# Unit 4-The Design Process

Content Area: **Technology**
Course(s): **Computer Science Discoveries**
Time Period:
Length: **6 Weeks Grade 8**
Status: **Published**

## Title Section

## Department of Curriculum and Instruction

**Belleville Public Schools**

**Curriculum Guide**

# Computer Science Discoveries, Grade 8

# The Design Process

**Belleville Board of Education**

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## Unit Overview

The Design Process unit transitions students from thinking about computer science as a tool to solve their own problems towards considering the broader social impacts of computing. Through a series of design challenges, students are asked to consider and understand the needs of others while developing a solution to a problem. The second half of the unit consists of an iterative team project, during which students have the opportunity to identify a need that they care about, prototype solutions both on paper and in App Lab, and test their solutions with real users to get feedback and drive further iteration.

## Enduring Understanding

Upon completion of this section, please remove all remaining descriptions, notes, outlines, examples and/or ilustrations that are not needed or used.

**Enduring understandings**:

- Summarize important ideas and core processes that are central to a discipline and have lasting value beyond the classroom;
- Synthesize what students should understand - not just know or do - as a result of studying a particular content area;
- Frame the Big Ideas that give meaning and lasting importance to such discrete curriculum elements as

facts and skills;
- Transfer to other fields and adult life;
- "Unpack" areas of the curriculum where students may struggle to gain understanding or where they demonstrate misunderstandings and misconceptions;
- Provide a conceptual foundation for studying the content area;
- Articulate what students should "revisit" over the course of their lifetimes in relationship to the content area;
- Are framed as declarative sentences that present major curriculum generalizatios and recurent ideas.

**Examples:**

- **Enduring Understanding**: Reading is a process by which we construct meaning about the information being communicated by an author within a print or non-print medium.

- **Essential Question**: How is reading a process for constructing meaning from text?

## Essential Questions

- How do designers identify the needs of their user?
- How can we ensure that a user's needs are met by our designs?
- What processes will best allow us to efficiently create, test, and iterate upon our designs?
- How do teams effectively work together to develop software?
- What roles beyond programming are necessary to design and develop software?
- How do designers incorporate feedback into multiple iterations of a product?

## Exit Skills

By the end of Grade 8, Computer Science Discoveries Unit 4, the student should be able to answer all the following questions:

- How do designers identify the needs of their user?
- How can we ensure that a user's needs are met by our designs?
- What processes will best allow us to efficiently create, test, and iterate upon our designs?
- How do teams effectively work together to develop software?

- What roles beyond programming are necessary to design and develop software?
- How do designers incorporate feedback into multiple iterations of a product?

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

| | |
|---|---|
| TECH.8.1.8 | Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. |
| TECH.8.1.8.A | Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations. |
| TECH.8.1.8.B | Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology. |
| TECH.8.1.8.C | Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. |
| TECH.8.1.8.D | Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior. |
| TECH.8.1.8.E | Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information. |
| TECH.8.1.8.F | Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. |
| TECH.8.2.8 | Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment. |
| TECH.8.2.8.A | The Nature of Technology: Creativity and Innovation: Technology systems impact every aspect of the world in which we live. |
| TECH.8.2.8.B | Technology and Society: Knowledge and understanding of human, cultural and society values are fundamental when designing technology systems and products in the global society. |

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|---|---|
| TECH.8.2.8.C | Design: The design process is a systematic approach to solving problems. |
| TECH.8.2.8.D | Abilities for a Technological World: The designed world is the product of a design process that provides the means to convert resources into products and systems. |
| TECH.8.2.8.E | Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge. |

## Interdisciplinary Connections

| | |
|---|---|
| LA.RI.8 | Reading Informational Text |
| LA.RI.8.1 | Cite the textual evidence and make relevant connections that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text. |
| LA.RI.8.2 | Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text. |
| LA.RI.8.3 | Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories). |

