

# SCIENTIFIC REVOLUTION

**Scientific Revolution was nothing less than a revolution in the way the people thought about the world**

**Science surrounds and effects every part of our daily lives, so much we take it for granted**

**Science is a mixed blessing -- with much that is good comes much that is clearly bad**

**Science has given us nylon, fluoride, latex paint, 747s, faster microchips and PEZ**

**BUT science has also given us fluorocarbons, heroin, nuclear waste, dioxin, sarin gas and the atomic bomb!!!**

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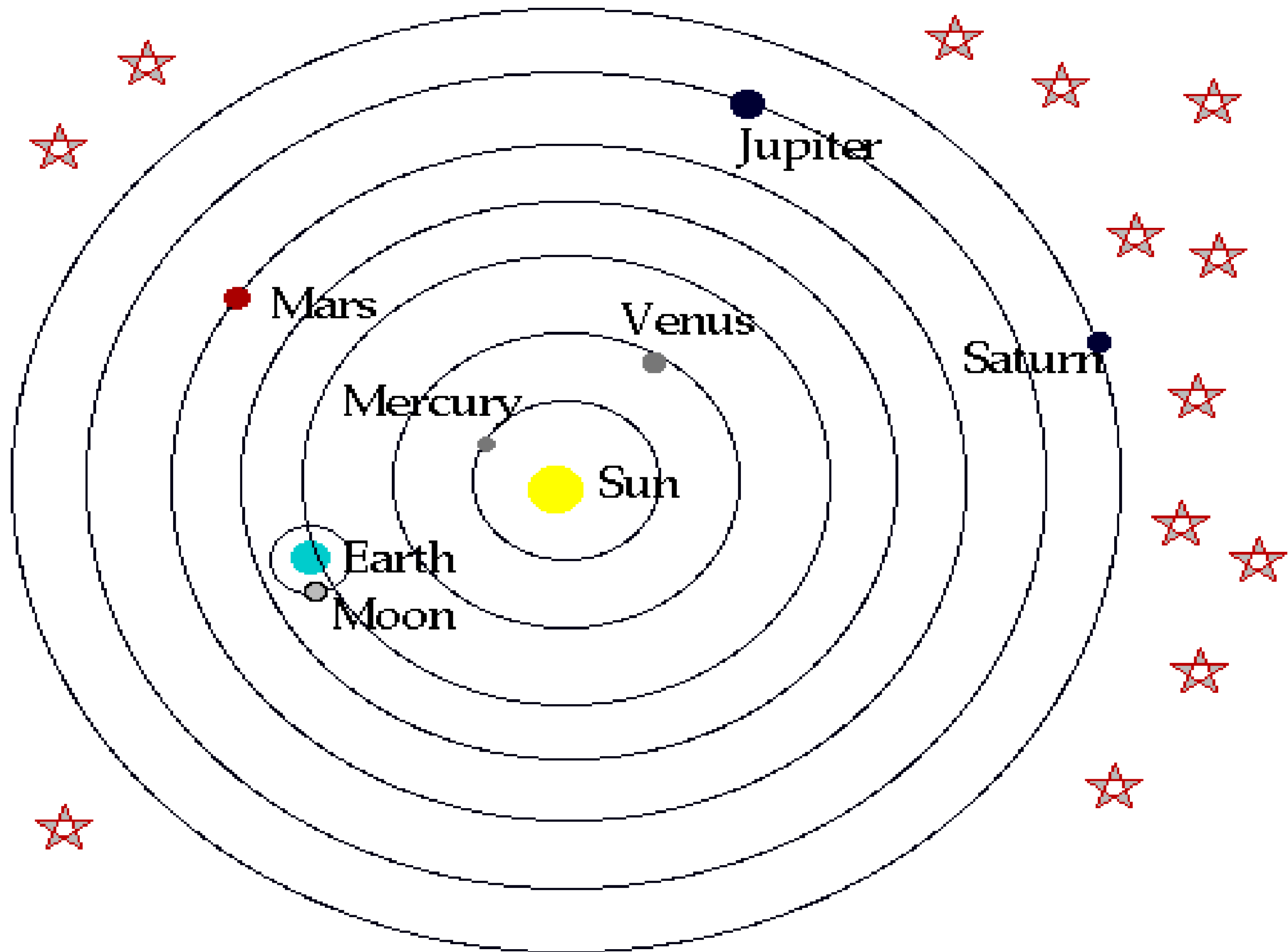
## REASONS FOR SCIENTIFIC REVOLUTION

