

LEONARDO

da VINCI • SCIENTIST

INVENTOR • ARTIST

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LEONARDO

The Original  
RENAISSANCE

Man

1452-1519



# Early Years



- ❖ Born in 1452 in the town of Vinci in Italy.
- ❖ By the age of 8, he and his family moved to Florence, Italy where he got the best education possible.

- ❖ At 14 years old, he was an apprentice for Verrocchio, the famous Italian sculptor and painter.
- ❖ Leonardo used what he learned from his studies of nature to make his paintings look realistic.



*The Annunciation, 1475-1480, Uffizi Florence*



# Leonardo Da Vinci- Early Years

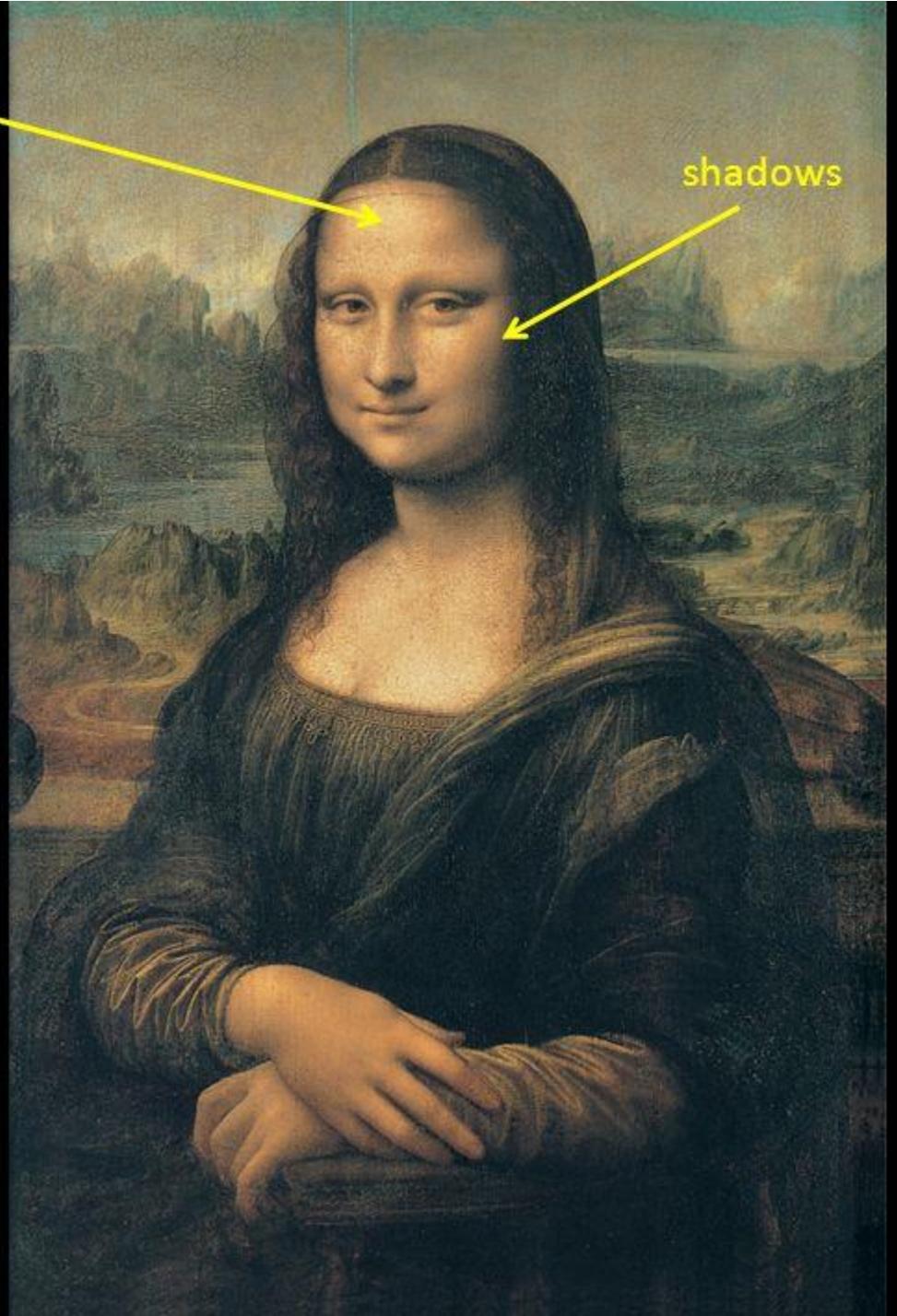
- ❖ By 20 years old, Leonardo helped Verrocchio, his teacher, finish this painting by creating the Angel.
- ❖ Leonardo's angel was thought to be the most realistic and best part of painting by many in Florence.
- ❖ After this painting, Leonardo was seen as a gifted artist and gained his own commissions for paintings.