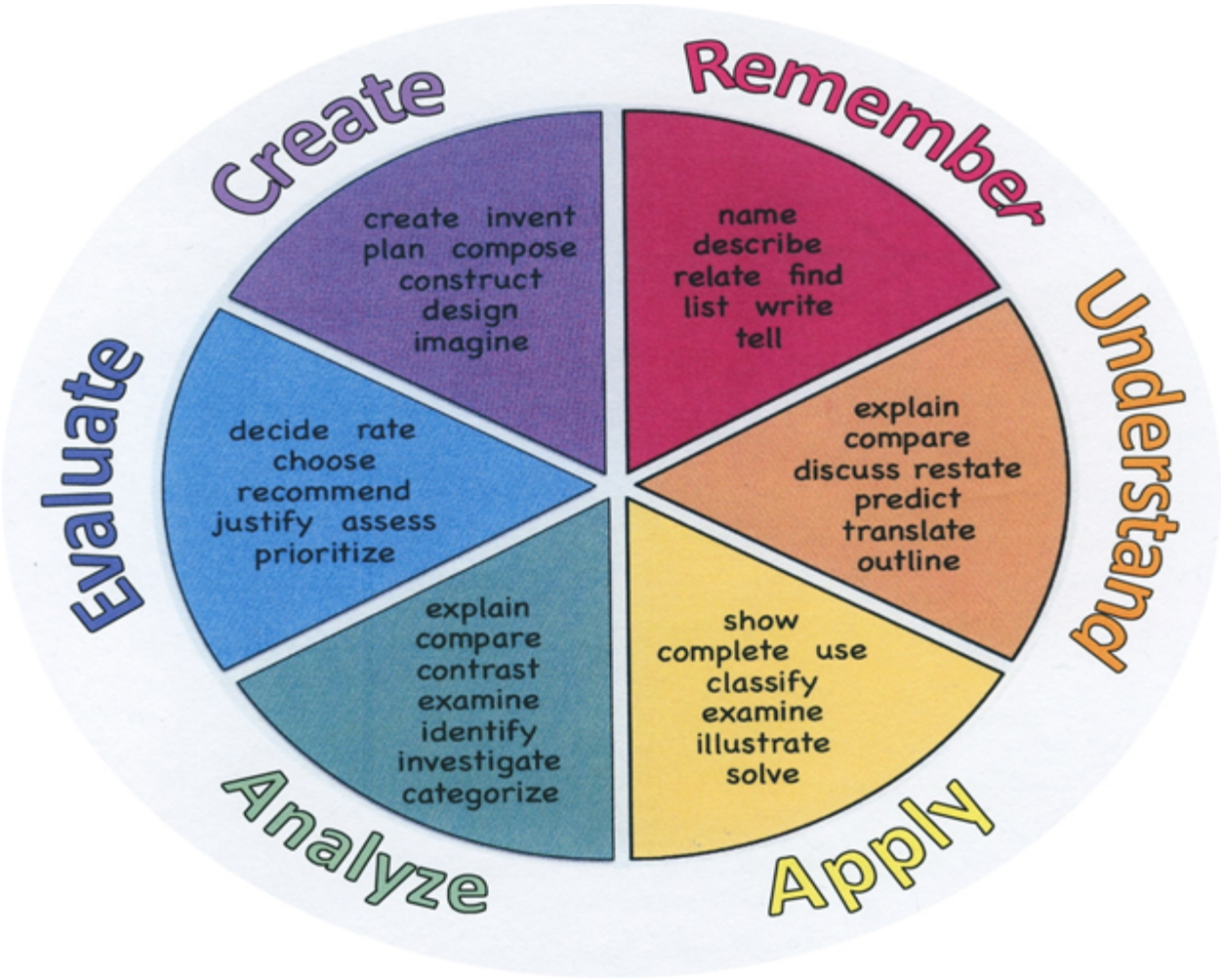
## Learning Objectives

- Critically evaluate an object for how well its design meets a given set of needs
- Identify empathy for the user as an important component of the design process
- Critique a design through the perspective of a user profile.
- Design improvements to a product based on a user profile.
- Generate multiple strategies for meeting user needs.
- Organize ideas and strategies into meaningful categories.
- Analyze and select the most appropriate strategies to meet user needs.
- Use a paper prototype to test the design of an app.
- Collect and analyze feedback from user testing with a paper prototype.
- Use feedback to create a plan for further development of an app
- Categorize and prioritize user feedback for an app
- Improve a screen design based on user feedback.
- Conduct an interview to collect information about user needs
- Analyze interview notes to identify specific user needs
- Design the functionality of an app to address the specific needs of a user
- Identify improvements to an app based on user testing
- Design the user interface of an app
- Develop a plan for collaborating with others to design a computational artifact
- Describe the target users for a computational artifact
- Evaluate a design based its ability to meet target user's needs
- Evaluate the purpose and impact of a computational artifact
- Explain the role of paper prototypes in app development.
- Create a paper prototype that incorporates the user flow for a computational artifact.

- Design and run test that use paper prototypes to gather feedback on a design
- Analyze user tests to identify features that should be removed, added, or improved
- Assign roles and responsibilities to each team member when collaborating to create a digital artifact
- Select the appropriate input element for a given type of information
- Create a digital prototype of an application screen
- Create an event that detects and responds to user input
- Integrate all components from collaborative work into a final computational artifact.
- Create a digital prototype that incorporates the user flow for a computational artifact
- Design and run tests that use digital prototypes to gather feedback on a design
- Analyze user feedback and test results on a computational artifact
- Categorize and prioritize the issues according to impact and ease of implementation
- Present technical information clearly to non-technical users
- Reflect on the development of an ongoing project

**Action Verbs:** Below are examples of action verbs associated with each level of the Revised Bloom's Taxonomy.

| 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

