# Unit 5-Thickness Planer/Cutting Techniques

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## Title Section

## Department of Curriculum and Instruction

**Belleville Public Schools**

**Curriculum Guide**

# Unit 5- Thickness Planer/Cutting Techniques

**Belleville Board of Education**

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## Unit Overview

Students will learn what is the purpose of a thickness planer. Students will understand the need for cutting techniques and when you use a thickness planer. Students will identify the proper use of a thickness planer. Safety protocol of a thickness planer and safety protocol for cutting techniques will be used at all times.

## Enduring Understanding

Students will understand....

-The importance of identifying a thickness planer

-The importance of using proper cutting techniques

-Identifying the safety protocol for all equipment

-Use of power tools.

-Creation of multiple projects

## Essential Questions

-How do we use a thickness planer?

-What is the reason for a thickness planer?

-Why do we need a thickness planer?

-Why do we have a need for cutting techniques?

-How do we safely shut down all equipment in case of emergency?

-What is the need for equipment when creating projects?

## Exit Skills

By the end of  Unit 5, the student should be able to:

-Properly use a thickness planer

-Identify when to use a thickness planer

-Create various projects including a table

-Use a variety of cutting techniques in order to master a project

-Develop the understanding use of a thickness planer

-Understand the safety protocol for use

## New Jersey Student Learning Standards (NJSLS-S)

| | |
|---|---|
| 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 |

## Interdisciplinary Connections

| | |
|---|---|
| LA.RL.11-12.1 | Cite strong and thorough textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain. |
| LA.RL.11-12.2 | Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text. |
| LA.RL.11-12.3 | Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed). |
| LA.RL.11-12.7 | Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text. (e.g., Shakespeare and other authors.) |
| LA.RL.11-12.8 | (Not applicable to literature) |
| LA.RL.11-12.9 | Demonstrate knowledge of and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) eighteenth-, nineteenth- and early twentieth-century foundational works of literature, including how two or more texts from the same period treat similar themes or topics. |
| LA.RI.11-12.7 | Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem. |
| LA.RI.11-12.8 | Describe and evaluate the reasoning in seminal U.S. and global texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., The Federalist, presidential addresses). |
| LA.RI.11-12.9 | Analyze and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) documents of historical and literary significance for their themes, purposes and rhetorical features, including primary source documents relevant to U.S. and/or global history. |
| MA.A-REI.C | Solve systems of equations |
| MA.A-REI.D | Represent and solve equations and inequalities graphically |
| LA.SL.11-12.4 | Present information, findings and supporting evidence clearly, concisely, and logically. The content, organization, development, and style are appropriate to task, purpose, and audience. |

## Learning Objectives

Students will be able to...

