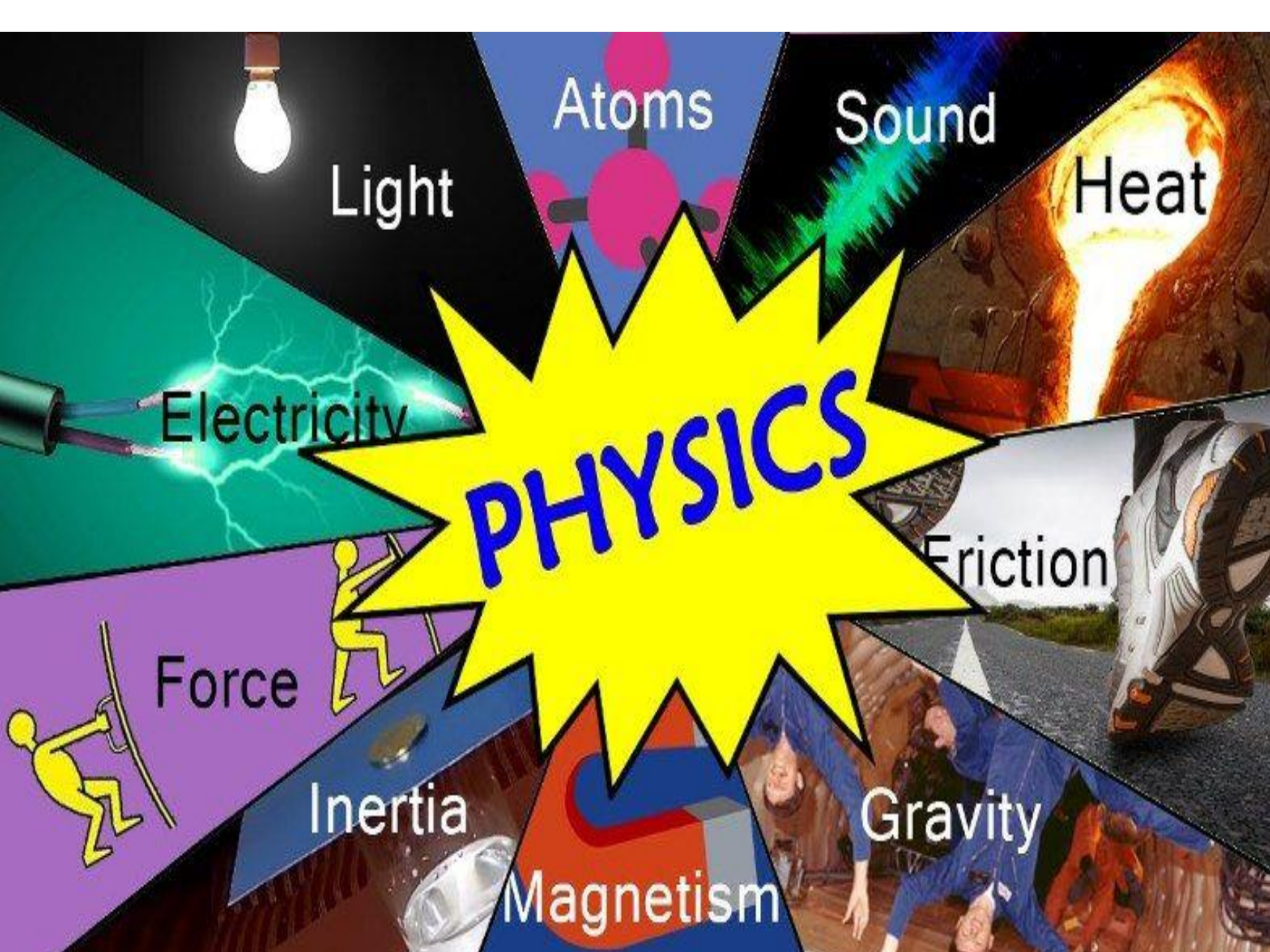


Why Do We Study Physics?



The Importance of Physics in Our Daily Lives



Light

Atoms

Sound

Heat

Electricity

PHYSICS

Friction

Force

Inertia

Gravity

Magnetism



What is physics?

- Physics is the study of the physical world, that is, the world of matter and energy.
- Physics is everywhere; any problem that deals with temperature, size, motion, position, shape, or color involves physics.



What is Physics?

- Physics is a natural science that studies the behavior and structure of matter and energy.
- Physics is a natural science based on experiments, measurements, and mathematical analysis.
- Physics is a creative process that encourages the mind to curiously investigate the world.



What is Physics? Continued

- Physics is everywhere, in fact most people know more about it than they think they do
 - When you buy ice cream you know that you need to put it in the freezer. Why? Because it would melt otherwise.
- Any problem that deals with temperature, size, motion, position, shape, or color involves physics.
- We have remarkably found that these laws can be expressed in terms of mathematical equations.

