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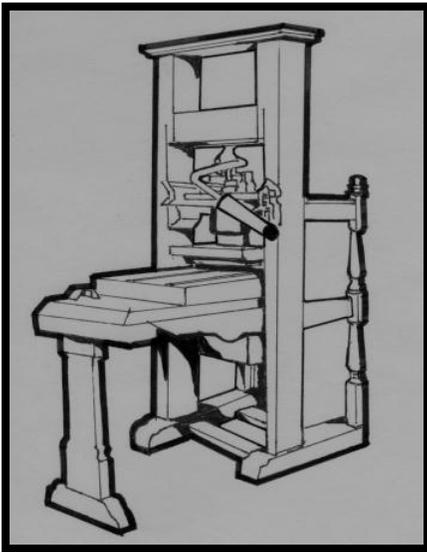
BLAINE AIRPORT PROMOTION GROUP

TOURS AVAILBLE K-12

HOW DISCOVERIES IN ART HAS LEAD TO INOVATION

BLACK, the color of space and fashion. The black color has been used in art compositions found in caves that

were created using charcoal, and vivid black pigments created by using burned bones of animals. Later the black-pigment was incorporated into designs on pottery. Black was the most important color by ancient artists, and craftsmen. Social hierarchy was greatly influenced by what was worn and black symbolized both power and secrecy. Obtaining quality black pigments became the essential element during the 15th century (1401-1500) because of an invention designed by Johannes Gutenberg in 1440. Gutenberg developed a printing system by using existing technologies and making inventions of his own. Before Gutenberg's invention would eventually introduce the era of mass communication that permanently altered the structure of society, a new black ink had to be formulated. Early formulas of ink that worked with pen or quill is absorbed into the paper and is not stable to hold its shape and will become smeared. Over the centuries inks required using a vast range of pigment and color and have been formulated for a variety of applications. The ink produced for the Gutenberg invention required a formula using soot, turpentine, and walnut oil. Ink is a very complex compound of elements including solvents, pigments, resins, and a number of colorants, and other additives that control flow and thickness of the ink and its appearance when the ink is dry.



The search for black pigments used in the arts, industrial applications, and in aerospace, continue to change the way we communicate with all forms of wireless tools that we use every day.

In physics, a black object is a perfect absorber of light. By thermodynamic rule, black surfaces can act as thermal collectors, absorbing light and generating heat. Designers of early aircraft engines used black that both absorb and then deflect heat from the cylinders of the engine as a primary coolant for the engine.



On January 16, 2008, researchers at Rensselaer Polytechnic Institute, Troy NY, announced the creation of the darkest material on the planet. This dark material was created by the structured arrangement of extremely thin cylinders of carbon atoms called nanotubes. It was reported that the material absorbs light but reflect very little light in comparison to the current standards for blackness. Nanotubes are extremely strong materials and have good thermal conductivity. The implications are for greater miniaturization of electronic devices, medical, and aerospace technology.

carbon nanotube

*can act as a metal
or semiconductor;
changing the way
we communicate
and develop
technology*

