LONDON

AVIATION

MUSEUM

Educational Guidebook : Aviation History for Your Classroom

Explore artifacts, discover stories, and engage students in London's flight history

www.427wing.com

Introduction

This resource is primarily designed for Grade 10 History (Canadian History since WWI), with adaptable elements for intermediate grades.

Overview

The London Aviation Museum preserves aviation history and inspires curiosity about flight. This guide alongside the virtual museum experience on our website brings the museum into your classroom. This resource supports curriculum outcomes related to Canadian history, technological development, and historical analysis through aviation-focused content.

Museum Mission

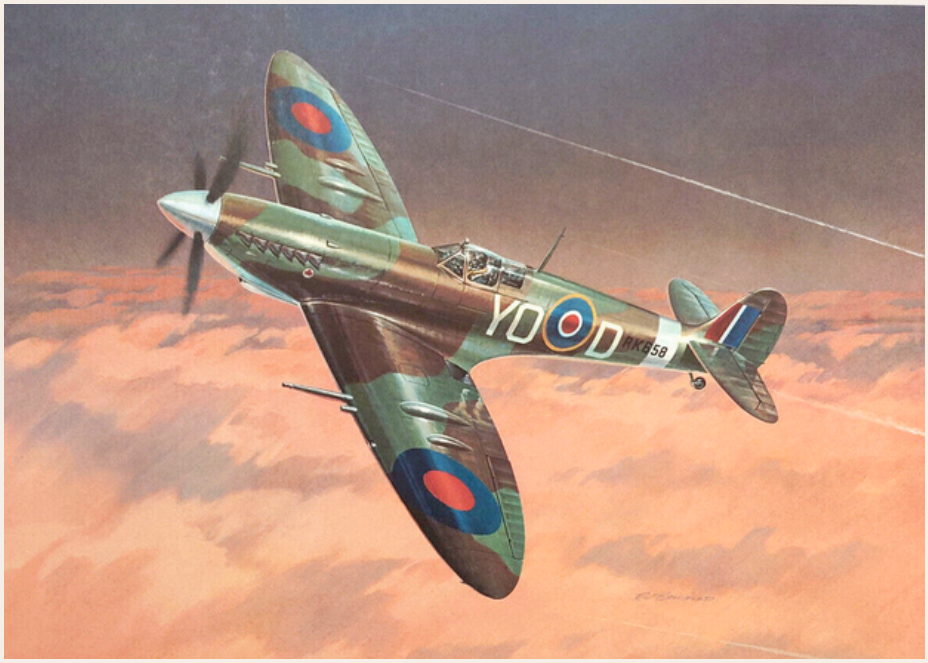
To bring the stories of aviation to life online by making history accessible, engaging, and inspiring for today's audience.

Learning Outcomes

1. Identify key eras in the history of aviation
2. Identify important events and figures in London's aviation history
3. Analyze aircraft and artifacts for historical significance
4. Interpret aircraft markings and explain their purpose
5. Apply basic principles of flight through hands-on design activities

Featured Aircraft

Supermarine Spitfire I



Supermarine Spitfire MK IX by Robert W Bradford

The Spitfire is the most famous British fighter aircraft in history. It became a symbol of freedom during the summer months of 1940 by helping to defeat the German air attacks during the Battle of Britain. It was the highest performing Allied aircraft in 1940.

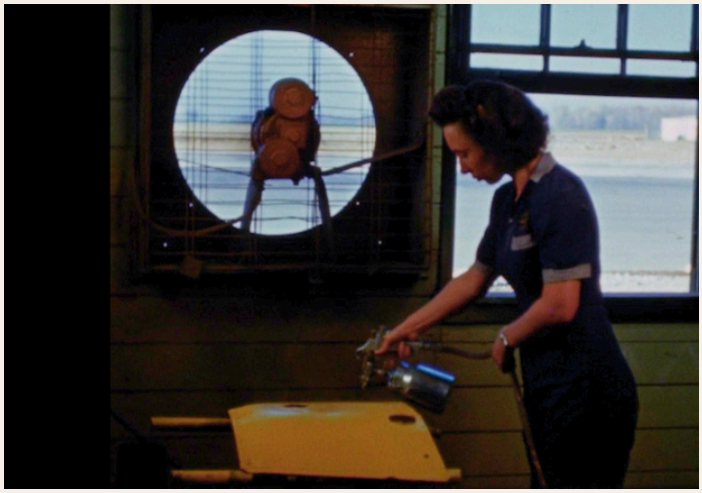
The crowds at the 1936 RAF Display at Hendon had a first glimpse of the prototype Spitfire in the New Types Park but it was not until August 1938 that production Spitfires began to enter service. By the outbreak of war, a year later, nine squadrons were equipped. In spite of vigorous demands from the France the Commander in Chief of Fighter Command refused to send any Spitfires to France during the German Blitzkrieg of 1940. The wisdom of that decision was clearly shown. By July 1940 RAF Fighter Command had nineteen Spitfire MkI squadrons available.

Once the RAF modified their tactics to properly counter the Luftwaffe, the Spitfire MkI proved to be the only British fighter capable of meeting the Messerschmitt Bf109E on equal terms. Often the outcome of a combat depended more on the quality of the pilot than his aircraft.

Further improvements in performance were made by fitting new type propellers, known as constant speed units, and modifying the Merlin engine to run on 100 octane fuel.

Featured Role

Women in Aviation During World War II



During the Second World War, thousands of women played a critical role in aviation, not as pilots alone, but as skilled workers who maintained, repaired, and prepared aircraft for flight. As more men were deployed overseas, women stepped into roles that had previously been closed to them. They became mechanics, engineers, fabric workers, electricians, and inspectors, ensuring that aircraft remained safe, functional, and mission-ready. Their work was essential. Without proper maintenance, even the most advanced aircraft could not fly.

Women were responsible for:

- Inspecting aircraft before and after missions
- Repairing engines and mechanical systems
- Refuelling and rearming planes
- Performing structural repairs on wings and fuselage

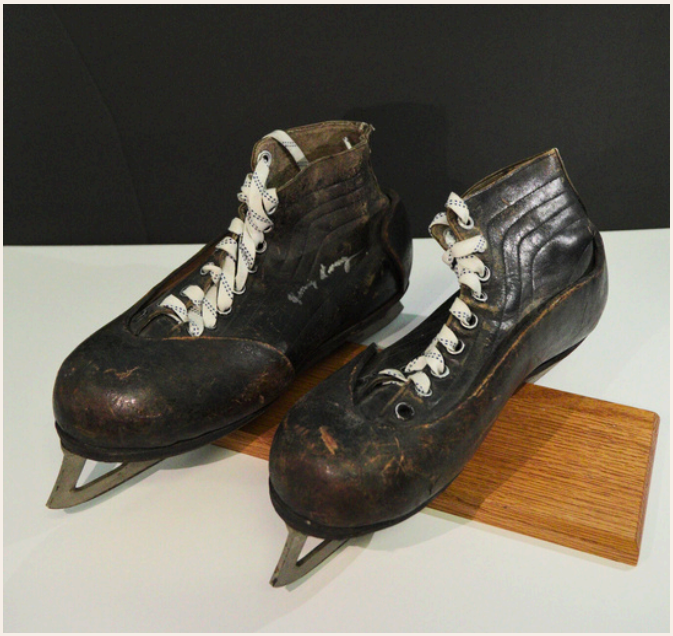
These roles required precision, technical knowledge, and attention to detail. Many women were trained quickly but performed at an exceptionally high level under pressure. In Britain, members of the Women's Auxiliary Air Force (WAAF) supported Royal Air Force operations by maintaining aircraft like the Spitfire. In Canada, women in the Royal Canadian Air Force Women's Division (RCAF WD) contributed to similar efforts on bases across the country.

For many women, working in aviation during the war was their first opportunity to enter technical fields. They proved that they could perform demanding and highly skilled work, challenging traditional ideas about women's roles in society. Although many were expected to return to domestic roles after the war, their contributions marked an important step toward greater inclusion in aviation and engineering careers.

Preserving these stories helps us understand that aviation history is not only about aircraft and pilots—it is also about the people who made flight possible.

Featured Artifacts

RCAF Flyers Win Gold at 1948 Olympics



Skates worn by Murray Dowey

When Squadron Leader Alexander “Sandy” Watson, the Royal Canadian Air Force’s senior medical officer, learned that Canada would not be sending a men’s hockey team to the 1948 Olympics, he stepped forward with a solution. Watson offered to assemble a team himself. He contacted every RCAF base across the country, asking them to send their best players. More than 200 men answered the call.

Early exhibition losses led critics to doubt the team’s chances. Several players were released, and new recruits — including two civilians — were added to strengthen the roster. The press predicted Canada would be fortunate to finish fourth at the Winter Games in St. Moritz.

Just days before departure, disaster struck: the team’s goaltender failed his medical exam. A player suggested the name of a former teammate, Murray Dowey, who was then working for the Toronto Transit Commission. Dowey was quickly brought in — and would prove to be the difference-maker.

He recorded five shutouts during the tournament, posting a remarkable goals-against average of 0.62 — a record that still stands in Olympic history. The team won seven of its eight games, tying Czechoslovakia 0–0 and defeating the United States 12–3. Canada and Czechoslovakia finished with identical records, but thanks to a superior goal differential, Canada claimed the gold medal.

When Dowey passed away in 2021 at the age of 95, he was the last surviving member of that remarkable team.

Lesson Plans | Classroom Activities

Aviation STEM Challenge

Students will analyze aircraft markings using the museum's featured Supermarine Spitfire, identifying symbols such as roundels, squadron codes, and serial numbers to understand their historical and military significance.

Teacher Tips : Ask students to measure flight distance and accuracy, then chart results to integrate math skills. Assign small groups with roles (**navigator** (designer), **pilot** (tester), **radio operator** (recorder) to build collaboration skills.

Templates available on the next page.

Artifact Analysis

Students take on the role of a museum investigator, analyzing an aircraft or artifact from the collection. They will examine its origin, historical context, and significance, similar to how museums document and interpret objects for public education.

Teacher Tips : Have students connect the artifact to a specific time period or historical event. Ask students how this artifact might have impacted people's daily lives.

Discussion Prompts

1. "Using the Spitfire example, how did fighter aircraft impact World War II and daily life in Britain?"
2. Early aviators took great risks to advance flight technology. Why do you think innovation often requires risk? Can you think of modern examples?
3. How has aviation changed the way people travel, communicate, or experience the world? What would life be like without airplanes?
4. Why is it important to preserve historic aircraft and artifacts? How do they help us understand the evolution of flight and recognize the people behind these innovations?
5. What do you think the next major breakthrough in aviation will be — electric planes, space tourism, autonomous flight? How might it impact society?

Teacher Tips : Think–Pair–Share: Give students time to think individually, discuss with a partner, then share with the class.

Aviation STEM Challenge Worksheet 1

Mission: Design, Build & Test Your Aircraft

Section A : Decoding Aircraft Markings

1. Aircraft Name : _____

2. Country of Origin : _____

3. What symbols or letters do you see?

- ☐ Roundel
- ☐ Numbers
- ☐ Squadron code
- ☐ Nose art
- ☐ Other: _____

4. What do you think these markings represent?

_____

_____

5. Why would identification markings be important in wartime?

_____

_____

Aviation STEM Challenge Worksheet 2

Mission: Design, Build & Test Your Aircraft

Materials List :

- Paper
- Tape
- Paper clips (optional weight)

Objective :

Design a paper aircraft that maximizes either:

- distance OR
- accuracy

Constraints :

- Must use only provided materials
- Must test 3 times and record results

Aviation STEM Challenge Worksheet 3

Mission: Design, Build & Test Your Aircraft

Section B : Plan Your Aircraft

Design Name : _____

What changes will you make to improve distance or accuracy?

- ☐ Wider wings
- ☐ Narrow nose
- ☐ Added weight
- ☐ Wing flaps
- ☐ Other: _____

Draw Your Design Below :

Aviation STEM Challenge Worksheet 4

Mission: Design, Build & Test Your Aircraft

Section C : Test Flight Results

Trial	Distance	Accuracy (Hit Target Y/N?)	Notes
1			
2			
3			

What design worked best? Why?

_____

_____

What would you improve for next time?

_____

_____

Artifact Analysis Worksheet

Museum Investigator: Artifact Analysis Report

Section A : Basic Information

Name of Aircraft/Artifact : _____
Year Created : _____
Country : _____
Primary Use : _____

Section B : Historical Context

What was happening in the world when this aircraft/artifact was used? Who would have used it? Why?

Artifact Analysis Worksheet

Museum Investigator: Artifact Analysis Report

Section C : Significance

Why is this artifact important to aviation history?
Did it introduce new technology or ideas? Explain.

Section D : Critical Thinking

If this artifact could “tell a story,” what would it say?

Discussion & Critical Thinking Worksheet

Recommended for Grades 9–10

Aviation & Society : Reflection

Prompt 1 : Aviation & Society

“Using the Spitfire example, how did fighter aircraft impact World War II and daily life in Britain?”

Prompt 2 : Innovation & Risk

Early aviators took great risks. Why is risk often part of innovation? Can you think of modern examples?

Prompt 3 : A World Without Flight

How has aviation changed the way people travel, communicate, or experience the world? What would life be like without airplanes?

Prompt 4 : Preservation Matters

Why is it important to preserve historic aircraft and artifacts? How do they help us understand the evolution of flight and recognize the people behind these innovations?

Prompt 5 : The Future of Flight

What do you think the next major breakthrough in aviation will be — electric planes, space tourism, autonomous flight? How might it impact society?

Virtual & Interactive Resources

Extend the Experience Beyond the Classroom

Online Artifact Gallery

Explore History Up Close

Our Online Artifact Gallery allows students to examine historic aircraft and artifacts in detail. High-resolution images and background information make it easy to :

- Assign research projects
- Conduct artifact analysis activities
- Compare aircraft across eras
- Study markings, technology, and design evolution
- Encourage students to choose an artifact that interests them and become aviation historians for the day.

Digital Scavenger Hunt App | Flight Paths

Turn Exploration into a Mission

Transform learning into an interactive challenge with our Scavenger Hunt App. Students complete aviation-themed missions, uncover historical clues, and test their knowledge as they navigate through digital exhibits.

- Independent learning
- Group competitions
- Homework enrichment
- Virtual field trips

How This Resource Complements Local Programs

While nearby museums such as the Jet Aircraft Museum offer in-person, hands-on STEM experiences, this digital resource focuses on historical analysis, artifact interpretation, and classroom-based learning, making it an ideal pre- or post-visit educational tool.

Stay Connected with Educator Updates

Sign up for our newsletter to receive :

- New educational resources
- Special events and digital offerings

LONDON AVIATION MUSEUM

Thank You

for helping to bring London's aviation history to life.

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