

Curriculum Map: Aerial Videography

MASH

Communications Department

Course Description: This semester-long course will explore the exciting and rapidly advancing field of aerial videography. Students in this course will begin by learning the rules and regulations associated with flying unmanned aircraft. Following this understanding, students will learn to fly an advanced video quadcopter by participating in simulated and real-world flight activities. After the basics of flying the quadcopter have been mastered, students will set out on the challenge of capturing the world around them as seen from above. Flying activities will include capturing images on the campus of Meadville High School, various locations within Crawford Central School District, and the surrounding community. As students capture the video images from an aerial perspective, they will also build on video editing skills that they have learned in Digital Communications and Advanced Digital Communications by using Adobe Premiere Pro to edit and produce projects. Students in the course must be dedicated to learning the intricacies of both flying a quadcopter and using it to capture high quality video. The goal of the course will be to train students in the use of a new and exciting technological platform to positively depict the school district and community.

Unit Title: *The Rules of the Sky*

Suggested time frame: 2 Weeks

Standards: 15.4: Computer and Information Technologies

15.3: Communication

3.4.12.C3 Apply the concept that many technological problems require a multi-disciplinary approach.

3.4.12.E4 Synthesize the effects of information and communication systems and subsystems as an integral part of the development of the Information Age.

CC.1.5: Speaking and Listening

Big Idea: Rules have to be followed in the sky just like on the ground

Essential Questions:

1. What challenges are there for creating rule and regulations for unmanned aircraft?
2. Why are rules important for unmanned aircraft?
3. How will the technology of unmanned aircraft continue to evolve and make the world a better or worse place to live?
4. What are the rules of flying unmanned aircraft?

Competency	Vocabulary	Strategy	Resource
<ul style="list-style-type: none"> • Communicate the need for rules associated with the flying of unmanned aircraft • Understand the evolving technology of unmanned aircraft • Predict what the future of unmanned aircraft will be like • Explore the ways that unmanned aircraft are currently being used • Demonstrate understanding of the current rules and regulations associated with flying unmanned aircraft 		<p>PowerPoint and lecture based presentations on unmanned aircraft</p> <p>Video based demonstrations of unmanned aircraft</p> <p>Student-centered activities focused on active engagement with the rules and regulations associated with unmanned aircraft</p> <p>Teacher led discussion on the positives and negatives of the emerging technology</p>	<p>Primary sources in the form of current rules and regulations concerning unmanned flight</p> <p>Internet resources including Google Classroom, Google Drive, and Youtube</p> <p>Smartboard demonstrations</p> <p>Online course provided by the FAA</p>

Unit Title: *The Simulation*

Suggested time frame: 2 Weeks

Standards: 15.4: Computer and Information Technologies

15.3: Communication

3.4.12.C3 Apply the concept that many technological problems require a multi-disciplinary approach.

3.4.12.E4 Synthesize the effects of information and communication systems and subsystems as an integral part of the development of the Information Age.

CC.1.5: Speaking and Listening

Big Idea: Learning how to fly from the ground

- Essential Questions:**
1. How do you fly a quadcopter?
 2. What types of quadcopters are there?
 3. What is a good platform to begin flying with?
 4. Why learn to fly a quadcopter?
 5. What types of careers are associated with flying quadcopters?

Competency	Vocabulary	Strategy	Resource
<ul style="list-style-type: none"> • Demonstrate an understanding of the various types of quadcopters • Demonstrate understanding of the careers associated with flying quadcopters • Demonstrate understanding of the basic principles of flying the quadcopter • Demonstrate proficiency flying the quadcopter in the flight simulator mode 		<p>PowerPoint and lecture based presentations</p> <p>Video based demonstrations of video techniques</p> <p>Teacher led demonstrations on the technique of flying the quadcopter</p> <p>Hands-on experience flying the quadcopter in the flight-simulator mode</p>	<p>Teacher lecture and online tutorials</p> <p>Tutorials produced by DJI on flying the quadcopter</p> <p>Internet resources including Google Classroom, Google Drive, and Youtube</p> <p>Smartboard demonstrations</p> <p>Flight simulator software contained within the DJI quadcopter</p> <p>External connection from IPAD to Smartboard to display the flight simulator</p>

Unit Title: *Taking Flight*

Suggested time frame: 5 Weeks

Standards: 15.4: Computer and Information Technologies

15.3: Communication

CC.1.4: Writing

CC.1.5: Speaking and Listening

Big Idea: Flying, recording, and producing video with the DJI Phantom Quadcopter

- Essential Questions:**
1. How do you fly a DJI Phantom?
 2. How can you safely learn to fly a quadcopter ?
 3. How can you take video with a quadcopter?
 4. How can you produce and publish aerial videos?

