

Computer Repair, Operations and Maintenance (C-ROM) Level I

Course Description

Computer Repair, Operations and Maintenance (C-ROM) I is a course designed to help students understand the basic, underlying concepts of the knowledge, skills and practices of the computer support industry by learning about its history, career opportunities, business ethics, health and safety, computer systems and troubleshooting skills.

Computer Repair, Operations and Maintenance (C-ROM) I is a five (5) credit course that spans four (4) units and meets daily for forty (40) minutes for the entire school year, or an equivalent with an alternate scheduling system. This course represents the first level of a three-year sequence of the program and targets 9th and 10th grade students interested in this field.

Computer Repair, Operations and Maintenance (C-ROM) Level I

Pacing Guide		
Unit	Topic	Suggested Timing
Unit 1	IT Careers and Internet Safety	approx. 10 weeks
Unit 2	Computer Components and Repair Tools	approx. 7 weeks
Unit 3	Computer System Repair and Upgrade Issues	approx. 10 weeks
Unit 4	Website and Video Making Skills	approx. 8 weeks

Educational Technology Standards

8.1.12.B.2, 8.1.12.F.1, 8.2.12.C.5, 8.2.12.D.3, 8.2.12.E.3, 8.2.12.E.4

- **Technology Operations and Concepts**
 - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.
- **Creativity and Innovation**
 - Apply previous content knowledge by creating and piloting a digital learning game or tutorial.
- **Communication and Collaboration**
 - Develop an innovative solution to a real world problem or issue in collaboration with peers and experts, and present ideas for feedback through social media or in an online community.
- **Digital Citizenship**
 - Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.
- **Research and Information Literacy**
 - Produce a position statement about a real world problem by developing a systematic plan of investigation with peers and experts synthesizing information from multiple sources.
- **Critical Thinking, Problem Solving, Decision Making**
 - Evaluate the strengths and limitations of emerging technologies and their impact on educational, career, personal and or social needs.

Career Ready Practices

Career Ready Practices describe the career-ready skills that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

CRP1. Act as a responsible and contributing citizen and employee

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.

CRP2. Apply appropriate academic and technical skills.

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.

CRP3. Attend to personal health and financial well-being.

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.

CRP4. Communicate clearly and effectively and with reason.

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

Career Ready Practices

individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.

CRP5. Consider the environmental, social and economic impacts of decisions.

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.

CRP6. Demonstrate creativity and innovation.

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.

CRP7. Employ valid and reliable research strategies.

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.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

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.

CRP9. Model integrity, ethical leadership and effective management.

Career-ready individuals consistently act in ways that align personal and community-held ideals and principles while employing

Career Ready Practices

strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.

CRP10. Plan education and career paths aligned to personal goals.

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.

CRP11. Use technology to enhance productivity.

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.

CRP12. Work productively in teams while using cultural global competence.

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.

Differentiated Instruction

Strategies to Accommodate Students Based on Individual Needs

<u>Time/General</u>	<u>Processing</u>	<u>Comprehension</u>	<u>Recall</u>
<ul style="list-style-type: none"> • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline 	<ul style="list-style-type: none"> • Extra Response time • Have students verbalize steps • Repeat, clarify or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners 	<ul style="list-style-type: none"> • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback • Small group instruction • Emphasize multi-sensory learning 	<ul style="list-style-type: none"> • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal reminders • Graphic organizers
<u>Assistive Technology</u>	<u>Tests/Quizzes/Grading</u>	<u>Behavior/Attention</u>	<u>Organization</u>
<ul style="list-style-type: none"> • Computer/whiteboard • Camera phone • Spell-checker • Online Translation Software 	<ul style="list-style-type: none"> • Extended time • Study guides • Shortened tests • Read directions aloud 	<ul style="list-style-type: none"> • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback 	<ul style="list-style-type: none"> • Individual daily planner • Display a written agenda • Note-taking assistance • Color code materials

Enrichment

Strategies Used to Accommodate Based on Students Individual Needs:

- Adaption of Material and Requirements
- Evaluate Vocabulary
- Elevated Text Complexity
- Additional Projects
- Independent Student Options
- Projects completed individual or with Partners
- Self Selection of Research
- Tiered/Multilevel Activities
- Learning Centers
- Individual Response Board
- Independent Book Studies
- Open-ended activities
- Community/Subject expert mentorships

