Program: Aviation Learning Center – Level I, II, III
Grade Level: 4 to 12
Group Size: Max. 36
Length: 2 hours
Location: The Museum of Flight

OVERVIEW

Students will learn about the science of flight and experience what it takes to be a pilot. They will perform a pre-flight safety inspection on a real airplane, create a flight plan, and fly the route in flight simulators.

BIG IDEAS

• Four forces of flight
• Navigation and map reading
• Parts of a plane
• Flight controls

OUTCOMES – What will the students know or be able to do at the end of the lesson?

• Identify the preparations a pilot must undertake before flying
• Understand the value of math and science skills in the real world

Vocabulary

• Force
• Aileron
• Elevator
• Rudder
• Nautical mile
• Knots
• Latitude
• Longitude
• Altitude

Extended Learning

In your classroom:
• Smithsonian National Air and Space Museum: learn how things fly

At the Museum:
• The Tower at Boeing Field: watch planes fly in and out of Boeing Field and listen live to air traffic controllers
Standards Supported – NGSS/CCSS/21st Century Skills

Next Generation Science Standards (NGSS)

Grade 4-5 (Level I)
- Earth's Systems: 4-ESS2-2
- Energy: 4-PS3-1
- Motion and Stability: 5-PS2-1
- Practices: 2, 3, 4, 5, 8

Grade 6-8 (Level II)
- Earth's Systems: MS-ESS2-2, MS-ESS2-6
- Energy: MS-PS3-1
- Motion & Stability: MS-PS2-2
- Practices: 2, 3, 4, 5, 7, 8

Grade 9-12 (Level III)
- Engineering Design: HS-ETS1-3
- Motion & Stability: Forces & Motion: HS-PS2-1
- Practices: 2, 3, 4, 5, 6, 7, 8

Common Core State Standards (CCSS)

Grade 4-5 (Level I)
ELA:
- Reading Foundational Skills: RF.4.1, RF.4.2, RF.4.3, RF.4.4, RF.4.4.A
- Reading: Informational Text: RI.4.1, RI.4.2, RI.4.3

Math:
- Geometry: 5.GA.2
- Measurement & Data: 4.MD.A.2
- Operations & Algebraic Thinking: 4.OA.A.1, 4.OA.A.2, 4.OA.A.3, 4.OA.B.4
- Operations in Base Ten: 4.NBT.B.4, 5.NBT.B.6

Grade 6-8 (Level II)
ELA:
- Reading: Informational Text: RI.6.6, RI.6.7, RI.7.4, RI.8.4
- Writing: W.6.4, W.7.4, W.8.4

Math:

Grade 9-12 (Level III)
ELA:
- Language: L.9-10.6, L.11-12.6
- Speaking & Listening: SL.9-10.1, SL.9-10.4, SL.11-12.1, SL.11-12.4
- Writing: W.9-10.4, W.11-12.4

Math:
- Algebra: Creating Equations: HSA.CED.A.1
- Algebra: Reasoning with Equations & Inequalities: HSA.REI.A
- Numbers & Quantity: Quantities: HSN.Q.A.1, HSN.Q.A.2
- Numbers & Quantity: Vector & Matrix Quantities: HSN.VM.A.3
- Statistics & Probability: Interpreting Categorical & Quantitative Data: HSS.ID.C.7

21st Century Skills

- Work Creatively with others: 1.A.3, 1.B.1, 1.B.2, 1.B.4
- Reason Effectively: 2.A.1
- Use Systems Thinking: 2.B.1
- Make Judgments and Decisions: 2.C.1, 2.C.3, 2.C.4, 2.C.5
- Solve Problems: 2.D.1, 2.D.2
- Collaborate with Others: 3.B.1, 3.B.2, 3.B.3
- Use and Manage Information: 4.B.2
- Apply Technology Effectively: 6.A.1
- Adapt to Change: 7.A.1, 7.A.2
- Be Flexible: 7.B.1, 7.B.2
- Manage Goals and Time: 8.A.3
- Work Independently: 8.B.1
- Work Effectively in Diverse Teams: 9.B.1, 9.B.2
- Manage Projects: 10.A.1
- Produce Results: 10.B.1, 10.B.1.E, 10.B.1.F
- Guide and Lead Others: 11.A.1

Reservations

For reservations, please call 206-768-7175 or email: outreach@museumofflight.org.
For grant assistance, please visit www.museumofflight.org/education/grant-assistance.
The Museum of Flight Boeing Academy for STEM Learning