

Aviation II

Teacher: Roger Bovee

September 2016

Content	Skills	Learning Targets	Standards	Assessment	Resources & Technology
<p>CEQ: Why do airplanes look different and what does that have to do with how they fly?</p> <p>What are the components of an RC airplane?</p> <p>What are the building techniques for assembling an RC airplane?</p> <p>UEQ: What design should I choose for my airplane?</p> <p>A: Airplane Design A1: High wing, low wing, mid wing, and bi-plane designs A2: Prop vs Jet A3: Materials A4: Designing airplane on CohrefDraw</p> <p>UEQ: •Can you read, draw, and laser out parts?</p> <p>B: Fabrication</p>	<p>A: Airplane Design A1: Identify the flight characteristics of the different airplane designs. A2: Identify the different characteristics of propellor driven airplanes vs jet driven airplanes. A3: Identify the different materials used in airplane construction and determine what material will be best for your RC airplane. A4: Design overall shape of airplane, then design individual parts necessary for creating the airplane.</p> <p>B: Fabrication A1. Accurately reading airplane blueprints A2. Drawing aircraft parts A3. Laser-out scaled parts for use</p>	<p>A: Airplane Design A1-2: I can determine what type of airplane will be best suited for building in the classroom and flying by remote control. A3: I can determine what type of materials will be best suited for building an RC airplane. A4: I can draw individual parts on CorelDraw to be lasered from balsa for assembly later.</p> <p>B: Fabrication B1: I can accurately read airplane blueprints for assembly purposes B2: I can accurately draw aircraft parts in CorelDraw. B3: I can laser parts to be sued for airplane construction.</p>		<p>A: Airplane Design CFA A1-2: Students sketch plane design on graph paper. CFA A1-2: Students research airplane designs on the internet and print off pictures of desired airplane. CFA A3: Observe drawings of parts before they are lasered.</p> <p>B: Fabrication CFA B1-3. Compare replicated part with original design for</p>	<p>A: Airplane Design Internet access graph paper</p> <p>B: Fabrication CorelDraw Laser Balsa wood</p> <p>C: Construction C1-3: adhesives, x-acto knives, cutting boards, wax paper</p> <p>D: Testing D1: RC motor, Field box, Fuel, Battery</p> <p>E. Flight E1. "Real Flight Delux" RC Simulator</p>

<p>A1. Blueprints A2. Replicating A3. Lasering</p> <p><i>UEQ:</i> •Can you apply model building knowledge to aircraft construction?</p> <p>C: Construction</p> <p>C1. Fuselage C2. Wings/Empannage C3. Mechanical Components</p> <p><i>UEQ:</i> •Can you mount and start your motor? •Do your mechanism's work?</p> <p>D: Testing</p> <p>D1. Motor tune-up D2. Servo positioning D3. Transmitter/Reciever Check-up</p> <p><i>UEQ:</i> •Can you fly your plane?</p>	<p>C: Construction</p> <p>C1. Assemble Fuselage C2. Assemble Wings/Empannage C3. Gather all hardware needed</p> <p>D. Testing</p> <p>D1. Test motor D2. Calibrate servos D3. Test mechanical components</p> <p>E. Flight</p> <p>E1. Utilize Flight simulator software E2. Fly RC aricraft</p>	<p>C: Construction</p> <p>C1: I can use lasered parts to assemble a fuselage. C2: I can use lasered parts to assemble wings and empennage. C3: I can utilize hardware necessary to build airplane.</p> <p>D: Testing</p> <p>D1: I can start my motor using the field flight box D2: I can link my servos to flight surfaces with proper calibration necessary for safe flight control. D3: I can test radio controls for proper flight movements and directional movement.</p> <p>E: Flight</p> <p>E1: I can successfully complete a flight using the flight simulator software. E2: I can successfully complete an outdoor flight with my model.</p>	<p>consistency. CFA B1-3: Evaluate parts for fit in model to be sure they will work. If not, redesign the part and laser again.</p> <p>C: Construction</p> <p>C1. Check fuselage for quality C2. Check Wings/Empannage for quality C3. Oversee servo/transmitter/reciever usage.</p> <p>D. Testing</p> <p>D1. Aid students in starting motor D2. Observe students during</p>	
--	--	--	--	--


