

# CAREERS IN AVIATION THRU STEM?

THE AIRPORT IS A GOOD PLACE TO START

COMBINED WITH YOUR CLASSROOM PROGRAM IN SCIENCE, TECHNOLOGY, ENGINEERING, & MATH

## GET THE GEARS TURNING

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ANOKA COUNTY-BLAINE AIRPORT

BLAINE AIRPORT PROMOTION GROUP

TOURS AVAILABLE K-12



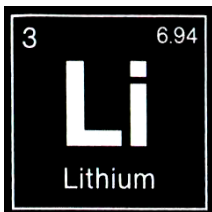
## TECHNOLOGY

IS THE BUILDING BLOCK THAT SCIENCE, ENGINEERING, AND MATH IS LINKED TO. "THESE FIELDS ARE MADE COMPLETE BY THE TECHNOLOGY COMPONENTS THAT PROVIDE A CREATIVE AND INNOVATIVE WAY TO PROBLEM SOLVE AND APPLY WHAT HAS BEEN LEARNED."

Quote by K-12 Education Expert, Dr. Patricia Fioriollo



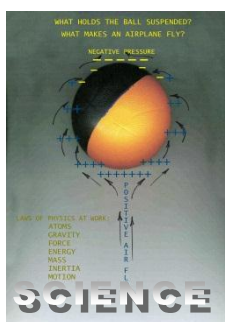
Fabrication of a form of metal takes many steps. Through *Science*, a metal alloy is developed that will be suitable to withstand the environment that the finished product will experience. *Engineering* is the discipline, art, skill and profession of acquiring and applying scientific, mathematical, economic, social, and practical knowledge in order to design and build the structure. *Mathematics* is a precise, rigorous principle or method of proving the integrity of the structure. *Technology* is the body of knowledge to extract, gather, and practice skills to achieve the desired results.



Development of a product sometimes takes a while. A discovery of *Petalite* ore was made in 1800. John August Arfwedson is credited with the discovery of *Lithium* in 1817 while analyzing petalite ore. The pure element of lithium was not isolated until 1821 showing it to be the lightest metal and the least dense solid element. Quantities of lithium were produced in 1855 through the electrolysis of lithium chloride. The discovery of this procedure led to commercial production of lithium, beginning in 1923.



The first major application of lithium became high temperature grease for aircraft engines and other similar uses during World War II. The United States became the primary producer of lithium in a period between the 1950's and 1980's. By 2000 lithium demand increased due to development of lithium powered equipment and several industries were launched as a result to meet the demands for new innovations world wide. Usage of lithium in the United States production of aluminum is 6%, batteries 23%, ceramics and glass 31%,



Lubricating grease 9%, air treatment 6%, continuous casting 4%, rubber and thermoplastics 4%, Pharmaceuticals 2%, and other products make up 15%. How many products can be counted that have origins to discoveries of this lightest of all metals known to man? Optics, medicine, air purification, and mobile phones to name a few as new technologies are constantly being announced.