Why do you learn physics?

- Why does the sky look blue in a sunny day and white in a cloudy day?
- What makes milk white and rainbow colorful?
- How does an airplane fly? What lifts it?
- How does a screwdriver work?
- How does the speed detector on the 19th Ave detect your driving speed instantaneously without contacting?

Physics is everywhere in our daily life.

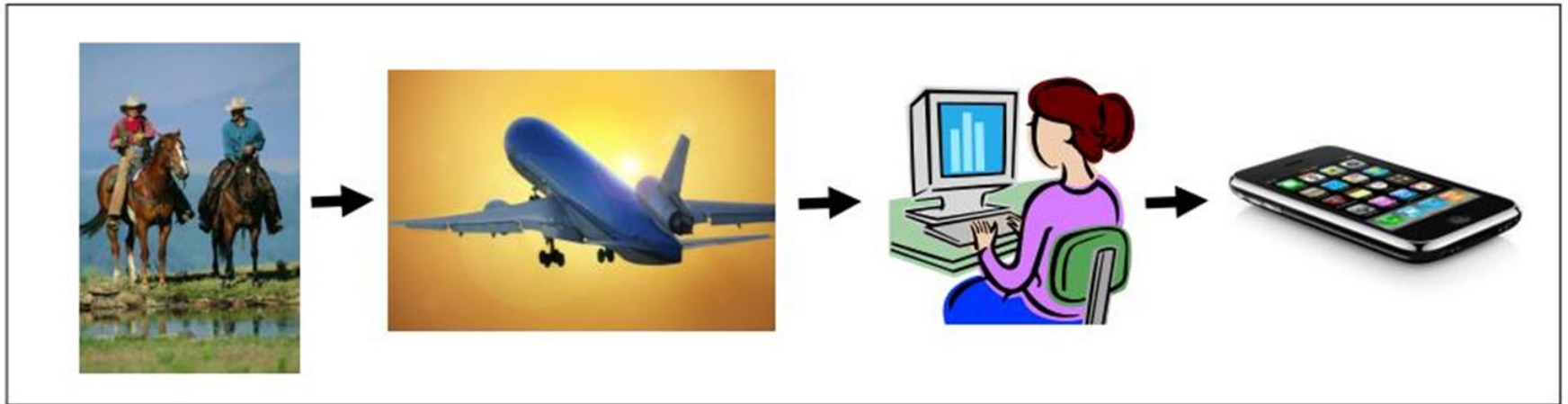
Physics is Everywhere

- Designers need to understand the science of motion and its causes to design a fuel efficient shape.
- Designer needs knowledge of physics of fluids (air flow)



Physics is EVERYWHERE in everyday life

- We live in an increasingly technological society
- Example: Sending a message over the last century



- Today, EVERYONE needs a basic grasp of science for a successful society

Physics in everyday life



Motion

Mercury is the closest planet to the Sun



Force

Venus has a beautiful name, but it's terribly hot



Electricity

Despite being red, Mars is a cold place



Matter

Jupiter is the biggest planet in our Solar System



Magnetism

Saturn is the ringed one and a gas giant

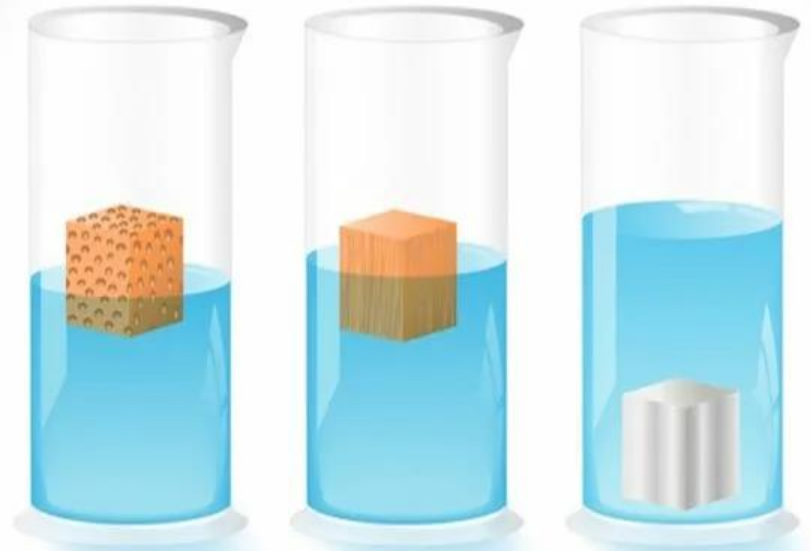


Light

Saturn is the farthest planet from the Sun

DENSITY

Density is a central concept in chemistry and physical science.



WHAT IS DENSITY?

Density has to do with how close the atoms are inside the object.