Analysis of Design

To kick off a unit devoted to group problem solving and developing products for other users, students begin by investigating the design of various teapots. Students analyze each teapot, attempting to identify how specific user needs might have informed its design. By considering these design choices, and attempting to match each teapot with a potential user, students can begin to see how taking a user-centered approach to designing products (both physical and digital) can make those products more useful and usable. To conclude the activity, students are asked to propose some changes to one of the teapots that would make it more useful or usable.

**Purpose**

Students will enter this unit with an understanding of the problem solving process from prior units.

The problem solving process used throughout CS Discoveries is:

- Define
- Prepare
- Try
- Reflect

In this lesson, students look at real world objects to understand how the problem solving process can be applied to help others. Starting with this lesson, we will be reframing this process to include a layer of empathy, encouraging students to consider how others will experience and use the things they create.

We are purposefully starting out by looking at non-technical objects to encourage students to think more broadly about what it means to consider the end user of a product before honing in on how it specifically applies to software design

**Assessment Opportunities**

1. Critically evaluate an object for how well its design meets a given set of needs

   In the discussion at the end of the activity, ensure that students are connecting specifics of the user descriptions to the features of the teapots that they have chosen for those respective users.

2. Identify empathy for the user as an important component of the design process

   In the discussion at the end of the activity, check that students are referencing the user descriptions for their explanations, rather than general advantages and disadvantages of each teapot.

**Agenda**

- Warm Up (5 min)
- Introduction
- Activity (35 min)
- Who Was this Designed For?
- Discussing Design Choices
- Wrap Up (5 min)
- Improving on Designs
- Extension Activites
- Exploring Everyday Things
- Poorly Designed Products

**Objectives**

**Students will be able to:**

- Critically evaluate an object for how well its design meets a given set of needs
- Identify empathy for the user as an important component of the design process

**Preparation**

- Print a copy of the activity guide for each student (or prepare to distribute the document digitally).

