

Springfield Public Schools
Springfield, New Jersey 07081

Animation

Curriculum Guide

2025

This curriculum may be modified through varying materials, techniques, and strategies as per an individual student's IEP.

Springfield Board of Education
Approved August 25, 2025

Springfield Public Schools
Springfield, New Jersey

Rachel Goldberg
Superintendent of Schools

Erica Scudero
Assistant Superintendent

Curriculum Developed By:

Jaclene Santone - Teacher

EXTRACT OF THE MINUTES OF A MEETING OF
THE BOARD OF EDUCATION OF
THE TOWNSHIP OF SPRINGFIELD
COUNTY OF UNION, NEW JERSEY
AS RECORDED IN THE OFFICIAL MINUTE BOOK

Resolution: 21
Introduced By: Mrs. Turnbull
Seconded By: Mrs. Murphy
Adopted: August 25, 2025

Curriculum Update

To approve the following curriculum revisions:

a. Elementary School Level
   1. Grade K Art
   2. Grade 1 Music
   3. Grade 2 Music
   4. Grade 4 Art
   5. Grade 4 Instrumental Music
   6. Grade 4 Vocal/General Music
   7. Gifted & Talented through Art K-5

b. Middle School Level
   1. Concert Choir Gr. 6-8
   2. Concert Band Gr. 6-8
   3. Grade 7 Art (Ceramics)
   4. Grade 7-Art Lab Maker Space
   5. Grade 6 Accelerated Math
   6. Math Lab Grades 6, 7, & 8

c. High School
   1. Advanced Ceramics and 3D Forms
   2. Advanced TV Production
   3. Animation *(New)*
   4. AP Environmental Science
   5. Bake Shop I
   6. Bake Shop II
   7. Business Law
   8. Business Management
   9. Dance I
   10. Dance II
   11. Digital Photography

(continued)

12. Drawing and Painting
13. Foundations in Crafts
14. History of Pop Culture *(New)*
15. Introduction to Graphic Design
16. Introduction to Television
17. JDHS Beginning String Ensemble
18. Multimedia Storytelling *(New)*

I, Michelle Calas, School Business Administrator/ Board Secretary of the Springfield Board of Education, hereby certify that the extract from the minutes of a meeting of the Board of Education duly called and held on August 25, 2025 has been compared by me with the original minute book of said Board of Education, and is a true, complete and exact copy thereof, as far as the same relates to the subject matter to on said extract.

In WITNESS THEREOF, I have hereunto set my hand and seal of the Springfield Board of Education, this 26th day of August 2025.

SEAL

Michelle Calas
School Business Administrator/ Board Secretary



Unit Overview Template

Content Area: Digital Media / Animation / Visual Arts **Grade Level:** 9-12 **Unit Title:** Animation Basics

Unit Summary: This unit is designed to build foundational skills in animation, with a focus on the core principles that drive motion and storytelling in visual media. Students will explore essential animation techniques such as squash and stretch, anticipation, timing, and keyframing to understand how motion can convey weight, emotion, and intent.

A major emphasis will be placed on storyboarding, where students will learn to visually plan and communicate animated sequences through thumbnail sketches, scene composition, and shot progression. Students will practice organizing scenes using standard storyboard templates, applying concepts like camera angles, scene continuity, and pacing to guide viewer experience.

Students will also develop a working knowledge of pose-to-pose animation planning, staging, and visual storytelling. Through guided exercises and creative assignments, learners will gain confidence in breaking down actions into key poses and designing sequences that communicate clearly and effectively.

By the end of the unit, students will produce a fully developed storyboard and a short, animated scene that demonstrates thoughtful application of timing, motion principles, and narrative design.

Primary Interdisciplinary Connections: Career Readiness

21st Century Themes X Creativity and Innovation X Critical Thinking and Problem Solving ☐ ICT Literacy X Information Literacy X Life and Career Skills X Communication and Collaboration X Media Literacy

Unit Rationale: This unit introduces students to the foundational principles of animation and visual storytelling, providing the essential skills needed to plan and communicate motion-based ideas. Through focused instruction on timing, movement, and storyboarding, students learn how to break down complex actions into clear, expressive sequences. By developing an understanding of how motion and visual planning work together, students gain the tools to create compelling animated content and prepare for more advanced studies in animation, film, or digital media.

Career Readiness (Standard 9): 9.2, 9.4

Learning Targets

Standards: 1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4, SEL.PK-12.5

Content Statements:
Anchor Standard 2: Organizing and developing ideas.
Anchor Standard 11: Relating artistic ideas and works within societal, cultural and historical contexts to deepen understanding.
Core Idea: There are strategies to improve one's professional value and marketability.

Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices

Core Idea: Laws govern the use of intellectual property and there are legal consequences to utilizing or sharing another's original works without permission or appropriate credit.

SEL.PK-12.1: Self-Awareness

SEL.PK-12.2: Self-Management

SEL.PK-12.3: Social Awareness

SEL.PK-12.4: Responsible Decision-Making

SEL.PK-12.5: Relationship Skills

CPI#:	Cumulative Progress Indicator (CPI):
1.5.12adv.Cr2c	Demonstrate in works of art or design how visual and material culture defines, shapes, enhances, inhibits, and/or empowers people's lives.
1.5.12adv.Cn11a	Assess the impact of an artist or a group of artists on the beliefs, values, and behaviors of a society.
9.2.12.CAP.2	Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
9.4.12.DC.2	Compare and contrast international differences in copyright laws and ethics.

Unit Essential Questions:

- How do the principles of animation bring characters and objects to life?
- In what ways does visual storytelling impact the audience's understanding and emotional response?
- Why is timing important in animation, and how does it affect the viewer's perception of movement?
- What role does storyboarding play in the planning and communication of animated scenes?
- How do composition, framing, and camera angles influence the effectiveness of a visual narrative?

Unit Enduring Understandings:

- The principles of animation are fundamental techniques that create believable and expressive movement.

- Visual storytelling uses images and motion to convey emotion, character, and narrative without relying solely on dialogue.
- Timing and spacing directly influence how natural, impactful, or stylized motion appears to the audience.
- Storyboarding is a critical pre-production tool that helps plan sequences, visualize ideas, and communicate the story effectively.
- Composition, framing, and camera angles guide audience focus and enhance the clarity and emotional power of a scene.

Unit Learning Targets:

Students will....

- identify and apply the fundamental principles of animation (e.g., squash and stretch, anticipation, timing).
- create clear and effective storyboards that visualize sequence, character action, and camera movement.
- plan animated scenes using storyboards to organize narrative flow and pacing.
- analyze and adjust timing in animation to enhance the believability and emotion of motion.
- use composition and framing techniques to guide the audience's focus within a scene.
- communicate visual ideas through sketches and thumbnail storyboards to support animation production.
- explain the role of storyboarding in the animation production pipeline.

Evidence of Learning	
Summative Assessment:	7 days
Equipment Needed:	Various textbooks, computer, magazines, Google Slideshow
Teacher Resources:	Various textbooks, computer, internet access, projector

Formative Assessments:

- Class Participation
- Observation
- Oral Questioning
- Written Test
- Performance Objectives
- Rubric based assignments



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Lesson Plans	
Lesson	**Time Frame**
Lesson 1 **Introduction to Storyboarding & Visual Storytelling**	**1-2 days**
Lesson 2 **Storyboard Structure & Planning Action**	**2 days**
Lesson 3 **Composition, Camera, and Final Storyboard Presentation**	**1 day**
Teacher Notes:	
Curriculum Development Resources/Technology Resources: Click the links below to access additional resources used to design this unit: https://www.cde.ca.gov/ci/ct/sf/documents/artsmedia.pdf https://www.storyboardthat.com	



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Lesson Plan 1 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Introduction to Storyboarding and Visual Storytelling	Time Frame:	1-2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving ☐ Information Literacy

☐ Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

English Language Arts – Narrative structure, sequencing, and visual storytelling

Film/Drama – Scene composition, visual direction

Technology/Graphic Design – Use of digital tools for pre-production planning

Integration of Technology:

Use of projector or digital board to analyze clips or sample storyboards

Option to use free online storyboard tools such as StoryboardThat.com

Document camera or digital drawing tablet for live sketch demo

Equipment Needed: Computers or tablets with internet access

Projector and screen or smartboard

Printed storyboard templates (3- or 6-panel)

Pencils, erasers, rulers, poster board

Sample storyboard visuals or video clips

Whiteboard/markers

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: Goal: To introduce students to the purpose and structure of storyboarding in the animation process and to build foundational skills in visual storytelling through planning, composition, and sequencing. Objectives (SWBAT): • SWBAT define what a storyboard is and explain its role in the animation and filmmaking pipeline. • SWBAT identify and describe basic shot types (e.g., close-up, wide shot, over-the-shoulder) and their narrative effects. • SWBAT analyze short visual media to understand how framing, composition, and sequencing contribute to storytelling. • SWBAT create a 3–4 panel storyboard based on a simple narrative prompt using appropriate shot types and clear visual sequencing.	Lesson Sequence 1. Hook / Warm-Up • Quick Class Discussion: "What is a storyboard, and where have you seen one before?" • Show 1–2 short storyboards from familiar media (e.g., Pixar, Marvel, or SpongeBob) alongside the final animated/video scenes. • Discuss how planning the visuals helps the final product. --- 2. Direct Instruction / Mini-Lesson • Teacher-led presentation on: ○ Definition and purpose of storyboarding in animation and film ○ Introduction to key shot types (close-up, wide shot,	• Class Discussion Participation • Storyboard Clip Analysis Activity • Peer Feedback / Gallery Walk

	over-the-shoulder, pan, zoom) ○ Basic composition principles (rule of thirds, framing, focus) • Use visual examples and a whiteboard or projector to annotate scenes and demonstrate concepts 3. Guided Practice • Storyboard Analysis Activity: ○ Students watch a short animated or silent film clip ○ Students work in pairs or small groups to identify major shots and note the camera angles or framing used ○ Optional: fill out a storyboard template with rough sketches of key frames from the scene 4. Independent Practice	

	• Storyboard Creation Activity: ○ Students receive a short narrative prompt (e.g., "A student oversleeps and rushes to school") ○ Using a 3–6 panel storyboard template, students sketch out the key moments of the scene ○ Focus on sequencing, clarity of action, and appropriate use of different shot types 5. Sharing / Closure • Select students share their boards under the document camera or in a gallery walk • Class provides positive feedback and suggestions (e.g., "Which panel communicated the most clearly?")	

Differentiation:
Flexible grouping, exploration by interest, goal setting with students, open ended activities, alternative assessments, leveled rubrics, project based learning, stations/centers

Resources Provided:

- Printable storyboard templates (3-panel and 6-panel)
- Short animation clip for analysis (e.g., Pixar short or silent film scene)
- Shot type & camera angle reference chart
- Vocabulary sheet (e.g., pan, zoom, close-up, wide shot)



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Lesson Plan 2 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Storyboard Structure & Planning Action	Time Frame:	2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

X Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving ☐ Information Literacy

☐ Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

English Language Arts: Understanding narrative structure (beginning, middle, end) and character motivation

Visual Arts: Sketching, layout, and composition

Film/Media Studies: Visual storytelling, pacing, and shot continuity

Integration of Technology: Projection of short films or silent scenes for class analysis

Equipment Needed:

Projector or smartboard for clip viewing and class discussion

Computers or tablets for digital storyboarding

Printed storyboard templates

Pencils, erasers, rulers

Reference handouts on shot types and keyframe concepts

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: Goal: To help students understand how to organize visual stories into clear, sequential actions and begin planning animated scenes using storyboard techniques. Objectives (SWBAT): • SWBAT organize actions into a logical sequence using beginning, middle, and end structure. • SWBAT plan a storyboard that illustrates character movement and visual storytelling beats. • SWBAT identify and sketch keyframes that define critical actions in a scene. • SWBAT differentiate between keyframes and in-betweens in the planning stage of animation. • SWBAT use thumbnail sketches to develop pacing and flow in a visual narrative.	Lesson Sequence 1. Review & Activate Prior Knowledge • Begin with a class review of Lesson 1 concepts: storyboarding purpose, shot types, and visual storytelling. • Brief discussion: "What makes a story feel complete? What's missing if we don't show the beginning or end?" --- 2. Direct Instruction / Mini-Lesson • Introduce the idea of story beats (key events in a story arc). • Define and model the beginning–middle–end structure using a short, familiar story (e.g., a short silent film or simple comic). • Discuss keyframes vs. in-betweens using simple movement examples (e.g., lifting a cup, opening a door). --- 3. Guided Practice	Group Story Breakdown Check (Guided Practice) • As students break down a short narrative into beginning, middle, and end beats, observe and ask: ○ Can they identify key actions? ○ Are they using correct sequence and logical flow? • Use a checklist to note group understanding of narrative structure and pacing. --- 2. Thumbnail Sketch Review • Circulate while students create thumbnail storyboards. Look for: ○ Logical progression of events ○ Clear character movement ○ Use of at least one keyframe to define major action • Offer immediate verbal feedback to guide

	• In pairs or small groups, students break down a short narrative prompt (e.g., "A character tries to open a stuck door") into 3–5 major story beats. • Students sketch rough thumbnail panels to represent those beats, focusing on clear action and camera placement. • Class checks in on clarity and sequence. 4. Independent Practice • Students choose a provided or original short scenario and plan their own 6+ panel storyboard. • Focus on developing a complete arc with a clear beginning, middle, and end, and using at least one keyframe to show movement. • Optional: students label actions or note intended camera movements under each panel. 5. Exit Reflection / Share Out	revision. 3. Peer Review / Pair Share • Have students exchange storyboard thumbnails and give quick feedback using a checklist: ○ Does the story have a clear beginning, middle, and end? ○ Are actions easy to understand? ○ Are different shots or angles used effectively? 4. Teacher Check-In • Ask 2–3 students to briefly explain a panel and how it supports the story arc. • Look for vocabulary use (e.g., "This is a keyframe because..." or "This panel shows the turning point..."). 5. Exit Slip or Quick Write (Optional)

	• Quick gallery walk or pair-and-share: students present one panel they think is strongest and explain their framing or action choices. • Optional written reflection: "What did you find challenging about pacing a scene visually?"	• Prompt examples: ○ "How did you decide which moments to include in your storyboard?" ○ "What's one thing you'd change in your pacing or panel layout?"