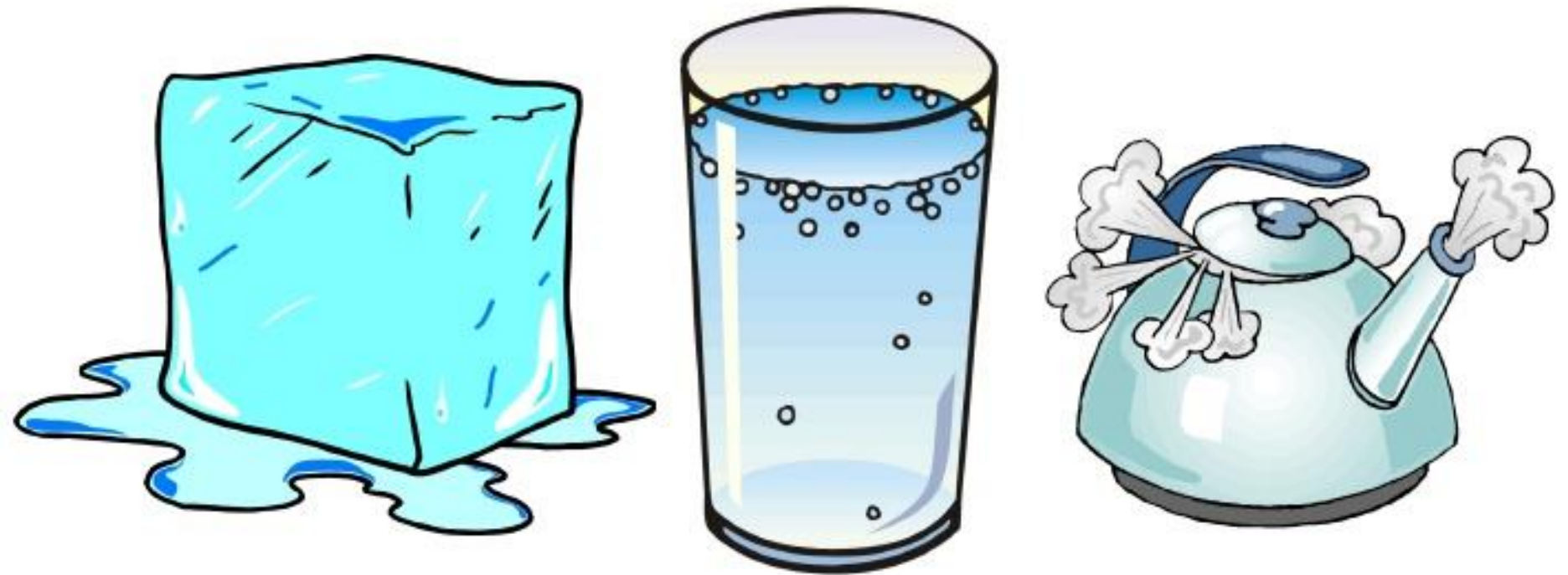
Low density materials feel lighter and high density materials feel heavier.



