


Board/Authority Authorized Course Framework Template

School District/Independent School Authority Name: Surrey School District	School District/Independent School Authority Number (e.g. SD43, Authority #432): SD36
Developed by: Arnel Aliwalas	Date Developed:
School Name: North Surrey Secondary	Principal's Name: Stefan Stipp
Superintendent Approval Date (for School Districts only):	Superintendent Signature (for School Districts only): 
Board/Authority Approval Date:	Board/Authority Chair Signature:
Course Name: Aviation 11 – Explorations in Aviation	Grade Level of Course: 11
Number of Course Credits: 4	Number of Hours of Instruction: 120

Board/Authority Prerequisite(s):

N/A

Special Training, Facilities or Equipment Required:

- No special training, facilities or equipment is required.

Course Synopsis:

The Grade 11 Explorations in Aviation Careers course provides students with a comprehensive understanding of the fundamental aspects of aviation. This course is designed for students interested in exploring careers in the aviation industry, gaining practical knowledge, and understanding the intricacies of aviation operations. The curriculum is divided into four main themes: Aviation Safety, Aviation Industries, Aviation Vehicles, and Aviation Infrastructure. Through a combination of theoretical knowledge, practical activities, and field trips, students will develop a deep appreciation and understanding of the aviation world.

Goals and Rationale:

Air transportation has become a major driver for global travel and commerce. Students interested in aviation as a career will gain fundamental knowledge of the aviation vocabulary, industry, careers, and opportunities.

Aboriginal Worldviews and Perspectives:

Aboriginal Worldviews and Perspectives: Declaration of First People's Principles of Learning:

- Learning is embedded in story and can enhance understanding of human factors and pilot decision making.
- Interpersonal relations are essential within aviation and are enhanced when personal connection and relationships are at the forefront of learning and teamwork.
- An understanding of meteorology combined with an engagement with nature allows for more successful flight planning.
- Having a local focus and utilizing community members creates more meaningful understanding of the local aviation industry.
- Experiential, hands-on learning is essential to learning how to create flight plans, and for success in flight training.

Declaration of Aboriginal Worldviews and Perspectives: The First People's Principles of Learning are inherent in the aspects included in Explorations in aviation. The Exploration in aviation course is inseparable from connectedness and relationships; specifically:

- The power of story
- Connectedness and relationship
- Engagement with the Land, Nature, the Outdoors
- Local focus
- Community involvement
- Experiential learning
- The role of the teacher

BIG IDEAS

Aviation is the Convergence Point of Multidisciplinary Industries.

Aviation is comprised of diverse vehicles each tailored for specific purposes and environments.

Aviation connects people and places across the globe, transcending geographical boundaries and cultural barriers.

Aviation represents human ingenuity, combining cutting-edge engineering, advanced materials, and sophisticated software to bring vehicles into the sky.

Aviation industry can create a resilient safety net that not only addresses current risks but also anticipates future challenges.

Learning Standards

Curricular Competencies	Content
<p><i>Students are expected to do the following:</i></p> <p>Recall and Reproduction:</p> <ul style="list-style-type: none"> • Understand and recall basic aviation terms related to pilots, mechanics, engineers, air traffic controllers, aircraft, and manufacturers. • Identify various aircraft types and their main components. • Demonstrate an understanding about the various types of aviation vehicles and their specific purpose and environment • Describe the primary roles and responsibilities of pilots, mechanics, engineers, and air traffic controllers. • Demonstrate an understanding of meteorology and the atmosphere. • Engage in class discussions on the history of aviation and the principles of flight. • Participate in case studies and problem-solving activities related to aircraft performance. <p>Skills and Concepts:</p> <ul style="list-style-type: none"> • Explain fundamental aerodynamic principles • Understand basic maintenance procedures for aircraft, including pre-flight and post-flight inspections. 	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> • History of Canadian aviation • Aviation terminology: focusing on foundational aviation terms and concepts necessary for initial flight training and ground school. • Basic Meteorological terminology focusing on: weather, clouds, temperature, and wind • Aerospace engineering and manufacturing industries • Aviation regulatory and legal frameworks • Aviation regulations and safety • Demonstrate an awareness of the scope of the aviation industry locally, regionally, nationally, and internationally. • Demonstrate the appropriate use and management of materials, tools, and equipment. • Demonstrate basic employability skills. • Basic aerodynamic forces acting on an airplane

- Describe different classes of airspace and basic navigation principles.
 - Interpret aviation charts and maps during flight planning exercises.
 - Describe and apply appropriate health and safety practices.
 - Demonstrate an understanding of **air law**.
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- Strategic Thinking:
 - Apply knowledge to solve aviation-related problems, such as troubleshooting mechanical issues or making in-flight decisions.
 - Develop a basic flight plan considering factors like weather, air traffic, and aircraft performance.
 - Evaluate the impact of emerging technologies in aviation, such as advanced avionics or new manufacturing techniques.

Extended Thinking:

- Synthesize knowledge from various areas to design or critique an entire aviation system.
- Engage in simulations that require decision-making, problem-solving, and critical thinking in complex, real-world aviation scenarios.
- Conduct independent research on an aviation-related topic and present findings
- Demonstrate an understanding about the various aviation industries and how they support each other
- Develop a fundamental knowledge of the causes and effects of weather.
- Evaluate weather conditions and their potential impact on flight operations.
- Engage actively in reflective strategies including weekly reflections on
 - their learning and thinking processes; use learning to generate new
 - questions

- Aircraft classification by flight principle: Lift Mechanisms and Control Surfaces; **Fixed-wing** and **Rotary-wing aircraft**
- Air traffic control and airport operations

Big Ideas – Elaborations

Curricular Competencies – Elaborations

- **Air Law** – Canadian Aviation Regulations, Aeronautics Act

Content – Elaborations

- **Forces** : lift, weight, thrust, drag
- **Fixed-Wing Aircraft**: Lift is generated by fixed wings with an airfoil shape, creating a pressure difference between the upper and lower surfaces. Control surfaces like ailerons, elevators, and rudders manage the aircraft's pitch, roll, and yaw.
- **Rotary-Wing Aircraft**: Lift is generated by rotors that spin around a central mast. The pitch of the rotor blades can change to control lift and direction.
- **Weather**: The state of the atmosphere at a particular place and time.
- **Employability skills**: punctuality, communication, initiative, literacy and numeracy, ability to work in a team as well as independently, adaptability.

Recommended Instructional Components:

- Direct instruction through classroom format
- Modeling/ demonstrations
- Experiential learning
- Peer feedback

Recommended Assessment Components: Ensure alignment with the [Principles of Quality Assessment](#)

This BAA course is built on a foundation that focuses on the learning process and provides multiple opportunities for students to demonstrate their learning. It consists of both formative and summative assessment.

FORMATIVE ASSESSMENT

Students and teachers will engage in a process of gathering, interpreting and responding to evidence of learning.

STUDENTS WILL ANSWER THESE QUESTIONS ON AN ONGOING BASIS:

- What am I learning?
- Where am I in my learning?
- Is there anything hindering my learning?
- What goals have I set for my learning?
- How am I going to move forward in my learning?

THE TEACHER WILL:

- clarify Learning intentions
- generate and provide clear success criteria in student-friendly language
- frame and solicit meaningful open-ended questions that lead to deeper understanding of the learning intentions
- provide ongoing descriptive feedback
- provide opportunities for ongoing Self and Peer Assessment

SUMMATIVE ASSESSMENT

Students will complete performance-based tasks connected to curricular competencies and content.

Evaluation of these tasks will be reserved for those occasions when a snapshot of student performance/achievement is required or necessary.

The evidence gathered will be used to communicate student learning and provide evaluative feedback.

Learning Resources:

- Guest speakers from various aviation sectors
- Visits to local airports or aviation industry facilities
- Online resources and documentaries on aviation technology and careers