



# CANADIAN WARPLANE HERITAGE MUSEUM

## Education Programs

2017 - 2018





# DESIGNED EDUCATION PROGRAMS

Our Education Programs have been designed with teachers and their students in mind. Using the Ontario Science and Technology Curriculum as a guide, specific programs have been created to reinforce the “Understanding Structures and Mechanisms” strand of the guide. Programs at the Pre-school, Kindergarten, Grade 3, 6, 7 plus Grade 10 history programs at the academic and applied levels are available. All programs use a student centered approach reinforced with many hands on activities. Classes are conducted in an aviation environment with classrooms situated beside or under the Museum’s aircraft. Our professional staff consist of pilots, retired teachers and school administrators, Scout and Guide leaders and others who have an intense passion for aviation.





# PRE-K TO GRADE 2 (Thunderbirds)

## PROGRAM

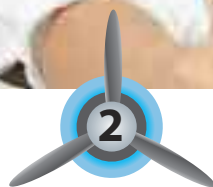
A 2 hour program designed for Pre-Kindergarten, Kindergarten, Grades 1 and 2.

Curriculum oriented activities including:

- number and measurement sense
- simple machines
- shapes and patterns
- sorting, classifying and comparing

Plus lots of fun activities that will introduce your young aviators to the fascinating world of flight, including:

- creating your own ID tags
- Listen to short stories of Canada's aviation achievements
- a visit to the de Havilland Buffalo (weather permitting)

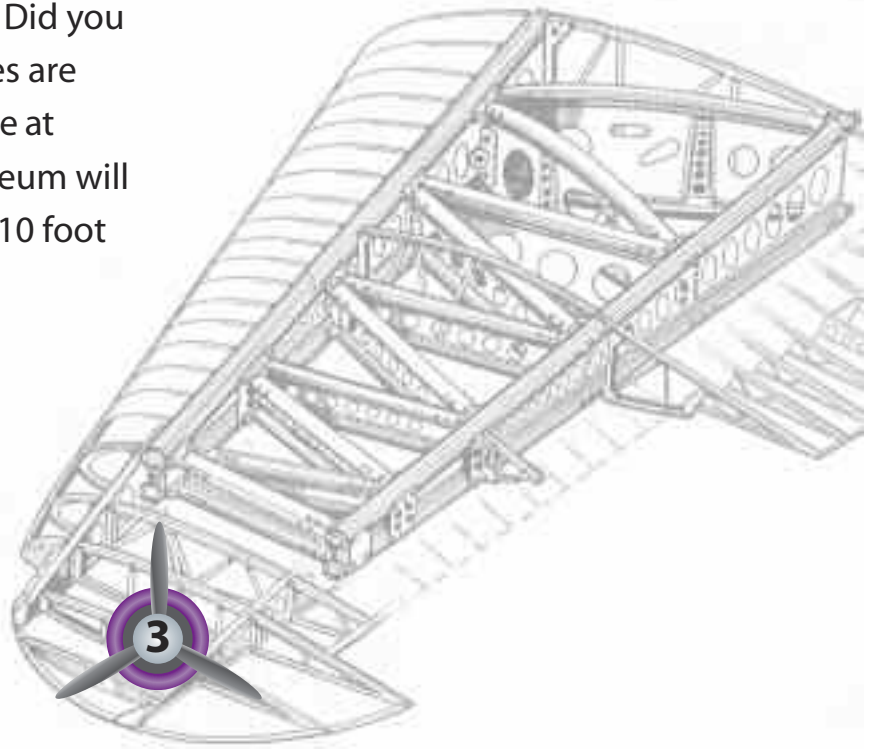


## GRADE 3 (Ribs'n Wings)

A special program for Grade 3 Science - "Ribs'n Wings": How do you get a truss bridge to fly? Impossible you say!!! Bring your class and we'll show you how it is done. The secret: use extremely lightweight materials that are incredibly strong, then streamline them.

### PROGRAM

See how the forces of compression, tension, shear and torsion not only hold bridges together but aircraft too. Investigate and compare the various materials used to construct aircraft starting from the earliest aircraft all the way to modern jet fighters. Look at how symmetry plays a key role in aircraft design. Plenty of hands-on activities explore how metals are joined together and how wing ribs are assembled to make an airfoil. Did you know that wing ribs and fuselages are modified trusses? Your experience at Canadian Warplane Heritage Museum will conclude with the assembly of a 10 foot wooden aircraft. (No! It won't fly).



# GRADE 6 (Controlling Aircraft In Flight)

Specifically tailored to the Grade 6 academic program we have created an exciting approach to help deliver the Understanding Structures and Mechanisms strand from the Science and Technology curriculum, specifically Flight.

## PROGRAM

Starting from the simple concepts that air occupies space and that air has weight, we systematically show the students that these two concepts have a great deal to do with the principles of flight. After introducing the notion that air can do work for us, we proceed to an aircraft to show the students examples of pneumatic and hydraulic systems.

Back at the workstations, students construct a simple device that starts to demonstrate the concept of low pressure and that this low pressure contributes to the principle of lift. Aircraft in the Museum are used to reinforce the concept of lift by showing the differences in shape between an upper wing surface and the lower wing surface. The principle of an airfoil is introduced at this time and a representative example is constructed.

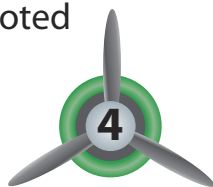
We also take a nostalgic trip back in time to the days of Daniel Bernoulli, the noted 18th century mathematician and



physicist. With a focus on fun and humour, a series of demonstrations are presented to the students that show the concepts of lift

and the experiments that Bernoulli conducted.

The concept of lift, gravity, thrust and drag are shown and Museum aircraft are viewed to show the principles of aerodynamics. Also the principles of roll, pitch and yaw are introduced to expand the concept of flight into the more complicated concept of controlling an aircraft when it is flying. Each student constructs a small styrofoam aircraft, modifying it with appropriate flight control surfaces to demonstrate the control surfaces that control roll, pitch and yaw.





# GRADE 7 (Frames, Forces and Flight)

A special program for Grade 7 Science - "Frames, Forces and Flight". How do you get a truss bridge to fly? Impossible you say!!! Bring your class and we'll show you how it is done. The secret: use extremely lightweight materials that are incredibly strong, then streamline them.

## PROGRAM

See how the forces of compression, tension, shear and torsion not only hold bridges together but aircraft too. Investigate and compare the various materials used to construct aircraft starting from the earliest aircraft all the way to modern jet fighters. Look at how symmetry plays a key role in aircraft design. Plenty of hands-on activities explore how metals are joined together and how wing ribs are assembled to make an airfoil. Did you know that wing ribs and fuselages are modified trusses? Students will actually build a Warren Truss bridge using K'nex™ kits. Your experience at Canadian Warplane Heritage Museum will conclude with the assembly of a 10 foot wooden aircraft. (No! It won't fly).





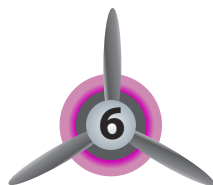
# GRADE 10 (A Wartime Experience)

While retaining most of the concepts from our Grade 10 Quest for Heroes program, the focus of this program is based on short, hands-on activities designed specifically for Applied Students. However, it has proved extremely popular with the Academic stream.

## PROGRAM

All of the hands on activities are interspersed with aircraft visits and short story telling sessions. Hands on activities include:

1. A student will be invited to wear a World War II Supermarine Spitfire combat pilot's uniform.
2. Nose Art: An opportunity to express artistic talent by creating nose art that could be painted on the nose of a World War II aircraft. There are plenty of examples of nose art in the Museum, strategically placed to inspire creativity. All art materials are supplied.
3. Metal Work: A great activity that demonstrates how women (and men too) contributed to the war effort through the sheet metal construction of military aircraft during World War II. The story of Rosie the Riveter is presented. Students will be shown how to temporarily fasten sheet metal to an aircraft frame using temporary rivets called Clecos. Actual aircraft parts will be used.
4. Ribs'n Wings: Students will take wing ribs and assemble them with leading and trailing edge spars to form an airfoil just as they were assembled in World War II. A great photo op when the project is complete.
5. Rationing: A look a teenage life during the war years. Students will be supplied with replica ration books and will be invited to "shop" in a small General Store that we have set up with World War II food artifacts and replicas. Tough choices during tough times.
6. Evacuation: What a teenager would have gone through when they were taken from their families and shipped off to a stranger's house. Students will be asked to decide what they would take with them considering that they will be absent from their homes for up to 5 years. All this in the equivalent of a small backpack.
7. Codes and Ciphers: Students will be invited to send a secret message to spies behind enemy lines using Morse Code technology. Actual encoding devices will be used. Other wartime communication coding technologies will be demonstrated as well.





# PLANNING YOUR VISIT

## PRICES

	Per Student	Per Supervisor	Minimum Charge
PRE-K TO GRADE 2 (Thunderbirds)	\$11.00	FREE	\$132.00
GRADE 3 (Ribs'n Wings)	\$13.00	FREE	\$156.00
GRADE 6 (Controlling Aircraft In Flight)	\$13.00	FREE	\$195.00
GRADE 7 (Frames, Forces & Flight)	\$13.00	FREE	\$195.00
GRADE 10 (A Wartime Experience)	\$13.00	FREE	\$195.00
School Bus Parking & Driver		FREE	

- No payment is required for supervisors up to a maximum ratio of 1:10 (supervisors to students). The ratio is 1:15 for Grade 10. Additional adults will need to purchase their own admission at the general admission rate. A support person accompanying a student with a disability will be admitted free.
- HST exempt. Programs, prices and policies are subject to change without notice. No additional coupons, promotions, passes or membership discounts apply.

## SUPERVISION

Supervisors are required to remain with their students and be responsible for discipline at all times. Please ensure that your students and supervisors are aware that the following conduct is not acceptable:

- loud, profane and inappropriate language
- sexual harassment
- racial and ethnic discrimination
- disrespectful or physically aggressive behaviour
- conduct which is harmful to the exhibits and displays or disruptive to other visitors
- food and drink outside the designated areas







# PLANNING YOUR VISIT

## BOOKING YOUR VISIT

Booking online at <http://www.warplane.com/kid-zone/education/school-visit-application-form.aspx> will allow us to process your request faster but you can also fill in the application form on the next page. Alternatively, you can book with Christine Stevenson at 905-679-4183 Ext. 222. or [edserv@warplane.com](mailto:edserv@warplane.com)

## CONFIRMING YOUR VISIT

Your visit is not confirmed until you have received a Confirmation Form. The full cost of your visit as shown on your Confirmation Form will be charged upon arrival. Any changes, increases or decreases in numbers must be confirmed with the Education Department no later than 5 business days prior to your visit. Cancellations received after that date will be charged a cancellation fee equivalent to the minimum charge in the particular program.

## PAYING FOR YOUR VISIT

Payment for school visits is expected upon arrival. We accept payment by Visa, Mastercard, Interac, cash or cheque payable to Canadian Warplane Heritage Museum. A \$20.00 administration fee will be added if payment is not made upon arrival and invoicing is required.



## GIFT SHOP

As part of our Education Program, we always allocate time for a short visit to the Gift Shop. Ensure your students and parents are aware and come prepared. There is a wide selection of items with kid friendly pricing such as aviator glasses, toys, books & posters. We also carry a large selection of aviation t-shirts, jackets, hats, models & prints.



# SCHOOL VISIT APPLICATION FORM 2017-2018

CANADIAN WARPLANE  
HERITAGE MUSEUM



Phone Number \_\_\_\_\_ School Fax Number \_\_\_\_\_

School Name \_\_\_\_\_

School Address \_\_\_\_\_

City \_\_\_\_\_, Ontario Postal Code \_\_\_\_\_

Contact Name \_\_\_\_\_

Email \_\_\_\_\_

No. of Students \_\_\_\_\_ No. of Supervisors \_\_\_\_\_ Grade Level \_\_\_\_\_  
INCLUDING TEACHER

Arrival Time \_\_\_\_\_ Departure Time \_\_\_\_\_

Preferred Visit Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Alternative Visit Date \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
MONTH DAY YEAR MONTH DAY YEAR

Type of Visit (Check one only)

- PRE-K TO GRADE 2 (Thunderbirds)  GRADE 7 (Frames, Forces & Flight)  
 GRADE 3 (Ribs'n Wings)  GRADE 10 (A Wartime Experience)  
 GRADE 6 (Controlling Aircraft in Flight)

Special Needs / Additional Comments

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\_\_\_\_\_

## Book Online:

[www.warplane.com](http://www.warplane.com)

**Fax to:** 905-679-4186

**Mail to:** Educational Dept.  
Canadian Warplane Heritage  
Museum, 9280 Airport Rd.  
Mt. Hope, ON L0R 1W0

**DO NOT SEND PAYMENT  
WITH THIS FORM**

## BOOKING & MODIFICATION/ CANCELLATION POLICY

The full cost of your visit as shown on your Confirmation Form will be charged upon arrival. Any changes, increases or decreases in numbers must be confirmed with the Education Department no later than 5 business days prior to your visit. Cancellations

received after that date will be charged a cancellation fee equivalent to the minimum charge in the particular program.

## PAYMENT

Payment for school visits is expected upon arrival. We accept payment by Visa, Mastercard, Interac, cash or cheque payable to Canadian Warplane Heritage Museum.

A \$20.00 administration fee will be added if payment is not made upon arrival and invoicing is required.

## DISCLAIMER

All prices and policies are subject to change without notice. School group rates are already discounted. No additional coupons, passes or membership discounts apply.