Density



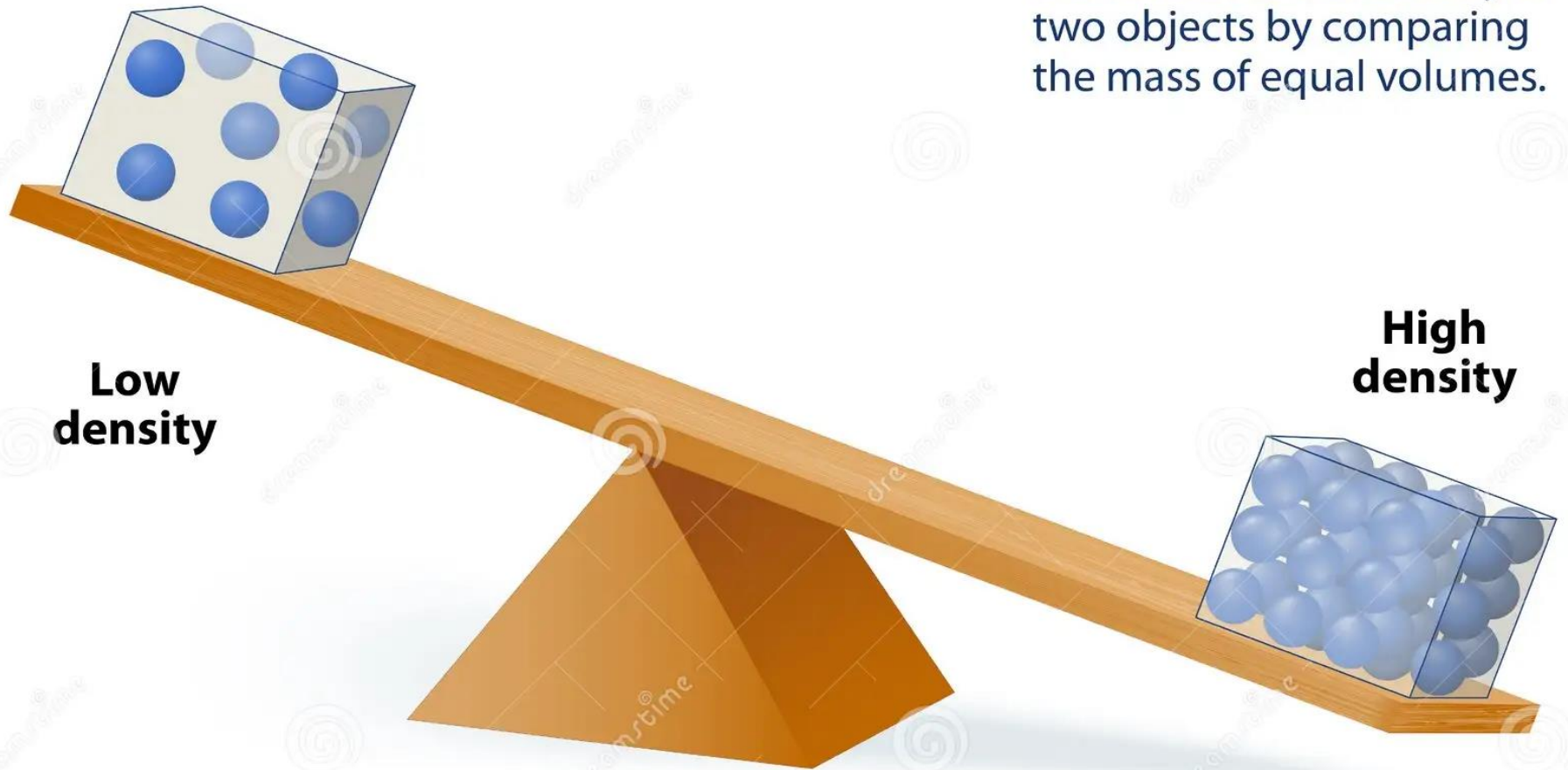
states of matter



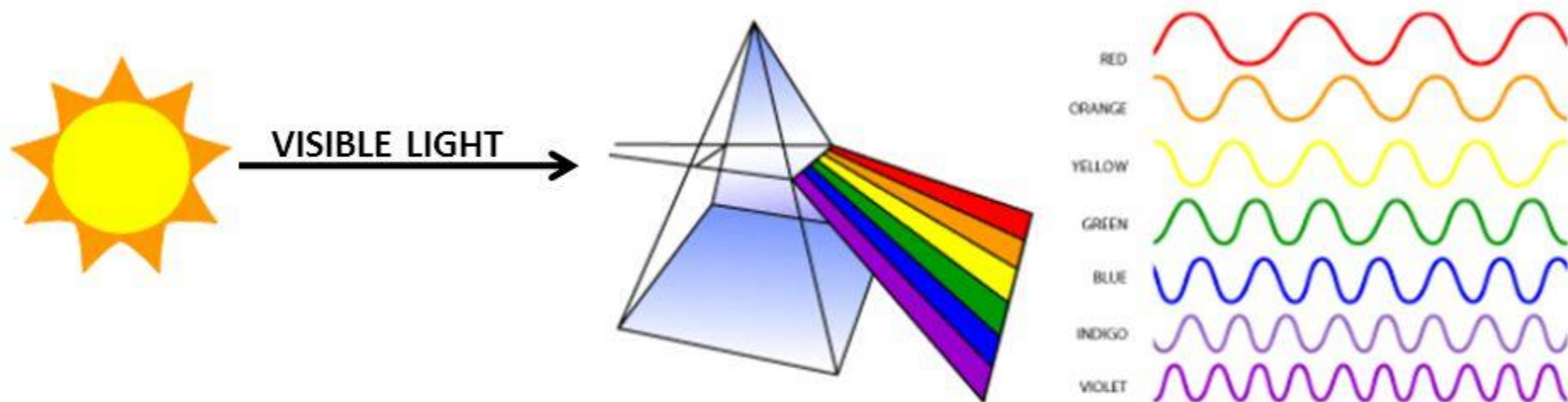
There are three states of matter - solid, liquid and gas.