<p>E: Flight</p> <p>E1. Flight Simulator E2. Outdoor flight.</p>				<p>servo hook-up D3. Have students demonstrate fully functional model</p> <p>E. Flight</p> <p>E1. Have students complete a flight plan E2. Demonstrate/observe RC flight</p>
---	--	--	--	---


October 2016

Content	Skills	Learning Targets	Assessment	Resources & Technology
<p><i>UEQ:</i> •Can you read, draw, and laser out parts?</p> <p>B: Fabrication</p> <p>A1. Blueprints A2. Replicating A3. Lasering</p> <p><i>UEQ:</i> •Can you apply model building knowledge to aircraft construction?</p>	<p>B: Fabrication</p> <p>A1. Accurately reading airplane blueprints A2. Drawing aircraft parts A3. Laser-out scaled parts for use</p> <p>C: Construction</p> <p>C1. Assemble Fuselage C2. Assemble Wings/Empannage C3. Gather all hardware</p>	<p>B: Fabrication</p> <p>B1: I can accurately read airplane blueprints for assembly purposes B2: I can accurately draw aircraft parts in CorelDraw. B3: I can laser parts to be sued for airplane construction.</p> <p>C: Construction</p> <p>C1: I can use lasered parts</p>	<p>B: Fabrication</p> <p>CFA B1-3. Compare replicated part with original design for consistency. CFA B1-3: Evaluate parts for fit in model to be sure they will work. If not, redesign the part and laser again.</p> <p>C: Construction</p>	<p>B: Fabrication</p> <p>CorelDraw Laser Balsa wood</p> <p>C: Construction</p> <p>C1-3: adhesives, x-acto knives, cutting boards, wax paper</p>

<p>C: Construction</p> <p>C1. Fuselage C2. Wings/Empannage C3. Mechanical Components</p>	<p>needed</p>	<p>to assemble a fuselage. C2: I can use lasered parts to assemble wings and empennage. C3: I can utilize hardware necessary to build airplane.</p>	<p>C1. Check fuselage for quality C2. Check Wings/Empannage for quality C3. Oversee servo/transmitter/reciever useage.</p>	
---	---------------	---	--	--

November 2016

Content	Skills	Learning Targets	Assessment	Resources & Technology
<p><i>UEQ:</i> •Can you mount and start your motor? •Do your mechanism's work?</p> <p>D: Testing</p> <p>D1. Motor tune-up D2. Servo positioning D3. Transmitter/Reciever Check-up </p> <p><i>UEQ:</i> •Can you fly your plane?</p> <p>E: Flight</p>	<p>D. Testing</p> <p>D1. Test motor D2. Calibrate servos D3. Test mechanical components</p> <p>E. Flight</p> <p>E1. Utilize Flight simulator software E2. Fly RC aricraft</p>	<p>D: Testing</p> <p>D1: I can start my motor using the field flight box D2: I can link my servos to flight surfaces with proper calibration necessary for safe flight control. D3: I can test radio controls for proper flight movements and directional movement.</p> <p>E: Flight</p> <p>E1: I can successfully complete a flight using the</p>	<p>D. Testing</p> <p>D1. Aid students in starting motor D2. Observe students during servo hook-up D3. Have students demonstrate fully functional model</p> <p>E. Flight</p> <p>E1. Have students complete a flight plan E2. Demonstrate/observe RC flight</p>	<p>D: Testing</p> <p>D1: RC motor, Field box, Fuel, Battery</p> <p>E. Flight</p> <p>E1. "Real Flight Delux" RC Simulator</p>

<p>E1. Flight Simulator E2. Outdoor flight.</p> 		<p>flight simulator software. E2: I can successfully complete an outdoor flight with my model.</p>		
---	--	--	--	--