-Use and identify a thickness planer

-Create and construct various projects including a table

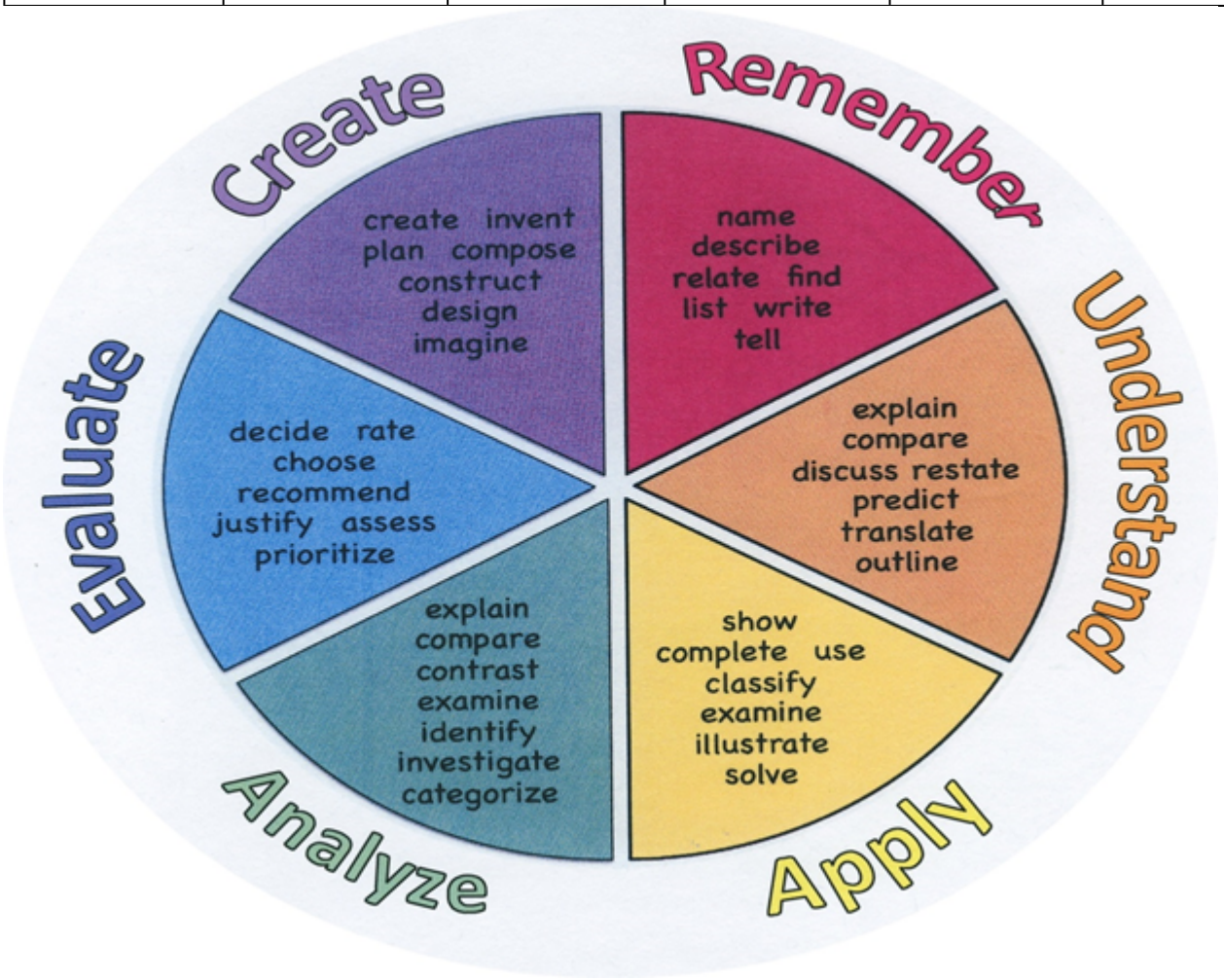
-Explain the function of a thickness planer

-Develop a timeline to meet project demands

-Compare and contrast a variety of cutting techniques when creating projects

| Remember | Understand | Apply | Analyze | Evaluate | Create |
|---|---|---|---|---|---|
| Choose | Classify | Choose | Categorize | Appraise | Combine |
| Describe | Defend | Dramatize | Classify | Judge | Compose |
| Define | Demonstrate | Explain | Compare | Criticize | Construct |
| Label | Distinguish | Generalize | Differentiate | Defend | Design |

| | | | | | |
|---|---|---|---|---|---|
| List | Explain | Judge | Distinguish | Compare | Develop |
| Locate | Express | Organize | Identify | Assess | Formulate |
| Match | Extend | Paint | Infer | Conclude | Hypothesize |
| Memorize | Give Examples | Prepare | Point out | Contrast | Invent |
| Name | Illustrate | Produce | Select | Critique | Make |
| Omit | Indicate | Select | Subdivide | Determine | Originate |
| Recite | Interrelate | Show | Survey | Grade | Organize |
| Select | Interpret | Sketch | Arrange | Justify | Plan |
| State | Infer | Solve | Breakdown | Measure | Produce |
| Count | Match | Use | Combine | Rank | Role Play |
| Draw | Paraphrase | Add | Detect | Rate | Drive |
| Outline | Represent | Calculate | Diagram | Support | Devise |
| Point | Restate | Change | Discriminate | Test | Generate |
| Quote | Rewrite | Classify | Illustrate | | Integrate |
| Recall | Select | Complete | Outline | | Prescribe |
| Recognize | Show | Compute | Point out | | Propose |
| Repeat | Summarize | Discover | Separate | | Reconstruct |
| Reproduce | Tell | Divide | | | Revise |
| | Translate | Examine | | | Rewrite |
| | Associate | Graph | | | Transform |
| | Compute | Interpolate | | | |
| | Convert | Manipulate | | | |
| | Discuss | Modify | | | |
| | Estimate | Operate | | | |
| | Extrapolate | Subtract | | | |
| | Generalize | | | | |
| | Predict | | | | |



