Architecture, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse, Photoshop

Equipment Needed: Computers, projector, software

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand what Isometric drawings are - Understand how to draw in Isometric - Demonstrate how to draw in Isometric - Complete multiple drawings	Lesson Sequence - Demonstration on Isometric - Complete simple sample drawings - Complete multiple formal drawings	- Observation - Sample drawings - Formal drawings
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - Isometric Drawing Intro - Isometric Drawing - The Basics - Drawing a Set of Isometric Stairs with Dimensions - Class notes		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	X		
Allow for student choice		X	
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	X		
Are varied to address different student learning styles and preferences		X	
Are differentiated based on student needs		X	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment		X	
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template

Content Area: Practical Arts	Grade Level: 9-12	Unit Title: Project Design
Created: Steve Di Gangi	Board Approved on:	Type Here



Unit Overview Template

Content Area:	Practical Arts	Grade Level:	9-12	Unit Title:	Portable tools
Unit Summary: This unit will teach students how to use basic hand tools and portable power tools					
Primary Interdisciplinary Connections:					
21st Century Themes ✕ Creativity and Innovation ✕ Critical Thinking and Problem Solving ✕ ICT Literacy ✕ Information Literacy ✕ Life and Career Skills Communication and Collaboration ✕ Media Literacy					
Unit Rationale: Teaches students how to correctly and safely use basic woodworking tools.					
Career Readiness (Standard 9): 9.2 & 9.4					

Learning Targets

Standards: VPA 1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4, SEL.PK-12.5	
Content Statements: Anchor Standard 2: Organizing and developing ideas. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making Core Idea: Innovative ideas or innovation can lead to career opportunities. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices.	
CPI#:	Cumulative Progress Indicator (CPI):
1.5.12prof.Cr	Explain how traditional and nontraditional materials may impact human health and the environment and demonstrate safe handling of materials, tools, and equipment.
9.4.12.CI.2:	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
SEL.PK-12.1.	Recognise one's feelings and thoughts
SEL.PK-12.2.	Understand and practice strategies for managing one's own emotions, thoughts and behaviors

Unit Essential Questions:

- How do artists work?
- How do artists and designers determine whether a particular direction in their work is effective?
- How do artists and designers learn from trial and error?
- How do artists and designers care for and maintain materials, tools, and equipment?
- Why is it important for safety and health to understand and follow correct procedures in handling materials, tools, and equipment?



- What responsibilities come with the freedom to create?
- How do objects, places, and design shape lives and communities?
- How do artists and designers determine goals for designing or redesigning objects, places, or systems?
- How do artists and designers create works of art or design that effectively communicate?

Unit Enduring Understandings:

- Artists and designers experiment with forms, structures, materials, concepts, media, and art-making approaches.
- Artists and designers balance experimentation and safety, freedom and responsibility while developing and creating artworks.
- People create and interact with objects, places, and design that define, shape, enhance, and empower their lives.

Unit Learning Targets:

Students will....

- Demonstrate proper use of hand tools
- Demonstrate proper use of portable power tools
- Follow all safety rules associated with the above woodworking tools

Evidence of Learning

Summative Assessment: 5 days

Equipment Needed: Computer, hand tools, portable power tools

Teacher Resources: Internet resources, local network, teacher made assessments

Formative Assessments:

- Teacher observations
- Student demonstrations
- Performance assessments
- Written assessments



Lesson Plans

Lesson	Time Frame
Lesson 1 Hand tools	10 days
Lesson 2 Portable Cutting tools	5 days
Lesson 3 Portable Fastening tools	3 days

Teacher notes:

Students must pass all safety tests before using any equipment

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://www.nj.gov/education/sboe/>

<https://www.nj.gov/education/standards/clicks/>

<https://www.nj.gov/education/standards/vpa/Index.shtml>



Lesson Plan 1 Template

Content Area: Practical Arts Lesson Title: Hand Saws Time Frame: 4 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, various hand saws

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Identify different hand saws and when to use each one - Demonstrate ability to correctly and safely use each one	Lesson Sequence - Lesson on each hand saw - Written assessment - Hands on application by students	- Teacher observation - Teacher made assessments - Student performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - How To Use Hand Saws - Ace Hardware - How to Choose Hand Saws Ask This Old House - Class notes		



Lesson Plan 2 Template

Content Area: Practical Arts Lesson Title: Portable Jigsaw Time Frame: 2 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, Jigsaw

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Identify when and how to use a jigsaw - Complete written assessment - Demonstrate ability to correctly and safely use it	Lesson Sequence - Lesson on uses and demonstration - Written assessment - Hands on application by students	- Teacher observation - Teacher made assessments - Student performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - How to use a Jigsaw - Basics - How To Use A Jigsaw Tips & Tricks - Class notes		



