

7th Grade Digital Literacy and STEAM Plan

Unit Overview

This unit plan provides a comprehensive framework for teaching 7th-grade digital literacy and STEAM concepts, ensuring students engage actively with technology while meeting educational standards.

Grade Level: 7th Grade

Unit Length: 20 school days

Aligned Standard: NYS Digital Literacy Grade 7

Vocabulary

1. Digital Literacy
2. Maker Space
3. Green Screen
4. Podcasting
5. 3D Printing
6. Drones
7. Robotics
8. Silhouette Cutter
9. Laser Engraving
10. Programming
11. Collaboration
12. Presentation Skills
13. Reflection
14. Prototype
15. Design Thinking

Day 1: Introduction to Digital Literacy

- **Objective:** Understand the importance of digital literacy in today's world.
- **Assessment:** Class discussion and reflection journal entry.
- **Key Points:** Definition of digital literacy, its relevance, and key skills involved.
- **Vocabulary:** Digital Literacy, Skills, Relevance
- **Writing Assignment:** Write a paragraph on how digital literacy impacts your daily life.
- **Resources:** Articles on digital literacy, videos explaining digital skills.

- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.1

Day 2: Exploring Maker Spaces

- **Objective:** Identify various types of maker space equipment and their uses.
- **Assessment:** Group presentation on assigned equipment.
- **Key Points:** Overview of equipment: green screens, 3D printers, etc.
- **Vocabulary:** Maker Space, Equipment, Collaboration
- **Writing Assignment:** Create a brochure highlighting the different maker space tools.
- **Resources:** Maker space equipment guides, introductory videos on maker spaces.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.2

Project Choice 1: Introduction to Green Screen Technology

- **Objective:** Learn how to use green screens in video production.
- **Assessment:** Create a short video using green screen techniques.
- **Key Points:** Basics of lighting, positioning, and editing.
- **Vocabulary:** Green Screen, Video Production, Editing
- **Writing Assignment:** Script a short video that incorporates green screen technology.
- **Resources:** Video editing software tutorials, examples of green screen videos.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.3

Project Choice 2: Podcasting Basics

- **Objective:** Understand the components of podcast production.
- **Assessment:** Script a short podcast episode.
- **Key Points:** Audio editing software, scripting, and voice modulation.
- **Vocabulary:** Podcast, Scripting, Audio Editing
- **Writing Assignment:** Write a script for a 3-minute podcast on a topic of choice.
- **Resources:** Podcasting guides, audio editing software (e.g., Audacity).
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.4

Project Choice 3 : Introduction to 3D Printing

- **Objective:** Learn the basics of 3D modeling and printing.
- **Assessment:** Create a simple 3D model using design software.
- **Key Points:** 3D printing process, software tools, and safety protocols.
- **Vocabulary:** 3D Modeling, Printing, Safety Protocols
- **Writing Assignment:** Describe the process of creating a 3D model.
- **Resources:** Tinkercad tutorials, 3D printing safety guidelines.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.5

Hands-on with 3D Printers

- **Objective:** Operate a 3D printer to produce a designed object.
- **Assessment:** Successful printing of the designed object.
- **Key Points:** Printer setup, material loading, and troubleshooting.
- **Vocabulary:** Troubleshooting, Setup, Material Loading
- **Writing Assignment:** Reflect on the challenges faced while printing the object.
- **Resources:** 3D printer operation manuals, troubleshooting guides.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.6

Project Choice 4: Introduction to Drones

- **Objective:** Explore the basics of drone technology and its applications.
- **Assessment:** Research and present on a drone application.
- **Key Points:** Drone types, uses in various fields, and regulations.
- **Vocabulary:** Drone, Application, Regulation
- **Writing Assignment:** Write an informative paragraph on a specific drone application.
- **Resources:** Articles on drone technology, videos demonstrating drone uses.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.7

Drone Flight Basics

- **Objective:** Learn how to safely operate a drone.
- **Assessment:** Demonstrate drone flight skills in a controlled environment.
- **Key Points:** Safety protocols, controls, and flight patterns.
- **Vocabulary:** Flight Patterns, Safety Protocols, Controls
- **Writing Assignment:** Create a flight plan for a drone demonstration.
- **Resources:** Drone operation manuals, safety checklists.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.8

Project Choice 5: Introduction to Robotics

- **Objective:** Understand the fundamentals of robotics and programming.
- **Assessment:** Build a simple robot using provided kits.
- **Key Points:** Components of robots, basic programming concepts.
- **Vocabulary:** Robotics, Programming, Components
- **Writing Assignment:** Describe the components of your robot and their functions.
- **Resources:** Robotics kits, programming guides.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.9

Programming Robots

- **Objective:** Program a robot to complete a specific task.
- **Assessment:** Robot task completion demonstration.
- **Key Points:** Programming languages used in robotics, debugging code.
- **Vocabulary:** Debugging, Programming Language, Task Completion
- **Writing Assignment:** Write a reflection on the programming process and any challenges faced.
- **Resources:** Programming software (e.g., Scratch, Arduino), debugging resources.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.10

Project Choice 6: Silhouette Cutting Basics

- **Objective:** Learn how to operate a silhouette cutter.
- **Assessment:** Create a design using the silhouette cutter.
- **Key Points:** Software for design, cutting process, and safety.
- **Vocabulary:** Silhouette Cutting, Design, Safety
- **Writing Assignment:** Create a design proposal for a project using the silhouette cutter.
- **Resources:** Silhouette cutting machine manuals, design software tutorials.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.11

Project Choice 7: Laser Engraving Introduction

- **Objective:** Understand how laser engraving works.
- **Assessment:** Design an engraving project.
- **Key Points:** Laser engraver operation, materials, and applications.
- **Vocabulary:** Laser Engraving, Design, Materials
- **Writing Assignment:** Write a plan for a laser engraving project, including material choices.
- **Resources:** Laser engraving tutorials, material guides.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.12

Final: Project Planning Day

- **Objective:** Plan a final project incorporating learned technologies.
- **Assessment:** Submit project proposal outlining tools and processes.
- **Key Points:** Brainstorming ideas, creating timelines, and resource allocation.
- **Vocabulary:** Project Proposal, Brainstorming, Timeline
- **Writing Assignment:** Create a detailed project proposal outlining your project's goals and tools needed.
- **Resources:** Project planning templates, brainstorming tools.

- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.13

Project Development

- **Objective:** Begin developing the final project.
- **Assessment:** Progress check and peer feedback session.
- **Key Points:** Importance of iteration and feedback.
- **Vocabulary:** Iteration, Feedback, Collaboration
- **Writing Assignment:** Document the progress of your project and any changes made based on feedback.
- **Resources:** Peer feedback forms, project development guidelines.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.14

Project Development

- **Objective:** Continue working on the final project.
- **Assessment:** Check-in with mentor/teacher for guidance.
- **Key Points:** Problem-solving and adapting designs.
- **Vocabulary:** Problem-solving, Adaptation, Design
- **Writing Assignment:** Write about any problems encountered and how you solved them.
- **Resources:** Project development checklists, troubleshooting guides.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.15

Final Touches on Projects

- **Objective:** Finalize and prepare to present projects.
- **Assessment:** Completion of the project ready for presentation.
- **Key Points:** Presentation skills, project editing, and refinement.
- **Vocabulary:** Presentation Skills, Refinement, Project Completion
- **Writing Assignment:** Write a summary of your project's development and final outcomes.

- **Resources:** Presentation guidelines, editing resources.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.16

Project Presentations

- **Objective:** Present projects to the class.
- **Assessment:** Peer and teacher evaluation of presentations.
- **Key Points:** Effective communication, audience engagement, and feedback.
- **Vocabulary:** Audience Engagement, Evaluation, Communication
- **Writing Assignment:** Reflect on your presentation experience and feedback received.
- **Resources:** Presentation rubrics, peer evaluation forms.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.17

Reflection on Learning

- **Objective:** Reflect on the learning journey throughout the unit.
- **Assessment:** Written reflection on what was learned.
- **Key Points:** Personal growth, skills developed, and future applications.
- **Vocabulary:** Reflection, Growth, Future Applications
- **Writing Assignment:** Complete a reflective essay on your learning experiences during the unit.
- **Resources:** Reflection prompts, writing guidelines.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.18

Celebration of Learning

- **Objective:** Celebrate achievements and share projects with the school community.
- **Assessment:** Organize and participate in a showcase event.
- **Key Points:** Community engagement, showcasing digital literacy skills.
- **Vocabulary:** Celebration, Showcase, Community Engagement

- **Writing Assignment:** Write a thank-you letter to the community for their support during the unit.
- **Resources:** Event planning guides, community engagement resources.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.19

Unit Review and Feedback

- **Objective:** Review the unit and gather feedback for improvement.
- **Assessment:** Unit survey and discussion.
- **Key Points:** Importance of feedback in learning and growth.
- **Vocabulary:** Review, Feedback, Continuous Improvement
- **Writing Assignment:** Complete a survey about what worked well in the unit and what could be improved.
- **Resources:** Feedback forms, discussion prompts.
- **Standard Addressed:** NYS Digital Literacy Standard 7.DL.20

Culminating Activities Suggestions

1. **Digital Showcase:** Organize a gallery walk for students to display their projects to peers and parents.
2. **Podcast Series:** Create a series of podcasts highlighting various technologies learned in the unit.
3. **Community Engagement Project:** Develop a project that addresses a community issue using digital tools and technologies.

Standards Addressed

- NYS Digital Literacy Standard 7.DL.1 - Demonstrate knowledge of digital tools and resources.
- NYS Digital Literacy Standard 7.DL.2 - Use digital tools to create, collaborate, and communicate.
- NYS Digital Literacy Standard 7.DL.3 - Apply creative thinking skills to digital projects.
- NYS Digital Literacy Standard 7.DL.4 - Design and produce digital media.
- NYS Digital Literacy Standard 7.DL.5 - Utilize 3D design software to create objects.

- NYS Digital Literacy Standard 7.DL.6 - Evaluate the effectiveness of digital solutions.
- NYS Digital Literacy Standard 7.DL.7 - Analyze the impact of technology on society.
- NYS Digital Literacy Standard 7.DL.8 - Demonstrate responsible use of technology.
- NYS Digital Literacy Standard 7.DL.9 - Apply coding skills to create digital solutions.
- NYS Digital Literacy Standard 7.DL.10 - Evaluate and refine digital projects.
- NYS Digital Literacy Standard 7.DL.11 - Create and edit digital designs using technology.
- NYS Digital Literacy Standard 7.DL.12 - Use digital tools to produce physical products.
- NYS Digital Literacy Standard 7.DL.13 - Collaborate with peers on digital projects.
- NYS Digital Literacy Standard 7.DL.14 - Implement project plans using digital tools.
- NYS Digital Literacy Standard 7.DL.15 - Demonstrate critical thinking in project development.
- NYS Digital Literacy Standard 7.DL.16 - Present information clearly and effectively.
- NYS Digital Literacy Standard 7.DL.17 - Communicate ideas effectively with various audiences.
- NYS Digital Literacy Standard 7.DL.18 - Reflect on personal learning and identify future learning goals.
- NYS Digital Literacy Standard 7.DL.19 - Engage with the community through digital projects.
- NYS Digital Literacy Standard 7.DL.20 - Contribute to continuous improvement in digital literacy.