

Lights, Camera, and Technical Filmmaking

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UNIT INTRODUCTION

In this unit, students learn how to capture stories on film and visually communicate ideas by making specific camera choices. Students will use mathematics to discover how camera angles and distances can change a shot's visual impact.

Students will storyboard, film and edit a short scene focused on conflict.

SUBJECT AREAS

Media
Arts

Math

Math / Unit 4

Unit Objectives

Students will be able to conceive, plan, and film a live-action scene.

Students will be able to use various camera angles and shots intentionally.

Students will be able to investigate technical components of filmmaking to determine how measurements and angles create a variety of visual results.

Standards

MEDIA ARTS

Anchor Standard #1 Generate and conceptualize artistic ideas and work.

Anchor Standard #4 Select, analyze, and interpret artistic work for presentation.

Anchor Standard #5 Develop and refine artistic techniques and work for presentation.

MATH

CCSS.MATH.CONTENT.6.G.A.1, Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

CCSS.MATH.CONTENT.7.G.B.6, Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

CCSS.MATH.CONTENT.8.G.C.9, Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

CCSS.MATH.CONTENT.HSG.GMD.A.3, Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.

INTRODUCTION

Film and television are an art form that most people interact with every day. It has the power to capture attention from the masses with even one scene. It allows you to tell a story with moving image which allows writers and filmmakers to use movement and action in telling a story.

This lesson will ask students to come up with a story idea and focus on filming one scene with conflict in it. Through the process of filming that scene, students will learn about cinematography and editing to tell the narrative of a focused story.

ACTIVATION

Teacher asks class to share out some of their favorite movies or TV shows and what specifically they like about them. After discussion, ask students to think about what all of them have in common no matter the story. Push students to focus on what their favorite movies and TV shows all have in common.

DEMONSTRATION

Teacher introduces two film clips and prompts students to pay attention so the class can build a list afterwards of what all TV shows and movies have.
Use two distinct movie or TV trailers so students can focus on what they have in common.

Teacher builds class list on board of what all movies or TV shows have in common

- Characters, plot, setting, conflict, dialogue (usually)
- Define each of these as students suggest them
- If students suggest other things like “humor” or “romance” you can bank them in a separate list of things we like in movies / TV shows. Let students continue to dig for the things they should need to have.

APPLICATION

Students get into groups and brainstorm a concept involving conflict and each of the following three components:

- Characters: What are the “characters” or subjects in this conflict?
- Plot: What is the beginning, middle, end of this conflict?
- Setting: Where and when could you set your scene specifically to draw attention to the main point of conflict?

ACTIVATION

Ask students to share out some of their favorite scenes from movies or TV. Why do they like them? Use class discussion to push students to consider what specifically made those scenes great from movies or TV shows they like.

DEMONSTRATION

Teacher shows a film clip, prompting students to pay attention to what makes a great scene.

- A location (setting), one or more characters, and conflict
- Choose an example clip that includes all of these!

APPLICATION

Challenge students to turn their concept from the previous day into a 60 second scene representing a conflict. Have students make necessary updates to the setting, characters and plot they will include. Finally, in six frames or less, have students storyboard their scene.

Have each group share finished storyboards with peers. Ask the peers to explain the scene. If the peers are confused or misinterprets the scene in any way, have the group make revisions to the storyboard to improve its clarity.

In the next classes, students will work to translate concepts into live-action scenes. Have students begin to brainstorm ways they will depict their stories on film. What considerations will need to be made when creating a live-action film (lighting, setting, actor performances, etc.)?

DEMONSTRATION

Teacher introduces three types of camera angles and three shot sizes with students and reviews the main points of each with a bullet list. Video tutorials available on Filmmaking Resources page.

Camera angles

- **Eye level:** Camera points at level of subject's face. Maintains a level of objectivity. Think of an interview.
- **Low angle:** Camera looks up at the subject from a low angle. Can make a character seem dominant, scary, or powerful. Think of looking up at Godzilla.
- **High angle:** Camera points down on subject from a higher angle. Can make a character appear small or vulnerable, or show action happening from a bird's eye view.

For each camera angle presented, label the scene with numeric distances and angles to create a triangle. The numbers can represent the distance from the character to the camera, the height of the character, and the tilt of the camera. Have students calculate the area of the triangle or solve for unknown angles or lengths of the triangle.

Shot sizes

- **Close-up:** Highlights and focuses on character's face / expressions without distraction
- **Long shot:** Often used in action scenes to see how the character is moving through their environment
- **POV:** Used to let the viewer see what the character is seeing or feel what they're feeling

For each shot size presented, create numeric distances that represent the length, width, and depth (distance between camera and characters) of the scene. Have students calculate the area or perimeter of the frame or the spatial volume of the scene.

If time, can ask students for examples from movies / TV shows when each were used. Why were they effective? How were camera angles used to make their conflict appear more dramatic?

APPLICATION

Students get back into their groups and start to create a shot list for their 60 seconds of their story. Groups are tasked to incorporate 3 camera angles or shot sizes in their scene of conflict.

Teacher circulates the room and checks in on each group. Ask students to:

- Explain why they chose each angle in their shot list.
- Explain how each angle emphasizes the key moments.

Depending on level of students / time constraints, can increase or decrease shot requirements.

APPLICATION

Review and summarize final project task to students:

Create a 60 second short film that clearly communicates a conflict. Students will need to carefully consider the following components:

- **Setting:** location should be a plausible environment for the conflict to take place. Props and other set decorations should be considered.
- **Characters:** each character should be a distinct person with their own way of acting and speaking. Wardrobe and styling should be considered.
- **Conflict:** the conflict should be the focus of the film and should be clear to the audience. Each characters' engagement in the conflict should be considered.
- **Camera:** at least three intentional camera angles or shots should be included in the final film.

Students must also measure and record the angle of the camera and shot dimensions. After each shot, have students draw and label the scene with measurements. Optional: students complete a scaled drawing.

Students use rest of class to create their short films using phone cameras or any available video cameras.

- Give students time constraint to shoot their scene
- Have students actively use scene shot list to structure their work time.
- Remind students that like a real life production schedule, they have to get their shots done to be able to stay on schedule for production company, budget, etc.

DEMONSTRATION

Teacher introduces film editing and its practices. Editing allows the filmmaker to focus a scene by highlighting important shots and cutting distracting ones. Editing also helps to set the pace and tone of a film.

APPLICATION

Students exchange film projects with a peer group to give and receive feedback based on film editing learning. Peer group should create a written list of editing ideas that will help focus and improve the film.

Groups receive peer feedback and incorporate final edits to scenes before final submissions. If necessary and time allows, students may reshoot parts of their scene.

INTEGRATION

Teacher prepares all short films / scenes to be viewed for an end-of-project screening of all group projects. Invite groups to “pitch” out their story to the class to introduce each 60 second short film.

As a final reflection ask students to write reflections:

1. How did their learning about graphic design at the beginning of the year support their final film project?
2. How does storyboarding and other planning for filmmaking help produce a cohesive final product?
3. What are the advantages and disadvantages to creating art using technological tools and/or processes?