Differentiation:
Exploration by interest, goal setting with students, open ended activities, alternative assessments, leveled rubrics, project based learning

Resources Provided:

- Teacher Made Handout
- Desktop computer
- Printable storyboard templates (3-panel and 6-panel)
- Short animation clip for analysis (e.g., Pixar short or silent film scene)
- Shot type & camera angle reference chart
- Vocabulary sheet (e.g., pan, zoom, close-up, wide shot)



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Lesson Plan 3 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Composition, Camera, and Final Storyboard Presentation	Time Frame:	1 day

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving ☐ Information Literacy

☐ Life and Career Skills X Communication and Collaboration X Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Visual Arts – Composition, visual hierarchy, and framing

Film/Media Studies – Camera angles, shot design, and scene blocking

English Language Arts – Interpreting narrative pacing and tone through visual structure

Integration of Technology:

Use of a projector or smartboard to model camera angles and analyze student work

Optional use of digital drawing tools or storyboard software (e.g., Storyboard That, Krita, or Photoshop)

Gallery walk or screen-share presentations for peer feedback

Equipment Needed:

Printed storyboard templates (6–12 panels)

Projector or display screen

Reference sheet of camera angles and framing techniques

Pencils, erasers, rulers (or digital drawing tools if applicable)

Optional: tablets, drawing software, or computers for finalizing boards

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: Goal: To refine students' understanding of visual storytelling by incorporating thoughtful composition, shot variety, and camera movement into a completed storyboard sequence. Objectives (SWBAT): • SWBAT use framing and camera angles (e.g., close-up, over-the-shoulder, pan) to enhance visual storytelling and emotional impact. • SWBAT revise and refine storyboard panels for clarity, pacing, and composition. • SWBAT evaluate visual choices and provide constructive feedback to peers. • SWBAT finalize a 6–12 panel storyboard that clearly communicates a complete narrative using shot direction, character	Lesson Sequence 1. Warm-Up / Visual Review • Framing & Camera Angle Recap: Show visual examples (slides or printouts) of camera angles (e.g., bird's-eye view, low angle, over-the-shoulder). Brief class discussion: "How do different shots affect the viewer's experience?" Quick sketch challenge: Students redraw a simple action (e.g., opening a door) from two different camera angles. --- 2. Mini-Lesson: Applying Composition Discuss visual composition rules (e.g., rule of thirds, leading lines, visual balance). • Demonstrate how composition can guide the viewer's focus or	Formative Assessment Tasks **1. Camera Angle Sketch Warm-Up** • Evaluate students' quick sketches showing different camera angles. • Look for understanding of perspective, shot types (e.g., close-up, wide shot), and how angle affects meaning. --- **2. Peer Critique Session** • Students provide feedback using a structured peer review form or guided questions: ○ "Is the action clear in each panel?" ○ "Are different angles used to support emotion or pacing?" ○ "Does the sequence flow logically?"

placement, and camera movement. •	emphasize emotion. • Show before/after storyboard panels to compare composition improvements. --- 3. Peer Critique & Revision • Peer Review Session: Students pair up and exchange storyboards. Each gives feedback on: ○ Clarity of visual storytelling ○ Use of varied shots and angles ○ Flow and pacing of the sequence • Students take notes and begin revising 2–3 selected panels based on feedback. --- 4. Final Storyboard Work Time • Students finalize their full storyboard (6–12 panels) using pencil, ink, or digital tools. • Include camera directions, movement notes (e.g., "zoom," "pan left"), and consistent	• Teacher circulates and observes student conversations, checking for vocabulary use and thoughtful critique. --- **3. Teacher Checkpoint During Revision** • As students revise storyboard panels, review changes for: ○ Improved framing and clarity ○ Use of varied angles ○ Effective visual pacing • Offer verbal or written suggestions to support refinement. --- **4. Final Storyboard Presentation or Gallery Walk** • Informally assess completed 6–12 panel storyboards by asking: ○ Are story elements (beginning, middle, end) present?

	character action. 5. Presentation or Gallery Walk • Students present their boards (projected, displayed, or on desks). • Peers leave feedback via sticky notes or a structured critique form. • Optional reflection prompt: "What did you change and why?"	○ Do panels show a variety of camera angles and thoughtful composition? ○ Are movement notes or directions included where needed? **5. Reflection Exit Slip** Prompt examples: • "Which panel did you revise most, and why?" • "How did camera angles help you tell your story visually?"

Differentiation:
Flexible grouping, exploration by interest, goal setting with students, open ended activities, alternative assessments, leveled rubrics, project based learning, stations/centers

Resources Provided:
- Teacher Made Handout
- Desktop computer
- Printable storyboard templates (3-panel and 6-panel)
- Short animation clip for analysis (e.g., Pixar short or silent film scene)
- Shot type & camera angle reference chart
- Vocabulary sheet (e.g., pan, zoom, close-up, wide shot)
- Cameras



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly, Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging **Strongly** and require higher order thinking and problem solving skills	X		
Allow for student choice	X		
Provide scaffolding for acquiring targeted knowledge/skills		X	
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	X		
Are varied to address different student learning styles and preferences		X	
Are differentiated based on student needs		X	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment		X	
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template

Content Area:	Digital Media / Animation / Visual Arts	**Grade Level:**	9-12	**Unit Title:**	Animation Basics
Created:	Jaclene Santone	**Board Approved on:**	Type Here		



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Unit Overview Template					
Content Area:	Digital Media / Animation / Visual Arts	**Grade Level:**	9-12	**Unit Title:**	Stop Motion Animation

Unit Summary: This unit is designed to develop a better understanding of planning and brainstorming for Animated story.

Primary Interdisciplinary Connections:

21st Century Themes X Creativity and Innovation X Critical Thinking and Problem Solving ☐ ICT Literacy ☐ Information Literacy ☐ Life and Career Skills X Communication and Collaboration ☐ Media Literacy

Unit Rationale: Storyboarding is a key step in the animation process, helping artists plan and visualize stories before production begins. This unit teaches students how to break down scripts into visual scenes, explore camera angles, timing, and character movement, and communicate ideas clearly through drawings.

By creating their own storyboards, students develop storytelling, planning, and design skills essential for animation. They also learn how strong pre-production work saves time, improves clarity, and strengthens the final product. This unit lays the groundwork for effective visual storytelling in any animation project.

Career Readiness (Standard 9):

9.2, 9.4

Learning Targets	
Standards:	1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4,
Content Statements:	Anchor Standard 7: Perceiving and analyzing products. Anchor Standard 9: Applying criteria to evaluate products. Core Idea: There are strategies to improve one's professional value and marketability. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices. Core Idea: Advanced search techniques can be used with digital and media resources to locate information and to check the credibility and the expertise of sources to answer questions, solve problems, and inform the decision-making. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making

CPI#:	Cumulative Progress Indicator (CPI):
1.5.12 acc.Cr1a	Individually or collaboratively formulate new creative problems based on the student's existing artwork.

1.5.12adv.Cn11b	Assess the impact of an artist or group of artists on global issues, including climate change.
9.2.12.CAP.2	Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals.

Unit Essential Questions:

- What makes stop motion animation different from other forms of animation or filmmaking?
- How have artists used stop motion over time to tell stories and evoke emotion?
- What basic principles of animation apply across all stop motion techniques?

Unit Enduring Understandings:

- Stop motion is a unique and powerful form of animation that brings inanimate objects to life through frame-by-frame photography, allowing artists to tell stories using real-world materials and physical manipulation.
- The history of stop motion reveals its importance in the evolution of animation and visual effects, influencing everything from early cinema to modern-day film and television.
- Foundational animation principles—like timing, motion, anticipation, and squash & stretch—are essential to creating believable movement and emotional expression, regardless of medium or technique.
- Different stop motion techniques (e.g., claymation, cutout, object animation) offer diverse creative possibilities, each with its own strengths, tools, and challenges.
- Stop motion combines artistic vision with technical problem-solving, requiring patience, precision, and a hands-on understanding of visual storytelling.
-

Unit Learning Targets:
Students will....

- Define stop motion animation and describe how it differs from other animation techniques such as traditional hand-drawn or digital animation.
- Identify and explain key historical milestones and influential figures in the development of stop motion animation (e.g., Georges Méliès, Willis O'Brien, Ray Harryhausen, Aardman Animations).
- Recognize and describe basic animation principles such as squash and stretch, timing, anticipation, and exaggeration, and explain how they apply to stop motion.
- Distinguish between different stop motion techniques (e.g., claymation, object animation, cutout, pixilation) and describe the basic process for each.
- Use a stop motion app or software (e.g., Stop Motion Studio or Dragonframe) to create a simple animated sequence using objects or paper cutouts.
- Critically evaluate examples of stop motion animation, discussing their style, technique, and storytelling approach.
- Demonstrate basic frame-by-frame animation techniques by producing a short test animation (5–10 seconds) that shows controlled movement and use of animation principles.

Evidence of Learning

Summative Assessment: 3-4 days

Equipment Needed: Cameras with stop motion capability

Tripods or stands (or DIY phone holders)

Stop motion animation applications (Premier and After Effects)

Basic art supplies: scissors, glue, paper, clay, wire, small objects/toys

Computer for viewing/editing

Projector or screen for class critique/showcase

Teacher Resources: Video clips:

- *Wallace & Gromit*, *Coraline*, *The Nightmare Before Christmas*, early Méliès films, Gumby

Animation principles videos (e.g., from Alan Becker or Pixar in a Box – Khan Academy)

Stop motion tutorials (YouTube or curriculum-aligned platforms like Common Sense or PBS LearningMedia)

Lesson plan guides from:

- The Animation Handbook (Pixar)
- Stop Motion Explosion or LEGO Stop Motion books
- Aardman Academy or AnimationChefs resources

Pre-built rubric templates and storyboard worksheets

Formative Assessments:

- Think-Pair-Share: Discuss what makes a good animated movement after watching clips
- Flipbook exercise: Students create a mini flipbook to demonstrate movement

- Exit Ticket: Name two animation principles and describe where they saw them in a video
- Storyboard draft check: Review early storyboards or scene plans
- Peer feedback: Partner review of first test animations for smoothness and clarity

Lesson Plans	
Lesson	**Time Frame**
Lesson 1 **Intro to Claymation & Character Creation**	**2- 3 days**
Lesson 2 **Animating Basic Movement**	**1-2 days**
Lesson 3 **Mini Claymation Story**	**2-3 days**

Teacher Notes:
This unit introduces students to the foundational concepts of stop motion animation through hands-on claymation activities. It's important to pace the lessons so students don't rush the animation process—frame-by-frame work requires patience and careful planning. Encourage students to test animations frequently and reflect on what works. Also, allow flexibility for different creative styles and support students in learning from technical "mistakes." Consider pairing students for production roles if equipment is limited (e.g., one animates while the other manages the camera).
Classroom management tip: Create dedicated "animation zones" with minimal lighting changes and clear table space.

Curriculum Development Resources/Technology Resources:
Click the links below to access additional resources used to design this unit:
Pixar in a Box – Animation

Aardman Academy (Free Resources)

Stop Motion Studio App

National Film Board of Canada – Stop Motion Workshop Guide



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Lesson Plan 1 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Introduction to Claymation & Character Creation	Time Frame:	2-3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving ☐ Information Literacy

X Life and Career Skills X Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Visual Arts: Sculpture and 3D modeling techniques

Language Arts: Character development and storytelling

Technology: Digital photography and animation apps

Integration of Technology: Students will use cameras equipped with stop motion animation apps to capture and eventually animate their clay models. The lesson introduces basic camera techniques and digital documentation as part of the creative process.

Equipment Needed:

- Modeling clay (non-drying)
- Toothpicks or wire for armatures
- Sculpting tools or plastic utensils
- Cameras
- Tripods
- Sketchpads and pencils for character design

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Understand the basics of claymation and its role in stop motion animation. • Design and sculpt a simple clay character with attention to form and basic anatomy. • Demonstrate safe and effective use of clay and sculpting tools. • Explain the importance of character design in storytelling through animation.	Lesson Sequence • Begin with a multimedia presentation showing examples of claymation characters and films to spark interest. • Lead a class discussion about character traits and how physical features communicate personality. • Demonstrate the process of building a clay character, including use of armatures for structure. • Provide guided sculpting time with one-on-one feedback. • Encourage students to sketch character concepts before sculpting. Lesson Sequence 1. Introduction & Hook: Show claymation clips; ask students what makes the characters interesting. 2. Mini-Lesson: Explain basic claymation character design and demonstrate sculpting	• Complete a character sketch to show planning before sculpting. • Participate in a peer critique session to discuss design choices and improvements. • Submit their finished clay character for teacher observation and informal feedback. • Reflect verbally or in writing on what they learned about character creation.

	techniques. 3. Guided Practice: Students sketch character ideas and start sculpting their clay figures. 4. Independent Practice: Continue sculpting with teacher support; students refine their models. 5. Closure: Students share their characters, discuss challenges, and reflect on their learning.	

Differentiation:
Provide step-by-step visual guides or video tutorials
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:

- Character Design Worksheet (printable)
- Step-by-step demo video link (teacher-created or YouTube)
- Examples of claymation characters from films like *Wallace & Gromit*
- Animation principles handout (basic)



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Lesson Plan 2 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Animating Basic Movement	Time Frame:	2-3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

☐ Creativity and Innovation ☐ Critical Thinking and Problem Solving ☐ Information Literacy

☐ Life and Career Skills ☐ Communication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Science: Understanding motion and physics concepts like timing and movement.

Language Arts: Storytelling through non-verbal communication and visual sequencing.

Technology: Using digital tools and software for creative expression.

Math: Counting frames and measuring timing intervals for smooth animation.

Integration of Technology: Students will use stop motion animation software/apps on a camera to capture frames, preview motion, and edit sequences. Technology supports hands-on learning by allowing immediate feedback through playback and onion-skinning features. Students will also learn basic digital file management by saving and exporting their animations.

Equipment Needed:

Clay characters created in Lesson 1

Cameras

Tripods (to keep devices steady)

Sculpting tools for small adjustments during animation

Charging stations or extra batteries for devices

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Understand and apply basic animation principles such as timing, anticipation, and squash & stretch. • Use stop motion software to capture and sequence images to create fluid movement. • Animate a simple action (e.g., waving, blinking) using their clay character. • Develop patience and attention to detail through frame-by-frame animation.	Lesson Sequence • Begin with a close viewing and group analysis of a short claymation clip, focusing on movement. • Mini-lesson on animation principles with visuals and examples. • Demonstrate how to set up and use the stop motion app, including onion-skinning and frame capture. • Guided practice animating a simple movement with teacher support. • Independent work time for students to animate their clay figures. • Peer sharing and discussion of challenges and successes. Lesson Sequence • Hook & Discussion: Watch a claymation clip and identify key movements. • Mini-Lesson: Teach animation principles	• Submit a 10 second stop motion animation demonstrating a simple movement. • Participate in peer critiques focusing on smoothness of motion and use of animation principles. • Complete a self-reflection checklist about what worked well and what could improve. • Respond to exit ticket questions, e.g., "What is anticipation in animation?"

	relevant to stop motion. • Demo: Show how to use stop motion software and demonstrate capturing frames. • Guided Practice: Animate a basic movement with teacher help. • Independent Practice: Students create their own simple animation. • Closure: Share animations and reflect on learning.	