## Suggested Activities & Best Practices

-Students will use a thickness planer on wood projects to help finish project

-Students will use various cutting techniques and understand why they are used

## Assessment Evidence - Checking for Understanding (CFU)

-Students will be given quizzes on the thickness planer and on various cutting techniques-benchmark assessment

-Students will self assess each other when completing the cutting techniques

-Students will evaluate final cuts and check measurements to be exact

Unit test-summative assessment

Think,pair, share-formative assessment

Web-based assessment-alternate assessment

- Admit Tickets
- Anticipation Guide
- Common Benchmarks
- Compare & Contrast
- Create a Multimedia Poster

- DBQ's
- Define
- Describe
- Evaluate
- Evaluation rubrics
- Exit Tickets
- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- Journals
- KWL Chart
- Learning Center Activities
- Multimedia Reports
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes
- Red Light, Green Light
- Self- assessments
- Socratic Seminar
- Study Guide
- Surveys
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit review/Test prep
- Unit tests
- Web-Based Assessments
- Written Reports

## Primary Resources & Materials

Basic Woodworking Fundamentals- Wilcox Company

Desktop PC

Internet

## Ancillary Resources

YouTube Training Video

Scholarly Articles and Videos

Media Center

## Technology Infusion

Hardware (Ex. Hammer, Screwdriver, Sander, Wrench)

Desktop PC-Students will be viewing various videos on how to use a thickness planer

Vise-Vise will be used to support the wood

Electronic Measuring Tape-Students will be given tests on measurement markings and cuts on wood

