



DIY Science

Heart Pump

Cut off the neck of a balloon and set it aside. Fill a small jar halfway with water and stretch the balloon across the top. Poke two small holes in the stretched balloon and insert a straw down through each into the water.

Now make a *one-way valve*: Slide the balloon neck over the top of one of the straws and tape it in place so



DIY Technology

Electromagnet

A nail is made of millions of tiny magnets all pointing in different directions. Because they are pointing in different directions, the nail is not magnetic. But you can turn a nail into a magnet. Tightly wrap 24" of insulated copper wire around a large nail, leaving about 4" of each end free. Press these wire ends to the poles of a D battery. The



GREAT IDEAS in Engineering

Printing Press

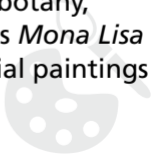
Before 1440, books had to be copied by hand, making them scarce and leaving most people without access to learning and information. Johannes Gutenberg invented a method of using ink and small letter blocks to press words onto paper. His invention, the printing press, led to literacy and revolution.



GREAT MINDS in Art

Leonardo da Vinci (1452-1519)

If there is any one person who represents all five fields of STEAM, it's Leonardo da Vinci. His curiosity and imagination led him to discoveries in human anatomy, flight, botany, mathematics, and more. His *Mona Lisa* is one of the most influential paintings ever produced.





GREAT WORDS in Math

“The beauty of mathematics only shows itself to more patient followers.”

—**Maryam Mirzakhani**, professor of mathematics at Stanford University and first female recipient of the highest prize in mathematics, the Fields Medal