**Vocabulary**

- Critique - To critically evaluate in a detailed and constructive manner.
- Empathy - In design, paying attention to a user's feelings and needs when designing a product.

- User - Someone who uses an object, including software and hardware.

**Warm Up (5 min)**

**Introduction**

Display: Put up the Problem Solving Process with Empathy - Image to introduce students to the User-Centered Design Process as an extension of the Problem Solving Process they used in the first three units. The primary difference to note is that we've added Empathize to the background of the entire process.

Prompt: What does it mean to empathize? How might the concept of empathizing in a problem solving process be different from in other places you've heard of empathy?

Discussion Goal

Goal: This discussion can be fairly free-flowing and open ended. While you want to eventually arrive at a shared understanding of what it means to empathize, students will be working on their understanding of the word over the entire unit. There's no need to settle on a single fixed definition, so treat this discussion as an introduction to a theme of the unit.

Discuss: Students should discuss their ideas as a class. Eventually direct conversation towards the fact that to empathize with other people means to consider their wants, needs, or concerns.

**Activity (35 min)**

**Who Was this Designed For?**

Distribute: Hand out copies of the activity guide or have students take out their journals.

**Determining the User**

The first part of this activity asks students to match different teapots with the most likely user. Have students work through this activity in pairs, encouraging discussion about why exactly they are choosing to make each connection. This is a great place to discuss the design of teapots and the needs of users.

While some of the users have an obvious connection to a specific teapot, arguments could be made for any number of connections. There are no right or wrong answers here - the discussion and ability to reasonably back up a decision are what matter.

**This second activity gives students an opportunity to specifically critique four of the teapots. The structure of this page reflects the general approach we will be using for critique, using the three statements:**

- **I Like... (a strength)**
- **I Wish... (a weakness)**
- **What if... (a suggestion)**

**You may want to ask students to apply this critique process to more of the teapots, or objects around the room,**

**to help reinforce the process.**

**Discussing Design Choices**

Assessment Opportunity

As students discuss their reasoning for their choices, check to ensure that they are identifying the particular user's needs and characteristics, rather than general reasons to prefer a certain teapot. You may want to challenge students to distinguish their own needs and preferences from those of the described users.

**Discuss: Students should talk about their answers on the worksheet either in their small groups or as a class. Questions could include:**

- **Which teapots did you choose for "Someone who needs to serve tea at dinner party?" Why did you choose those particular teapots?**
- **Which teapots did you choose for "Someone who likes metallic objects?" Why did you choose those particular teapots?**
- **Which users were the easiest to find matches for?**
- **Which users were the hardest to find matches for?**
- **For page 2, which teapot was your favorite? Why?**

**Wrap Up (5 min)**

**Improving on Designs**

Journal: Pick one or two of the objects you analyzed today (in either activity):

- What could you change to make this object more usable for you? Feel free to use words, pictures, or a combination of both.

## Assessment Evidence - Checking for Understanding (CFU)

By identifying the Evidence of Student Learning with Checking for Understanding (CFU) techniques used during the lesson and/or for Closure (Madeline Hunter), please list the variety of means used to access students' learning (e.g. quizzes, tests, academic prompts, observations, homework, journals).

At the end of each lesson, there is a hands on quiz each student will complete before moving on to the next

lesson. - Formative

After the completion of each unit there is a test on the unit. The test consists of completing each of the activities taught throughout the unit to work towards building their website or game. - Summative

Students may also have the opportunity of completing tasks one by one instead of building the website or game. This will be graded through completion of the task or observation of their work. - Alternative

- 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

Code.org

Google Suite

## Ancillary Resources

Everfi

Typing.com

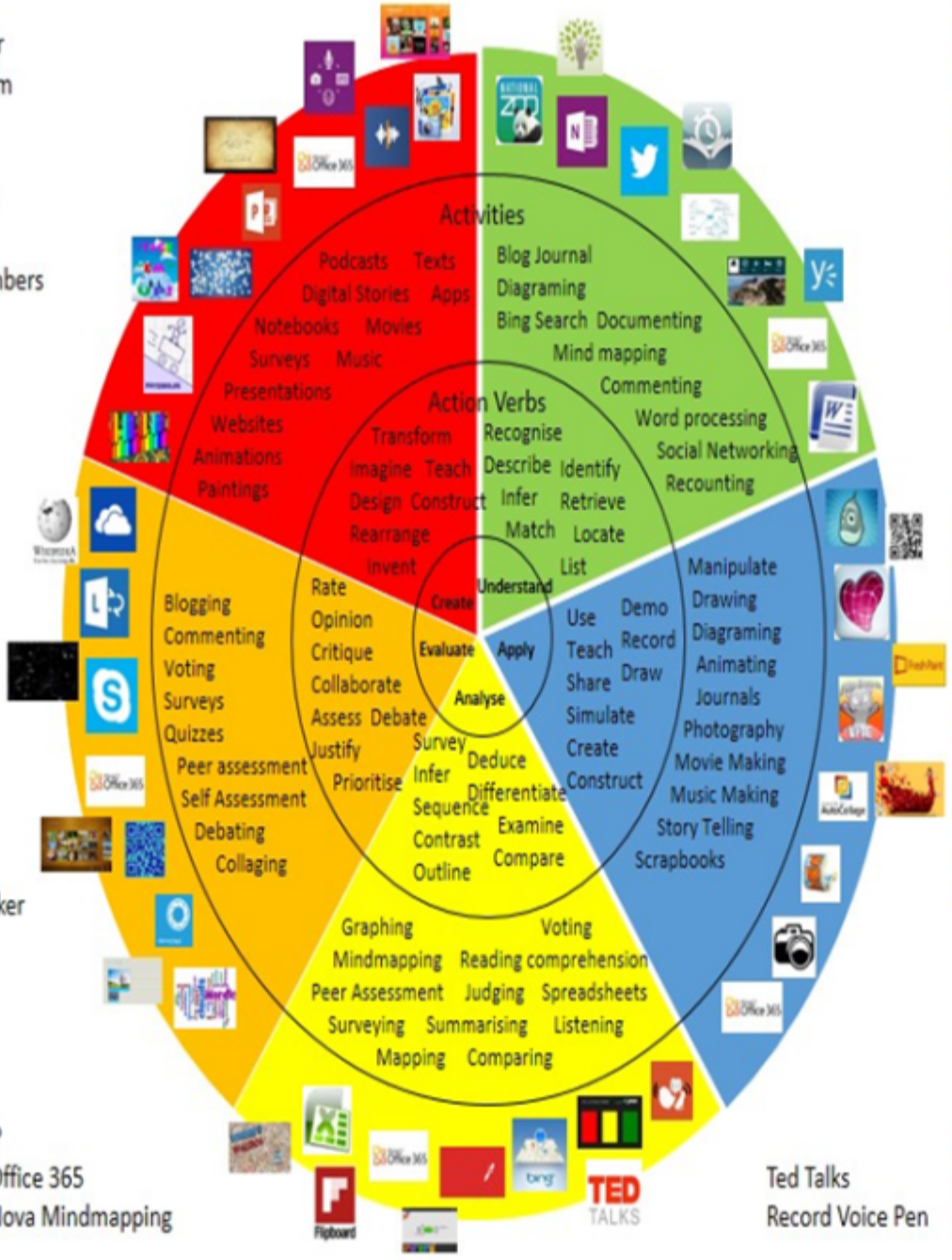
## Technology Infusion

All students will use their Chromebooks to access different programs to complete their work.

# 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 Office 365
Flipboard 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

Mastery and infusion of **21st Century Skills & Technology** and their Alignment to the core content areas is essential to student learning. The core content areas include:

- English Language Arts;
- Mathematics;
- Science and Scientific Inquiry (Next Generation);
- Social Studies, including American History, World History, Geography, Government and Civics, and Economics;
- World languages;
- Technology;
- Visual and Performing Arts.

| | |
|---|---|
| CRP.K-12.CRP1 | Act as a responsible and contributing citizen and employee. |
| CRP.K-12.CRP1.1 | Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good. |
| 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.CRP3 | Attend to personal health and financial well-being. |
| CRP.K-12.CRP3.1 | Career-ready individuals understand the relationship between personal health, workplace performance and personal well-being; they act on that understanding to regularly practice healthy diet, exercise and mental health activities. Career-ready individuals also take regular action to contribute to their personal financial well-being, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success. |
| CRP.K-12.CRP4 | Communicate clearly and effectively and with reason. |
| 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. |

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|---|---|
| CRP.K-12.CRP5 | Consider the environmental, social and economic impacts of decisions. |
| CRP.K-12.CRP5.1 | Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization. |
| CRP.K-12.CRP6 | Demonstrate creativity and innovation. |
| CRP.K-12.CRP6.1 | Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization. |
| CRP.K-12.CRP7 | Employ valid and reliable research strategies. |
| CRP.K-12.CRP7.1 | Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies. They use reliable research process to search for new information. They evaluate the validity of sources when considering the use and adoption of external information or practices in their workplace situation. |
| CRP.K-12.CRP8 | Utilize critical thinking to make sense of problems and persevere in solving them. |
| CRP.K-12.CRP8.1 | Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others. |
| CRP.K-12.CRP10 | Plan education and career paths aligned to personal goals. |
| CRP.K-12.CRP10.1 | Career-ready individuals take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals. |
| CRP.K-12.CRP11 | Use technology to enhance productivity. |
| CRP.K-12.CRP11.1 | Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks. |
| CRP.K-12.CRP12 | Work productively in teams while using cultural global competence. |
| CRP.K-12.CRP12.1 | Career-ready individuals positively contribute to every team, whether formal or informal. They apply an awareness of cultural difference to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings. |
| CAEP.9.2.8.B | Career Exploration |
| CAEP.9.2.8.B.1 | Research careers within the 16 Career Clusters ® and determine attributes of career success. |

| | |
|---|---|
| CAEP.9.2.8.B.2 | Develop a Personalized Student Learning Plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan. |
| CAEP.9.2.8.B.3 | Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career. |
| CAEP.9.2.8.B.4 | Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally. |
| CAEP.9.2.8.B.5 | Analyze labor market trends using state and federal labor market information and other resources available online. |
| CAEP.9.2.8.B.6 | Demonstrate understanding of the necessary preparation and legal requirements to enter the workforce. |
| CAEP.9.2.8.B.7 | Evaluate the impact of online activities and social media on employer decisions. |

## 21st Century Skills/Interdisciplinary Themes

Please list only the **21st Century/Interdisciplinary Themes** that will be incorporated into this unit.

- 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

Please list only the **21st Century Skills** that will be incorporated into this unit.

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

## Differentiation

All will be used based on the students needs.

Please remember: Effective educational **Differentiation** in a lesson lies within content, process, and/or product.

* Extra time to complete assignments.

**Differentiations:**

- Small group instructionSmall groups will be set up to teach and re-teach as necessary
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions-Directions will be repeated as necessary and will be available on the computer
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments allowed
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary-A shared google doc will be available with 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-students will have extension activities in all phases
- 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-Personal agendas will be created with student to ensure extension activities are included in the process

- 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-students will set goals to assist with achieving proficiency in required skills
- Jigsaw
- Mini workshops to re-teach or extend skills-Mini workshops will be available as necessary or as requested
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

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

* Students can work with an assigned partner.

- 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 be assigned a partner for tutoring & assistance in class.

- 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 be allowed to correct errors on assignments.

- 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)

* Utilize project based learning for greater depth of knowledge.

- 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: