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[**WABS ACCESS STEM PBL Unit/Lesson Plan Template**](https://docs.google.com/document/u/1/d/1lzkUygoxlsEvaoczfdcXTIwzbba2y2ON/edit)

**U**NIT OVERVIEW

| **Title of PBL Unit:** Drone Services  **Target Grade Level(s):** 5  **Subject(s):** STEM, 21st Century skills, Social Studies/ CTE  **Author(s):** Trevor Carslay, Erica Swanson, Barbara Bromley, Kim Hemingway |
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| **Problem Statement:** How can we give access to community and family resources to ALL students so that students can engage in 21st century skills to prepare them for whichever career pathways students pursue, they can be successful? |
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| **Unit Overview and Table of Contents:** |
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| **Standards:** CCSS.ELA-LITERACY.W.5.2 - Write informative/explanatory texts to examine a topic and convey ideas and information clearly; CCSS.ELA-LITERACY.W.5.7 - Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic; CCSS.ELA-LITERACY.SL.5.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly |
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| **21st-Century Skills:** Literacy in, technology, communication, groupcollaboration, creativity, critical thinking computer/gaming skills, sales skills, and taking initiative. |
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| **Locally and/or Personally Relevant for Students:** Boeing, airlines, real estate, parks & recreation, forestry, agriculture, industrial or residential home inspections, Amazon & other package delivery, construction, shipping, military, weather monitoring, warehouse inventory management, vacation & tourist views, public safety, aerial performances & shows, sports |
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| **Connections to Career and Educational Pathways:** Licensure/certification pathways |
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**LESSON #1 OVERVIEW**

This section should be repeated for each individual lesson that makes up the unit.

| **Lesson Number and Title:** Lesson #1 - Small Group Interview Questions (week prior to start of project) |
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| **Problem Statement:** How can we give access to community and family resources to ALL students so that students can engage in 21st century skills to prepare them for whichever career pathways students pursue, they can be successful? |
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| **Lesson Objectives:** Interview a small group of students with questions about drones to identify prior knowledge. |
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| **Lesson Standards:** CCSS.ELA-LITERACY.SL.5.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly |
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| **Materials:** Students- none; Teacher- anchor chart & markers |
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**If relevant to a single lesson, please include:**

| **Lesson 21st-Century Skills:** |
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| **Lesson-Locally and/or Personally Relevant for Students:** |
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| **Lesson-Connections to Career and Educational Pathways:** |
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**LESSON #1 PREPARATION**

| **Time Required:** 5 minutes |
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| **Grouping of Students for Instruction:** 4 groups of 5 students |
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| **What is the instruction? (Consider the PBL procedure that is being addressed here):** During ELA small groups, ask students interview questions to provoke prior knowledge about drones, complete the “K- what do you already KNOW” portion of the KWL chart |
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| **Possible Accommodations:** Use of pictures of drones |
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| **Possible Extensions:** Move into the middle section of the KWL anchor chart; “What do you want to know about drones?” |
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| **Possible Assessment:** none for lesson 1 |
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| **References and Resources:** None for Lesson 1 |
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**LESSON #2 OVERVIEW**

This section should be repeated for each individual lesson that makes up the unit.

| **Lesson Number and Title:** Lesson #2 - Complete “K” & “W” portion of KWL chart and PowerPoint presentation |
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| **Problem Statement:** How can we give access to community and family resources to ALL students so that students can engage in 21st century skills to prepare them for whichever career pathways students pursue, they can be successful? |
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| **Lesson Objectives:** Discover knowledge and questions students have about drones by showing a variety of pictures of drones by showing a variety of pictures of drones used in various situations**.** Provoke prior knowledge of drones and what students want to know about drones; introduce pictures drones have taken |
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| **Lesson Standards:** CCSS.ELA-LITERACY.SL.5.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly |
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| **Materials:** Students- none; Teacher- anchor chart & markers; powerpoint of drones |
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**If relevant to a single lesson, please include:**

| **Lesson 21st-Century Skills:** Collaboration to identify information about drones |
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| **Lesson-Locally and/or Personally Relevant for Students:** Students can use their video gaming skills to learn more about drones and how they can be maneuvered. |
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| **Lesson-Connections to Career and Educational Pathways:** Using the Powerpoint to discuss possible jobs drones are used for and student future job interests |
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**LESSON #2 PREPARATION**

| **Time Required:** 20 minutes |
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| **Grouping of Students for Instruction:** Whole class |
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| **What is the instruction? (Consider the PBL procedure that is being addressed here):** Complete the “K- what do you already KNOW” and the “W- what I WANT to know” portion of the KWL chart as a whole class; Review what class previously collaborated before adding more ideas |
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| **Possible Accommodations:** Use of pictures of drones; refer to anchor chart with possible careers with drones |
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| **Possible Extensions:** Move into the middle section of the KWL anchor chart; “What do you want to know about drones?”; have students come up with questions to ask guest speakers |
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| **Possible Assessment:** none for lesson 2 |
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| **References and Resources:** PowerPoint for pictures drones have taken |
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**LESSON #3 OVERVIEW**

This section should be repeated for each individual lesson that makes up the unit.