Lesson Plan 3 Template

Content Area: Practical Arts Lesson Title: Impact driver Time Frame: 1 day

Lesson Components

21st Century Themes

✗ Global Awareness □ Financial, Economic, Business and Entrepreneurial Literacy
 ✗ Civic Literacy ✗ Health Literacy

21st Century Skills

✗ Creativity and Innovation ✗ Critical Thinking and Problem Solving ✗ Information Literacy
 ✗ Life and Career Skills □ Communication and Collaboration ✗ Media Literacy ✗ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, impact driver

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Identify the uses and advantages for an impact driver - Understand the difference between drill driver and impact driver - Demonstrate the ability to correctly and safely use the tool	Lesson Sequence - Lesson on the tool - Demonstration - Tips - Hands on application by students	- Teacher observation - Performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: 📺 Beginner Power Tool Advice Impact Driver 📺 Drill VS Impact Driver What's The DIFFERENCE? 📺 Impact Driver v Drill - What's the Difference? - Class notes		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills		X	
Allow for student choice		X	
Provide scaffolding for acquiring targeted knowledge/skills		X	
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	X		
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs		X	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment	X		
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template

Content Area:	Practical Arts	Grade Level:	9-12	Unit Title:	Portable Tools
Created:	Steve Di Gangi	Board Approved on:	Type Here		



Unit Overview Template

Content Area:	Practical Arts	Grade Level:	9-12	Unit Title:	Woodworking Machinery
Unit Summary: Students will gain a knowledge about using the machinery safely and effectively					
Primary Interdisciplinary Connections:					
21st Century Themes ✕ Creativity and Innovation ✕ Critical Thinking and Problem Solving ✕ ICT Literacy ✕ Information Literacy ✕ Life and Career Skills □ Communication and Collaboration ✕ Media Literacy					
Unit Rationale: Machines are a vital part of woodworking and are used in residential and commercial use					
Career Readiness (Standard 9): 9.2 9.4					

Learning Targets

Standards: VPA 1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4, SEL.PK-12.5	
Content Statements: Anchor Standard 1: Generating and conceptualizing ideas. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making Core Idea: Innovative ideas or innovation can lead to career opportunities. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices.	
CPI#:	Cumulative Progress Indicator (CPI):
1.5.12 prof.Cr1b	Use multiple approaches to begin creative endeavors.
9.4.12.CI.2:	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
SEL.PK-12.1.1	Recognise one's feelings and thoughts
SEL.PK-12.2.1	Understand and practice strategies for managing one's own emotions, thoughts and behaviors
Unit Essential Questions:	
• What conditions, attitudes, and behaviors support creativity and innovative thinking? • What factors prevent or encourage people to take creative risks? • How does collaboration expand the creative process? • How does knowing the contexts, histories, and traditions of art forms help us create works of art and design?	



- Why do artists follow or break from established traditions? How do artists determine what resources and criteria are needed to formulate artistic investigations?

Unit Enduring Understandings:

- Creativity and innovative thinking are essential life skills that can be developed.
- Artists and designers shape artistic investigations, following or breaking with traditions in pursuit of creative art-making goals.

Unit Learning Targets:

Students will....

- Demonstrate knowledge of various woodworking machines
- Demonstrate ability to safely and correctly use each machine
- Complete safety assessments for each machine

Evidence of Learning

Summative Assessment: 6 days

Equipment Needed: Computer, lumber, various machines

Teacher Resources: Internet resources, local network, teacher made assessments

Formative Assessments:

- Teacher observations
- Student demonstrations
- Performance assessments
- Written assessments



Lesson Plans

Lesson	Time Frame
Lesson 1 Compound Miter Saw	3 days
Lesson 2 Band Saw	3 days
Lesson 3 Jointer	2 days

Teacher notes:

Students must pass written assessment before using each machine

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://www.nj.gov/education/sboe/>

<https://www.nj.gov/education/standards/clicks/>

<https://www.nj.gov/education/standards/vpa/Index.shtml>



Lesson Plan 1 Template

Content Area: Practical Arts Lesson Title: Miter Saw Time Frame: 3 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, Compound Miter Saw, Computer

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand the uses of the miter saw - Demonstrate ability to properly use miter saw - Follow all safety rules	Lesson Sequence - Lesson on compound miter saw - Demonstration on proper use - Safety quiz - Hands on application by students	- Teacher observation - Written assessment - Performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - MITER SAW FOR BEGINNERS - How to use a Miter Saw - A complete beginner's guide - Class notes		