- **Renaissance**
- **Rise of UNIVERSITIES**
- **Literacy**
- **Curiosity/Questioning**
- **Investigation**
- **Discovery**
- **Experiments/Math**
- **No longer accept things because of the CHURCH or TRADITION**

# SCIENTIFIC REVOLUTION

## COPERNICUS

- ✓ **Beginning of Scientific Revolution**
- ✓ **Renaissance Man**
- ✓ **“On the Revolutions of the Heavenly Spheres”**
  - ❖ **HELIOCENTRIC THEORY**
    - ❖ **But could not prove it**
- ✓ **Ptolemy and later ARISTOTLE**
  - ❖ **GEO-CENTRIC THEORY**
  - ❖ **Catholic Church SUPPORTED**



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## GERARDUS MERCATOR

- ❑ 1<sup>st</sup> to use longitude/latitude
- ❑ Mercator Projection

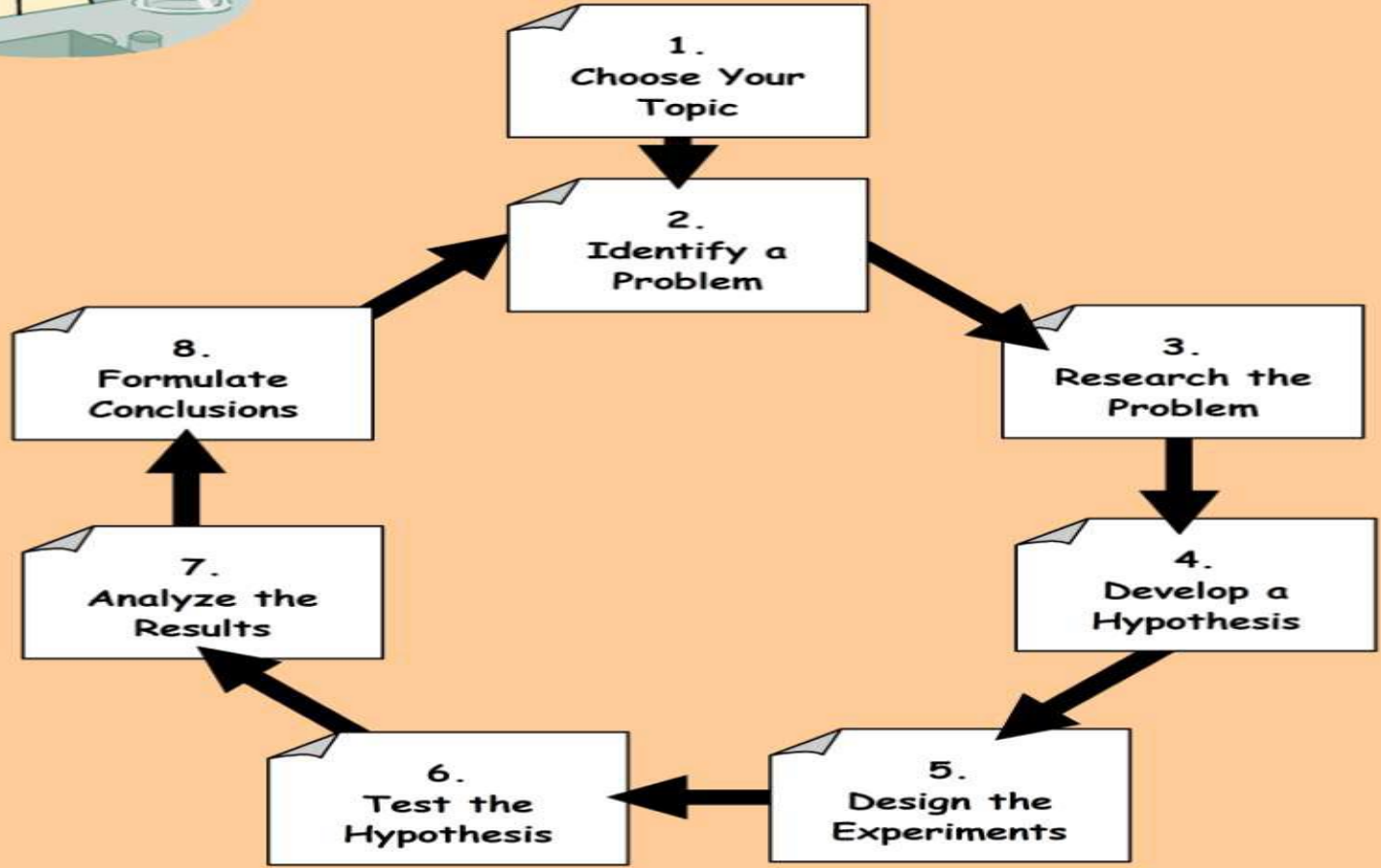
## ANDREAS VESALIUS

➤ **ANATOMY**

## FRANCIS BACON

○ **SCIENTIFIC METHOD**

# The Scientific Project Flow Chart



# SCIENTIFIC REVOLUTION

## JOHANNES KEPLER

😊 Provided support to Copernicus through Math, models, observation

## GALILEO 📢

### ☀️ TELESCOPE

- enemy ships
- used to prove Copernicus and Heliocentric Theory correct
- Church did not agree

# SCIENTIFIC REVOLUTION

1632 Galileo wrote “**Dialogue**”

- ❑ imaginary conversation between 3 characters
  - Character 1 supported Galileo's side of the argument
  - Character 2 was open to both sides of the argument
  - Character 3 (**Simplicio**) gave **Pope Urban VIII's** arguments against Galileo and for “geo-centrism”

Pope Urban VIII ordered Galileo to stand trial for  
“**HERESY**”

Church felt Galileo's scientific discoveries contradicted the Catholic **interpretation** of Christian scripture

- ❑ human observation and reasoning that differs from the Church **MUST** be wrong



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## GALILEO cont.

Galileo pointed out that he was not denying God's perfection or role as a creator

❑ **HE WAS NOT SAYING GOD WAS WRONG**, but the interpretation by the Church was wrong

Church held that knowledge was revealed in Scripture and that the Clergy were the only ones allowed to interpret Scripture

❑ So... **SHUT UP AND I WILL TELL YOU WHAT I WANT YOU TO KNOW**

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## GALILEO cont.

**CHURCH FEARED THAT IF ITS TEACHINGS/BELIEFS WERE CALLED INTO QUESTION, THEN ALL OF ITS TEACHINGS COULD BE QUESTIONED**

- Galileo, now 68, avoided torture by recanting and accepting house arrest
- after recanting Galileo whispered, “**and yet it moves**”

10/31/1992 **Pope John Paul II** apologized and cleared Galileo of any wrongdoing

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## RENE DESCARTES

Argued that at the very essence of a human being was the ability to think or reason

– **“I THINK THEREFORE I AM”**

– **BUT** had to prove without offending the Church

– He argued that the Church could not deny reason because it had been given to us by God

- only by reason can we have an idea of God, understand scripture, worship, etc...
- "all our ideas or notions ought to have some foundation of truth, for it would not be possible that God, who is all-perfect and all-truthful, would have put them in us without that"

**“FATHER OF MODERN PHILOSOPHY”**

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## WILLIAM HARVEY

- Circulation of blood / pumping of heart

## ROBERT BOYLE

- Matter is composed of tiny particles
- One substance could be transferred to another substance
- **“FATHER OF MODERN CHEMISTRY**

## ANTONIO VAN LEEUWENHOEK

- 1<sup>st</sup> to see cells/microrganisms
- bacteria

## SIR ISSAC NEWTON

- **LAWS OF GRAVITY**
- By math, showed universe worked by God's laws