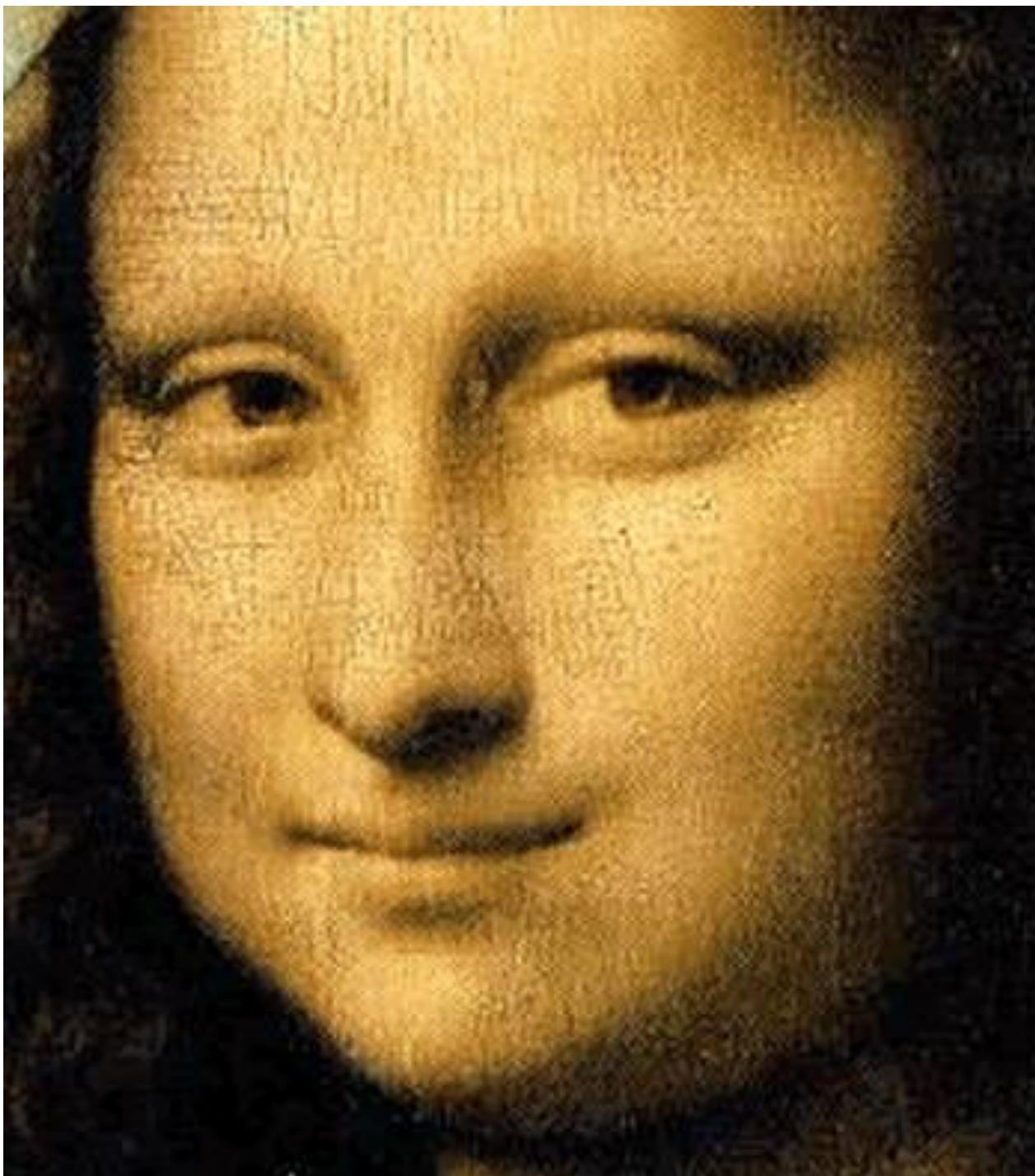
highlights

shadows

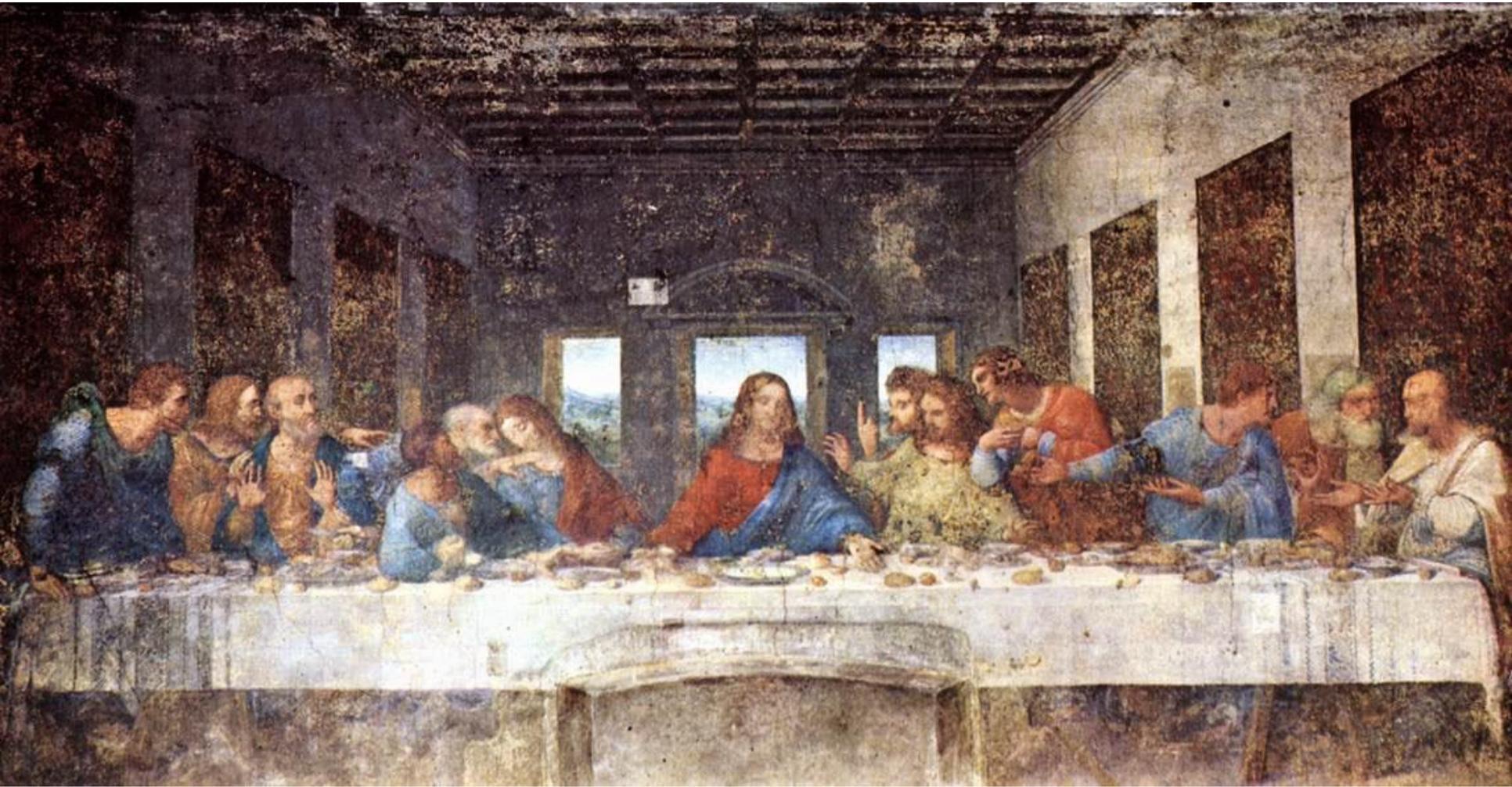
- Use of chiaroscuro
- Leonardo invented a technique called *sfumato*, a hazy or misty glaze over the painting



Leonardo da Vinci, *Mona Lisa*, 1503. Oil on wood, 30 $\frac{3}{8}$ " x 20 $\frac{7}{8}$ ". Musée du Louvre, Paris, France



Chairoscuro- Using light and dark shading to emphasize or de-emphasize parts of the painting. Also adds depth.



# A & E'S BIOGRAPHY: 100 MOST INFLUENTIAL PEOPLE OF THE MILLENNIUM

- 1 Johann Gutenberg (mass media--movable type for printing)
- 2 Isaac Newton (gravity)
- 3 Martin Luther (Protestant Reformation)
- 4 Charles Darwin (evolutionist writer)
- 5 William Shakespeare (Renaissance playwright)
- 6 Christopher Columbus (explorer)
- 7 Karl Marx (19th c. political writer)
- 8 Albert Einstein (physicist)
- 9 Nicolaus Copernicus (astronomy)
- 10 Galileo Galilei (astronomy)
- 11 Leonardo da Vinci (for science)

# Leonardo Da Vinci-Technology & Engineer

- ❖ Leonardo was one of the most creative genius! Look at all of his inventions he created using simple machines and because of his amazing drawings and scientific recordings in journals, we can see how advanced he was! Let's try to match Leonardo's invention to sketch (guess 1<sup>st</sup>, then "right arrow" for answer)



*Inclined plane*

WATER LIFT

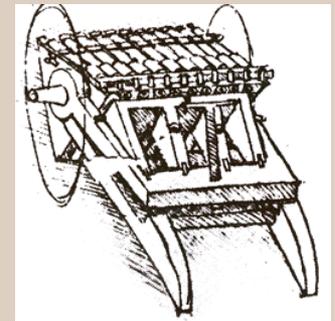
LANDING GEAR

MACHINE GUN

THREAD CUTTER

CROSSBOW

CATAPULT

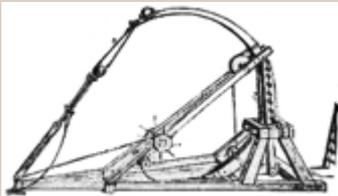


*Screw*

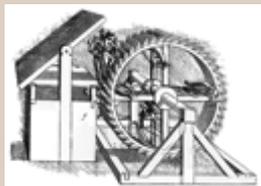
*Inclined plane*



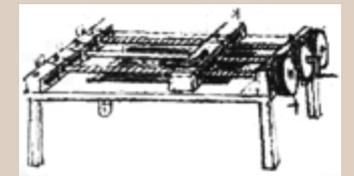
*Wedge*



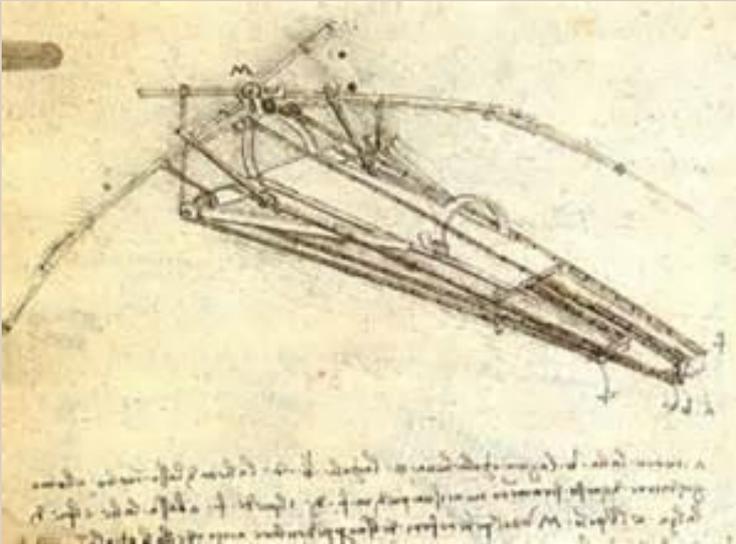
*Pulley & Lever*



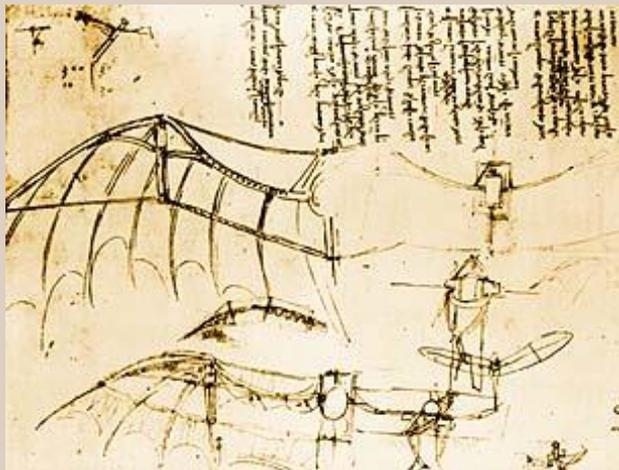
*Wheel & Axel*



# Leonardo Da Vinci-Inventions of the Future

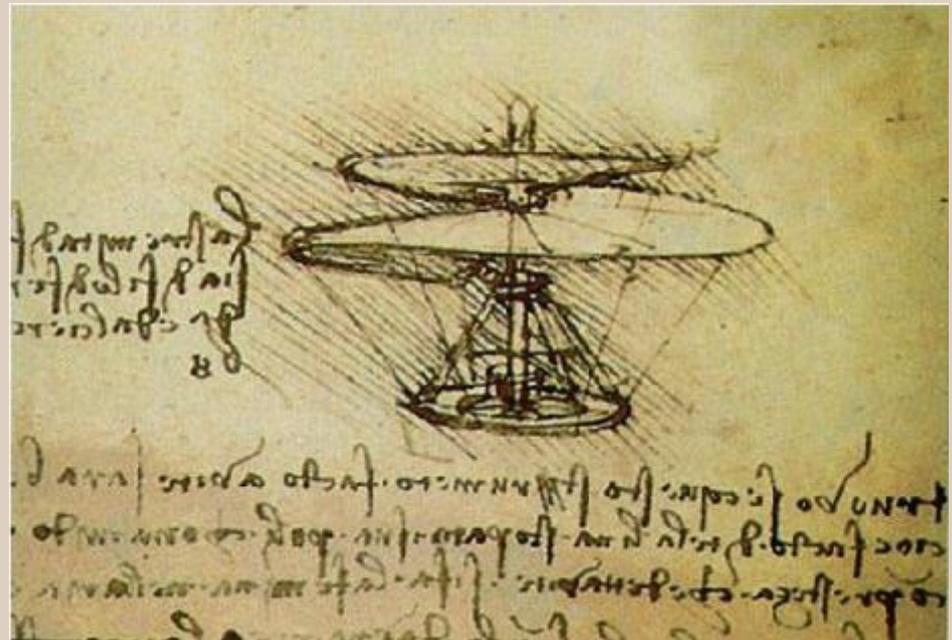


***Central Framework for Human Powered Omithoper – ca. 1485***



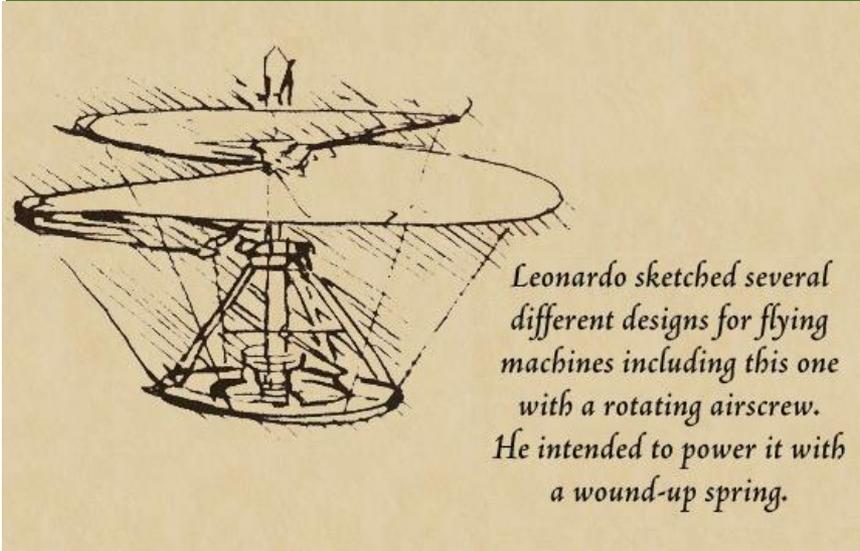
***DaVnci's Mechanical Wing Device-ca. 1485***

- ❖ Leonardo was particularly interested in flight and studied birds and their wing pattern. He drew wing structures over and over to develop his own mechanics for flying machines.
- ❖ Unfortunately, only few of his inventions come to fruition in his time.

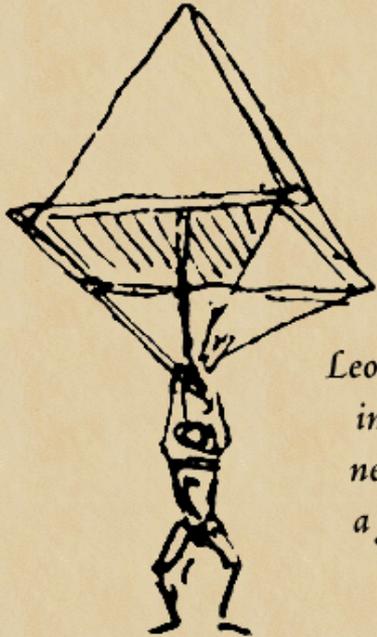


***Helicopter designs– ca. 1485***

# Leonardo's Helicopter



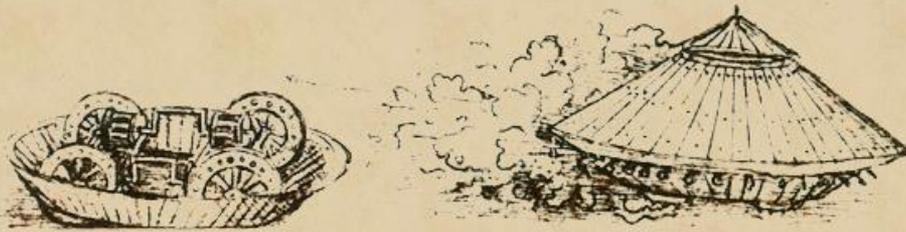
# “Leo-chute”



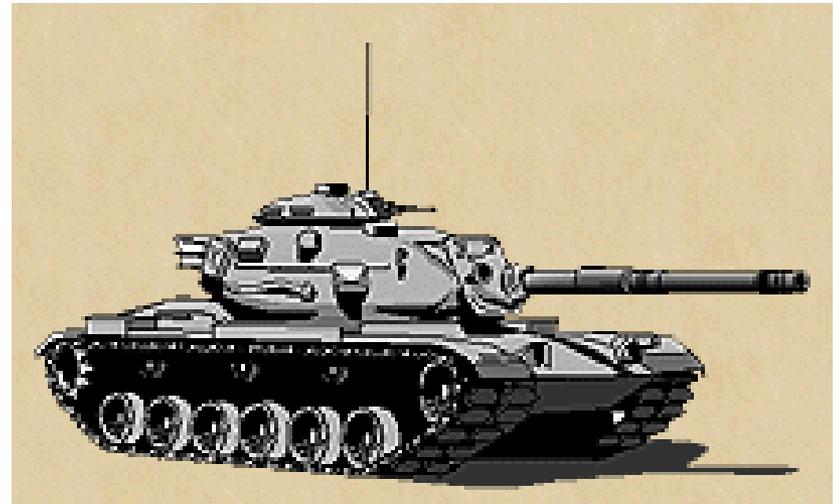
*Leonardo sketched this design for a parachute in 1485. He suggested what size would be needed to allow a person to fall safely from a great height. No one knows whether he ever tested a full scale model.*



# The First Tank



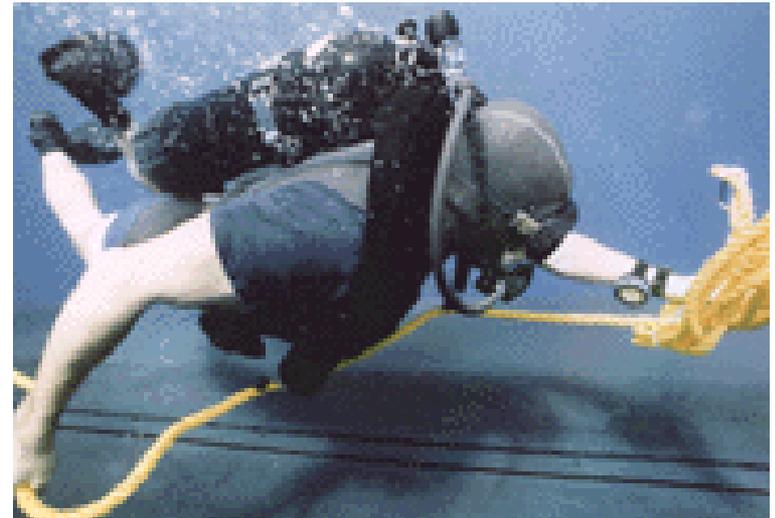
*Leonardo's many military inventions included this design for an armored vehicle. Four soldiers sitting inside could turn cranks to move the wheels on this "tank."*



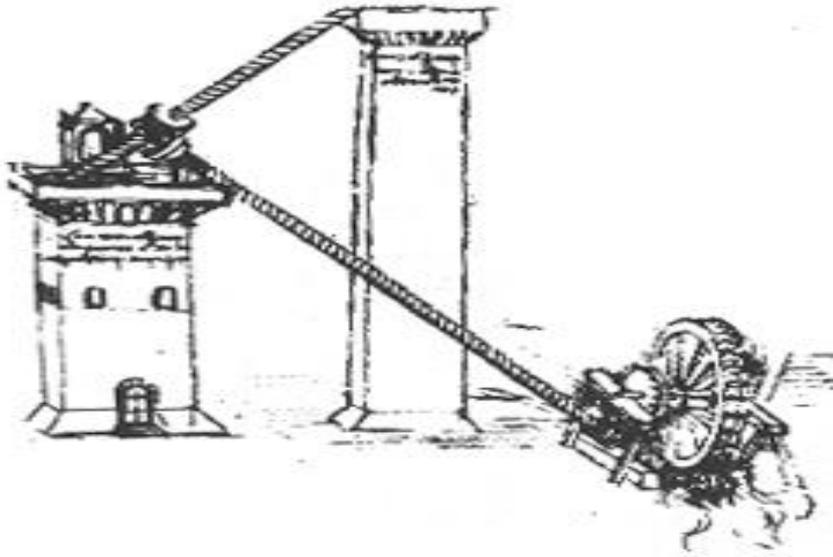
# Diving During the Renaissance?



*Leonardo sketched designs for several different diving suits. Most required a diver to breathe air from the surface through long hoses. In this design, he imagined a crush proof air chamber attached to the diver's chest to allow the diver to swim freely without connection to the surface.*



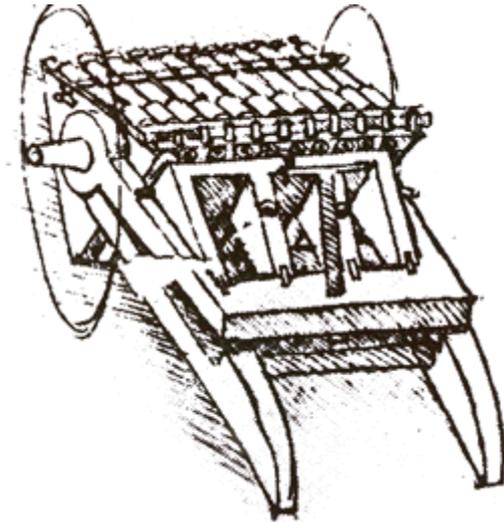
# The Water Lift



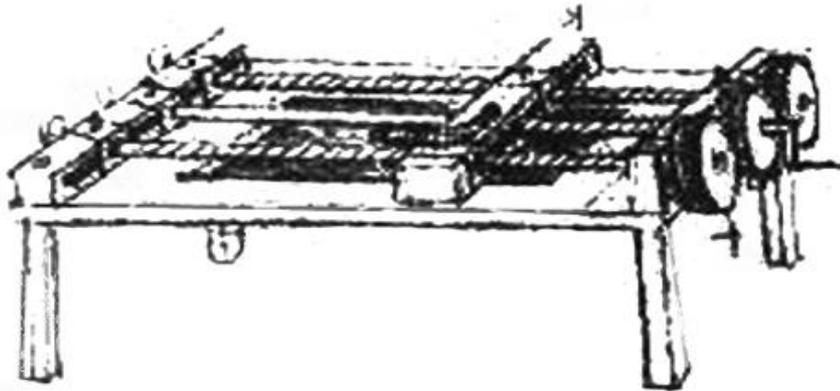
- This invention consists of a water wheel, two screws and two towers
- As the water wheel turns, the screws turn, pushing the water up to the highest tower
- The tall tower acts as a reservoir for gravity fed water pipes

# The Machine Gun

- This machine actually consisted of three sets of machine guns, set on a rotating drum
- When the first set is fired, the force of the explosion would pivot the guns down, bringing the next set of guns to the top, ready to be fired.