| **Lesson Number and Title:** Lesson #3 - Guest speakers (5 days)- Boeing and Civil Air Patrol |
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| **Problem Statement:** How can we give access to community and family resources to ALL students so that students can engage in 21st century skills to prepare them for whichever career pathways students pursue, they can be successful? |
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| **Lesson Objectives:** Learn about how different careers use drones and possible future career/education pathways. Students explore the four different types of drones: 1) Multi Rotor, 2) Fixed Wing, 3) Single Rotor, and 4) Hybrid to peak curiosity in career discovery in drone technology. |
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| **Lesson Standards:** CCSS.ELA-LITERACY.W.5.7 - Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic; CCSS.ELA-LITERACY.SL.5.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly |
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| **Materials:** Students- list of questions to ask guest speakers ; Teacher- zoom meeting |
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**If relevant to a single lesson, please include:**

| **Lesson 21st-Century Skills:** Communication and Critical Thinking |
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| **Lesson-Locally and/or Personally Relevant for Students:** |
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| **Lesson-Connections to Career and Educational Pathways:** Students are learning about local jobs/careers students could pursue |
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**LESSON #3 PREPARATION**

| **Time Required:** 20-30 minutes |
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| **Grouping of Students for Instruction:** whole class |
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| **What is the instruction? (Consider the PBL procedure that is being addressed here):** Teacher will log into zoom link for each guest speaker. Each speaker will give presentation, students can take notes and create questions to ask after presentation |
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| **Possible Accommodations:** Provide sentence/question stems |
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| **Possible Extensions:** Add any additional questions to ask the next guest speaker or to the “W-What do I WANT to learn” section of the KWL chart |
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| **Possible Assessment:** none |
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| **References and Resources:** any of the resources/handouts sent by guest speakers |
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**LESSON #4 OVERVIEW**

This section should be repeated for each individual lesson that makes up the unit.

| **Lesson Number and Title:** Lesson #4 - Intro to Drone Service Group Project |
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| **Problem Statement:** How can we give access to community and family resources to ALL students so that students can engage in 21st century skills to prepare them for whichever career pathways students pursue, they can be successful? |
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| **Lesson Objectives:** Complete the last section of the KWL chart “L- what have I LEARNED”; Students will collaborate on a list of possible services drones could provide. Working in small groups students will collaborate by choosing one possible service a drone could provide. Decide on the purpose, type and describe the service of the drone. Discuss and select company names and provide a scenario for advertising. |
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| **Lesson Standards:** CCSS.ELA-LITERACY.W.5.2 - Write informative/explanatory texts to examine a topic and convey ideas and information clearly; CCSS.ELA-LITERACY.W.5.7 - Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic; CCSS.ELA-LITERACY.SL.5.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly |
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| **Materials:** Students- Notes taken during guest speaker presentations ; Teacher- Drone picture powerpoint presentation, anchor charts (KWL, possible drone services list, PBL poster example) |
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**If relevant to a single lesson, please include:**

| **Lesson 21st-Century Skills:** Communication, Collaboration, Creativity and Critical Thinking |
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| **Lesson-Locally and/or Personally Relevant for Students:** |
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| **Lesson-Connections to Career and Educational Pathways:** Students are learning about local jobs/careers students could pursue |
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**LESSON #4 PREPARATION**

| **Time Required:** 20-30 minutes |
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| **Grouping of Students for Instruction:** Whole class; 5 groups of 4 students |
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| **What is the instruction? (Consider the PBL procedure that is being addressed here):** As a whole class, complete the last section of the KWL chart “L- what have I LEARNED”; Students will collaborate a list of possible services drones could provide |
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| **Possible Accommodations:** previous anchor charts to reference |
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| **Possible Extensions:** Groups can start their rough drafts of group poster |
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| **Possible Assessment:** none |
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| **References and Resources:** previous anchor charts and student notes taken during guest speaker presentations |
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**LESSON #5 OVERVIEW**

This section should be repeated for each individual lesson that makes up the unit.

| **Lesson Number and Title:** Lesson #5 - Drone Service Group Project (2-3 days) |
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| **Problem Statement:** How can we give access to community and family resources to ALL students so that students can engage in 21st century skills to prepare them for whichever career pathways students pursue, they can be successful? |
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| **Lesson Objectives:** Students will collaborate on a list of possible services drones could provide, complete a rough draft of a group project with company name, drone service, description of drone service providing, measurable outcomes for success and pictures. Small group to present company name, service and advertising scenario to classmates. |
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| **Lesson Standards:** CCSS.ELA-LITERACY.W.5.2 - Write informative/explanatory texts to examine a topic and convey ideas and information clearly; CCSS.ELA-LITERACY.W.5.7 - Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic; CCSS.ELA-LITERACY.SL.5.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly |
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| **Materials:** Students- Notes taken during guest speaker presentations, rough draft of drone service poster with necessary information, researched drone pictures ; Teacher- Drone picture powerpoint presentation, anchor charts (KWL, possible drone services list, PBL poster example), group drone pictures students provided to print off |
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**If relevant to a single lesson, please include:**

| **Lesson 21st-Century Skills:** Communication, Collaboration, Creativity and Critical Thinking |
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| **Lesson-Locally and/or Personally Relevant for Students:** |
| --- |

| **Lesson-Connections to Career and Educational Pathways:** Students are learning about local jobs/careers students could pursue |
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**LESSON #5 PREPARATION**

| **Time Required:** 20-30 minutes |
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| **Grouping of Students for Instruction:** 5 groups of 4 students |
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| **What is the instruction? (Consider the PBL procedure that is being addressed here):** Students will continue to collaborate a list of possible services drones could provide and create a rough draft following the directions including the necessary information before creating a formal group poster |
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| **Possible Accommodations:** previous anchor charts to reference |
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| **Possible Extensions:** Groups can start their final/formal group poster |
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| **Possible Assessment:** none |
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| **References and Resources:** previous anchor charts and student notes taken during guest speaker presentations |
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