Differentiation:
Provide step-by-step visual guides or video tutorials
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:

- Animation Principles Handout: Visual guide explaining timing, anticipation, squash & stretch with examples.
- Stop Motion Studio Quick Start Guide: Step-by-step tutorial on how to use the app features (capture, onion skin, playback).
- Sample Claymation Clips: Short videos demonstrating smooth movements and animation principles in action.
- Peer Review Checklist: Simple form to guide students in giving constructive feedback on classmates' animations.
- Reflection Worksheet: Prompts for students to evaluate their own animation process and identify areas for improvement.



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Lesson Plan 3 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Mini Claymation Story	Time Frame:	2-3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving ☐ Information Literacy

X Life and Career Skills XCommunication and Collaboration ☐ Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Science: Understanding motion and physics concepts like timing and movement.

Language Arts: Storytelling through non-verbal communication and visual sequencing.

Technology: Using digital tools and software for creative expression.

Math: Counting frames and measuring timing intervals for smooth animation.

Integration of Technology:

Students will use stop motion animation software/apps on a camera to capture frames, preview motion, and edit sequences. Technology supports hands-on learning by allowing immediate feedback through playback and onion-skinning features. Students will also learn basic digital file management by saving and exporting their animations.

Equipment Needed:

Clay characters created in Lesson 1

Cameras

Tripods (to keep devices steady)

Sculpting tools for small adjustments during animation

Charging stations or extra batteries for devices

Computer or projector for sharing animations

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Develop a simple narrative with a clear beginning, middle, and end suitable for claymation storytelling. • Plan their animation through storyboarding to organize scenes and actions. • Produce a 10–15 second claymation film using stop motion techniques incorporating character movement and props. • Collaborate or work independently to manage production tasks and solve technical challenges. • Reflect on the animation process and their storytelling choices.	Lesson Sequence • **Day 1 (Planning):** Introduce story arcs and storytelling basics for short animations. • Students brainstorm ideas and create storyboards outlining key scenes. • Discuss character motivation, conflict, and resolution. • Teacher models storyboard completion and pacing. • **Day 2 (Production):** Build props, set backgrounds, and rehearse movements. • Capture frames using stop motion software; focus on smooth motion and consistency. • Teacher circulates to assist with technical issues and artistic guidance.	• Submit storyboards for review and feedback before production. • Participate in peer feedback during production for troubleshooting and suggestions. • Complete a self-assessment on animation quality, storytelling, and teamwork. • Present final animation and discuss creative choices during critique.

- **Day 3 (Post-Production & Sharing):** Add simple sound effects, titles, or music (optional).
- Export final animation and share with class.
- Conduct a class critique and reflection session.

Lesson Sequence

1. **Introduction:** Discuss elements of storytelling in animation and watch example clips.
2. **Storyboard Workshop:** Guide students through drafting their storyboards.
3. **Set & Prop Building:** Create mini sets and props needed for scenes.
4. **Animation Production:** Shoot frame-by-frame sequences.
5. **Editing & Sound:** Add optional audio and finalize the project.
6. **Presentation & Reflection:** Share finished animations and discuss.

Differentiation: Provide step-by-step visual guides or video tutorials Pair with a peer buddy for collaborative sculpting and idea sharing.		
Resources Provided: • Animation Principles Handout: Visual guide explaining timing, anticipation, squash & stretch with examples. • Stop Motion Studio Quick Start Guide: Step-by-step tutorial on how to use the app features (capture, onion skin, playback). • Sample Claymation Clips: Short videos demonstrating smooth movements and animation principles in action. • Peer Review Checklist: Simple form to guide students in giving constructive feedback on classmates' animations. • Reflection Worksheet: Prompts for students to evaluate their own animation process and identify areas for improvement.		



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Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson ***Strongly, Moderately*** or ***Weakly*** meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging **Strongly** and require higher order thinking and problem solving skills	X		
Allow for student choice	X		
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives			
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	X		
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives		X	
Provide opportunities for student reflection and self- assessment		X	
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template

Content Area:	Digital Media / Animation / Visual Arts	**Grade Level:**	9-12	**Unit Title:**	Stop Motion
Created:	Jaclene Santone	**Board Approved on:**	Type Here		



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Unit Overview Template					
Content Area:	Digital Media / Animation / Visual Arts	**Grade Level:**	9-12	**Unit Title:**	Digital Frame-by-Frame Animation with Illustrator & Photoshop

Unit Summary: This curriculum introduces students to the fundamentals of frame-by-frame animation using Adobe Illustrator for creating vector assets and Adobe Photoshop for sequencing and animating frames. Students will develop skills in drawing, layering, timing, and exporting animations.

Primary Interdisciplinary Connections:

21st Century Themes **X** Creativity and Innovation **X** Critical Thinking and Problem Solving ☐ ICT Literacy ☐ Information Literacy **X** Life and Career Skills **X** Communication and Collaboration ☐ Media Literacy

Unit Rationale: Type Here

Career Readiness (Standard 9):
9.2 9.4

Learning Targets	
Standards:	1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4,
Content Statements:	Anchor Standard 7: Perceiving and analyzing products. Anchor Standard 9: Applying criteria to evaluate products. Core Idea: There are strategies to improve one's professional value and marketability. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices. Core Idea: Advanced search techniques can be used with digital and media resources to locate information and to check the credibility and the expertise of sources to answer questions, solve problems, and inform the decision-making. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making

CPI#:	Cumulative Progress Indicator (CPI):
1.5.12 acc.Cr1a	Individually or collaboratively formulate new creative problems based on the student's existing artwork.
1.5.12adv.Cn11b	Assess the impact of an artist or group of artists on global issues, including climate change.
9.2.12.CAP.2	Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.

9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals.
Standards:	1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4,

Unit Essential Questions:

- How can frame-by-frame animation effectively convey movement, emotion, and storytelling?
- What are the strengths and limitations of using Illustrator and Photoshop for animation?
- How do timing, spacing, and visual consistency impact the quality of an animation?

Unit Enduring Understandings:

- Frame-by-frame animation builds movement one image at a time and requires careful planning and attention to visual rhythm.
- Adobe Illustrator is a powerful tool for designing clean, scalable vector artwork used in animation.
- Adobe Photoshop allows animators to bring artwork to life through layer manipulation and frame sequencing.
- The principles of animation—such as timing, spacing, and anticipation—are essential regardless of the tools used.

Unit Learning Targets:

Students will....

- Design original characters or assets in Adobe Illustrator using layers and vector tools.
- Set up a Photoshop timeline and organize assets for frame-by-frame animation.
- Apply animation principles to create short, fluid sequences using incremental adjustments.
- Export animations in formats suitable for online sharing or digital presentation (e.g., GIF or MP4).
- Reflect on the animation process, identify challenges, and articulate how they resolved them creatively.

Evidence of Learning

Summative Assessment: 2-3 days

Equipment Needed: Computers with Adobe Illustrator & Photoshop

Headphones (if students add audio in later versions)

External storage or cloud access for saving project files

Teacher Resources:

- Adobe Education Exchange tutorials: https://edex.adobe.com
- YouTube tutorials on frame-by-frame Photoshop animation (e.g., by Motion Designers or Photoshop Training Channel)
- Sample project rubrics and peer critique sheets
- Handouts on 12 Principles of Animation
- Sample student projects or demo animations (teacher-created or from previous classes)

Formative Assessments:

- Sketch and storyboard planning sheets
- Illustrator file check for clean, layered asset design
- Photoshop animation timeline setup (frame-by-frame sequencing)
- Animation principle check-in (mini animation with one principle)
- Peer feedback session using critique guidelines



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Lesson Plans	
Lesson	**Time Frame**
Lesson 1 **Designing Animation Assets in Adobe Illustrator**	**2-3 days**
Lesson 2 **Frame-by-Frame Setup in Photoshop**	**1-2 days**
Lesson 3 **Final Animation Project & Export**	**2-3 days**

Teacher Notes:

This lesson introduces students to Adobe Illustrator and its role in preparing assets for animation. Emphasize the importance of clean layer organization, as each part of the character or object (eyes, limbs, etc.) must be placed on separate layers for later movement. Encourage students to keep designs simple to avoid overwhelming detail at the animation stage.

Consider demonstrating both mouse and tablet drawing to support different student preferences. Allow time for troubleshooting Illustrator basics with beginners.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

Adobe Illustrator for Beginners – Official Adobe Help

Adobe Education Exchange – Free Teacher & Student Resources

Vectortwist – Illustrator Tutorials (YouTube)

Graphic Mama – How to Create a Character in Adobe Illustrator



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Lesson Plan 1 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Designing Animation Assets in Adobe Illustrator	Time Frame:	2-3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving ☐ Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

Technology Education: Use of digital design tools and software workflows.

Art & Design: Principles of design, character development, and composition.

Language Arts: Planning and naming elements for narrative animation.

Math: Use of symmetry, proportions, and alignment tools in asset design.

Integration of Technology: Students use Adobe Illustrator to create scalable, editable vector artwork for animation. They explore digital drawing tools, layer management, and artboards, and prepare assets for use in Photoshop for animation. Technology supports visual storytelling and modern creative industry practices.

Equipment Needed:

Computers with Adobe Illustrator

Headphones (optional for tutorial videos)

Sketchbooks or printed planning sheets

Internet access for tutorials or reference images



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Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Understand the role of vector graphics in digital animation. • Use Adobe Illustrator tools (Pen Tool, Shape Tool, Layers) to design original characters or objects. • Organize Illustrator files using layers to prepare for animation. • Demonstrate creativity in design while following best practices for animation readiness.	Lesson Sequence 1. Hook: Show a short animated GIF or clip made with Illustrator assets. 2. Teach: Walk students through Illustrator workspace, tools, and file setup. 3. Practice: Students recreate a demo character or object step-by-step. 4. Create: Students begin designing their own characters with separate layers. 5. Close: Save Illustrator file, review checklist, and submit for feedback.	• Submit their Illustrator file with at least 3–5 labeled and logically layered parts. • Participate in a peer feedback session using a checklist (layer names, completeness, clarity). • Complete a self-assessment on their use of tools and file organization. • Answer an exit ticket prompt: "Why is layering important in animation?"

Differentiation:
Provide step-by-step visual guides or video tutorials
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:

- Vector Animation Asset Planning Worksheet – a guided sheet for students to sketch and label body parts or moving objects before designing in Illustrator.
- Layer Organization Checklist – a printable or digital checklist for students to review their Illustrator files before exporting (e.g., "Each moving part is on its own layer," "Layers are clearly named").
- Illustrator Quick Reference Guide – a handout with common tools (Pen Tool, Shape Tool, Direct Selection, Layer Panel tips).

- Teacher-Created Demo Video – a recorded walkthrough showing how to build a simple character using layers and shapes.

- Link to Adobe's Illustrator Beginner Tutorials:
  https://helpx.adobe.com/illustrator/tutorials.html



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Lesson Plan 2 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Digital Frame-by-Frame Animation with Illustrator & Photoshop	Time Frame:	1-2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving ☐ Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy ☐ ICT Literacy

Interdisciplinary Connections:

Technology: Digital software applications and timeline-based media production.

Visual Arts: Application of animation and design principles.

Math: Timing, frame rates, and spatial awareness.

Language Arts: Reflecting and describing animation choices.

Integration of Technology: Students will import Illustrator files into Adobe Photoshop and use the Timeline Panel to create basic frame-by-frame animations. They will also explore features like onion-skinning, frame duration, and playback controls.

Equipment Needed:

Computers with Adobe Photoshop and Illustrator installed

Illustrator files created in Lesson 1

Internet access for tutorials/demos

Headphones (if students watch support videos)

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Import Illustrator-created assets into Photoshop with proper layer separation • Set up and use Photoshop's timeline for frame-by-frame animation • Apply simple animation principles (e.g., squash/stretch, timing) • Create a short (3–5 frame) movement sequence using their asset	Learning Activities: Introduction: Watch a short frame-by-frame Photoshop animation; discuss what makes the movement feel natural. Demo: • Set up a Photoshop canvas • Import assets from Illustrator • Enable Timeline Panel and switch to Frame Animation • Demonstrate creating new frames, adjusting layers, and using onion-skinning Student Work: • Students animate a small action (e.g., a blink, bounce, or wave) • Save and preview playback • Export a test GIF or PSD file with frames	• Set up a Photoshop timeline and demonstrate frame-by-frame movement • Submit a short test animation (10 frames) • Participate in a peer check-in to offer and receive constructive feedback • Answer a reflection question: "What was the biggest challenge in making your frames consistent?"

	Lesson Sequence 1. Hook: Watch a 5-second hand-drawn-style animation made in Photoshop 2. Mini-Lesson: Demonstrate Photoshop animation setup and frame controls 3. Guided Practice: Students follow along creating a few frames of motion 4. Independent Creation: Animate and test a simple motion 5. Closure: Export file and group reflection or exit slip	

Differentiation:
Provide step-by-step visual guides or video tutorials
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:

- Photoshop Frame-by-Frame Setup Guide (PDF or Google Slides):
  Step-by-step visual guide for setting up the Timeline panel, creating frames, and enabling onion-skinning.
- Illustrator-to-Photoshop Import Tutorial:
  Instructions on how to correctly import vector assets with layer integrity from Adobe Illustrator into Photoshop.
- Animation Principles Mini-Handout:
  Covers key principles like timing, spacing, and anticipation with visual examples tailored for digital animation.
- Demo PSD File:
  A sample Photoshop project that includes layered artwork and a pre-built animation timeline

for students to explore and deconstruct.

- Online Reference – Adobe Photoshop Animation Tutorial: https://helpx.adobe.com/photoshop/how-to/make-animated-gif.html



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Lesson Plan 3 Template					
Content Area:	Digital Media / Animation / Visual Arts	Lesson Title:	Completing, Refining, and Exporting Frame-by-Frame Animations in Photoshop	Time Frame:	2-3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving X Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

Technology: Using software export functions and file management.