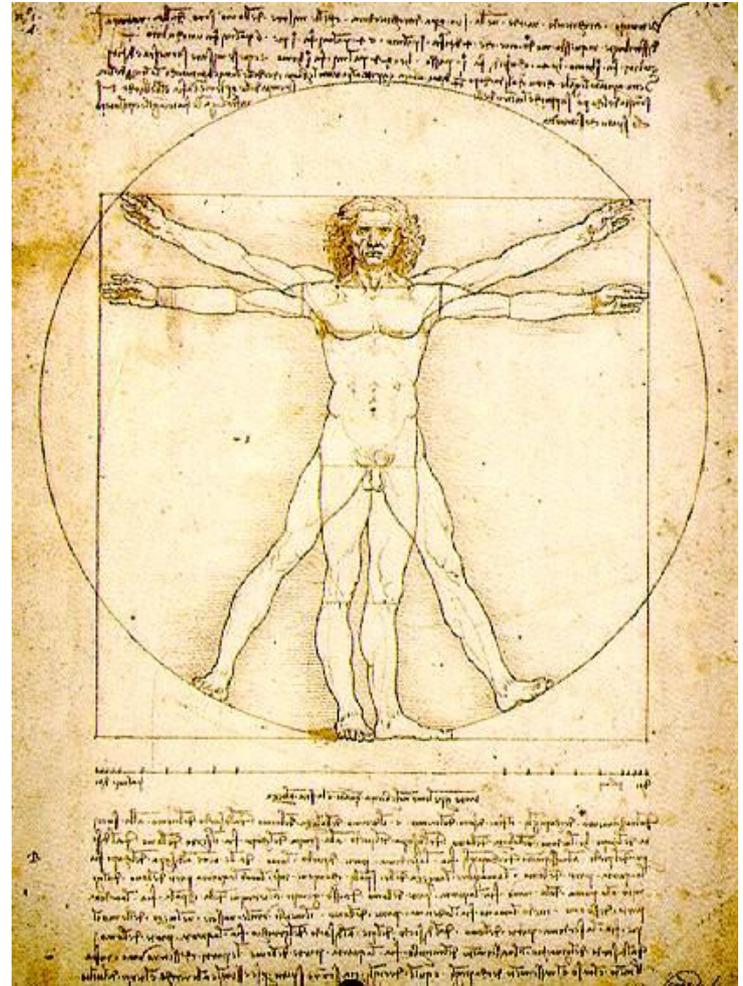
# The Thread Cutter

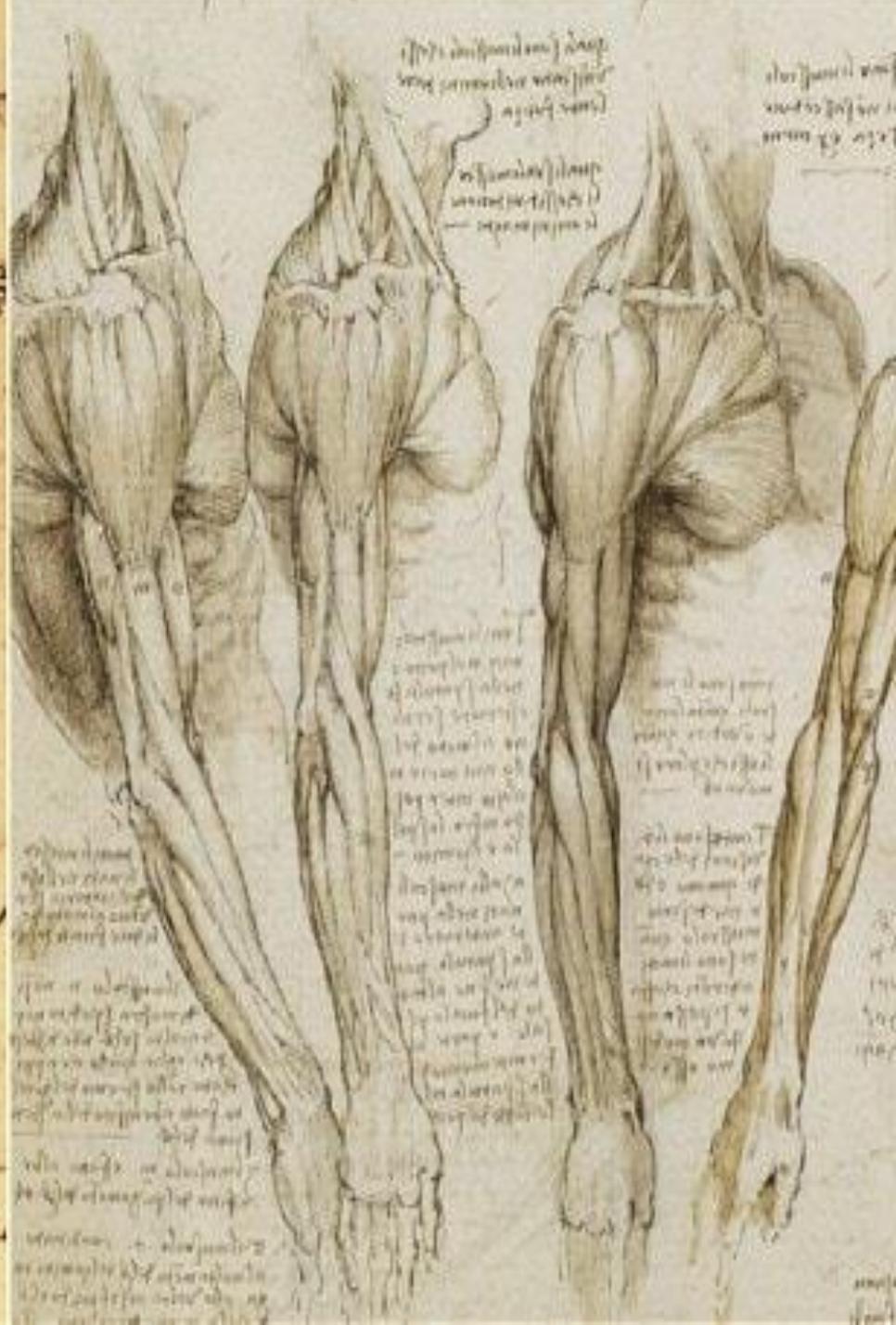
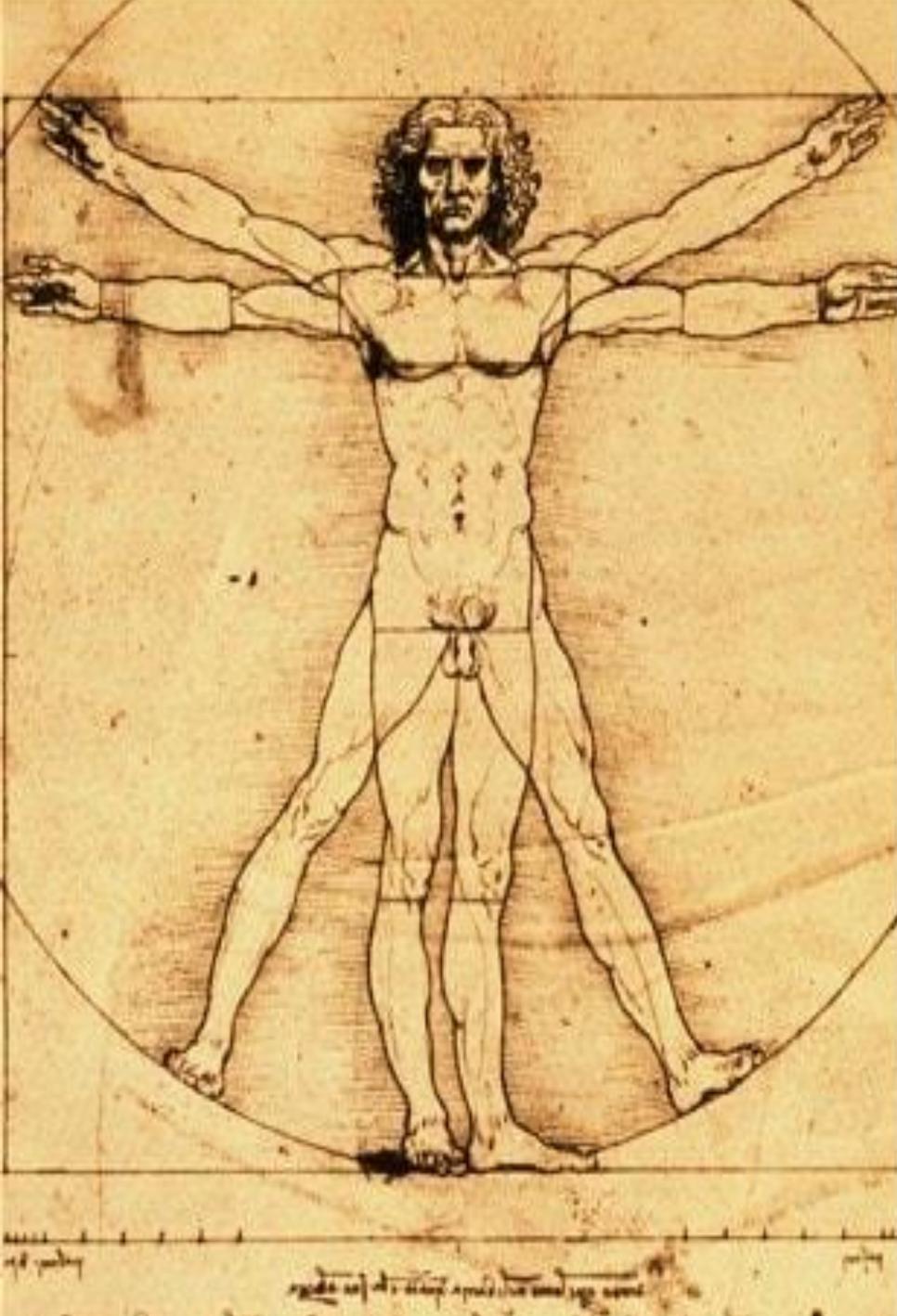


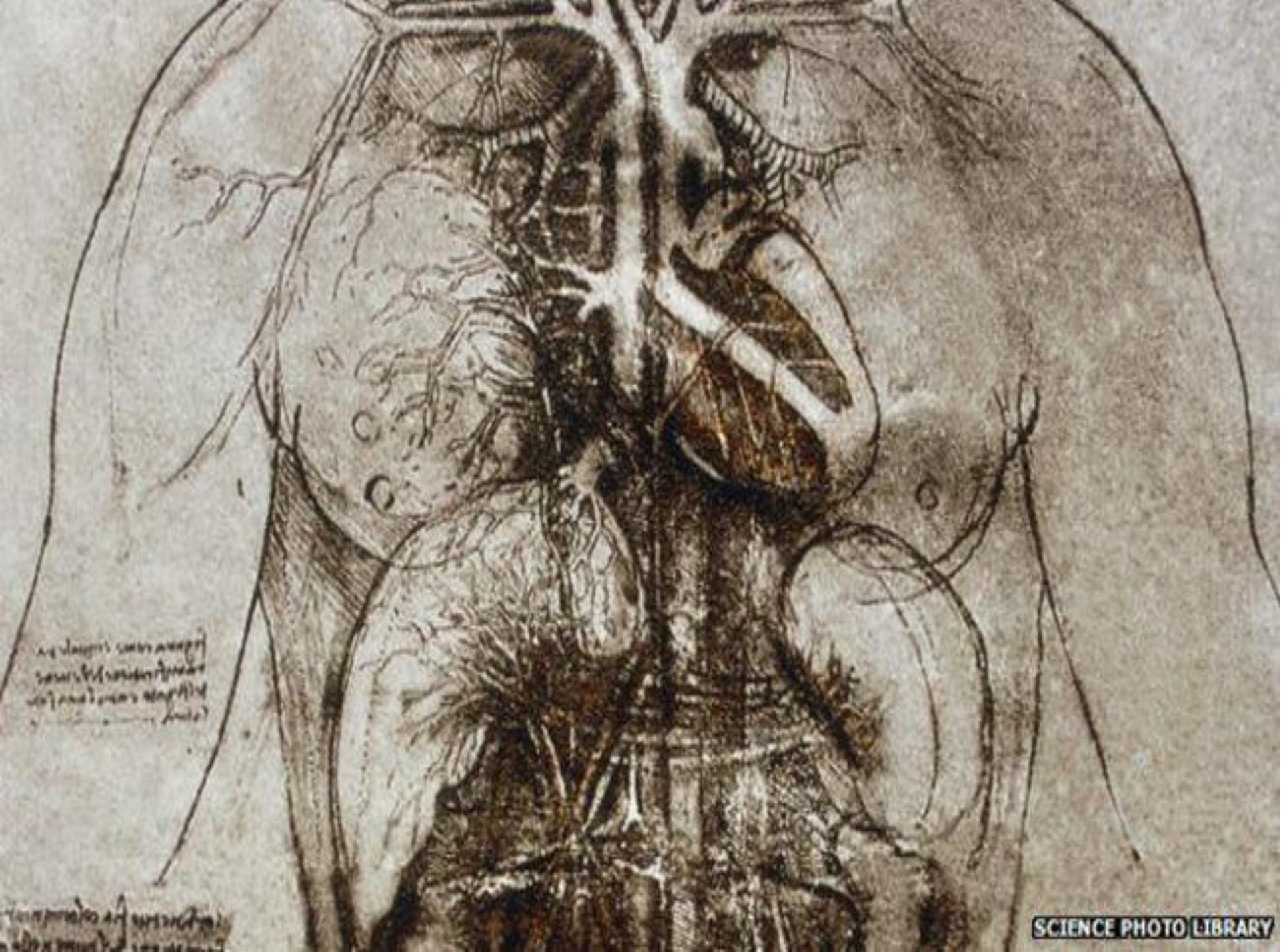
- This machine cuts the threads of screws
- A bar, the one to have the thread cut into it, would be laid in between the two screws.
- As the cranks on the end of the table were turned, the cutting blade would be carried down the two screws, creating an even groove to be used for screws, bolts, etc.

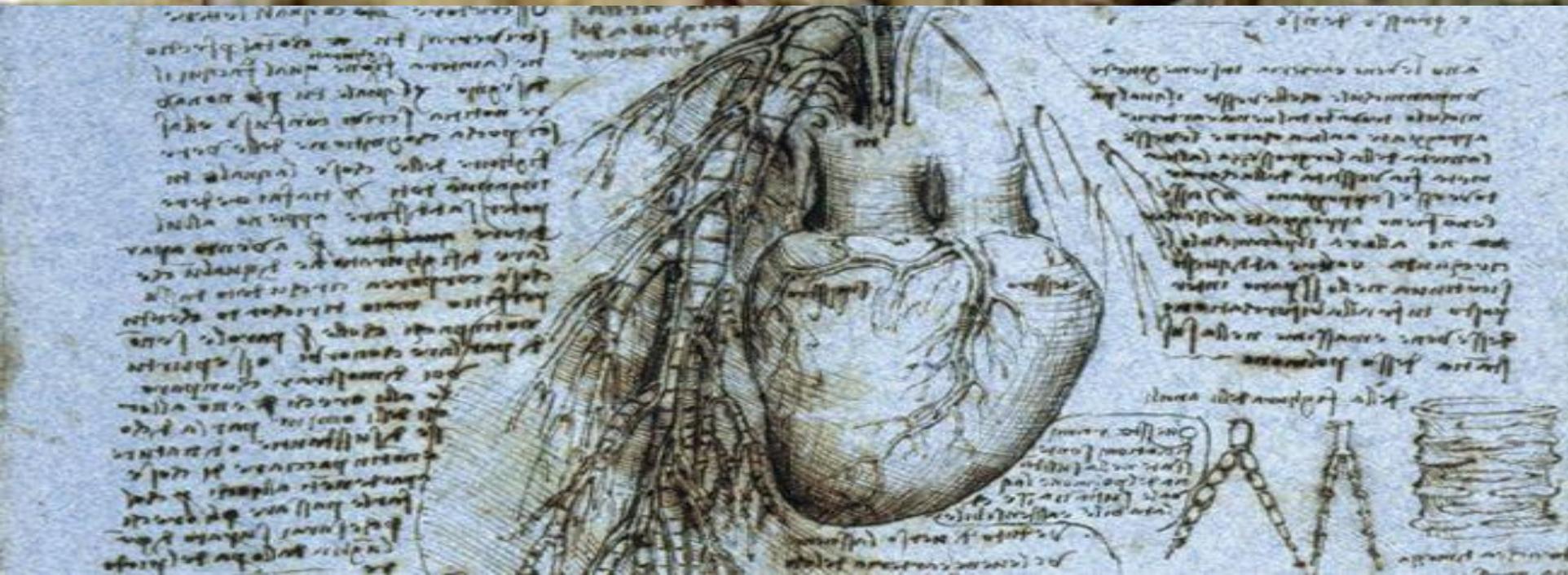
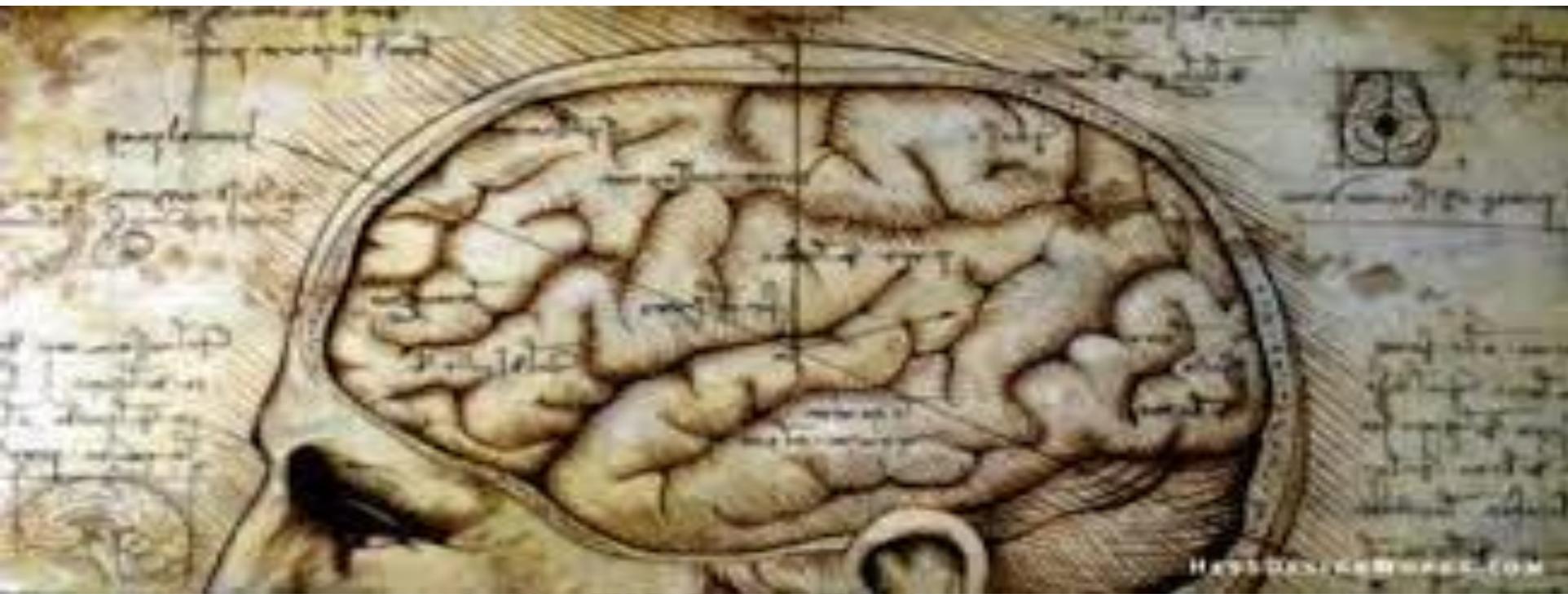
# *An Artistic and Scientific Search for the True Picture of Man and his Universe*

- *"Leonardo da Vinci was like a man who awoke too early in the darkness, while the others were all still asleep"*  
*-Sigmund Freud*









# Significance

- Original Renaissance Man
- Artistic Advances
  - Chairosкуро
  - Sfumato
  - Perspective
- Drawings in Notebooks
  - Inventions
  - Anatomical Advances