Thickness planer-Planer will be used to give wood a finished look

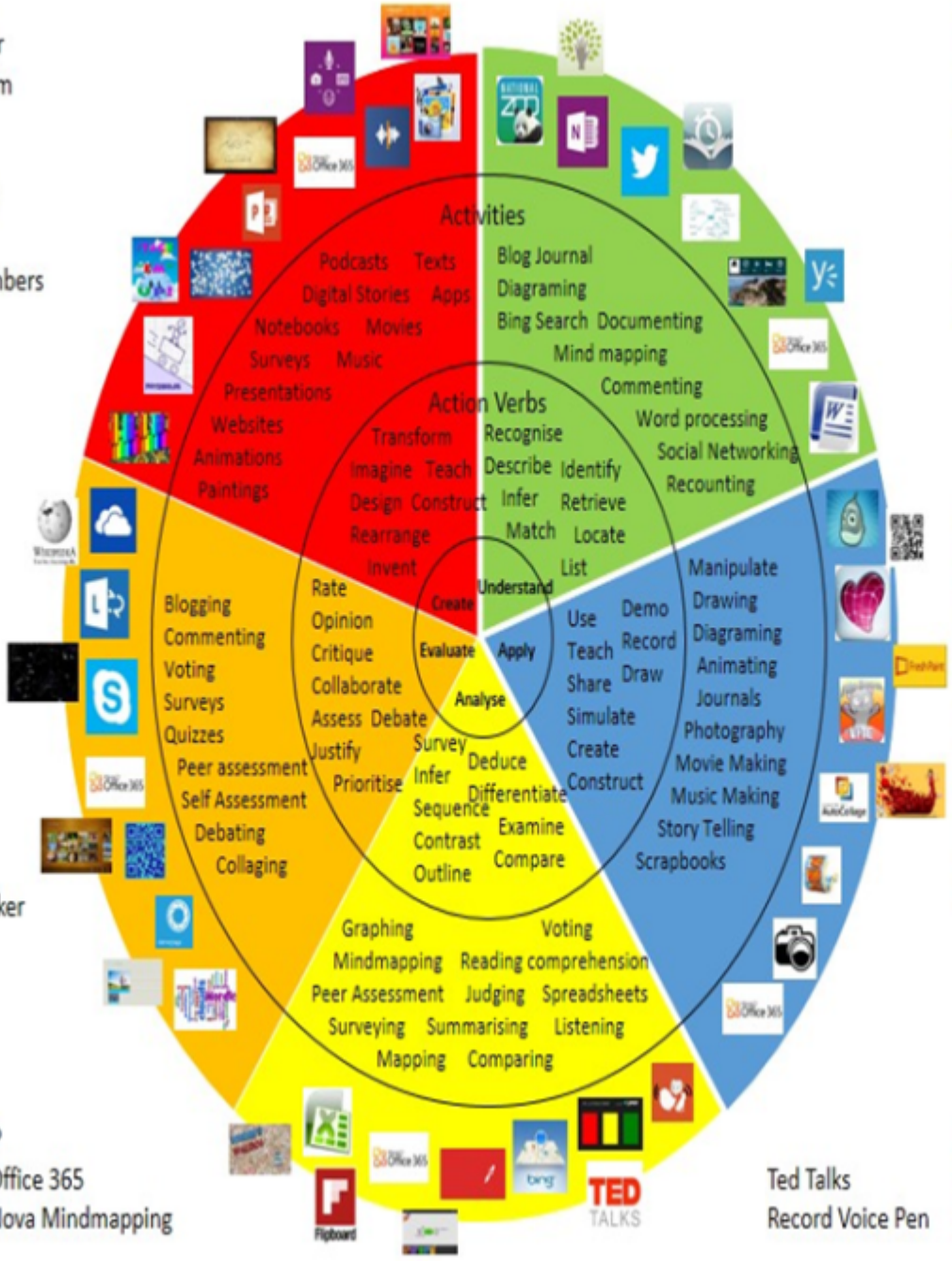
# Win 8.1 Apps/Tools Pedagogy Wheel

Podcasts
Photostory 3
Kid Story Builder
Music Maker Jam
Paint A Story
Office 365
MS PowerPoint
Stack 'Em Up
NqSquared Numbers
Physamajig
Xylophone 8

Wikipedia
Skydrive
Lync
SkyMap
Skype
Office 365
Puzzle Touch
Easy QR
Memorylage
Life Moments
Word Cloud Maker

Where's Waldo?
MS Excel
Flipboard
Office 365
Nova Mindmapping

Ted Talks
Record Voice Pen




Originally taken from http://www.coetail.com/vzimmer/files/2013/02/iPadagogy-Wheel.001.jpg
And adapted for Windows 8.1 devices by Charlotte Beckhurst @CharBeckhurst

## Alignment to 21st Century Skills & Technology

| | |
|---|---|
| CRP.K-12.CRP2 | Apply appropriate academic and technical skills. |
| CRP.K-12.CRP2.1 | Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation. |
| CRP.K-12.CRP4.1 | Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome. |
| CRP.K-12.CRP8 | Utilize critical thinking to make sense of problems and persevere in solving them. |
| CAEP.9.2.12.C.1 | Review career goals and determine steps necessary for attainment. |
| CAEP.9.2.12.C.5 | Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures. |
| TECH.8.1.12.A | Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations. |
| TECH.8.1.12.A.1 | Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources. |
| TECH.8.1.12.A.CS1 | Understand and use technology systems. |
| TECH.8.1.12.B.2 | Apply previous content knowledge by creating and piloting a digital learning game or tutorial. |
| TECH.8.1.12.B.CS1 | Apply existing knowledge to generate new ideas, products, or processes. |
| TECH.8.1.12.B.CS2 | Create original works as a means of personal or group expression. |