Visual Arts: Applying animation principles and refining visual storytelling.

Language Arts: Writing reflections on artistic process and creative decisions.

Integration of Technology: Students use Adobe Photoshop to finalize their frame-by-frame animations, adjust timing for smooth motion, and export their work as GIF videos. They will also submit project files for review.

Equipment Needed:

Computers with Adobe Photoshop & Illustrator

Completed Photoshop project files from previous lessons

External drives or cloud storage for saving/exporting files

Headphones (optional, for watching/exporting video tutorials)



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Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Apply animation principles (timing, spacing, squash & stretch) to enhance their frame-by-frame sequences. • Refine their animations by adjusting frame durations and testing playback. • Export animations in appropriate digital formats (GIF) • Write a brief artist statement reflecting on their animation process, challenges, and creative choices.	Lesson Sequence 1. Review: Recap animation principles and review storyboard plans. 2. Edit: Refine animation frames and timing. 3. Export: Demonstrate and assist students exporting their animations. 4. Reflect: Write and share artist statements. 5. Showcase: Optionally share animations in class or via an online gallery.	• Submit a completed animated GIF or MP4 demonstrating frame-by-frame animation techniques. • Submit their Photoshop project files with timeline and layers intact. • Complete a written reflection or artist statement discussing their process and use of animation principles. • Participate in peer review and constructive critique.

Differentiation:
Provide step-by-step visual guides or video tutorials
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:

- Exporting Animations in Photoshop Guide (PDF)
- Animation Principles Reference Sheet
- Artist Statement Writing Prompt Handout
- Sample Exported Animations for Inspiration
- Link: Adobe Photoshop Export GIF & Video

Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly, Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging **Strongly** and require higher order thinking and problem solving skills	X		
Allow for student choice		X	
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives			
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills		X	
Are varied to address different student learning styles and preferences		X	
Are differentiated based on student needs		X	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives		X	
Provide opportunities for student reflection and self- assessment	X		
Provide data to inform and adjust instruction to better meet the varying needs of learners	X		

Curriculum Design Template

Content Area:	Digital Media / Animation / Visual Arts	**Grade Level:**	9-12	**Unit Title:**	Introduction to Autodesk Maya
Created:	Jaclene Santone	**Board Approved on:**	Type Here		



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Unit Overview Template					
Content Area:	Digital Media / Animation / Visual Arts	**Grade Level:**	9-12	**Unit Title:**	Introduction to Autodesk Maya

Unit Summary: This unit introduces students to Autodesk Maya, a leading 3D modeling and animation software used in industries such as film, gaming, and visual effects. Students will learn the fundamentals of 3D modeling, texturing, lighting, and basic animation workflows within Maya. Through hands-on projects, learners will develop technical skills alongside creative problem-solving abilities to build and animate simple 3D assets.

Primary Interdisciplinary Connections:

Art & Design: 3D visual design principles, spatial reasoning, and aesthetics.

Technology: Software proficiency, digital asset creation, and file management.

Mathematics: Geometry, transformations, coordinates, and spatial measurements.

Engineering & Media Production: Understanding pipelines and workflow in digital media.

21st Century Themes X Creativity and Innovation X Critical Thinking and Problem Solving ☐ ICT Literacy ☐ Information Literacy X Life and Career Skills X Communication and Collaboration ☐ Media Literacy

Unit Rationale: Autodesk Maya is a powerful industry-standard tool for 3D modeling and animation, making it essential for students interested in careers in digital media, animation, gaming, and visual effects. This unit equips students with foundational technical skills and conceptual understanding to pursue advanced studies or entry-level roles in creative technology fields. By integrating creativity with technology, students also develop critical problem-solving abilities vital for modern careers.

Career Readiness (Standard 9):

9.2 9.4

Learning Targets	
1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4, SEL.PK-12.5	
Content Statements:	Anchor Standard 2: Organizing and developing ideas. Anchor Standard 11: Relating artistic ideas and works within societal, cultural and historical contexts to deepen understanding. Core Idea: There are strategies to improve one's professional value and marketability. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices

	Core Idea: Laws govern the use of intellectual property and there are legal consequences to utilizing or sharing another's original works without permission or appropriate credit. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making SEL.PK-12.5: Relationship Skills
	Cumulative Progress Indicator (CPI):
	Demonstrate in works of art or design how visual and material culture defines, shapes, enhances, inhibits, and/or empowers people's lives.
	Assess the impact of an artist or a group of artists on the beliefs, values, and behaviors of a society.
	Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.
	Identify transferable skills in career choices and design alternative career plans based on those skills.
	Compare and contrast international differences in copyright laws and ethics.

Unit Essential Questions:

- What are the core tools and features of Autodesk Maya used for 3D modeling and animation?
- How do principles of 3D design and animation influence storytelling and digital media production?
- In what ways can Autodesk Maya skills prepare students for careers in animation, gaming, and visual effects?

Unit Enduring Understandings:

- Autodesk Maya provides a comprehensive platform for creating and animating 3D models through specialized tools and workflows.
- Mastery of 3D modeling and animation principles is essential for producing professional digital media content.
- Understanding software pipelines and file management is critical for collaborative and efficient digital production.

- Developing technical skills in Maya fosters creativity, problem-solving, and career readiness in digital arts industries.

Unit Learning Targets:
Students will....
Navigate the Autodesk Maya interface and utilize basic modeling, texturing, and animation tools.

Create simple 3D models using polygons and NURBS techniques.

Apply materials and lighting to enhance the realism of 3D scenes.

Animate basic object movements using keyframes and timeline controls.

Demonstrate file management and export workflows relevant to 3D projects.

Analyze and critique 3D models and animations for improvement and storytelling effectiveness.

Evidence of Learning

Summative Assessment: 5 days

Equipment Needed: Computers with Autodesk Maya installed (latest or compatible version)

Adobe Illustrator and Adobe Photoshop

External storage or cloud access for saving project files

Projector or screen for demonstrations and critiques

Reference materials (sketches, storyboards)

Teacher Resources: Autodesk Maya official tutorials and user guides (Autodesk Knowledge Network)

Lesson plan templates and rubrics for 3D animation projects

Video tutorials from trusted educators (e.g., Digital Tutors, Pluralsight, YouTube channels)

Sample 3D models and project files for demonstration

Classroom management tools for software-based projects

Formative Assessments:

- Guided practice exercises on navigating the Maya interface and toolsets
- Checkpoints for ongoing project progress with peer and teacher feedback
- Short reflection journals on challenges and solutions encountered during modeling and animation
- In-class demonstrations of keyframe animation and rendering techniques

Lesson Plans	
Lesson	**Time Frame**
Lesson 1 **Getting Started with Autodesk Maya — Interface & Basic Navigation**	**2 days**
Lesson 2 **Basic 3D Modeling Techniques — Creating and Editing Polygon Objects**	**2 days**
Lesson 3 **Introduction to Animation — Keyframing and Timeline Controls**	**2 days**

Teacher Notes:
Ensure students have access to Autodesk Maya installed and working before the unit starts.

Provide an overview of industry applications to motivate student engagement (e.g., film, gaming, VR).

Prepare sample files and demo scenes ahead of time to streamline lessons.

Encourage exploration and experimentation with tools to build confidence.

Monitor students closely during hands-on modeling and animation activities to offer immediate support.

Remind students to save work frequently and maintain organized project files.

Incorporate peer reviews to foster collaborative learning and constructive feedback.

Adjust pacing based on student familiarity with 3D concepts and software proficiency.

Curriculum Development Resources/Technology Resources:
Click the links below to access additional resources used to design this unit:
Autodesk Maya Official Tutorials

- *Digital Tutors / Pluralsight Maya Courses*
- *YouTube Channel: Autodesk Maya Learning*
- *CG Cookie – Maya Tutorials*
- *Popular Movies made using Autodesk Maya*
- *How Pixar's 'Toy Story 4' Was Animated | Movies Insider*
- *How Pixar created its most complex character yet for 'Finding Dory' (CNET News)*



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Lesson Plan 1 Template					
Content Area:	Digital Media / 3D Modeling & Animation	Lesson Title:	Introduction to Autodesk Maya Interface and Basic Navigation	Time Frame:	2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving X Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

- Technology: Navigating complex software tools
- Visual Arts: Understanding 3D space and design principles
- Math: Coordinates, transformations, and spatial reasoning

Integration of Technology: Students will use Autodesk Maya software to explore and interact with the 3D workspace, learning to manipulate viewports and basic objects using mouse and keyboard shortcuts.

Equipment Needed:

Computers with Autodesk Maya installed

Projector or screen for demonstration

Sample Maya files (primitive shapes ready for manipulation)

Adobe Illustrator, Adobe Photoshop, Adobe Premiere, and Adobe After Effects



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Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Identify and navigate the Maya user interface components • Use viewport controls to change perspective views • Manipulate primitive objects using move, rotate, and scale tools • Save and organize project files appropriately	Lesson Sequence 1. Introduction: Teacher-led walkthrough of the Maya interface (menus, panels, toolbars) 2. Guided Practice: Students open Maya and explore navigation controls: orbit, pan, zoom 3. Hands-on Exercise: Create basic primitives (cube, sphere) and practice moving, rotating, scaling 4. Q&A and Wrap-up: Address questions and summarize key navigation tips	• Observe students during hands-on exercises to ensure correct tool usage • Quick verbal quiz on interface elements and navigation controls • Student demonstration of moving and rotating an object in the viewport

Differentiation:
Provide step-by-step visual guides or video tutorials.
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:
- Autodesk Maya Interface Quick Reference Guide (PDF)
- Video tutorial: "Maya Basics – Interface and Navigation"
- Sample Maya scene with primitives



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Lesson Plan 2 Template					
Content Area:	Digital Media / 3D Modeling & Animation	Lesson Title:	Polygon Modeling Basics in Autodesk Maya	Time Frame:	2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving X Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

- Visual Arts: Understanding form, structure, and 3D spatial relationships
- Technology: Using digital tools for creative production
- Math: Geometry concepts, such as vertices, edges, and faces

Integration of Technology: Students will use Autodesk Maya's polygon modeling toolkit to create and manipulate 3D objects, practicing extrusion, vertex editing, and mesh refinement.

Equipment Needed:

Computers with Autodesk Maya installed

Projector or screen for live demonstration

Sketches or reference images for modeling projects

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will:	Lesson Sequence	

• Create polygonal objects using primitive shapes and extrusion tools • Edit vertices, edges, and faces to modify geometry • Apply basic modeling techniques to develop a simple 3D object • Save and manage project files effectively	• Review: Brief recap of Maya interface and navigation skills from Lesson 1 • Demonstration: Teacher demonstrates polygon modeling tools — create primitives, extrude faces, manipulate vertices • Guided Practice: Students follow along to build a simple model (fish) • Independent Practice: Students continue modeling their object, exploring additional tools and asking questions • Wrap-up: Discuss challenges and solutions; share progress with peers	• Monitor student models during practice for proper use of tools and clean geometry • Peer review session where students provide constructive feedback on models

Differentiation:
Provide step-by-step visual guides or video tutorials.
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:

- Fish Front View and Side View Material
- Polygon Modeling Quick Guide (PDF)
- Video tutorial: "Introduction to Polygon Modeling in Maya"
- Sample Maya project file demonstrating basic modeling techniques



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Lesson Plan 3 Template					
Content Area:	Digital Media / 3D Animation	Lesson Title:	Introduction to Animation — Keyframing and Timeline Controls	Time Frame:	2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation **X** Critical Thinking and Problem Solving **X** Information Literacy

X Life and Career Skills **X** Communication and Collaboration **X** Media Literacy **X** ICT Literacy

Interdisciplinary Connections:

Art: Understanding motion, timing, and visual storytelling

Technology: Using digital tools for creating animated content

Physics: Concepts of motion and timing in animation

Integration of Technology: Students will use Autodesk Maya's timeline and graph editor to create simple keyframe animations, manipulating objects over time to produce movement.

Equipment Needed:

Computers with Autodesk Maya installed

Projector or screen for demonstration

Sample Maya scenes for animation practice

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will:	Lesson Sequence	

• Understand the basics of keyframe animation in Maya • Create simple animations by setting keyframes for object properties (position, rotation, scale) • Use the timeline and playback controls to review and refine animations • Apply principles of timing and motion to enhance animation quality	• Introduction: Teacher explains keyframe animation concepts and timeline use • Demonstration: Live demo on creating a bouncing ball animation using keyframes • Guided Practice: Students create their own simple animations (e.g., rotating or moving objects) • Peer Review and Discussion: Students share animations, discuss timing and motion, and provide feedback • Wrap-up: Reflect on challenges and successes in animation creation	• Submission of a short animation clip demonstrating keyframe use • Observation during guided practice to check understanding of timeline controls • Student reflection journal entry on the animation process and learning points

Differentiation:
Provide step-by-step visual guides or video tutorials.
Pair with a peer buddy for collaborative sculpting and idea sharing.

Resources Provided:
- Keyframing and Timeline Quick Reference (PDF)
- Video tutorial: "Basic Animation with Keyframes in Maya"
- Sample Maya animation project file



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Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson ***Strongly, Moderately*** or ***Weakly*** meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging **Strongly** and require higher order thinking and problem solving skills	X		
Allow for student choice		X	
Provide scaffolding for acquiring targeted knowledge/skills		X	
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	X		
Are varied to address different student learning styles and preferences		X	
Are differentiated based on student needs		X	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process	X		
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives	X		
Provide opportunities for student reflection and self- assessment	X		
Provide data to inform and adjust instruction to better meet the varying needs of learners	X		

Curriculum Design Template

Content Area:	Digital Media / 3D Animation	**Grade Level:**	9-12	**Unit Title:**	Type Here
Created:	Jaclene Santone	**Board Approved on:**	Type Here		



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Unit Overview Template					
Content Area:	Digital Media / 3D Animation	**Grade Level:**	9-12	**Unit Title:**	Advance Autodesk Maya

Unit Summary: This unit introduces students to the foundational skills of 3D modeling and animation using Autodesk Maya, a leading industry software. Students begin by exploring the interface and mastering navigation controls, then progress to creating detailed polygonal models using CV curves, such as a chess piece and board. The unit covers essential techniques including UV mapping and texturing to add realistic surface details. Students also learn to light and render scenes effectively, culminating with an introduction to basic rigging and keyframe animation to bring models to life. Through hands-on projects and industry-relevant tutorials, students develop technical proficiency, creativity, and problem-solving skills necessary for careers in animation, game design, and visual effects.