Assessments

Suggested Formative/Summative Classroom Assessments

- Timelines, Maps, Charts, Graphic Organizers
- Teacher-created Unit Assessments, Chapter Assessments, Quizzes
- Teacher-created DBQs, Essays, Short Answer
- Accountable Talk, Debate, Oral Report, Role Playing, Think Pair, and Share
- Projects, Portfolio, Presentations, Prezi, Gallery Walks
- Homework
- Concept Mapping
- Primary and Secondary Source analysis
- Photo, Video, Political Cartoon, Radio, Song Analysis
- Create an Original Song, Film, or Poem
- Glogster to make Electronic Posters
- Weebly to create a Website/Online Portfolio

Interdisciplinary Connections

English Language Arts

- Close reading of industry-related content
- Create a brochure for a specific industry

Social Studies

- Research the history of a given industry/profession
- Research prominent historical individuals in a given industry/profession

World Language

- Translate industry-content
- Create a translated index of industry vocabulary

Math

- Research industry salaries for a geographic area and juxtapose against local cost of living
- Track and track various data, such as industry's impact on the GDP, career opportunities or among of individuals currently occupying careers

Fine & Performing Arts

- Create a poster recruiting young people to focus their studies on a specific career or industry
- Design a flag or logo to represent a given career field

Science

- Research the environmental impact of a given career or industry
- Research latest developments in industry technology
- Investigate applicable-careers in STEM fields

New Jersey Student Learning Standards

8.1 Educational Technology

- 8.1.12.B.2: Apply previous content knowledge by creating and piloting a digital learning game or tutorial.
- 8.1.12.F.1: Evaluate the strengths and limitations of emerging technologies and their impact on educational, career, personal and or social needs.

8.2 Technology Education, Engineering, Design, and Computational Thinking

- 8.2.12.C.5: Create scaled engineering drawings of products both manually and digitally with materials and measurements labeled.
- 8.2.12.D.3: Determine and use the appropriate resources (e.g., CNC (Computer Numerical Control) equipment, 3D printers, CAD software) in the design, development and creation of a technological product or system.
- 8.2.12.E.3: Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).
- 8.2.12.E.4: Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).

9.3 Career and Technical Education: Information Technology Career Cluster

- 9.3.IT-SUP.5: Demonstrate the use of networking concepts to develop a network.
- 9.3.IT-NET.1: Analyze customer or organizational network system needs and requirements.
- 9.3.IT-PRG.1: Analyze customer software needs and requirements.
- 9.3.IT-PRG.4: Demonstrate the effective use of software development tools to develop software applications.
- 9.3.IT-PRG.5: Apply an appropriate software development process to design a software application.
- 9.3.IT-PRG.10: Design, create and maintain a database.
- 9.3.IT-WD.1: Analyze customer requirements to design and develop a Web or digital communication product.
- 9.3.IT-WD.2: Apply the design and development process to produce user-focused Web and digital communications solutions.

- 9.3.IT-WD.6: Design, create and publish a digital communication product based on customer needs.
- 9.3.IT-WD.10: Comply with intellectual property laws, copyright laws and ethical practices when creating Web/digital communications.

Common Career Technical Core (CCTC)

Career Cluster Education & Training

IT-SUP 05 – Demonstrate the use of networking concepts to develop a network.

- IT-SUP 05.1 – Describe basic network classifications, topologies and network operating systems (NOS).
- IT-SUP 05.2 – Demonstrate the use of networking concepts in the support and maintenance of the computers on the network.

IT-NET 3 – Design a network system using technologies, tools and standards.

- IT-NET 3.1 – Demonstrate knowledge of the basics of network architecture.

IT-PRG 01– Analyze customer software needs and requirements.

- IT-PRG 01.1 – Gather data to identify customer requirements.

IT-PRG 02– Demonstrate the use of industry standard strategies and project planning to meet customer specifications.

- IT-PRG 02.1 – Utilize interpersonal skills necessary to work on a software development team.
- IT-PRG 02.2 – Define scope of work for the programming project.
- IT-PRG 02.3 – Design project plan.

IT-PRG 10– Design, create, and maintain a database.

- IT-PRG 10.1 – Explain database development processes.
- IT-PRG 10.2 – Create, populate and maintain a database.

IT-WD 01– Analyze customer requirements to design and develop a Web or digital communication product.

- IT-WD 01.1 – Collect and evaluate data to identify customer requirements.
- IT-WD 01.2 – Collect requirements data from customers and competing web sites.

IT-WD 05– Develop, administer and maintain Web applications.

- IT-WD 05.1 – Implement functional design criteria.
- IT-WD 05.2 – Create product visual design.
- IT-WD 05.3 – Employ basic motion graphic programming knowledge.

IT-WD 10– Comply with intellectual property laws, copyright laws and ethical practices when creating Web/digital communications.

- IT-WD 10.1 – Explain the concept of intellectual property.
- IT-WD 10.2 – Differentiate between copyright and trademarks.

Common Core State Standards

English Language Arts

Key Ideas and Details:

- CCSS.ELA-LITERACY.RI.11-12.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.

Text Types and Purposes:

- CCSS.ELA-LITERACY.W.11-12.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

Mathematics

Building Functions:

- CCSS.MATH.CONTENT.HSF.BF.A.1.A
Determine an explicit expression, a recursive process, or steps for calculation from a context.

Modeling with Geometry:

- CCSS.MATH.CONTENT.HSG.MG.A.1
Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*

<p>Course: C-ROM</p> <p>Unit: IV – Website and Video Making Skills</p> <p>Grade Level: 9-12</p>	<p>Unit Overview: In Unit 4, students are exposed to many real life applications of computers and computer programs. Students have the opportunity to explore video editing, game creation, networking, databases, website creation, and 3D design.</p>
<p>New Jersey Student Learning Standards (NJSLS): 8.1.12.B.2, 8.1.12.F.1, 8.2.12.C.5, 8.2.12.D.3, 8.2.12.E.3, 8.2.12.E.4, 9.3.IT-SUP.5, 9.3.IT-NET.1, 9.3.IT-PRG.1, 9.3.IT-PRG.4, 9.3.IT-PRG.5, 9.3.IT-PRG.10, 9.3.IT-WD.1, 9.3.IT-WD.2, 9.3.IT-WD.6, 9.3.IT-WD.10</p>	
<p>Common Career Technical Core (CCTC): IT-SUP 05.1, IT-SUP 05.2, IT-NET 3.1, IT-PRG 01.1, IT-PRG 02.1, IT-PRG 02.2, IT-PRG 02.3, IT-PRG 10.1, IT-PRG 10.2, IT-WD 01.1, IT-WD 01.2, IT-WD 05.1, IT-WD 05.2, IT-WD 05.3, IT-WD 10.1, IT-WD 10.2</p>	
<p>Common Core State Standards (CCSS): RI.11-12.3, W.11-12.2, HSF.BF.A.1.A, HSG.MG.A.1</p>	

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>Compare trademark and copyright when building a website for a customer.</p> <p>NJSLS: 8.2.12.C.5, 8.2.12.E.3, 8.2.12.E.4, 9.3.IT-NET.1, 9.3.IT-PRG.1, 9.3.IT-WD.1, 9.3.IT-WD.2, 9.3.IT-WD.6, 9.3.IT-WD.10</p> <p>CCTC: IT-PRG 01.1, IT-PRG 02.1, IT-PRG 02.2, IT-PRG 02.3, IT-PRG 10.1, IT-PRG 10.2, IT-</p>	<p>How are websites made?</p> <p>What kinds of files are found on a website?</p> <p>What is a domain?</p> <p>How does color affect a website?</p>	<ul style="list-style-type: none"> ▪ Understand color theory. ▪ Understand website architecture. ▪ Understand web design. ▪ Understand how websites are created. ▪ Create a simple website on Weebly. 	<p>Website Project Create a website using Weebly for a potential consumer.</p> <p>Website Layout Draw a layout of a potential website using geometric shapes.</p> <p>Website Journal How did you use color to affect the mood in your website.</p>	<p>Web Architecture https://spin.atomicobject.com/2015/04/06/web-app-client-side-server-side/</p> <p>Web Project Ideas http://citadel.sjfc.edu/faculty-virtual/j/jsarachan/public_html/comm369/assignments.html#html</p> <p>Video: Web Design https://www.youtube.com/watch?v=sGmokujeknc</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>WD 01.1, IT-WD 01.2, IT-WD 05.1, IT-WD 05.2, IT-WD 05.3, IT-WD 10.1, IT-WD 10.2</p> <p>CCSS: RI.11-12.3, W.11-12.2, HSG.MG.A.1</p>			<p>Color Theory Journal How does color affect purchasing?</p>	<p>Video: How Websites Work https://www.youtube.com/watch?v=sGmokujeknc</p> <p>Video: How Websites Work https://www.youtube.com/watch?v=D8c4JZW73cM</p> <p>Video: What is DNS https://www.youtube.com/watch?v=72snZctFFtA</p> <p>Video: Color https://www.youtube.com/watch?v=Qj1FK8n7WgY</p> <p>Video: Color and Websites https://www.youtube.com/watch?v=r9gYdD-REIO</p>
<p>Understand basics of video editing and apply it towards the needs of a customer.</p> <p>NJSLS: 8.1.12.B.2,</p>	<p>How do you make a video?</p> <p>How do you place music in the background, add</p>	<ul style="list-style-type: none"> ▪ Use Windows Movie Maker to edit a short video. ▪ Understand the different tools of 	<p>Compare Video Effect on Business How does embedded web videos affect purchasing? What are some percentages?</p>	<p>Video: Videos and Websites https://www.youtube.com/watch?v=t1vaSiZ4mrQ</p> <p>Windows Movie Maker http://www.digitaltrends.com</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
<p>8.1.12.F.1, 9.3.IT-PRG.1, 9.3.IT-PRG.4, 9.3.IT-PRG.5, 9.3.IT-WD.6</p> <p>CCTC: IT-WD 05.2, IT-WD 05.3</p> <p>CCSS: RI.11-12.3, W.11-12.2, HSF.BF.A.1.A</p>	<p>pictures or text?</p> <p>What is the importance of video creation?</p> <p>How does video affect society?</p> <p>What could videos be used for?</p>	<p>video editing.</p> <ul style="list-style-type: none"> ▪ Understand importance of different sounds, texts, camera angels in video editing. ▪ Describe importance of videos on a website. 	<p>Create a Video Students create a video for a customer need.</p> <p>Research new technologies Students research new technologies that use videos in new ways such as Drone cameras and Virtual Reality Lenses.</p>	<p>/computing/how-to-use-windows-movie-maker/2/</p> <p>Evolution of Video https://www.brookings.edu/wp-content/uploads/2016/06/West_Evolution-of-VideoStreaming-and-Digital-Content-Delivery_Final.pdf</p>
<p>Understand basics of game creation.</p> <p>NJSLS: 8.1.12.B.2, 8.2.12.D.3, 8.2.12.E.3, 8.2.12.E.4</p> <p>CCTC: IT-WD 05.1, IT-WD 05.2, IT-WD 05.3</p> <p>CCSS: RI.11-12.3, W.11-12.2, HSG.MG.A.1</p>	<p>How do you create a game?</p> <p>What are some purposes of a game?</p> <p>What types of careers are included in a game design?</p> <p>How has gaming expanded?</p>	<ul style="list-style-type: none"> ▪ Use Unity 3D to create a game. ▪ Understand the different tools of game editing. ▪ Test creativity in game creation. ▪ Demonstrate thought process used in game design. 	<p>Create a Game Students create a game using Unity 3D.</p> <p>Gaming Journal What was the hardest part of creating a game?</p> <p>Gaming Introduction Take a simple game like tic-tac-toe and change a few rules. How does the game change as a result?</p> <p>Gaming Platforms Students research</p>	<p>Unity 3D Tutorials https://unity3d.com/learn/tutorials</p> <p>Unity 3D Examples https://www.assetstore.unity3d.com/en/#!/search/page=1/sortby=relevance/query=category:168</p> <p>Game Lesson Plans https://educators.brainpop.com/bp-topic/video-games/</p> <p>Game Lesson Plans http://www.gamasutra.com/blogs/EricZimmerman/20131</p>

Student Learning Objectives (SLOs)	Essential Questions	Skills & Indicators	Sample Activities	Resources
			different gaming platforms such as computer, gaming consoles, and Virtual reality glasses.	019/202710/How I Teach Game Design Lesson 1 The Game Design Process.php
<p>Understand basics of creating a database.</p> <p>NJSLS: 9.3.IT-PRG.10</p> <p>CCTC: IT-PRG 10.1, IT-PRG 10.2</p> <p>CCSS: RI.11-12.3, W.11-12.2, HSF.BF.A.1.A</p>	<p>What is a database? Why do we need a database?</p> <p>What is a field? How do you search a database?</p>	<ul style="list-style-type: none"> ▪ Create a database. ▪ Understand the problems database is solving. ▪ Identify some of the possible data formats. ▪ Identify some of the problems databases solve. ▪ Create formulas in a database. 	<p>Create a Database Students create a database in excel.</p> <p>Journal Students compare attributes vs records.</p> <p>Create a Diagram Students create a database diagram.</p>	<p>Video: Database https://www.youtube.com/watch?v=gfT7EGibry0</p> <p>Video: Database https://www.youtube.com/watch?v=z5YnKt2aOCs</p> <p>Resource http://searchsqlserver.techtarget.com/definition/database</p> <p>Resource http://www.edugrabs.com/er-diagram-example/</p>
<p>Understand basics of networking computers and network architecture.</p> <p>NJSLS: 9.3.IT-SUP.5</p> <p>CCTC: IT-SUP 05.1, IT-SUP 05.2, IT-NET 3.1</p>	<p>What is a network? What makes computers connect with one another?</p> <p>How do computers get on the same internet?</p>	<ul style="list-style-type: none"> ▪ Understand networking. ▪ Differentiate between LAN, WAN, and MAN. ▪ Draw a computer network diagram. 	<p>Create a Diagram Students create a network architecture diagram.</p> <p>Graphic Organizer Students compare LAN, MAN, and WAN.</p>	<p>Resource http://www.uml-diagrams.org/network-architecture-diagrams.html</p> <p>Resource http://www.conceptdraw.co</p>

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<p>CCSS: RI.11-12.3, W.11-12.2, HSG.MG.A.1</p>	<p>How do you print wirelessly?</p>	<ul style="list-style-type: none"> ▪ Understand how networked computers communicate with an entity. 	<p>Create a Plan Students explain how they would go about (step-by-step) creating a network in the classroom.</p>	<p>m/How-To-Guide/computer-network-architecture</p> <p>Video: Networking https://www.youtube.com/watch?v=aQVuZKLtBJg</p>
<p>Understand 3D design.</p> <p>NJSLS: 8.1.12.B.2, 8.2.12.D.3, 9.3.IT-PRG.4,</p> <p>CCTC: IT-WD 05.2, IT-WD 05.3</p> <p>CCSS: RI.11-12.3, W.11-12.2, HSG.MG.A.1</p>	<p>What careers incorporate the use of 3D computer design?</p> <p>How had 3D design changed our world?</p> <p>What examples of 3D design do you interact with on a daily basis?</p>	<ul style="list-style-type: none"> ▪ Learn how to use a 3D design software. ▪ Create 3D objects on the computer. ▪ Identify different uses of 3D design software in the real world. ▪ Understand the origins of computer graphics. ▪ Understand the history of animation. ▪ Create different shapes on a 3D design software. 	<p>Create a Design Students create an inanimate object, such as a table.</p> <p>Interior Design Students decorate the interior of a house.</p> <p>Digital Poster Students identify different careers that use 3D design software.</p>	<p>SketchUp Tutorial https://www.youtube.com/watch?v=UsHRGDvN4sM</p> <p>Resource http://www2.beens.org/tdj/sketchup/assign</p> <p>History of Animation Video https://www.youtube.com/watch?v=LzZwiLUVaKg</p> <p>History of Animation Video https://www.youtube.com/watch?v=Sfzy05M-nzY</p>

Unit 4 Vocabulary

Attribute
Color Theory
Computer Generated Images (CGI)
Computer Graphics
3D Design
Database
Data Type
Domain Name System
Flat File Database
Field

Formula
LAN
MAN
Network
Network Architecture
Platform
Record
Table
Trademark
WAN

Suggested Unit Projects

Choose At Least One

<p>Have students design a product in SketchUp Make. In addition, students can use a 3D Printer to demonstrate their completed project to the class.</p>	<p>Create a video portfolio that incorporates the different works created during this Unit including website design, game design, and 3D modeling. The video will also include an explanation of each and the steps required to achieve the result demonstrated.</p>
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Suggested Structured Learning Experiences

<p>InfoAge 2201 Marconi Road Wall, New Jersey http://infoage.org/wp/infoage/exhibits/</p> <p>Liberty Science Center Liberty State Park 222 Jersey City Boulevard Jersey City, NJ 07305 Phone: 201-200-1000 http://lsc.org/</p>	<p>Military Technology Museum of New Jersey 2201 Marconi Rd Wall, New Jersey Phone: 330-703-9902 http://militarytechnj.wixsite.com/main/home</p>
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