DENSITY

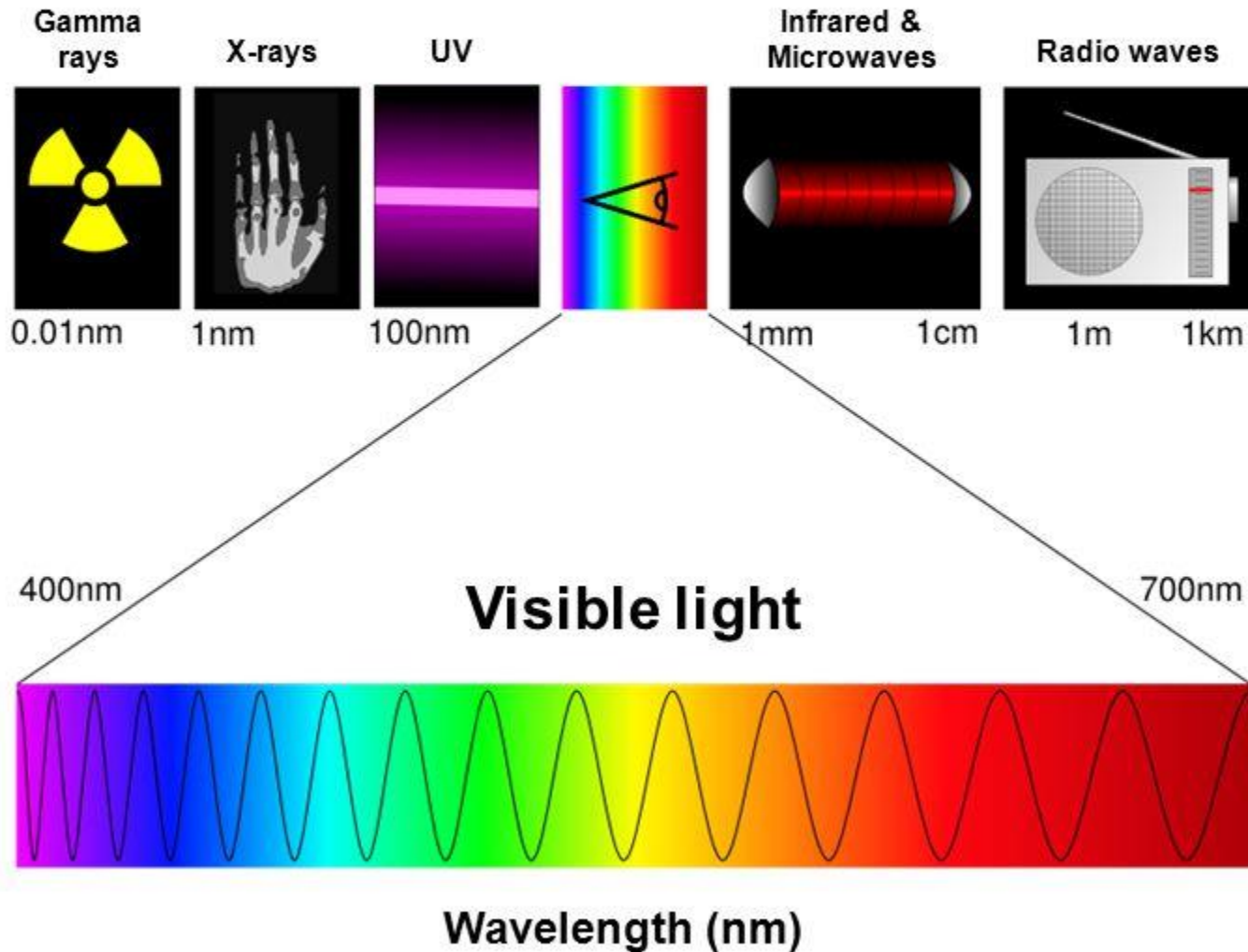
Demonstrate the density of two objects by comparing the mass of equal volumes.