Primary Interdisciplinary Connections:

21st Century Themes X Creativity and Innovation X Critical Thinking and Problem Solving X ICT Literacy X Information Literacy X Life and Career Skills X Communication and Collaboration X Media Literacy

Unit Rationale: This unit is designed to equip students with essential skills in 3D modeling, texturing, lighting, and animation using Autodesk Maya, a standard software in the animation, gaming, and visual effects industries. By learning these foundational techniques, students gain valuable technical proficiency and creative problem-solving abilities that align with current digital media careers. Understanding the entire 3D production pipeline—from modeling with CV curves to rigging and animating characters—prepares students to contribute effectively in collaborative, technology-driven environments. Furthermore, the unit fosters 21st-century skills such as creativity, critical thinking, and digital literacy, empowering students to pursue further education or career opportunities in digital arts and entertainment.

Career Readiness (Standard 9):
9.2 9.4

Learning Targets	
Standards:	1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4,
Content Statements:	Anchor Standard 7: Perceiving and analyzing products. Anchor Standard 9: Applying criteria to evaluate products. Core Idea: There are strategies to improve one's professional value and marketability. Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices. Core Idea: Advanced search techniques can be used with digital and media resources to locate information and to check the credibility and the expertise

	of sources to answer questions, solve problems, and inform the decision-making. SEL.PK-12.1: Self-Awareness SEL.PK-12.2: Self-Management SEL.PK-12.3: Social Awareness SEL.PK-12.4: Responsible Decision-Making
CPI#:	**Cumulative Progress Indicator (CPI):**
1.5.12 acc.Cr1a	Individually or collaboratively formulate new creative problems based on the student's existing artwork.
1.5.12adv.Cn11b	Assess the impact of an artist or group of artists on global issues, including climate change.
9.2.12.CAP.2	Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals.

Unit Essential Questions:

- How do 3D modeling, texturing, lighting, and animation work together to create compelling digital media?
- What role do CV curves and polygonal modeling play in designing smooth and detailed 3D objects?
- How can mastering Autodesk Maya's tools prepare students for careers in animation and digital content creation?

Unit Enduring Understandings:

- 3D digital content creation involves a sequence of interrelated processes including modeling, texturing, lighting, rigging, and animation.
- CV curves allow for precise control of complex shapes, enhancing the quality of 3D models.
- Proper UV mapping and texturing are essential for adding realism and visual interest to 3D objects.
- Mastery of industry-standard software like Autodesk Maya builds valuable technical skills applicable in multiple digital arts careers.

Unit Learning Targets:

Students will....

- Navigate and utilize Autodesk Maya's interface and workspace efficiently.
- Create detailed 3D models using CV curves and polygonal modeling techniques.
- Apply UV mapping and texture materials to 3D models for realistic surfaces.
- Set up lighting and render scenes to showcase their 3D work effectively.
- Build basic rigs and animate objects using keyframes and timeline controls.
- Demonstrate an understanding of the 3D production pipeline through project work.

Evidence of Learning

Summative Assessment: 5 days

Equipment Needed: Computers with Autodesk Maya installed

Drawing tablets (optional but recommended)

Projector or screen for demonstrations

External storage or cloud access for file saving and sharing

Reference images and texture files

Teacher Resources: Autodesk Maya User Guide and official tutorials

Online tutorials from Autodesk and trusted platforms (e.g., Digital Tutors, Pluralsight)

YouTube channels with Maya workflow demonstrations (including Pixar's behind-the-scenes videos)

Sample project files and textures

Lesson plans and assessment rubrics

Formative Assessments:

- Daily skill practice assignments (modeling, texturing, lighting, animation)
- Peer review sessions providing feedback on models and animations
- In-class demonstrations and checkpoints with progress critiques
- Reflection journals or exit tickets summarizing learned concepts and challenges



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Lesson Plans	
Lesson	**Time Frame**
Lesson 1 **CV Curves Modeling, UV Mapping, and Texturing**	**3 days**
Lesson 2 **Lighting and Rendering in Maya**	**3 days**
Lesson 3 **Rigging Fundamentals and Character Setup**	**3 days**

Teacher Notes:

This unit is designed to build students' proficiency step-by-step, starting with creating precise shapes using CV curves and texturing, moving to realistic scene lighting and rendering techniques, and finally introducing the fundamentals of rigging for animation. Allow flexibility in pacing based on student progress. Use project-based learning to reinforce concepts and encourage creativity. Make sure to provide plenty of hands-on practice, demonstrations, and opportunities for peer feedback.

Curriculum Development Resources/Technology Resources:

Click the links below to access additional resources used to design this unit:

Autodesk Maya Official Tutorials

Pixar Animation Studios YouTube Channel

Digital Tutors / Pluralsight Maya Training



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Lesson Plan 1 Template					
Content Area:	3D Modeling and Animation / Digital Media Arts	Lesson Title:	CV Curves Modeling, UV Mapping, and Texturing	Time Frame:	3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving X Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

Art & Design: Understanding shape, form, and texture in visual composition

Mathematics: Geometry concepts applied in 3D modeling and curves

Computer Science: Using software tools and digital workflows for creative production

Integration of Technology: Students will use Autodesk Maya to create CV curve-based models, unwrap UVs, and apply digital textures. Technology facilitates hands-on practice with industry-standard software, enhancing digital literacy and technical skills.

Equipment Needed:

Computers with Autodesk Maya installed

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Understand and create CV curves to model smooth, detailed 3D objects (e.g., chess piece	Lesson Sequence 1. **Introduction to CV Curves:** Overview and demonstration of creating and editing CV curves in	• **Skill Check:** Observe students as they create and adjust CV curves, providing immediate feedback on curve

and board) • Perform UV unwrapping to prepare models for texturing • Apply and manipulate textures and materials to enhance model realism • Demonstrate proficiency in using Autodesk Maya's modeling and texturing tools	Maya 2. **Modeling Activity:** Students design a chess piece and board using CV curves, focusing on smooth and accurate shapes 3. **UV Mapping:** Teacher-led tutorial on unwrapping models and preparing UV maps 4. **Texturing:** Students apply textures to their models, experimenting with materials to achieve realistic surfaces 5. **Review & Critique:** Group sharing of work, discussion of challenges, and instructor feedback 6. **Wrap-Up & Reflection:** Summarize key concepts and answer questions	control and accuracy. • **Model Progress Review:** Periodic check-ins where students submit screenshots or files showing the stage of their chess piece and board models. • **Texture Application Demo:** Students demonstrate how they apply and adjust textures on their models, explaining their material choices. • **Peer Review:** Students present their models and receive constructive feedback from classmates on shape accuracy and texture realism.

Differentiation:

- Flexible grouping, exploration by interest, goal setting with students, open ended activities, alternative assessments, leveled rubrics, project based learning, stations/centers
- Step by Step Videos

Resources Provided:

- Reference images of chess pieces and boards
- Texture files for materials such as wood, marble, and metal



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Lesson Plan 2 Template					
Content Area:	3D Modeling and Animation / Digital Media Arts	Lesson Title:	Lighting and Rendering in Maya	Time Frame:	3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation **X** Critical Thinking and Problem Solving **X** Information Literacy

X Life and Career Skills **X** Communication and Collaboration **X** Media Literacy **X** ICT Literacy

Interdisciplinary Connections:

Physics: Understanding light behavior, shadows, and reflections

Art & Design: Using lighting to influence mood, composition, and storytelling

Computer Science: Exploring rendering engines and software setting

Integration of Technology: Students will use Autodesk Maya's lighting tools and rendering engine to set up different types of lights (directional, point, spot) and render scenes. This process develops their understanding of how digital lighting influences visual storytelling and technical output.

Equipment Needed:

Computers with Autodesk Maya installed

Sample 3D scenes or student-created models for lighting practice

Projector or large screen for demonstrations

Reference images or videos demonstrating lighting effects in animation and film

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks

Students will:	Lesson Sequence	
• Understand different types of lights in Maya and their properties (directional, point, spot, area lights) • Set up and manipulate lighting in a 3D scene to create desired moods and effects • Use Maya's rendering tools to produce high-quality images of their lit scenes • Analyze how lighting impacts the perception of 3D models and environments	• Introduction to Lighting: Overview of light types and their characteristics in Maya • Demonstration: Teacher shows how to add and modify lights in a scene • Hands-On Practice: Students apply lights to models/scenes, experimenting with parameters • Rendering Tutorial: Step-by-step walkthrough of render settings and producing images • Student Project: Students create a lit scene and render final images • Review & Feedback: Group discussion and critique of lighting setups and rendered outputs	• Observation of students setting up different light types correctly • Submission of rendered images showing use of multiple light sources • Peer critiques focusing on effectiveness of lighting choices • Reflection journal entries describing lighting challenges and solutions

Differentiation:

- Flexible grouping, exploration by interest, goal setting with students, open ended activities, alternative assessments, leveled rubrics, project based learning, stations/centers
- Step by Step Videos

Resources Provided:

- Autodesk Maya Lighting and Rendering Official Documentation (https://knowledge.autodesk.com/support/maya)
- YouTube Tutorials on Maya Lighting Basics and Advanced Techniques (e.g., "Lighting in Maya" by Digital Tutors or Pluralsight)
- Sample 3D Scene Files for Lighting Practice (chess set or simple environments)



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Lesson Plan 3 Template					
Content Area:	3D Modeling and Animation / Digital Media Arts	Lesson Title:	Rigging Fundamentals and Character Setup	Time Frame:	3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation **X** Critical Thinking and Problem Solving **X** Information Literacy

X Life and Career Skills **X** Communication and Collaboration **X** Media Literacy **X** ICT Literacy

Interdisciplinary Connections:

Biology/Anatomy: Understanding joints and movement in living beings to inform rigging

Physics: Principles of motion and weight distribution applied in animation

Computer Science: Use of software tools and scripting for rig controls

Integration of Technology: Students will use Autodesk Maya's rigging tools to create joint systems and control rigs. This hands-on experience develops their ability to prepare 3D characters and objects for animation, understanding the technical aspects of movement in digital environments.

Equipment Needed:

Computers with Autodesk Maya installed

Sample rigging project files (e.g., simple character or object models)

Skeleton (optional for visual aid)

Reference materials on basic anatomy and joint movement



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Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Understand the purpose and fundamentals of rigging in 3D animation • Create joint chains and skeletons for simple 3D models • Apply basic control rigs for manipulating model movements • Test and troubleshoot rigs to ensure smooth and realistic motion	Lesson Sequence • Introduction to Rigging: Explanation of rigging concepts and importance in animation • Demonstration: Building joint chains and skeletons in Maya • Hands-On Practice: Students rig simple models, focusing on correct joint placement • Control Rig Setup: Adding manipulators and exploring IK/FK basics • Testing & Troubleshooting: Students test rigs with simple animations, fixing issues • Review & Critique: Group discussion of rig setups, sharing tips and improvements	• Observation during rigging exercises to assess understanding of joint placement and hierarchy • Submission of a basic rigged model with working controls • Peer and instructor feedback on rig functionality and ease of use • Student reflections on challenges and solutions encountered during rigging

Differentiation:
Step By Step Guide and Videos
Pairing with peers

Resources Provided:

- Autodesk Maya Rigging Official Documentation (https://knowledge.autodesk.com/support/maya)
- YouTube Tutorials on Rigging Basics (e.g., "Maya Rigging Fundamentals" by Digital Tutors or Pluralsight)

- Sample rigged character files for study and practice
- Reference videos on anatomy and joint movement for rigging accuracy



Lesson Reflection

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly, Moderately* or *Weakly* meets the criteria below.

Lesson Activities	Strongly	Moderately	Weakly
Are challenging **Strongly** and require higher order thinking and problem solving skills	X		
Allow for student choice	X		
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills	X		
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	X		
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs	X		
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives		X	
Provide opportunities for student reflection and self- assessment		X	
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template

Content Area:	3D Animation and Digital Media Arts	**Grade Level:**	9-12	**Unit Title:**	Advanced Autodesk Maya
Created:	Jaclene Santone	**Board Approved on:**	Type Here		



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Unit Overview Template					
Content Area:	3D Animation and Digital Media Arts	**Grade Level:**	9-12	**Unit Title:**	Advanced Autodesk Maya Particles

Unit Summary: This unit introduces students to Autodesk Maya's powerful particle systems and dynamics tools used to simulate real-world effects such as fire, smoke, rain, and magical effects. Students will explore Maya's nParticles and Bifrost systems to create realistic and stylized simulations that can be integrated into animated scenes. Through hands-on exercises and visual analysis, students will learn how to control particle emitters, adjust physics-based attributes (gravity, collision, lifespan), and render simulations with appropriate lighting and shaders. The unit emphasizes technical experimentation, creative design, and professional workflow, preparing students for advanced roles in animation, VFX, and game development pipelines.

Primary Interdisciplinary Connections:

21st Century Themes X Creativity and Innovation X Critical Thinking and Problem Solving X ICT Literacy
☐ Information Literacy X Life and Career Skills X Communication and Collaboration X Media Literacy

Unit Rationale:

As digital animation and visual effects continue to shape the entertainment, gaming, and advertising industries, the demand for artists skilled in realistic and stylized simulations is rapidly increasing. This unit provides students with the opportunity to explore Autodesk Maya's particle systems, a cornerstone of professional VFX and animation production. By working with tools like nParticles and Bifrost, students will gain hands-on experience creating dynamic simulations such as smoke, fire, and water—effects commonly used in films, commercials, and video games.

The unit not only strengthens students' technical abilities but also enhances their creative problem-solving and critical thinking skills as they control complex simulations, troubleshoot unexpected outcomes, and integrate particle effects into 3D scenes. Learning to simulate and render natural phenomena prepares students for real-world production environments, laying the groundwork for careers in animation, game design, digital media, and post-production. This unit also encourages experimentation and iteration, cultivating an adaptive mindset essential in today's fast-evolving creative industries.

Career Readiness (Standard 9):
9.2 9.4

Learning Targets	
Standards:	1.5, SEL.PK-12.1, SEL.PK-12.2, SEL.PK-12.3, SEL.PK-12.4,
Content Statements:	Anchor Standard 7: Perceiving and analyzing products. Anchor Standard 9: Applying criteria to evaluate products.