Competency	Vocabulary	Strategy	Resource
<ul style="list-style-type: none"> • Demonstrate an advanced understanding of DJI phantom flight controls • Fly the DJI phantom in a controlled space with the assistance of the instructor and classmates • Begin with basic flight techniques • Advance to GPS enabled flight features • Focus on capturing quality footage with the DJI camera • Move footage from the DJI phantom camera to editing software • Produce individual projects with aerial footage 		<p>PowerPoint and lecture based presentations</p> <p>Video based demonstrations of video techniques</p> <p>Teacher led demonstrations on the technique of flying the quadcopter</p> <p>Hands-on experience flying the quadcopter outside</p> <p>Peer instructions on flying the quadcopter</p>	<p>Teacher lecture and online tutorials</p> <p>Tutorials produced by DJI on flying the quadcopter</p> <p>Internet resources including Google Classroom, Google Drive, and Youtube</p> <p>Smartboard demonstrations</p> <p>Flight simulator software contained within the DJI quadcopter</p> <p>External connection from IPAD to Smartboard to display the flight simulator</p> <p>DJI Phantom quadcopter</p> <p>Adobe Premiere Pro</p>

Unit Title: *Your School Campus from Above*

Suggested time frame: 2-3 Weeks

Standards: 15.4: Computer and Information Technologies

15.3: Communication

CC.1.4: Writing

CC.1.5: Speaking and Listening

Big Idea: Effectively capturing the world from above

- Essential Questions:**
1. What can be seen from above that can't be seen from the ground?
 2. How does perspective influence interpretation?
 3. What would you like to see from above on the school campus?

Competency	Vocabulary	Strategy	Resource
<ul style="list-style-type: none"> • Understand how perspective influences reality • Consider the various structures on the school campus that will look different from above • Consider how height and angle will provide varying perspectives when capturing aerial video • Plan an individual film of the school campus • Storyboard a film using the school campus plan • Fly the quadcopter to capture the images in the planned sequence • Edit the individual project using Adobe Premiere Pro • Produce and publish the video using various internet-based platforms 		<p>PowerPoint and lecture based presentations</p> <p>Video based demonstrations of video techniques</p> <p>Teacher led demonstrations on the technique of flying the quadcopter</p> <p>Hands-on experience flying the quadcopter outside</p> <p>Peer instructions on flying the quadcopter</p>	<p>Teacher lecture and online tutorials</p> <p>Tutorials produced by DJI on flying the quadcopter</p> <p>Internet resources including Google Classroom, Google Drive, and Youtube</p> <p>Smartboard demonstrations</p> <p>Flight simulator software contained within the DJI quadcopter</p> <p>External connection from IPAD to Smartboard to display the flight simulator</p> <p>DJI Phantom quadcopter</p> <p>Adobe Premiere Pro</p>

Unit Title: *Your Community from Above*

Suggested time frame: 2-3 Weeks

Standards: 15.4: Computer and Information Technologies

15.3: Communication

CC.1.4: Writing

CC.1.5: Speaking and Listening

Big Idea: How can aerial videography be used to view your community from a new perspective?

- Essential Questions:**
1. Where do you live and how do you view it?
 2. How are your home, your neighborhood, your town, your state, your country, and your world related?
 3. How can you use aerial videography to view your community in new ways?

Competency	Vocabulary	Strategy	Resource
<ul style="list-style-type: none"> • Understand how perspective influences reality • Consider the various structures in the community that would look different from above • Consider how height and angle will provide varying perspectives when capturing aerial video • Plan an individual film in the community • Storyboard a film using community plan • Fly the quadcopter to capture the images in the planned sequence • Edit the individual project using Adobe Premiere Pro • Produce and publish the video using various internet-based platforms 		<p>PowerPoint and lecture based presentations</p> <p>Video based demonstrations of video techniques</p> <p>Teacher led demonstrations on the technique of flying the quadcopter</p> <p>Hands-on experience flying the quadcopter outside</p> <p>Peer instructions on flying the quadcopter</p>	<p>Teacher lecture and online tutorials</p> <p>Tutorials produced by DJI on flying the quadcopter</p> <p>Internet resources including Google Classroom, Google Drive, and Youtube</p> <p>Smartboard demonstrations</p> <p>Flight simulator software contained within the DJI quadcopter</p> <p>External connection from IPAD to Smartboard to display the flight simulator</p> <p>DJI Phantom quadcopter</p> <p>Adobe Premiere Pro</p>

Unit Title: *This is my Home*

Suggested time frame: 2-3 Weeks

Standards: 15.4: Computer and Information Technologies

15.3: Communication

CC.1.4: Writing

CC.1.5: Speaking and Listening

Big Idea: Using Aerial Videography to promote what you care about

- Essential Questions:**
1. What in my community do I most care about?
 2. How can I use traditional and aerial videography to influence others to care about what I care about?
 3. How can traditional and aerial video shots be combined to create a complete piece?

Competency	Vocabulary	Strategy	Resource
<ul style="list-style-type: none"> • Consider what is most important in their community • Consider how to best show that which is most important using aerial and traditional video shots • Influence others to care about what is most important to them • Film the chosen place, institution, or structure using aerial and traditional videography • Produce an original video project that will combine the use of aerial and traditional shots to allow others to view the impotence of the chosen entity • Publish and share the completed project using various web-based platforms 		<p>PowerPoint and lecture based presentations</p> <p>Video based demonstrations of video techniques</p> <p>Teacher led demonstrations on the technique of flying the quadcopter</p> <p>Hands-on experience flying the quadcopter outside</p> <p>Peer instructions on flying the quadcopter</p>	<p>Teacher lecture and online tutorials</p> <p>Tutorials produced by DJI on flying the quadcopter</p> <p>Internet resources including Google Classroom, Google Drive, and Youtube</p> <p>Smartboard demonstrations</p> <p>Flight simulator software contained within the DJI quadcopter</p> <p>External connection from IPAD to Smartboard to display the flight simulator</p> <p>DJI Phantom quadcopter</p> <p>Adobe Premiere Pro</p>