Lesson Plan 2 Template

Content Area: Practical Arts Lesson Title: Band Saw Time Frame: 3 days

Lesson Components

21st Century Themes

✗ Global Awareness □ Financial, Economic, Business and Entrepreneurial Literacy
 ✗ Civic Literacy ✗ Health Literacy

21st Century Skills

✗ Creativity and Innovation ✗ Critical Thinking and Problem Solving ✗ Information Literacy
 ✗ Life and Career Skills □ Communication and Collaboration ✗ Media Literacy ✗ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, visual and performing arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, Band Saw, Computer

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand the uses of the band saw - Demonstrate ability to properly use band saw - Follow all safety rules	Lesson Sequence - Lesson on band saw - Demonstration on proper use - Safety quiz - Hands on application by students	- Teacher observation - Written assessment - Performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: 📺 Top 5 Uses for a Band Saw How to Use a Bandsaw 📺 Bandsaw Tips - Class notes		



Lesson Plan 3 Template

Content Area: Practical Arts Lesson Title: Jointer Time Frame: 2 days

Lesson Components

21st Century Themes

✗ Global Awareness □ Financial, Economic, Business and Entrepreneurial Literacy
 ✗ Civic Literacy ✗ Health Literacy

21st Century Skills

✗ Creativity and Innovation ✗ Critical Thinking and Problem Solving ✗ Information Literacy
 ✗ Life and Career Skills □ Communication and Collaboration ✗ Media Literacy ✗ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, Jointer, Computer

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand the uses of the Jointer - Demonstrate ability to properly use Jointer - Follow all safety rules	Lesson Sequence - Lesson on the Jointer - Demonstration on proper use - Safety quiz - Hands on application by students	- Teacher observation - Written assessment - Performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: ▶ Jointer Basics – WOOD magazine ▶ How to use a Jointer ▶ Why do they call it a jointer when it planes wood? - Class notes		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills	x		
Allow for student choice		x	
Provide scaffolding for acquiring targeted knowledge/skills	x		
Integrate global perspectives		x	
Integrate 21st century skills	x		
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		x	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	x		
Are varied to address different student learning styles and preferences		x	
Are differentiated based on student needs		x	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		x	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	x		
Provide opportunities for student reflection and self- assessment	x		
Provide data to inform and adjust instruction to better meet the varying needs of learners		x	

Curriculum Design Template

Content Area:	Practical Arts	Grade Level:	9-12	Unit Title:	Machinery
Created:	Steve Di Gangi	Board Approved on:	Type Here		



Unit Overview Template

Content Area: Practical Arts **Grade Level:** 9-12 **Unit Title:** Assembly/Finishing

Unit Summary: This unit will teach students about various wood joints, assembly techniques, sanding, and finishing.

Primary Interdisciplinary Connections:

21st Century Themes **X** Creativity and Innovation **X** Critical Thinking and Problem Solving **X** ICT Literacy
X Information Literacy **X** Life and Career Skills ☐ Communication and Collaboration **X** Media Literacy

Unit Rationale: Woodworking projects need to be assembled and finished properly to be completed

Career Readiness (Standard 9): 9.2 9.4

Learning Targets

Standards: VPA 1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4, SEL.PK-12.5

Content Statements: Anchor Standard 1: Generating and conceptualizing ideas.
SEL.PK-12.1: Self-Awareness
SEL.PK-12.2: Self-Management
SEL.PK-12.3: Social Awareness
SEL.PK-12.4: Responsible Decision-Making
Core Idea: Innovative ideas or innovation can lead to career opportunities.
Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices.

CPI#:	Cumulative Progress Indicator (CPI):
1.5.12 prof.Cr1b	Use multiple approaches to begin creative endeavors.
9.4.12.CI.2:	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).
9.2.12.CAP.7	Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.
SEL.PK-12.1.	Recognise one's feelings and thoughts
SEL.PK-12.2.	Understand and practice strategies for managing one's own emotions, thoughts and behaviors

Unit Essential Questions:

- What conditions, attitudes, and behaviors support creativity and innovative thinking?
- What factors prevent or encourage people to take creative risks?



- How does collaboration expand the creative process?
- How does knowing the contexts, histories, and traditions of art forms help us create works of art and design?
- Why do artists follow or break from established traditions? How do artists determine what resources and criteria are needed to formulate artistic investigations?

Unit Enduring Understandings:

- Creativity and innovative thinking are essential life skills that can be developed.
- Artists and designers shape artistic investigations, following or breaking with traditions in pursuit of creative art-making goals.

Unit Learning Targets:

Students will....