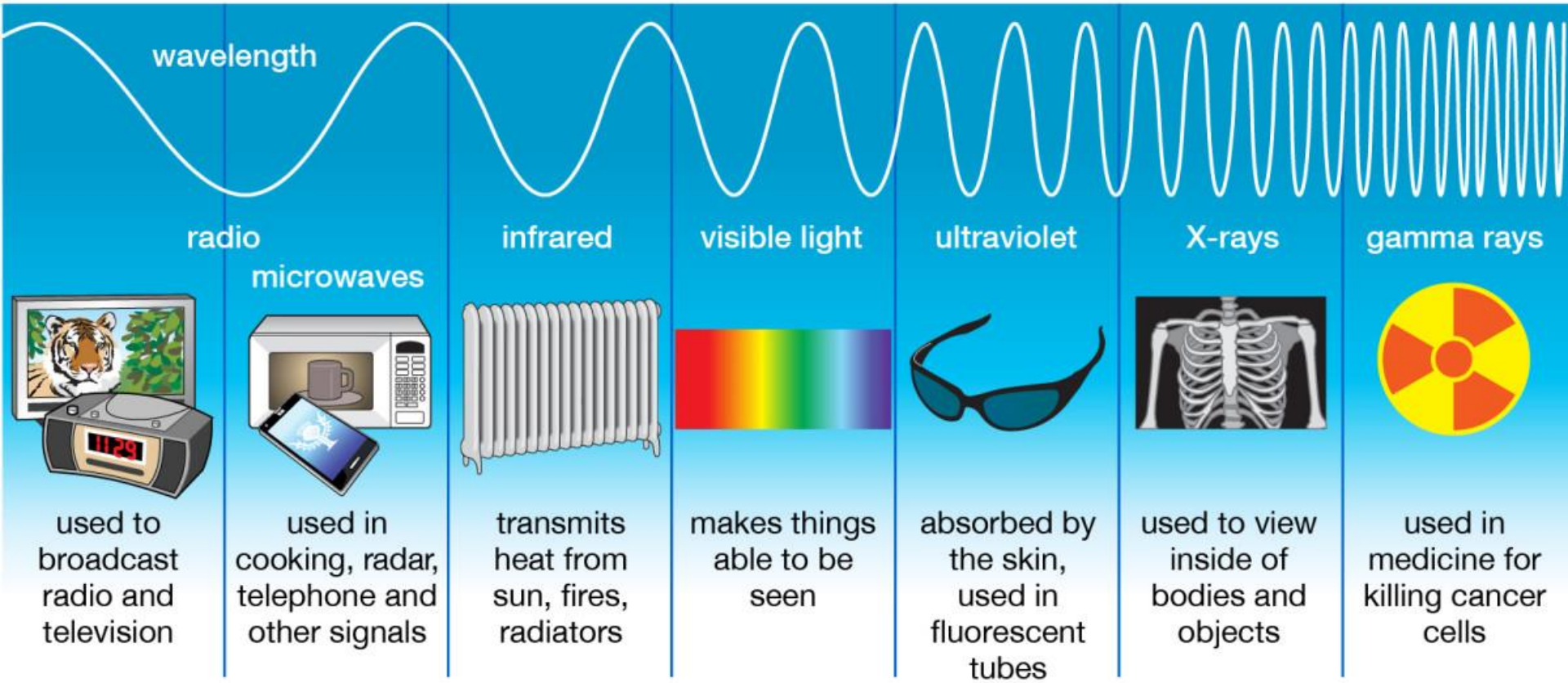
- **Visible light can be broken into component wavelengths by using a prism**