Core Idea: There are strategies to improve one's professional value and marketability.
Core Idea: Career planning requires purposeful planning based on research, self-knowledge, and informed choices.
Core Idea: Advanced search techniques can be used with digital and media resources to locate information and to check the credibility and the expertise of sources to answer questions, solve problems, and inform the decision-making.
SEL.PK-12.1: Self-Awareness
SEL.PK-12.2: Self-Management
SEL.PK-12.3: Social Awareness
SEL.PK-12.4: Responsible Decision-Making

CPI#:	Cumulative Progress Indicator (CPI):
1.5.12 acc.Cr1a	Individually or collaboratively formulate new creative problems based on the student's existing artwork.
1.5.12adv.Cn11b	Assess the impact of an artist or group of artists on global issues, including climate change.
9.2.12.CAP.2	Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.
9.2.12.CAP.6	Identify transferable skills in career choices and design alternative career plans based on those skills.
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals.

Unit Essential Questions:

- How can particle systems be used to simulate natural and fantastical effects in 3D environments?
- What are the artistic and technical considerations when creating dynamic simulations in Maya?
- How do particle effects enhance storytelling and realism in animation and visual effects?

Unit Enduring Understandings:

- Particle systems allow for the creation of realistic and stylized simulations such as fire, smoke, rain, and explosions.
- Understanding and controlling physics-based attributes (gravity, collision, lifespan, turbulence) is essential to simulation accuracy.

- Effective integration of particle effects requires planning, artistic direction, and technical problem-solving.
- Maya's nParticles and Bifrost systems are powerful tools used in professional production pipelines for VFX and animation.

Unit Learning Targets:
Students will....

Create and modify particle emitters using Maya's nParticle system.

Adjust key attributes such as lifespan, speed, gravity, and collisions to control simulation behavior.

Use fields and solvers to simulate environmental interactions like wind, turbulence, and viscosity.

Integrate particle effects into existing 3D scenes to enhance visual storytelling.

Render particle simulations using appropriate lighting, shaders, and camera techniques.

Evidence of Learning

Summative Assessment: 5 days

Equipment Needed: Computers with Autodesk Maya installed

Teacher Resources: Autodesk Maya Knowledge Base – https://knowledge.autodesk.com/support/maya

Pluralsight Maya VFX Courses – https://www.pluralsight.com (search "Maya particles" or "nParticles")

YouTube Tutorials:

- *nParticles in Maya for Beginners* – https://www.youtube.com/watch?v=kVkKiH56sX8
- *Bifrost Basics* by Autodesk
- *Pixar Behind the Scenes: Effects* (for inspiration and real-world application)

Sample Maya Files with pre-built scenes and simulations for demonstration

Rubrics and checklists for particle system projects

Breakdowns of professional VFX sequences (e.g., movie clips showing particles in use)

Formative Assessments:

- Daily skill checks (e.g., emitter setup, applying fields, enabling collisions)
- Checkpoint renders of particle systems at different stages
- Technical vocabulary quiz (terms like emitters, attributes, lifespan, collision layers, Bifrost)
- Peer critiques where students review each other's simulations for realism and creativity
- Reflection journals (short daily logs where students describe what they learned or struggled with)



Lesson Plans	
Lesson	**Time Frame**
Lesson 1 **Introduction to nParticles and Emitters**	**1-2 days**
Lesson 2 **Adding Fields, Collisions & Dynamic Interactions**	**1-2 days**
Lesson 3 **Shading, Lighting & Rendering Particle Effects**	**1-2 days**

Teacher Notes:
Ensure students have a foundational understanding of Maya's interface, basic modeling, and timeline/keyframing tools before starting this unit.

Encourage students to analyze real-world particle motion (e.g., how smoke drifts, how sparks scatter) through video reference before simulating.

When introducing fields and collisions, use simplified examples first to avoid overwhelming students with settings.

Remind students to frequently playblast and save iterations; simulations can become unstable or crash.

Stress the importance of combining both technical control and creative intent when working with particle effects.

Curriculum Development Resources/Technology Resources:
Click the links below to access additional resources used to design this unit:
Autodesk Maya nParticles Documentation:

https://help.autodesk.com/view/MAYAUL/2024/ENU/?guid=GUID-B57B8B26-CDF2-4F4A-B138-6B47996F42F6

*YouTube – **Maya nParticles Beginner Tutorial** (Academic Phoenix Plus):*
https://www.youtube.com/watch?v=kVkKiH56sX8

*YouTube – **Bifrost Effects for Beginners** (Autodesk Official):*
https://www.youtube.com/watch?v=GwZTJfG7Geo

Pluralsight Maya VFX Courses:
https://www.pluralsight.com/paths/maya-vfx-fundamentals



SPRINGFIELD PUBLIC SCHOOLS

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Lesson Plan 1 Template					
Content Area:	3D Animation and Digital Media Arts	Lesson Title:	Introduction to nParticles and Emitters	Time Frame:	2-3 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving X Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

- Physics: Understanding basic principles of motion, gravity, and force in particle behavior
- Visual Arts: Composition, movement, and stylized effects in digital design
- Computer Science: Procedural tools and attribute-based control systems

Integration of Technology: Students will use Autodesk Maya's nParticle system to simulate effects like falling snow, sparks, or bubbles. They will adjust settings such as emitter type, particle lifespan, speed, and gravity to control the motion and appearance of the simulation.

Equipment Needed:

- Computers with Autodesk Maya installed
- Internet access for reference videos/tutorials
- Projector or demonstration monitor for teacher-led instruction
- Headphones (for video tutorials or self-paced learners)

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Understand the basic function and application of nParticle systems in Maya • Create and configure a simple emitter in Maya to produce particles • Modify particle attributes such as speed, lifespan, and direction • Preview and playblast their particle simulation for review and critique	Lesson Sequence 1. Introduction & Purpose – Why particle effects matter in animation and VFX 2. Demonstration – How to create and configure an nParticle emitter in Maya 3. Hands-On Activity – Students build their own simulation scene using particle emitters 4. Check & Review – Playblast and view student simulations as a group **Learning Activities / Instructional Strategies** • **Direct instruction:** Teacher demonstration of emitter setup and key particle attributes • **Guided practice:** Students follow along and replicate a basic particle effect (e.g., snowfall or sparks) • **Exploration:** Students experiment with different emitter types (omni, directional, volume) and	• Checkpoint: Instructor circulates to observe student emitter setups • Peer feedback on playblasted simulations • Exit slip: Students answer 3 quick questions (e.g., "What's the difference between omni and directional emitters?") • Reflection journal: Students note challenges and strategies used in emitter creation

	parameter adjustments • **Reflection/discussion**: Analyze sample professional simulations and compare them to student work Closure Activities: • Share favorite particle example in small groups • Reflect in journal: one skill mastered, one skill to improve • Save work for next lesson (fields & forces)	

Differentiation:
Hand outs
Step By Step Videos
Peer Grouping

Resources Provided:

- Step-by-step written guide on creating and adjusting nParticle emitters in Maya (PDF handout)
- Sample Maya scene files with pre-built simple particle emitters for reference
- Video tutorial: *Maya nParticles Beginner Tutorial* (YouTube link)
- Glossary of particle system terms and common emitter settings



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Lesson Plan 2 Template					
Content Area:	3D Animation and Digital Media Arts	Lesson Title:	Adding Fields, Collisions & Dynamic Interactions	Time Frame:	2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation **X** Critical Thinking and Problem Solving **X** Information Literacy

X Life and Career Skills **X** Communication and Collaboration **X** Media Literacy **X** ICT Literacy

Interdisciplinary Connections:

Physics: Effects of forces like gravity, wind, and turbulence on particle motion

Mathematics: Understanding vector directions and magnitudes in field forces

Computer Science: Node-based system interactions and procedural effects

Integration of Technology: Students will use Maya's dynamic fields (gravity, turbulence, wind) and collision objects to control and influence particle simulations, observing cause-and-effect relationships in real-time.

Equipment Needed:

Computers with Autodesk Maya installed

Projector or screen for teacher demonstrations

Reference videos of natural particle effects (e.g., dust blowing, water spray)

Headphones (for individual video tutorials)

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Understand how to add and configure dynamic fields in Maya's particle system • Apply collision detection to particle simulations with 3D geometry • Adjust field attributes to manipulate particle behavior realistically • Evaluate the effects of combined fields and collisions on particle movement	Lesson Sequence 1. Review – Recap Lesson 1 particle emitter basics 2. Demo – Introduce dynamic fields and how to add them to particle systems 3. Practice – Students modify their emitters with fields and test effects 4. Collision Setup – Add objects and enable particle collisions 5. Discussion & Reflection – Analyze differences in simulations with and without fields Learning Activities / Instructional Strategies Teacher demonstration of adding gravity, wind, and turbulence fields Guided practice where students add fields to their Lesson 1 particle systems Adding simple collision objects and enabling particle interaction Group discussion on how environmental forces affect natural particle behavior	• Teacher observation during practice sessions • Student submission of simulation files incorporating fields and collisions • Peer review and constructive feedback sessions

Differentiation: Step By Step Videos Handouts Peer Pairing		
Resources Provided: • Step-by-step guide on fields and collisions in Maya (PDF) • Sample Maya scenes demonstrating field setups • Video tutorial: *Maya Dynamic Fields and Collisions* (YouTube) • Glossary of field and collision terminology		



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Lesson Plan 3 Template					
Content Area:	3D Animation and Digital Media Arts	Lesson Title:	Shading, Lighting & Rendering Particle Effects	Time Frame:	2 days

Lesson Components

21st Century Themes

☐ Global Awareness ☐ Financial, Economic, Business and Entrepreneurial Literacy

☐ Civic Literacy ☐ Health Literacy

21st Century Skills

X Creativity and Innovation X Critical Thinking and Problem Solving X Information Literacy

X Life and Career Skills X Communication and Collaboration X Media Literacy X ICT Literacy

Interdisciplinary Connections:

Visual Arts: Principles of light, color, and material properties

Physics: Light behavior and reflection on surfaces

Computer Science: Rendering pipelines and shader programming basics

Integration of Technology: Students will apply shaders to particles, set up appropriate lighting, and render their simulations using Arnold Render or Maya's native renderer, exploring different render passes and camera angles.

Equipment Needed:

Computers with Autodesk Maya and Arnold Render installed

Monitor/projector for demonstrations

Reference images/videos for lighting inspiration

Headphones for tutorials

Goals/Objectives	Learning Activities/ Instructional Strategies	Formative Assessment Tasks
Students will: • Learn to assign and customize shaders for particle effects (e.g., glow, transparency) • Set up scene lighting to enhance the visual appeal and realism of particle simulations • Configure render settings for high-quality output • Render and export final images or animations of their particle effects	Lesson Sequence 1. Introduction – Discuss importance of shading and lighting in particle effects 2. Demonstration – Applying shaders and configuring lights in Maya 3. Hands-On Practice – Students shade and light their particle systems 4. Rendering – Setup render options and export images/videos 5. Review & Critique – Group discussion and feedback on render results Teacher demonstration of shader assignment and lighting setup Hands-on activity: applying shaders to existing particle simulations Experimentation with light types (point, directional, area) and shadow settings Render preview and adjustments for optimal image quality Group critique focusing on visual impact and technical execution	• Submission of rendered still or animation of particle effects • Peer review for shading and lighting effectiveness • Self-assessment journal entry on challenges and solutions during rendering

Differentiation: Step By Step Videos Handouts Peer Pairing		
Resources Provided: • Shader and lighting tutorial handouts (PDF) • Sample scene files with preset shaders and lights • Video tutorial: *Lighting and Rendering Particle Effects in Maya* • Glossary of shader types and lighting terminology		



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Lesson Reflection			
Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly, Moderately* or *Weakly* meets the criteria below.			
Lesson Activities	**Strongly**	**Moderately**	**Weakly**
Are challenging **Strongly** and require higher order thinking and problem solving skills	X		
Allow for student choice		X	
Provide scaffolding for acquiring targeted knowledge/skills	X		
Integrate global perspectives		X	
Integrate 21st century skills		X	
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills		X	
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills	X		
Are varied to address different student learning styles and preferences	X		
Are differentiated based on student needs		X	
Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process		X	
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives		X	
Provide opportunities for student reflection and self- assessment		X	
Provide data to inform and adjust instruction to better meet the varying needs of learners		X	

Curriculum Design Template					
Content Area:	Type Here	**Grade Level:**	Type Here	**Unit Title:**	Type Here
Created:	Type Here	**Board Approved on:**	Type Here		

Varied reinforcement procedures
Immediate feedback
Work-in-progress check
Personalized examples

TESTING AND ASSESSMENT ACCOMMODATIONS AND MODIFICATIONS:

Answers to be dictated
Frequent rest breaks
Additional time
Oral testing
Untimed tests
Choice of test format (multiple-choice, essay, true-false)
Alternate ways to evaluate (projects or oral presentations instead of written tests)
Accept short answers
Open-book tests
Read test and directions to student
Provide study outline prior to tests
Highlight key directions
Test in alternative site
Use of calculator
Extra credit option
Preview test procedures
Simplified test wording; rephrased test questions and/or directions

GENERAL ACCOMMODATIONS AND MODIFICATIONS:

Use of alternative books or materials on the topic being studied
Computerized spell-check support
Word bank of choices for answers to test questions
Provision of calculator and/or number line for math tests
Reworded questions in simpler language
Projects instead of written reports
Highlighting important words or phrases in reading assignments
Modified workload or length of assignments/tests
Modified time demands
Modified grades based on IEP

BEHAVIOR ACCOMMODATIONS MODIFICATIONS:

Breaks between tasks
Cue expected behavior
Daily feedback to student
Have contingency plans
Use de-escalating strategies
Use positive reinforcement
Use proximity/touch control
Use peer supports and mentoring
Model expected behavior by adults
Have parent sign homework
Have parent sign behavior chart
Set and post class rules
Chart progress and maintain data



SPRINGFIELD PUBLIC SCHOOLS

ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

IEP AND 504 ACCOMODATIONS AND MODIFICATIONS FOR MIDDLE AND HIGH SCHOOL STUDENTS:

Large print textbooks
Textbooks for at-home use
Additional time for assignments
A locker with adapted lock
Review of directions
Review sessions
Use of mnemonics
Have student restate information
Provision of notes or outlines
Concrete examples
Adaptive writing utensils
Support auditory presentations with visuals
Weekly or bi-weekly home-school communication
Space for movement or breaks
Study sheets and teacher outlines
Extra visual and verbal cues and prompts
Lab and math sheets with highlighted instructions
Graph paper to assist in organizing or lining up math problems
Use of tape recorder for lectures
Use of Interactive notebook
Use of a scribe
Use of computers and calculators
Books on tape
Graphic organizers
Quiet corner or room to calm down and relax when anxious
Preferential seating
Alteration of the classroom arrangement
Reduction of distractions
Answers to be dictated
Hands-on activities
Ability to type all assignments
Follow a routine/schedule
Teach time management and organizational skills
Rest breaks
Verbal and visual cues regarding directions and staying on task
Agenda book and checklists
Daily check-in with case manager or special education teacher
Adjusted assignment timelines
Visual daily schedule