## 21st Century Skills/Interdisciplinary Themes

- Communication and Collaboration

- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy
- Life and Career Skills
- Media Literacy

## 21st Century Skills

- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

## Differentiation

-Students will be working in small groups to make sure cutting techniques are being used

-Students will be given study guides on how to operate the thickness planer

**Differentiations:**

- Small group instruction
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments allowed
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary
- Preview content & concepts
- Story guides
- Behavior management plan
- Highlight text
- Student(s) work with assigned partner
- Visual presentation
- Assistive technology
- Auditory presentations
- Large print edition
- Dictation to scribe

- Small group setting

**Hi-Prep Differentiations:**

- Alternative formative and summative assessments
- Choice boards
- Games and tournaments
- Group investigations
- Guided Reading
- Independent research and projects
- Interest groups
- Learning contracts
- Leveled rubrics
- Literature circles
- Multiple intelligence options
- Multiple texts
- Personal agendas
- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products
- Varying organizers for instructions

**Lo-Prep Differentiations**

- Choice of books or activities
- Cubing activities
- Exploration by interest
- Flexible grouping
- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

## Special Education Learning (IEP's & 504's)

-Students will be given extra time to master the operation of the thickness planer

-Students will repeat directions prior to operating any piece of equipment

- printed copy of board work/notes provided
- additional time for skill mastery
- assistive technology
- behavior management plan
- Center-Based Instruction
- check work frequently for understanding
- computer or electronic device utilizes
- extended time on tests/ quizzes
- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format
- modified test content
- modified test format
- modified test length
- multi-sensory presentation
- multiple test sessions
- preferential seating
- preview of content, concepts, and vocabulary
- Provide modifications as dictated in the student's IEP/504 plan
- reduced/shortened reading assignments
- Reduced/shortened written assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet
- Use open book, study guides, test prototypes

## English Language Learning (ELL)

-Students will use videos to show how to operate and safely use a thickness planer

-Students will be allowed to correct all error until mastery of operation is complete

- teaching key aspects of a topic.  Eliminate nonessential information
- using videos, illustrations, pictures, and drawings to explain or clarif
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student’s learning;
- allowing students to correct errors (looking for understanding)
- allowing the use of note cards or open-book during testing
- decreasing the amount of workpresented or required

- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching, or fill in the blank tests in lieu of essay tests

## At Risk

Students will use videos to show how to operate and safely use a thickness planer

-Students will be allowed to correct all error until mastery of operation is complete

- allowing students to correct errors (looking for understanding)
- teaching key aspects of a topic. Eliminate nonessential information
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices
- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- marking students' correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using authentic assessments with real-life problem-solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

## Talented and Gifted Learning (T&G)

-Students will debate with educator on how to cut proper angles

-Students will work at a faster pace when using the thickness planer and assist peers in class

- Above grade level placement option for qualified students

- Advanced problem-solving
- Allow students to work at a faster pace
- Cluster grouping
- Complete activities aligned with above grade level text using Benchmark results
- Create a blog or social media page about their unit
- Create a plan to solve an issue presented in the class or in a text
- Debate issues with research to support arguments
- Flexible skill grouping within a class or across grade level for rigor
- Higher order, critical & creative thinking skills, and discovery
- Multi-disciplinary unit and/or project
- Teacher-selected instructional strategies that are focused to provide challenge, engagement, and growth opportunities
- Utilize exploratory connections to higher-grade concepts
- Utilize project-based learning for greater depth of knowledge

## Sample Lesson

Using the template below, please develop a **Sample Lesson** for the first unit only.

Unit Name:

NJSLS:

Interdisciplinary Connection:

Statement of Objective:

Anticipatory Set/Do Now:

Learning Activity:

Student Assessment/CFU's:

Materials:

21st Century Themes and Skills:

Differentiation/Modifications:

Integration of Technology: