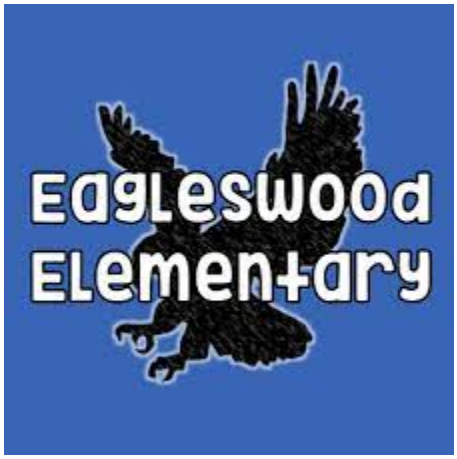
Eagleswood Township Elementary School District



Computer Curriculum

Grade 2

Adopted by the Eagleswood Board Of Education

August 15, 2022

Content Area: Computer Technology
Grade Level: 2nd
Date Created: August 2022
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Pacing Guide	
Unit 1: Digital Citizenship/ Navigation/ Keyboarding	Marking Period 1
Unit 2: Word Processing/ Spreadsheets/Paint/Introduction to Internet	Marking Period 2
Unit 3: Visual Mapping Basics/ Problem Solving	Marking Period 3
Unit 4: STEAM Integration	Marking Period 4

Unit 1- NJ Student Learning Standards - Computer Science and Design Thinking

8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
8.1.2.CS.2: Explain the functions of common software and hardware components of computing systems.
8.1.2.CS.3: Describe basic hardware and software problems using accurate terminology.
8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.
8.1.2.NI.2: Describe how the Internet enables individuals to connect with others worldwide.
8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others.
8.1.2.NI.4: Explain why access to devices need to be secured.
8.1.2.IC.1: Compare how individuals live and work before and after the implementation of new computing technology.
8.1.2.DA.2: Store, copy, search, retrieve, modify, and delete data using a computing device.
8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.
8.1.2.AP.4: Break down a task into a sequence of steps.

NJSLS for 21st Century Learning (Standard 9)

- CRP1 Act as a responsible and contributing citizen and employee.
- CRP2 Apply appropriate academic and technical skills.
- CRP11Use technology to enhance productivity.

NJSLS for ELA

- NJSLSA.R2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- NJSLSA.R5. Analyze the structure of texts, including how specific sentences,

paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
- NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
- RL.2.2. Recount stories, including fables and folktales from diverse cultures, and determine their central message/theme, lesson, or moral.
- RL.2.3. Describe how characters in a story respond to major events and challenges using key details.
- RL.2.4. Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.
- RL.2.10. Read and comprehend literature, including stories and poetry, at grade level text complexity or above with scaffolding as needed.
- RI.2.3. Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- RI.2.5. Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
- RI.2.10. Read and comprehend informational texts, including history/social studies, science, and technical texts, at grade level text complexity proficiently with scaffolding as needed.
- RF.2.3. Know and apply grade-level phonics and word analysis skills in decoding words.
- RF.2.4. Read with sufficient accuracy and fluency to support comprehension.
- SL.2.5. Use multimedia; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.

NJSLS for Math

- MP1 Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
- MP6 Attend to precision. Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in

their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

NJSLS for Science

- K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

NJSLS for Social Studies

- In grades K-4, students learn fundamental concepts about government, citizenship, **geography**, economics, and **history**. The focus of instruction is on developing an understanding of core democratic values, the rights and responsibilities of American citizens, and how key people and events contributed to the development of the American heritage. **Exploration of cultural universals enables students to realize how the availability of resources, the changing environment, and innovation impact everyday life.**

Unit 1

Central Idea/ Enduring Understanding

Students will…

- Understand proper use and care for the computer and other technological tools help students to appreciate the value of technology in our lives.
- A computer is an adaptable tool for organizing information and solving problems that facilitate lifelong learning.
- Understand that navigation tools are convenient ways for users to access and manipulate various computer software, programming, and applications.
- Basic word processing skills are essential for students to manipulate computer programs and applications.

Guiding Questions

- How are basic computer concepts, such as using the desktop, working with files and folders useful to users?
- How are the files accessed and saved?
- How has dropdown menus and general window controls make technology more accessible?
- How to locate all of the letters of the alphabet on the computer keyboard?
- How to change case of letters on the computer keyboard?
- How to locate all of the numbers on the computer keyboard?
- What are basic concepts about the internet and the World Wide Web, such as using a web page, and

● Technology is constantly changing and requires continuous learning of new skills. ● Selection of technology should be based on personal and/or career needs assessment. ● Technology can have positive or negative impact on both users and those affected by their use.	website, following links, and differentiating between the internet and the World Wide Web? ● How to identify and use URLs to research information online and use the navigation buttons? ● How to practice basic word processing skills by inputting text, moving the cursor, adding spaces, erasing typed information, saving, and printing.
Content ● Digital Citizenship ● Internet Safety ● Keyboarding ● Microsoft Word - locate, open & close files, right click. ● Selecting and applying various applications ● Basic computer ● troubleshooting	**Skills (objectives)** ● To identify and open files and folders. ● To navigate file structures and to use the recycle bin or trash to delete files ● To use text boxes to enter free-form information. ● To use dropdown menus to make a selection ● To use window controls to close, maximize, minimize, restore, and resize windows. ● To select appropriate digital tools to complete a task ● The relationship between pressing keys on the keyboard and seeing letters on the screen ● To identify and key the letters of the alphabet. ● To change the case of letters of the alphabet. ● To identify and key the numbers on the keyboard. ● Concept of home row keys and proper hand placement ● The difference between a web page and a website. ● To browse the World Wide Web by following a series of links. ● To use a browser to find and view information online. ● To use the back and forward buttons to navigate through web pages. ● Begin to explain the importance of copyright. ● Explain the importance of safely using

	the computer hardware and how to select the appropriate computer tool.
Performance Tasks ● Open-Ended Problems ● Project-Based Assessment ● Performance Based Assessments	**Other Evidence of Learning** ● Class-Work Review ● Teacher Observation
Learning Opportunities and Strategies ● Provide visual and tactile reference to computer hardware. ● Model program operations ● Utilize web resources/activities ● Dance Mat Typing programs	**Resources** ● Models ● Computer Lab ● Smart board/projector ● Web resources ● Application software ● Internet ● Dance Mat Typing programs

Unit 2- NJ Student Learning Standards - Computer Science and Design Thinking

8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
8.1.2.CS.2: Explain the functions of common software and hardware components of computing systems.
8.1.2.CS.3: Describe basic hardware and software problems using accurate terminology.
8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.
8.1.2.NI.2: Describe how the Internet enables individuals to connect with others worldwide.
8.1.2.NI.3: Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others.
8.1.2.NI.4: Explain why access to devices need to be secured.
8.1.2.IC.1: Compare how individuals live and work before and after the implementation of new computing technology.
8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats.
8.1.2.DA.2: Store, copy, search, retrieve, modify, and delete data using a computing device.
8.1.2.DA.3: Identify and describe patterns in data visualizations.
8.1.2.DA.4: Make predictions based on data using charts or graphs.
8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.
8.1.2.AP.2: Model the way programs store and manipulate data by using numbers or other symbols to represent information.
8.1.2.AP.4: Break down a task into a sequence of steps.
8.1.2.AP.5: Describe a program's sequence of events, goals, and expected outcomes.

NJSLS for 21st Century Learning (Standard 9)
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NJSLS for ELA

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- NJSLSA.R5. Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
- NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
- RL.2.2. Recount stories, including fables and folktales from diverse cultures, and determine their central message/theme, lesson, or moral.
- RL.2.3. Describe how characters in a story respond to major events and challenges using key details.
- RL.2.4. Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.
- RL.2.10. Read and comprehend literature, including stories and poetry, at grade level text complexity or above with scaffolding as needed.
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- MP1 Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects

or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

- MP6 Attend to precision. Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

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- K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

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- In grades K-4, students learn fundamental concepts about government, citizenship, **geography**, economics, and **history**. The focus of instruction is on developing an understanding of core democratic values, the rights and responsibilities of American citizens, and how key people and events contributed to the development of the American heritage. **Exploration of cultural universals enables students to realize how the availability of resources, the changing environment, and innovation impact everyday life.**

Unit 2

Central Idea/ Enduring Understanding Students will…	**Guiding Questions**
● Basic word processing skills are essential for students to manipulate computer programs and applications. ● Spreadsheets are valuable to everyday users, when there is a proficient understanding of its use.	● How to practice basic word processing skills by inputting text, moving the cursor, adding spaces, erasing typed information, saving, and printing. ● What is a spreadsheet program and what are worksheets, cells, rows, columns, and cell addresses? ● How do you navigate tables and enter data?

Content	**Skills (objectives)**
• Microsoft Word - locate, open & close files, right click. • Selecting and applying various applications • Basic computer troubleshooting • Informational Research - non-fiction text • Excel- input data and sort information	• How to open a word processing program. • To create a new document • To use the cursor. • How to save a file. • How to close a file. • How to open a file. • How to print a file. • How to exit a word processing program. • To type a numbered list • To type a document in paragraph form. • To identify and name the components of a spreadsheet, including worksheet, cell, row, and column. • The concept of a cell. • Concepts of rows and columns, including number and letter labels. • That a cell location name is based on the cell's row and column. • To enter data in individual cells. • To produce appropriate chart or graph
Performance Tasks • Open-Ended Problems • Project-Based Assessment • Performance Based Assessments	**Other Evidence of Learning** • Class-Work Review • Teacher Observation
Learning Opportunities and Strategies • Modeling of task • Follow multi-step instruction • Teacher generated word processing task • Teacher generated spreadsheet tasks • Creating graphs and charts	**Resources** • Word Processing software • Smart board/projector • Microsoft Word/ Google docs • Microsoft Excel/ Google forms

Unit 3- NJ Student Learning Standards - Computer Science and Design Thinking

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8.1.2.AP.2: Model the way programs store and manipulate data by using numbers or other symbols to represent information.
8.1.2.AP.3: Create programs with sequences and simple loops to accomplish tasks.
8.1.2.AP.4: Break down a task into a sequence of steps.
8.1.2.AP.5: Describe a program's sequence of events, goals, and expected outcomes.
8.1.2.AP.6: Debug errors in an algorithm or program that includes sequences and simple loops.

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Unit 3

Central Idea/ Enduring Understanding Students will… ● Understand and use visual mapping software and applications will assist in their ability to organize and present ideas. ● Select technology based on personal and/or career needs assessment. ● Understand that a tool is only as good as the person using it. ● Use the design process to systematically approach problems, generate solutions and make decisions. ● A computer is an adaptable tool for accessing information and using digital tools in generating solutions and making decisions. ● A computer is an adaptable tool for organizing information and solving problems that facilitate lifelong learning.	**Guiding Questions** ● How to use the basic concepts of visually organizing ideas and the components of visual mapping software ● How do I choose which technological tools to use and when it is appropriate to use them? ● How can I transfer what I know to new technological situations/experiences? ● How can the design process help to develop an understanding of a variety of tools and systems?
Content ● Google Maps/ Google Earth ● Selecting and applying various applications ● Basic computer troubleshooting ● Digital to draw ● Identify how technology impacts or improves life ● Identify the resources needed to create technological products and systems	**Skills (objectives)** ● To identify the basic components of visual mapping software. ● To understand the concept of direction. ● To begin to understand visual mapping software as a way to visualize distance. ● Explain the importance of safety in the use of technology tools. ● Identify resources used to create technological products.
Performance Tasks	**Other Evidence of Learning**

• Open-Ended Problems • Project-Based Assessment	• Class-Work Review • Teacher Observation
Learning Opportunities and Strategies • Locate specific places, addresses or landmarks using Google Maps/Google Earth • Illustrate a story using digital tools • Communicate using digital tools.	**Resources** • Google Maps/ Google Earth • Digital tools • Ozobots • Hour of Code

Differentiation Strategies			
High Achieving Students	On Grade Level Students	Struggling Students	Students with Special Needs
Create a PowerPoint presentation summarizing the lesson or introducing a topic Students create a Prezi on a given topic and present it to the class. Differentiate fact from opinion and fix the opinions to make them facts. Use of multiple texts, supplementary materials and computer programs Independent and small group projects chosen by students based on interest Student centered activities with the teacher as a guide Use of Jigsaw Think, Pair, Share Carousel activity to review or introduce material	Differentiate fact from opinion in the reading. Visual learners create a graphic organizer of the topic. Auditory learners give an oral report. Break some students into reading groups to discuss the assignment. Allow students to read individually if preferred. Use of student created charts and models Adaptive assessments that get easier or harder depending on how a student is performing. Learning activities in small groups, which are designed around student strengths and weaknesses so that they can tutor each other. Think, Pair, Share	Offer alternate assessments/ assignments Adapt reading levels Provide textbooks for visual and word learners. Visual learners create a graphic organizer of the topic. Break some students into reading groups to discuss the assignment. Supply note taking organizers and peer buddies Assign reading partners Choral reading/ answering Supply highlighted texts & worksheets Think, Pair, Share	Offer alternate assessments/assignments Match vocabulary words to definitions. Read a passage of text and answer related questions. Provide textbooks for visual and word learners. Allow auditory learners to listen to audio books. Give kinesthetic learners the opportunity to complete an interactive assignment online. Visual learners create a graphic organizer of the topic. Break some students into reading groups to discuss the assignment. Allow students to read individually if preferred.

Portfolios for Essay Writing E-pals to share essays Google Classroom Google docs to turn in and complete work Adapt reading levels	Allow for individual, partner and group work Carousel activity to review or introduce material Google Classroom	Google Classroom Carousel activity to review or introduce material Allow students to read individually if preferred. Have students define terms with pictures rather than words. Excel charts to compile information Kahoot to introduce/conclude lessons	Funbrain: quizzes/puzzles/games Kahoot to introduce/conclude lessons Internet Scavenger Hunts Google Classroom Google docs to turn in and complete work

NOTE: Teachers should follow the specific curricular accommodations for students with individualized learning plans such as IEPs and 504

Accommodations for Various Learners

Students that are English Language Learners:

1. Retell content information in easier English
2. Use simple sentence structure (verb-subject-object)
3. Use high frequency words
4. Avoid negative phrasing such as all, but, except
5. Actively help students build connections and associations in order to access background knowledge or previously taught information
6. Present students with written as well as oral messages (provide outlines or a copy of the notes of a classmate)
7. Always write assignments on the chalkboard
8. Modify assignments (fewer questions or fewer vocabulary)
9. Provide taped lessons
10. Provide concrete examples of vocabulary words through the use of visuals
11. Model Think Alouds to increase student comprehension
12. Directly teach learning strategies
13. Provide small group instruction
14. Provide preferential seating
15. Provide individual or study carrel
16. Use color overlays or templates
17. Provide oral reading of test questions in English

18. Provide oral reading of reading passages in English
19. Provide frequent monitored breaks
20. Provide extended time
21. Assess whether the student has the necessary prerequisite skills. Determine whether materials are appropriate to the student's current functioning levels

Students with Disabilities:

1. Seat student near model (student/teacher)
2. Seat student near instruction
3. Use a highlight marker to identify key words, phrases, or sentences for student to read
4. Provide manipulative objects for student to use in problem solving
5. Have peers deliver directions or explanations
6. Buddy in class to assist and clarify
7. Provide specific guidelines for prewriting
8. Provide mnemonic devices
9. Repeat major points of information
10. Provide visual cues (posters, number lines, gestures, use of technology)
11. Provide study guides
12. Highlight new vocabulary and key words
13. Use advance organizers
14. Allow for frequent breaks (sensory/brain)
15. Be aware of student's preferred learning style and provide matching instruction materials

Students listed as Gifted & Talented:

1. Modify the content through acceleration, compacting, variety, reorganization, flexible pacing, and the use of more advanced or complex concepts, abstractions, and materials
2. Provide content that is thematic, broad based, and integrative rather than just single-subject areas
3. Provide opportunities to generalize, integrate, and apply ideas to content
4. Encourage students to move through content at their own pace
5. Provide enrichment activities for content such as critical thinking, problem finding, and problem solving
6. Modify process to be more intellectually demanding that require a higher level of response or open-ended questions that stimulate inquiry, active exploration, and discovery
7. Require students to think about topics in more abstract and complex ways
8. Activity selection should be based on student interests and encourage self directed learning
9. Align objectives with Bloom’s Taxonomy
10. Modify the learning environment that encourages inquiry and independence. It should include a wide variety of materials, provides some physical movement, and connects the school experiences with the greater world

11. Modify product expectations and student responses. They should demonstrate what they have learned in a wide variety of forms that both reflect knowledge and ability to manipulate ideas
12. Assess curriculum effectiveness by accelerating the mastery of basic skills through testing-out procedures and reorganization of the curriculum according to higher level skills and concepts.

Students with 504 Plans:

Environmental Strategies
• Provide a structured learning environment
• Possible adapting of non-academic times such as lunch, recess, and physical education
• Change student seating
• Alter location or personal or classroom supplies for easier access or to minimize distraction
• Provide sensory breaks
• Provide a written or picture schedule

Presentation Strategies
• Record lessons so the student can review
• Use computer-aided instruction and other audiovisual equipment
• Select alternative textbooks, workbooks, or provide audio books
• Highlight main ideas and supporting details in the book
• Prioritize drill and practice activities for relevance
• Vary the method of lesson presentation using multi-sensory techniques
• Ask student to repeat/paraphrase context to check understanding
• Simplify and repeat instructions
• Vary instructional pace
• Reinforce the use of compensatory strategies, i.e. pencil grip, mnemonic devices, “spell check”
• Reinforce study skill strategies (survey, read, recite, review)
• Pre-teach and/or re-teach important concepts
• Prepare advanced organizers/study guides for new material

Behavioral Strategies
• Use behavioral management techniques consistently within a classroom and across classes
• Implement behavioral/academic contracts
• Utilize positive verbal and/or nonverbal reinforcements
• Utilize logical consequences
• Establish a home/school communication system for behavior monitoring
• Cooperatively generate rules and consequences for classroom behavior
• Reinforce self-monitoring and self-recording of behaviors

Organizational Strategies
• Model and reinforce organizational systems (i.e. color-coding)
• Write out homework assignments, check student's recording of assignments
• Set time expectations for assignments
• Provide clues such as clock faces indicating beginning and ending times
• Teach study/organizational skills

Evaluation Methods
• Limit amount of material presented on page
• Provide a sample or practice test
• Provide for oral testing
• Provide tests in segments so that student hands in one segment before receiving the next part
• Provide personal copy of test tools and allow for color-coding/highlighting
• Adjust time for completion
• Modify weights of tests when grading

Students that are At Risk:

1. Provide a structured learning environment
2. Provide sensory breaks
3. Change student seating

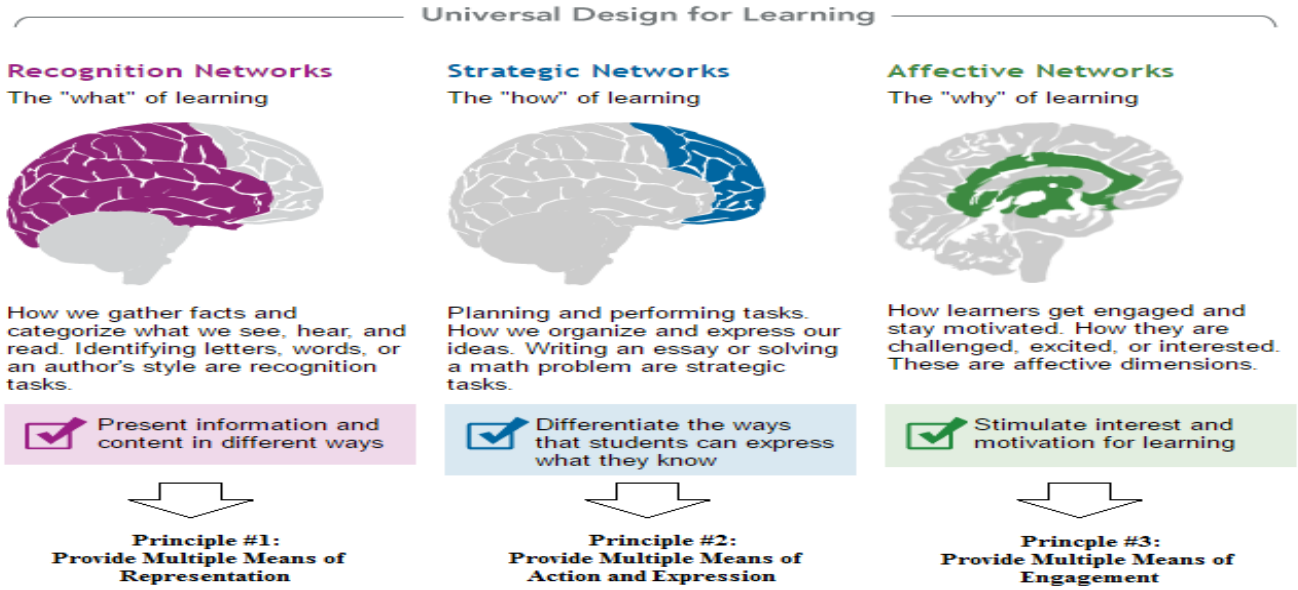
4. Select alternative textbooks, workbooks, or provide audio books
5. Vary the method of lesson presentation using multi-sensory techniques
6. Provide small group or individual instruction
7. Reinforce the use of compensatory strategies
8. Reinforce self-monitoring and self-reflecting strategies
9. Buddy in class to assist and clarify
10. Actively help students build connections and associations in order to access background knowledge or previously taught information
11. Directly teach learning strategies
12. Repeat major points of information
13. Provide visual cues (posters, number lines, gestures, use of technology)

Universal Design

The goal of UDL is to use a variety of teaching methods to remove any barriers to learning and give all students equal opportunities to succeed. It's about building in flexibility that can be adjusted for every student's strengths and needs. That's why UDL benefits all kids.

- Universal Design for Learning (UDL) is a way of thinking about teaching and learning that helps give all students an equal opportunity to succeed.
- This approach offers flexibility in the ways students access material, engage with it and show what they know.
- Developing lesson plans this way helps all kids, but it may be especially helpful for kids with learning and attention issues.

The Difference Between UDL and Traditional Education
UDL in the Classroom (5 Practices)



Works Consulted

The Technology Curriculum of the following districts were reviewed during the development of this curriculum document:
Mount Olive School District, Mount Olive, NJ
Pemberton School District, Pemberton, NJ
Westampton School District, Westampton, NJ