Varied reinforcement procedures
Immediate feedback
Work-in-progress check
Personalized examples

TESTING AND ASSESSMENT ACCOMMODATIONS AND MODIFICATIONS:

Answers to be dictated
Frequent rest breaks
Additional time
Oral testing
Choice of test format (multiple-choice, essay, true-false)
Alternate ways to evaluate (projects or oral presentations instead of written tests)
Accept short answers
Open-book or open-note tests
Read test and directions to student
Provide study guides prior to tests
Highlight key directions
Test in alternative site
Use of calculator
Extra credit option
Pace long-term projects
Preview test procedures
Simplified test wording; rephrased test questions and/or directions

GENERAL ACCOMMODATIONS AND MODIFICATIONS:

Allow outlining, instead of writing for an essay or major project
Use of alternative books or materials on the topic being studied
Computerized spell-check support
Word bank of choices for answers to test questions
Provision of calculator for math tests
Film or video supplements in place of reading text
Reworded questions in simpler language
Projects instead of written reports
Highlighting important words or phrases in reading assignments
Modified workload or length of assignments/tests
Modified time demands

Pass/no pass option
Modified grades based on IEP

BEHAVIOR ACCOMMODATIONS FOR STUDENTS:

Breaks between tasks
Cue expected behavior
Daily feedback to student
Have contingency plans
Use de-escalating strategies
Use positive reinforcement
Use proximity/touch control
Use peer supports and mentoring
Model expected behavior by adults
Have parent sign homework
Set and post class rules
Chart progress and maintain data



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Accommodations and Modifications for ESL Students

Give tests orally
Give instructions/directions in writing and orally
Assign a peer tutor, same language or English speaking
Allow use of bilingual/translation dictionary
Provide summaries of text or study guides of particular chapters
Allow errors in speaking
Allow errors in writing
Accept writing in first language
Highlight key vocabulary
Reduce amount of work required
Assess comprehension through demonstration or other alternative means (gestures, drawings)
Rephrase questions, directions, and explanations
Reduce multiple choices on assessments
Provide study guides and/ or outlines
Shorten reading assignments
Allow extended time for test/project completion
Use of audio books
Use of graphic organizers
Use reduced text, so that print is not dense
Use visuals/pictures throughout lesson/unit/assignemt
Adapt homework to reflect language proficiency/home support
Adapt homework to reflect home support
Provide hands-on activities and explanations
Allow extended time to answer questions, and permit drawing, as an explanation
Use of translation dictionaries to locate words in the native language
Use anecdotal records and portfolio of work as forms of assessment
Use story retellings to assess comprehension

Springfield Public Schools

Cultivating compassionate and extraordinary learners!

What Does the Gifted and Talented Experience Look Like?

Springfield Public Schools

Mission Statement

The Gifted and Talented Program of the Springfield Public Schools aims to provide a meaningful and rigorous education that instills the value of lifelong learning and empowers all students to reach their full potential and become self-fulfilled creative leaders in accordance with the comprehensive standards of our state. We accomplish this by offering challenging, real-world experiences in a student-centered environment.

We recognize that students come from diverse socioeconomic, cultural, and ethnic backgrounds, and the mission of the gifted and talented program is to provide opportunities for students to explore their intellectual, creative, and artistic gifts and talents within the classroom and with beyond-the-classroom experiences. It is essential to provide diverse, appropriate, and ongoing learning experiences and environments that incorporate students' academic, psychological, and social needs. Our responsibility is to provide students with educational alternatives that teach, challenge, and expand their knowledge, while simultaneously stressing the development of independent and self-directed learners who continuously generate questions, analyze, synthesize, and evaluate information and ideas.
New Jersey Administrative Code 6A:8-3.1 defines students who are gifted and talented as those students who possess or demonstrate high levels of ability in one or more content areas when compared to their chronological peers in the local district and who require modification of their educational program if they are to achieve in accordance with their capabilities.

Goals:

To support our mission, we have established the following goals to guide our work:

- ➢ To infuse into the general education program a broad range of activities for high-level learning that will challenge all students to perform at advanced levels, and provide extended opportunities, resources, and support in particular areas where student interest or talent is demonstrated.

- ➢ To provide a continuum of gifted education services that will strengthen the total school program, offer enriching and challenging learning opportunities for all students, and provide specialized learning experiences

- ➢ To promote achievement of students' best potentials and increased ability.

Through a productive and collaborative relationship among the building principals, classroom teachers, and the Gifted and Talented teacher, our schools can create programming that will enhance the learning experience for every student and serve the unique and specialized needs of students currently demonstrating gifted behaviors.

Elements of the Schoolwide Enrichment Model, W.I.N (What I Need), differentiated instruction, advanced classes, or individual programs into a student's regular instruction program are integral to this overarching framework for gifted education in the Springfield School District.

Reference Board Policy and Regulation 2464 – Gifted and Talented Pupils (M)

Early Childhood Center
Edward V. Walton

Schoolwide Virtual Enrichment

All first and second grade students have access to the Gifted and Talented Virtual Classroom. This virtual classroom is a space for students to complete various challenges and enrichment opportunities at their own pace. Students can receive feedback and additional adaptable resources to meet their individual learning needs. The virtual classroom design expands accessibility to enrichment resources and allows students to choose learning activities according to their unique interests and abilities. The purpose of the activities is to encourage problem-solving, develop critical thinking

skills, and expand curiosity and imagination. Activities are aligned to the New Jersey Student Learning Standards.

Gifted and Talented Teacher as a Resource

The Gifted and Talented teacher serves as a resource to all teachers within Edward V. Walton School. Teachers seeking resources for their high-ability learners will receive additional support from the Gifted and Talented teacher in various ways. This support may include additional units of study, challenging resources, and student projects.

Elementary Schools
James Caldwell
Thelma L. Sandmeier

The goal is to engage small groups of students in intensive learning experiences through standards-based, rigorous, and relevant units of study that supplement, not supplant, the grade-level curriculum and support students' unique learning needs.

Enrichment Experience Grade 3

Beginning in third grade, the G&T teacher will cycle through all classrooms to work on problem-solving and enrichment tasks with students. Driven by assessment data, academic performance, student interest, and teacher observation, small groups of students will meet with the G&T teacher during W.I.N. (What I Need) periods throughout the week that the teacher is assigned to their classroom teacher. Groupings will be flexible and monitored to best meet each student's needs throughout the school year. Activities will include brain teasers, puzzles, strategic thinking, problem-solving, and STEM challenges.

Targeted Gifted and Talented Programing Grades 4-5

Students may become identified as Gifted and Talented in fourth grade. Students that are identified may receive support from the G&T Teacher for up to five periods (200 minutes) a week during W.I.N. (What I Need) periods. Identified students will meet to explore grade-level content while incorporating depth and complexity in a student-centered, problem-based environment. The Gifted and Talented Program aims to provide students with various advanced and challenging learning experiences across content areas to promote independent thinking skills, refine critical thinking and communication skills, cultivate joy in learning, and expand student interests through problem-solving. The instruction that students receive incorporates 21st Century Skills and advanced content that is challenging, hands-on, and relevant to the real world.

Strategies and Practices that Support Gifted and Talented Students

- Adjusted Pace of Lessons
- Inquiry-Based Instruction
- Higher-Order Thinking Activities
- Interest-Based Content
- Real World Problem Solving/Problem Based Learning
- Independent Study/Passion Projects
- Units of Study with Like-Minded Peers

Schoolwide Virtual Enrichment

All JCS and TLS students have access to grade level-specific Gifted and Talented Virtual Classrooms. These virtual classrooms are a space for students to complete various challenges and enrichment opportunities at their own pace. Students are able to receive feedback and additional opportunities based on their needs. The virtual classrooms have expanded the accessibility of enrichment resources directly to the students and allows for students to choose opportunities according to their interests and abilities. The purpose of the activities is to encourage problem solving, develop critical thinking skills, and expand curiosity and imagination in conjunction with the New Jersey Student Learning Standards.

Gifted and Talented Teacher as a Resource

In addition to classroom support, the Gifted and Talented teacher also serves as a resource to all teachers in the building. Teachers that are seeking resources for their high ability learners will receive additional support from the Gifted and Talented teacher in various ways. This may include additional units of study, challenging resources, student projects, and meeting with the G&T teacher as needed.

Additional Enrichment Opportunities

Across all grade levels 3-5, as recommended by the classroom teacher, students exhibiting a need for additional enrichment may have the opportunity to meet with the G&T teacher as the schedule allows. Groupings will be flexible and monitored to best meet the students' needs throughout the school year. Activities will include, brain teasers, puzzles, strategic thinking activities, problem-solving challenges, and STEM challenges. Students engage in an extended process of asking questions, using resources, and developing answers that lead to thinking about what and how they are learning. Students are held accountable for how they work and use their time by demonstrating their learning through products or presentations.

Students self-select to participate in individual and/or group projects based on interest and commitment. The classroom teacher and/or the enrichment teacher will help guide and monitor student exploration of chosen topics, facilitating their learning with resources and teaching of needed skills.

Secondary Schools
Florence M. Gaudineer Middle School
Jonathan Dayton High School

Grades 6-12: Access to specific content programs with higher levels of academic challenges (i.e. Pre-Algebra, Accelerated Communication Arts, and Advanced Placement Classes)

Dual Credit Courses provide students the opportunity to obtain high school credit, and college credit, simultaneously through partnerships with several institutions.

Project Lead the Way (PLTW) students become builders of technology by engaging in real world activities. Students are empowered as design thinkers collaborating on real world projects.

Gifted and Talented Identification Criteria

The Springfield Schools Gifted and Talented Program recognizes that students require differentiated learning experiences beyond the core curriculum being taught because of their advanced abilities in one or more content areas. These students may also have other cognitive qualities such as curiosity, creativity, motivation, leadership, and passion that require modifications to their academic experience.

Multiple Measures of Eligibility

Kindergarten through grade twelve identification process for gifted and talented students includes multiple measures. Multiple measures may include but are not limited to: achievement test scores; grades; student performance or products; intelligence testing; parent, student, and/or teacher recommendation; and other appropriate measures. The identification methodology is developmentally appropriate, non-discriminatory, and related to the programs and services offered by the Springfield School District. The identification procedures are reviewed annually.

According to N.J.A.C. 6A:8-3.1, all public school districts must have a board-approved gifted and talented identification process and provide services for identified students enrolled in the grades of that school district. The regulations require that identification and services be made available to students in grades K-12.

When students are recommended for the Gifted and Talented Program there are multiple measures that are considered to determine if services are necessary and appropriate. The assessments used are as follows:

- *Cognitive Abilities Test (CogAT)*
- *Classroom Performance/Student Portfolios*
- *DRA2 Level*
- *iReady Diagnostic Scores*
- *Gifted Indicators Checklist*
- *Start Strong/NJSLA Assessment Data*

The N.J.A.C. requires that students be compared to their chronological peers in the local school district. The New Jersey Department of Education has not established state-level criteria for identifying students who are gifted, such as mandated tests or assessments, grade point averages, or IQ scores. Local school districts must use multiple measures to identify students.

Procedures
https://www.straussesmay.com/seportal/Public/DistrictPolicy.aspx?policyid=2464&id=b8a33a9f505e4998a6db3fb8e1de778b

Gifted and Talented Program Identification Matrix

Minimum Score Required for Consideration: 14 Points

1 Point	2 Points	3 Points
Cogat Assessment Overall Stanine Score of a 7	Cogat Assessment Overall Stanine Score of an 8	Cogat Assessment Overall Stanine Score of a 9
iReady Math Assessment Just Below Current Grade Level	iReady Math Assessment On Grade Level	iReady Math Assessment ½ Year + Above Current Level
IReady ELA On Grade Level	IReady ELA ½ Year Above Current Level	IReady ELA One Full Grade Level + Above Current Level
NJSLA Math Approaching Expectations	NJSLA Math Met Expectations	NJSLA Math Exceed Expectations
NJSLA ELA Approaching Expectations	NJSLA ELA Met Expectations	NJSLA ELA Exceed Expectations
HOPE Teacher Rating Scale Raw Score: 11 - 29	HOPE Teacher Rating Scale Raw Score: 30 - 49	HOPE Teacher Rating Scale Raw Score: 50-66

Team meetings present the opportunity to review data and assess the educational needs of all students. Teacher provides examples of student work exhibiting above and beyond grade level expectations, creativity, leadership, critical and abstract thinking. Programs for gifted and talented students will be periodically evaluated for their continuing efficacy and adjusted accordingly. The parent of any student identified as gifted or talented shall be consulted regarding any program designed to address the student's particular needs.

Resource Links
https://riversideinsights.com/cognitive_abilities_test
https://www.curriculumassociates.com/programs/i-ready-learning
https://www.nj.gov/education/assessment/resources/
https://www.routledge.com/HOPE-Teacher-Rating-Scale-Involving-Teachers-in-Equitable-Identification/Gentry-Pereira-Peters-McIntosh-Fugate/p/book/9781618214522#:~:text=The%20HOPE%20Teacher%20Rating%20Scale,making%20it%20easy%20to%20use.

Gifted and talented student: The *"Strengthening Gifted and Talented Education Act"* defines a gifted and talented student as a "student who possesses or demonstrates a high level of ability in one or more content areas when compared to their chronological peers in the school district and who require modifications of their educational program if they are to achieve in accordance with their capabilities."

Twice-exceptional (2E) students: A twice-exceptional (2E) student is defined as "a student who is both gifted and a student with a disability. These students may also be referred to as having dual exceptionalities or as being gifted with learning disabilities (GT/LD). This also applies to students who are gifted with ADHD or gifted with autism" (New Jersey Association for Gifted Children, *www.nagc.org).*

Instructional adaptation: An adjustment or modification to instruction enabling a student who is gifted and talented to participate in, benefit from, and demonstrate knowledge and application of the New Jersey Student Learning Standards in one or more content areas at the instructional level of the student, not just the student's grade level.

Identifying gifted and talented students: The focus of identification is to provide programming and services in which students' specific learning needs and potential are appropriately addressed and met. In every New Jersey school district, there are students who require modifications to the general education curriculum if they are to achieve in accordance with their abilities. By identifying a student's general intellectual ability, creativity, or specific academic area aptitudes, we are acknowledging that they need programming and services outside of the general education/grade level curriculum to advance their learning.