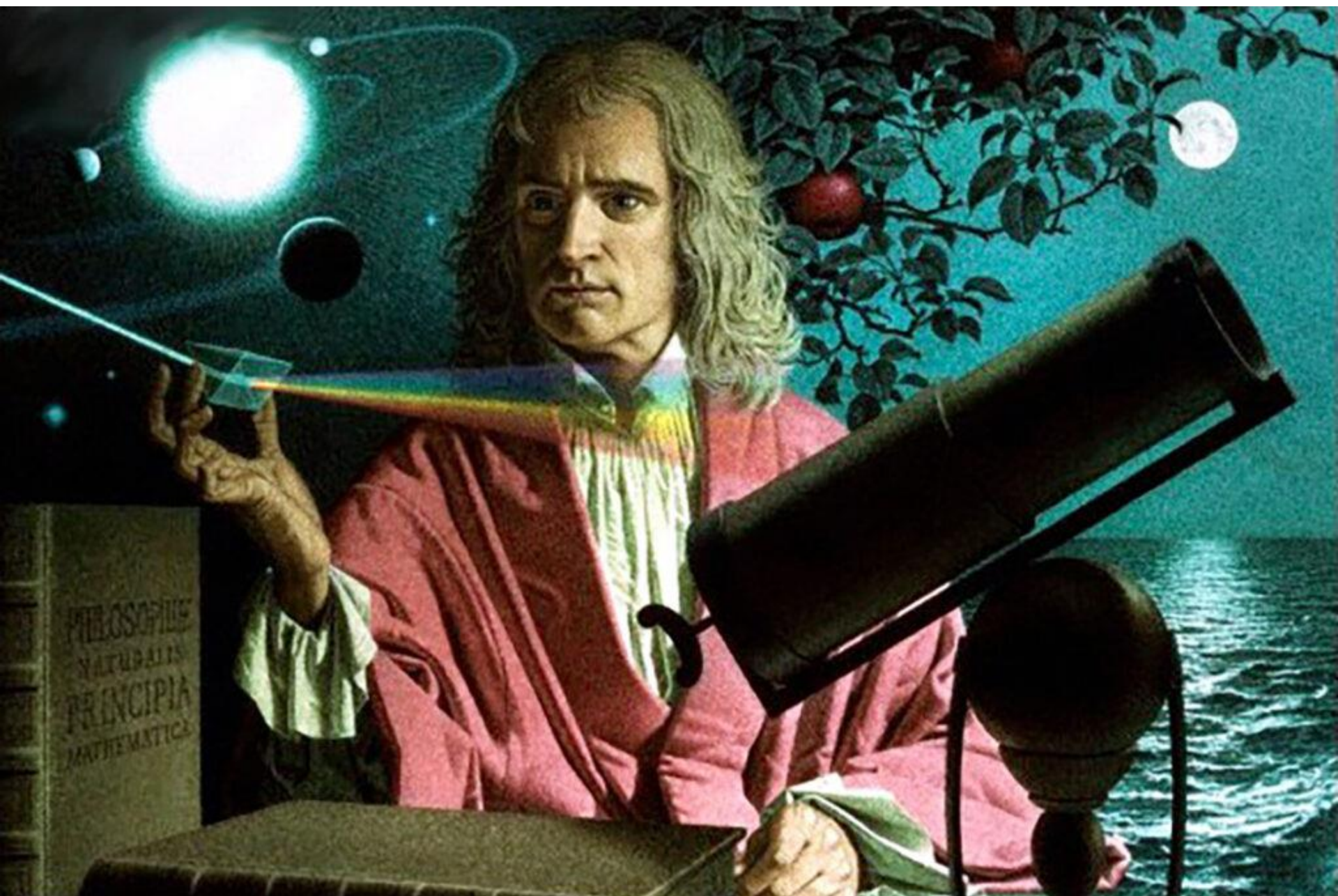


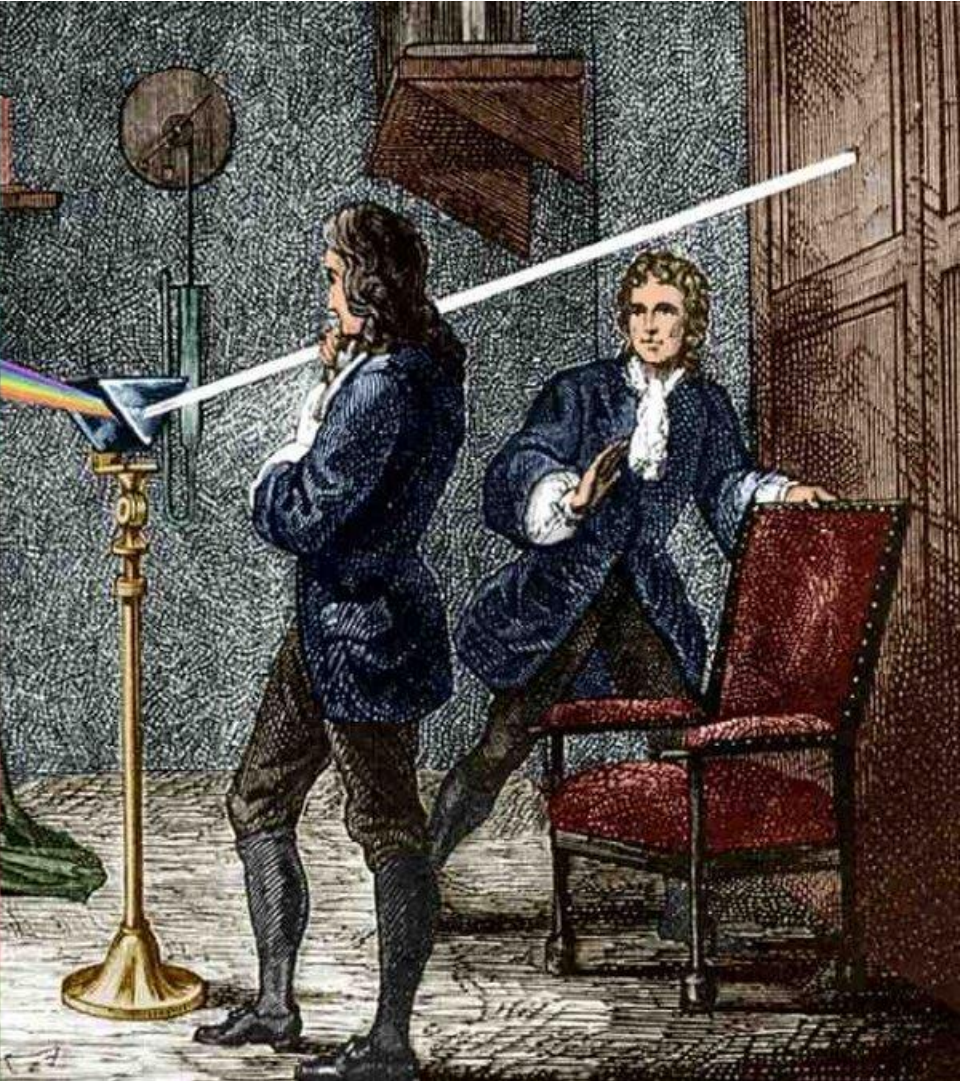
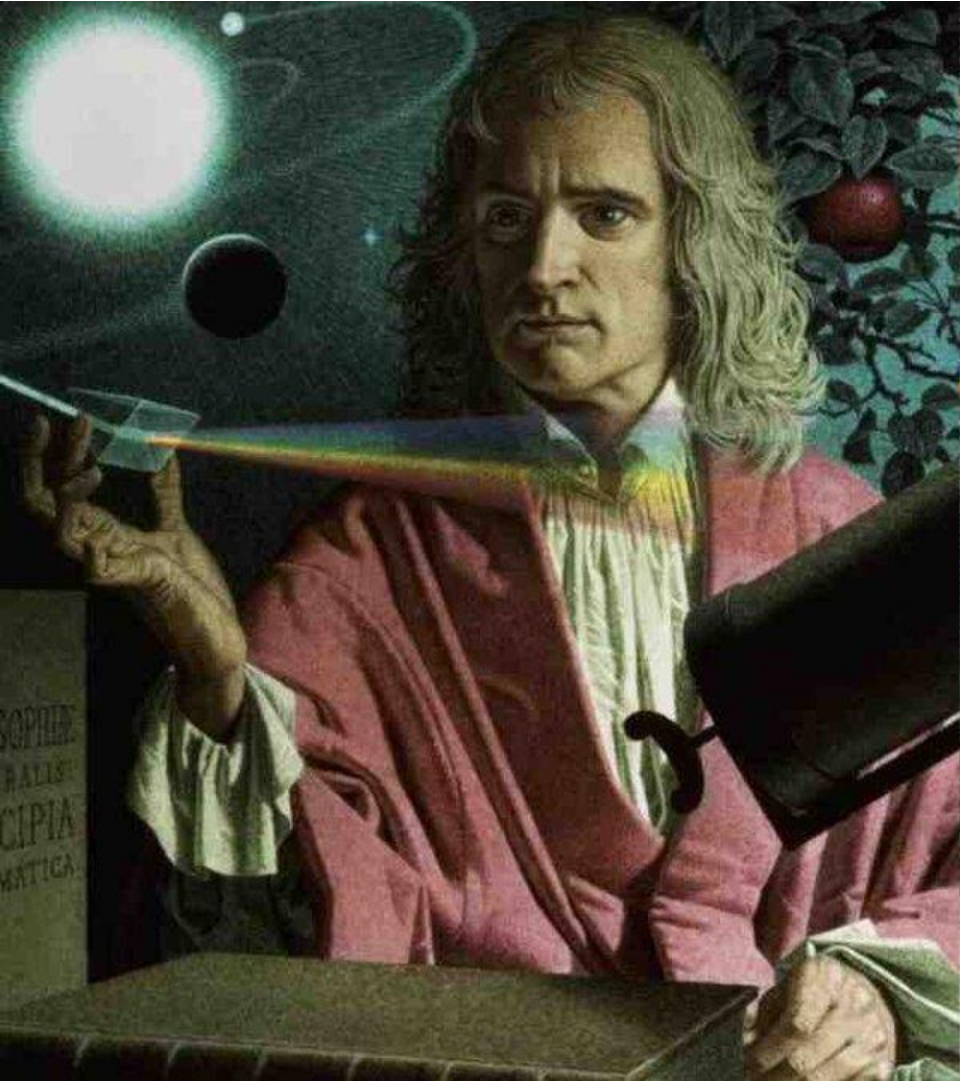
Electromagnetic Spectrum and Visible Light



Types of Electromagnetic Radiation





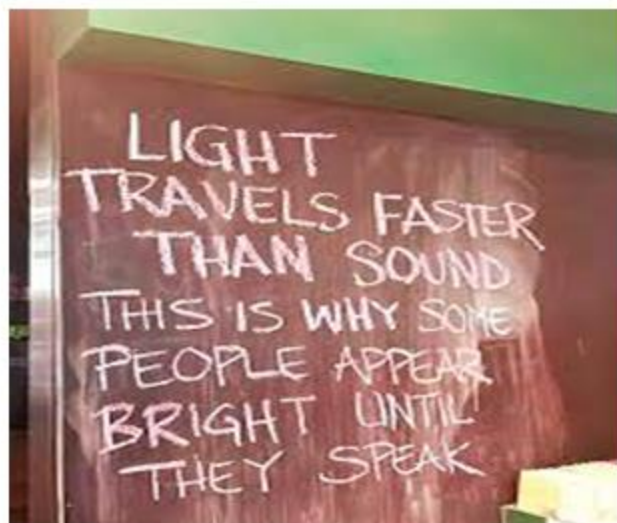


- What is your favourite subject?
- Why?
- What are the most unusual things in physics for you?
- What is the most interesting thing in physics for you?

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LIGHT
TRAVELS FASTER
THAN SOUND
THIS IS WHY SOME
PEOPLE APPEAR
BRIGHT UNTIL
THEY SPEAK