- Demonstrate knowledge of various types of wood joints
- Demonstrate different ways to assemble a project
- Demonstrate the proper way to sand a project
- Understand the multiple ways to finish a project
- Demonstrate the proper ways to finish a project

Evidence of Learning

Summative Assessment: 5 days

Equipment Needed: Computer, lumber, tools, machines, fasteners, glue, sand paper, stain, varnish

Teacher Resources: Internet resources, local network, teacher made assessments

Formative Assessments:

- Teacher observations
- Student demonstrations
- Performance assessments
- Written assessments



Lesson Plans

Lesson	Time Frame
Lesson 1 Wood Joints	2 days
Lesson 2 Sanding	2 days
Lesson 3 Types of Finishes	1 day

Teacher notes:

These are the final stages of project development

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

<https://www.nj.gov/education/sboe/>

<https://www.nj.gov/education/standards/clicks/>

<https://www.nj.gov/education/standards/vpa/Index.shtml>



Lesson Plan 1 Template

Content Area: Practical Arts Lesson Title: Wood Joints Time Frame: 2 days

Lesson Components

21st Century Themes

☒ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy
☒ Civic Literacy ☒ Health Literacy

21st Century Skills

☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Information Literacy
☒ Life and Career Skills ☐ Communication and Collaboration ☒ Media Literacy ☒ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, Compound Miter Saw, Router, Computer

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand and identify the different types of wood joints - Be able to cut/create multiple wood joints	Lesson Sequence - Lesson on wood joints - Demonstration on how to cut them - Students work to cut various types of joints	- Teacher observation - Written assessment - Performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - Class notes  Basic Wood Joinery https://www.youtube.com/watch?v=WFXieuIcPdU		



Lesson Plan 2 Template

Content Area: Practical Arts Lesson Title: Sanding Time Frame: 2 days

Lesson Components

21st Century Themes

✗ Global Awareness □ Financial, Economic, Business and Entrepreneurial Literacy
 ✗ Civic Literacy ✗ Health Literacy

21st Century Skills

✗ Creativity and Innovation ✗ Critical Thinking and Problem Solving ✗ Information Literacy
 ✗ Life and Career Skills □ Communication and Collaboration ✗ Media Literacy ✗ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, Electric Sanders, Sanding Blocks, Abrasive Paper, Computer

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand how sanding makes wood smoother - Understand the different grades and types of abrasive papers - Be able to sand their project smooth	Lesson Sequence - Lesson on how sanding closes the pores of the wood - Lesson on different grades and types of abrasive papers - Demonstration on how to and not to sand - Student participate in sanding their project	- Teacher observation - Written assessment - Performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - Class notes 📺 Sanding by Hand 📺 How to sand a table top 📺 How to hand sand woodworking projects Rockler Skill Builders		



Lesson Plan 3 Template

Content Area: Practical Arts Lesson Title: Types of Finishes Time Frame: 1 day

Lesson Components

21st Century Themes

✗ Global Awareness □ Financial, Economic, Business and Entrepreneurial Literacy
 ✗ Civic Literacy ✗ Health Literacy

21st Century Skills

✗ Creativity and Innovation ✗ Critical Thinking and Problem Solving ✗ Information Literacy
 ✗ Life and Career Skills □ Communication and Collaboration ✗ Media Literacy ✗ ICT Literacy

Interdisciplinary Connections: 21st Century Life & Career Education, Industrial Arts, Visual and Performing Arts

Integration of Technology: Internet sites, local network, OnCourse

Equipment Needed: Lumber, Types of finishes, Brushes, Rags, Finishing room with exhaust fan, Computer

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: - Understand the different types of finishing materials - Understand the difference between paint and stain - Be able to add a finish their project	Lesson Sequence - Lesson on finishing materials and safety precautions - Check for understanding - Students will apply first coat of finish - Students will sand in between coats then add additional coats	- Teacher observation - Written assessment - Performance assessment
Differentiation: Demonstration, practice, written and oral participation, modified assessments		
Resources Provided: - Class notes ▶ What Kind of Finish Should You Use? WOOD FINISHING BASICS ▶ Wood Finishes - A Quick Guide - Varnish / Stain / Oil / Wax / Lacquer / Polyurethane / S...		



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly*, *Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging Strongly and require higher order thinking and problem solving skills		x	
Allow for student choice	x		
Provide scaffolding for acquiring targeted knowledge/skills	x		
Integrate global perspectives		x	
Integrate 21st century skills		x	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		x	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	x		
Are varied to address different student learning styles and preferences		x	
Are differentiated based on student needs		x	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		x	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	x		
Provide opportunities for student reflection and self- assessment	x		
Provide data to inform and adjust instruction to better meet the varying needs of learners		x	

Curriculum Design Template

Content Area: Practical Arts	Grade Level: 9-12	Unit Title: Assembly & Finishing
Created: Steve Di Gangi	Board Approved on: Type Here	