NJDOE Fast Facts

https://www.nj.gov/education/standards/gifted/

https://www.nj.gov/education/standards/gifted/legislation.shtml

Supplemental Resources/Programming for Gifted Students

Edward V. Walton

- PETS Program – Primary Education Thinking Skills
- Group Solutions/Group Solutions 2 – Cooperative Logic Activities
- Lollipop Logic
- Beginning Thinking Skills
- AIMS Education Programming

James Caldwell and Thelma L. Sandmeier

Math/ELA

- Project M3: Mentoring Mathematical Minds
- Junior Great Books
- AIMS Education Programming
- Borenson Hands on Equations
- BizWorld
- Perplexors
- Advanced Math Explorations grade 3-5
- Challenging Units for Gifted Learners (ELA and Math)
- Creative Curriculum Extenders
- Differentiated Lessons & Projects
- Challenge Math Grades 4+
- Differentiating Instruction with Menus (All Content Areas)
- Jacob's Ladder
- Genius Hour/Passion Project
- Spatial Reasoning
- Logic Puzzles, Brain Games, Analogies

STEM

- Engineering is Elementary
- Engineer Throughout the Year
- PBS Design Squad
- DefinedSTEM
- Project Lead the Way (PLTW)

Enrichment Events

Experience for all students to be enriched through events related to the curricular or extracurricular activities. Examples include after school clubs, PTA-sponsored events, leadership opportunities, visual and performing arts, and community service opportunities.

Springfield Public Schools

Cultivating compassionate and extraordinary learners!

What Does the Gifted and Talented Experience Look Like?

Springfield Public Schools

Mission Statement

The Gifted and Talented Program of the Springfield Public Schools aims to provide a meaningful and rigorous education that instills the value of lifelong learning and empowers all students to reach their full potential and become self-fulfilled creative leaders in accordance with the comprehensive standards of our state. We accomplish this by offering challenging, real-world experiences in a student-centered environment.

We recognize that students come from diverse socioeconomic, cultural, and ethnic backgrounds, and the mission of the gifted and talented program is to provide opportunities for students to explore their intellectual, creative, and artistic gifts and talents within the classroom and with beyond-the-classroom experiences. It is essential to provide diverse, appropriate, and ongoing learning experiences and environments that incorporate students' academic, psychological, and social needs. Our responsibility is to provide students with educational alternatives that teach, challenge, and expand their knowledge, while simultaneously stressing the development of independent and self-directed learners who continuously generate questions, analyze, synthesize, and evaluate information and ideas.
New Jersey Administrative Code 6A:8-3.1 defines students who are gifted and talented as those students who possess or demonstrate high levels of ability in one or more content areas when compared to their chronological peers in the local district and who require modification of their educational program if they are to achieve in accordance with their capabilities.

Goals:

To support our mission, we have established the following goals to guide our work:

- ➢ To infuse into the general education program a broad range of activities for high-level learning that will challenge all students to perform at advanced levels, and provide extended opportunities, resources, and support in particular areas where student interest or talent is demonstrated.

- ➢ To provide a continuum of gifted education services that will strengthen the total school program, offer enriching and challenging learning opportunities for all students, and provide specialized learning experiences

- ➢ To promote achievement of students' best potentials and increased ability.

Through a productive and collaborative relationship among the building principals, classroom teachers, and the Gifted and Talented teacher, our schools can create programming that will enhance the learning experience for every student and serve the unique and specialized needs of students currently demonstrating gifted behaviors.

Elements of the Schoolwide Enrichment Model, W.I.N (What I Need), differentiated instruction, advanced classes, or individual programs into a student's regular instruction program are integral to this overarching framework for gifted education in the Springfield School District.

Reference Board Policy and Regulation 2464 – Gifted and Talented Pupils (M)

Early Childhood Center
Edward V. Walton

Schoolwide Virtual Enrichment

All first and second grade students have access to the Gifted and Talented Virtual Classroom. This virtual classroom is a space for students to complete various challenges and enrichment opportunities at their own pace. Students can receive feedback and additional adaptable resources to meet their individual learning needs. The virtual classroom design expands accessibility to enrichment resources and allows students to choose learning activities according to their unique interests and abilities. The purpose of the activities is to encourage problem-solving, develop critical thinking

skills, and expand curiosity and imagination. Activities are aligned to the New Jersey Student Learning Standards.

Gifted and Talented Teacher as a Resource

The Gifted and Talented teacher serves as a resource to all teachers within Edward V. Walton School. Teachers seeking resources for their high-ability learners will receive additional support from the Gifted and Talented teacher in various ways. This support may include additional units of study, challenging resources, and student projects.

Elementary Schools
James Caldwell
Thelma L. Sandmeier

The goal is to engage small groups of students in intensive learning experiences through standards-based, rigorous, and relevant units of study that supplement, not supplant, the grade-level curriculum and support students' unique learning needs.

Enrichment Experience Grade 3

Beginning in third grade, the G&T teacher will cycle through all classrooms to work on problem-solving and enrichment tasks with students. Driven by assessment data, academic performance, student interest, and teacher observation, small groups of students will meet with the G&T teacher during W.I.N. (What I Need) periods throughout the week that the teacher is assigned to their classroom teacher. Groupings will be flexible and monitored to best meet each student's needs throughout the school year. Activities will include brain teasers, puzzles, strategic thinking, problem-solving, and STEM challenges.

Targeted Gifted and Talented Programing Grades 4-5

Students may become identified as Gifted and Talented in fourth grade. Students that are identified may receive support from the G&T Teacher for up to five periods (200 minutes) a week during W.I.N. (What I Need) periods. Identified students will meet to explore grade-level content while incorporating depth and complexity in a student-centered, problem-based environment. The Gifted and Talented Program aims to provide students with various advanced and challenging learning experiences across content areas to promote independent thinking skills, refine critical thinking and communication skills, cultivate joy in learning, and expand student interests through problem-solving. The instruction that students receive incorporates 21st Century Skills and advanced content that is challenging, hands-on, and relevant to the real world.

Strategies and Practices that Support Gifted and Talented Students

- Adjusted Pace of Lessons
- Inquiry-Based Instruction
- Higher-Order Thinking Activities
- Interest-Based Content
- Real World Problem Solving/Problem Based Learning
- Independent Study/Passion Projects
- Units of Study with Like-Minded Peers

Schoolwide Virtual Enrichment

All JCS and TLS students have access to grade level-specific Gifted and Talented Virtual Classrooms. These virtual classrooms are a space for students to complete various challenges and enrichment opportunities at their own pace. Students are able to receive feedback and additional opportunities based on their needs. The virtual classrooms have expanded the accessibility of enrichment resources directly to the students and allows for students to choose opportunities according to their interests and abilities. The purpose of the activities is to encourage problem solving, develop critical thinking skills, and expand curiosity and imagination in conjunction with the New Jersey Student Learning Standards.

Gifted and Talented Teacher as a Resource

In addition to classroom support, the Gifted and Talented teacher also serves as a resource to all teachers in the building. Teachers that are seeking resources for their high ability learners will receive additional support from the Gifted and Talented teacher in various ways. This may include additional units of study, challenging resources, student projects, and meeting with the G&T teacher as needed.

Additional Enrichment Opportunities

Across all grade levels 3-5, as recommended by the classroom teacher, students exhibiting a need for additional enrichment may have the opportunity to meet with the G&T teacher as the schedule allows. Groupings will be flexible and monitored to best meet the students' needs throughout the school year. Activities will include, brain teasers, puzzles, strategic thinking activities, problem-solving challenges, and STEM challenges. Students engage in an extended process of asking questions, using resources, and developing answers that lead to thinking about what and how they are learning. Students are held accountable for how they work and use their time by demonstrating their learning through products or presentations.

Students self-select to participate in individual and/or group projects based on interest and commitment. The classroom teacher and/or the enrichment teacher will help guide and monitor student exploration of chosen topics, facilitating their learning with resources and teaching of needed skills.

Secondary Schools
Florence M. Gaudineer Middle School
Jonathan Dayton High School

Grades 6-12: Access to specific content programs with higher levels of academic challenges (i.e. Pre-Algebra, Accelerated Communication Arts, and Advanced Placement Classes)

Dual Credit Courses provide students the opportunity to obtain high school credit, and college credit, simultaneously through partnerships with several institutions.

Project Lead the Way (PLTW) students become builders of technology by engaging in real world activities. Students are empowered as design thinkers collaborating on real world projects.

Gifted and Talented Identification Criteria

The Springfield Schools Gifted and Talented Program recognizes that students require differentiated learning experiences beyond the core curriculum being taught because of their advanced abilities in one or more content areas. These students may also have other cognitive qualities such as curiosity, creativity, motivation, leadership, and passion that require modifications to their academic experience.

Multiple Measures of Eligibility

Kindergarten through grade twelve identification process for gifted and talented students includes multiple measures. Multiple measures may include but are not limited to: achievement test scores; grades; student performance or products; intelligence testing; parent, student, and/or teacher recommendation; and other appropriate measures. The identification methodology is developmentally appropriate, non-discriminatory, and related to the programs and services offered by the Springfield School District. The identification procedures are reviewed annually.

According to N.J.A.C. 6A:8-3.1, all public school districts must have a board-approved gifted and talented identification process and provide services for identified students enrolled in the grades of that school district. The regulations require that identification and services be made available to students in grades K-12.

When students are recommended for the Gifted and Talented Program there are multiple measures that are considered to determine if services are necessary and appropriate. The assessments used are as follows:

- *Cognitive Abilities Test (CogAT)*
- *Classroom Performance/Student Portfolios*
- *DRA2 Level*
- *iReady Diagnostic Scores*
- *Gifted Indicators Checklist*
- *Start Strong/NJSLA Assessment Data*

The N.J.A.C. requires that students be compared to their chronological peers in the local school district. The New Jersey Department of Education has not established state-level criteria for identifying students who are gifted, such as mandated tests or assessments, grade point averages, or IQ scores. Local school districts must use multiple measures to identify students.

Procedures
https://www.straussesmay.com/seportal/Public/DistrictPolicy.aspx?policyid=2464&id=b8a33a9f505e4998a6db3fb8e1de778b

Gifted and Talented Program Identification Matrix

Minimum Score Required for Consideration: 14 Points

1 Point	2 Points	3 Points
Cogat Assessment Overall Stanine Score of a 7	Cogat Assessment Overall Stanine Score of an 8	Cogat Assessment Overall Stanine Score of a 9
iReady Math Assessment Just Below Current Grade Level	iReady Math Assessment On Grade Level	iReady Math Assessment ½ Year + Above Current Level
IReady ELA On Grade Level	IReady ELA ½ Year Above Current Level	IReady ELA One Full Grade Level + Above Current Level
NJSLA Math Approaching Expectations	NJSLA Math Met Expectations	NJSLA Math Exceed Expectations
NJSLA ELA Approaching Expectations	NJSLA ELA Met Expectations	NJSLA ELA Exceed Expectations
HOPE Teacher Rating Scale Raw Score: 11 - 29	HOPE Teacher Rating Scale Raw Score: 30 - 49	HOPE Teacher Rating Scale Raw Score: 50-66

Team meetings present the opportunity to review data and assess the educational needs of all students. Teacher provides examples of student work exhibiting above and beyond grade level expectations, creativity, leadership, critical and abstract thinking. Programs for gifted and talented students will be periodically evaluated for their continuing efficacy and adjusted accordingly. The parent of any student identified as gifted or talented shall be consulted regarding any program designed to address the student's particular needs.

Resource Links
https://riversideinsights.com/cognitive_abilities_test
https://www.curriculumassociates.com/programs/i-ready-learning
https://www.nj.gov/education/assessment/resources/
https://www.routledge.com/HOPE-Teacher-Rating-Scale-Involving-Teachers-in-Equitable-Identification/Gentry-Pereira-Peters-McIntosh-Fugate/p/book/9781618214522#:~:text=The%20HOPE%20Teacher%20Rating%20Scale,making%20it%20easy%20to%20use.

Gifted and talented student: The "*Strengthening Gifted and Talented Education Act*" defines a gifted and talented student as a "student who possesses or demonstrates a high level of ability in one or more content areas when compared to their chronological peers in the school district and who require modifications of their educational program if they are to achieve in accordance with their capabilities."

Twice-exceptional (2E) students: A twice-exceptional (2E) student is defined as "a student who is both gifted and a student with a disability. These students may also be referred to as having dual exceptionalities or as being gifted with learning disabilities (GT/LD). This also applies to students who are gifted with ADHD or gifted with autism" (New Jersey Association for Gifted Children, *www.nagc.org).*

Instructional adaptation: An adjustment or modification to instruction enabling a student who is gifted and talented to participate in, benefit from, and demonstrate knowledge and application of the New Jersey Student Learning Standards in one or more content areas at the instructional level of the student, not just the student's grade level.

Identifying gifted and talented students: The focus of identification is to provide programming and services in which students' specific learning needs and potential are appropriately addressed and met. In every New Jersey school district, there are students who require modifications to the general education curriculum if they are to achieve in accordance with their abilities. By identifying a student's general intellectual ability, creativity, or specific academic area aptitudes, we are acknowledging that they need programming and services outside of the general education/grade level curriculum to advance their learning.

NJDOE Fast Facts

https://www.nj.gov/education/standards/gifted/

https://www.nj.gov/education/standards/gifted/legislation.shtml

Supplemental Resources/Programming for Gifted Students

Edward V. Walton

- PETS Program – Primary Education Thinking Skills
- Group Solutions/Group Solutions 2 – Cooperative Logic Activities
- Lollipop Logic
- Beginning Thinking Skills
- AIMS Education Programming

James Caldwell and Thelma L. Sandmeier

Math/ELA

- Project M3: Mentoring Mathematical Minds
- Junior Great Books
- AIMS Education Programming
- Borenson Hands on Equations
- BizWorld
- Perplexors
- Advanced Math Explorations grade 3-5
- Challenging Units for Gifted Learners (ELA and Math)
- Creative Curriculum Extenders
- Differentiated Lessons & Projects
- Challenge Math Grades 4+
- Differentiating Instruction with Menus (All Content Areas)
- Jacob's Ladder
- Genius Hour/Passion Project
- Spatial Reasoning
- Logic Puzzles, Brain Games, Analogies

STEM

- Engineering is Elementary
- Engineer Throughout the Year
- PBS Design Squad
- DefinedSTEM
- Project Lead the Way (PLTW)

Enrichment Events

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