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# SCENIC SCIENCE

## LESSONS 6B



# ISRAEL IS DIFFERENT

THEIR LAND WAS GIVEN BY GOD

THEY CLAIMED ONE TRUE GOD (when most others claimed many gods)

TAUGHT GOD'S COMMANDMENTS

GOVERN BY HIS LAWS AND STATUTES

AS THE NATION CHOSEN TO BRING THE  
**SAVIOR OF THE WORLD TO LIFE,**  
**AND TO BRING HIS WORD TO LIGHT**

THE HEBREW  
NATION  
NEEDED A  
SAVIOR THEY  
COULD  
SHARE WITH  
THE WORLD





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## AND, ISRAEL NEEDED PATHWAYS TO SHARE

- READERS
- WRITERS & SCRIBES
- INTELLECTUAL AWARENESS
- PAPER – PARCHMENT, PAPYRUS,  
MEDIUMS TO WRITE ON
- PEACE AND PROTECTION
- ROADWAYS
- TEACHERS & DISCIPLES

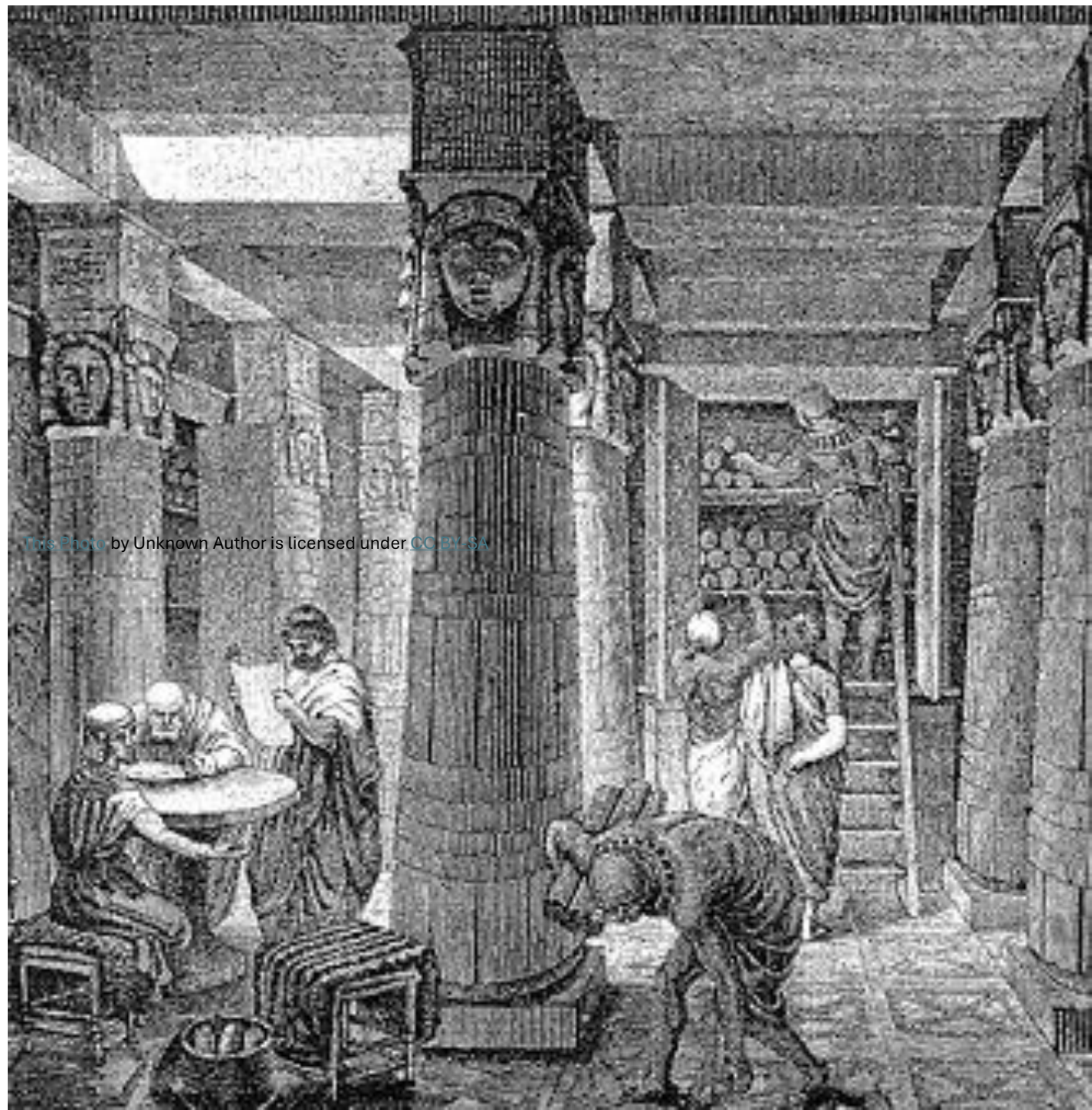


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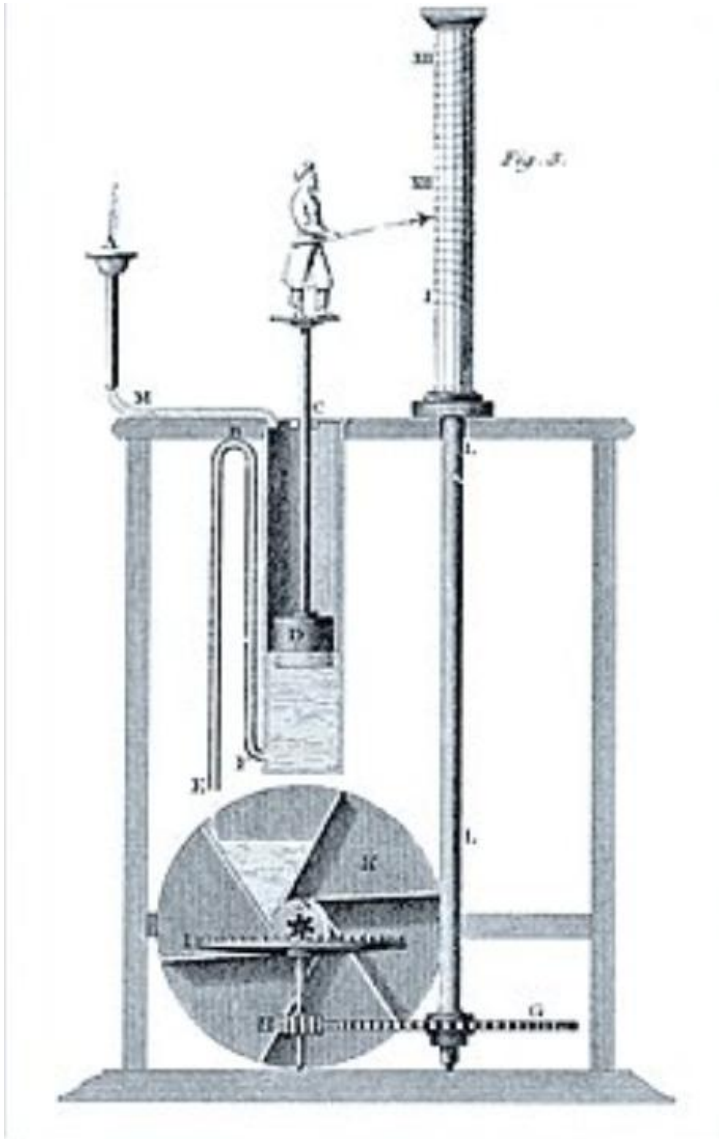
# THE CLASSICAL AGE

- Thoughts, ideas, and schooling flourished
- Greek thinkers teach mathematics, physics, natural law, and logic beginning around ~600 BC
- The Library of Alexandria compiles knowledge from around the world, ~300 BC



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## CONCEPTS PUT INTO MOTION

**Force = mass x acceleration**

**Gravity also ( $m \times a$ )**

**Rotational Motion (wheels, shafts, etc)**

**BATTERING RAMS:** Simple physics  $F = ma$

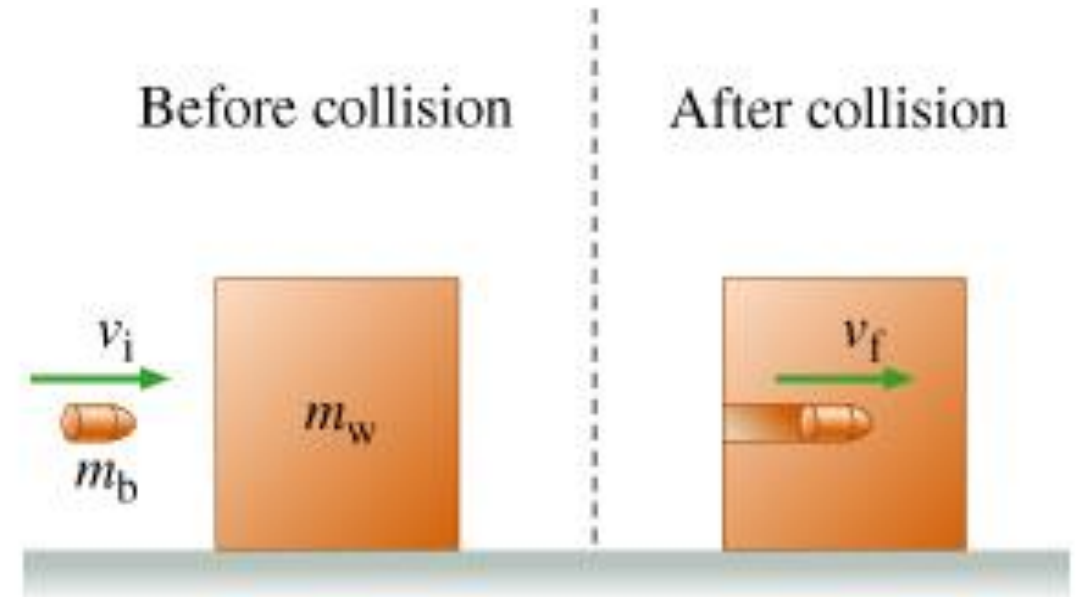
**WATER CLOCK ALARMS**— water weight (gravity) turns a shaft on cogs, turns a shaft with gears, attached to another shaft... water level rises to indicate elapsed time

$$\text{SPEED} + \text{METAL} + F = ma$$

The larger and faster the battering ram...  
The greater the force...



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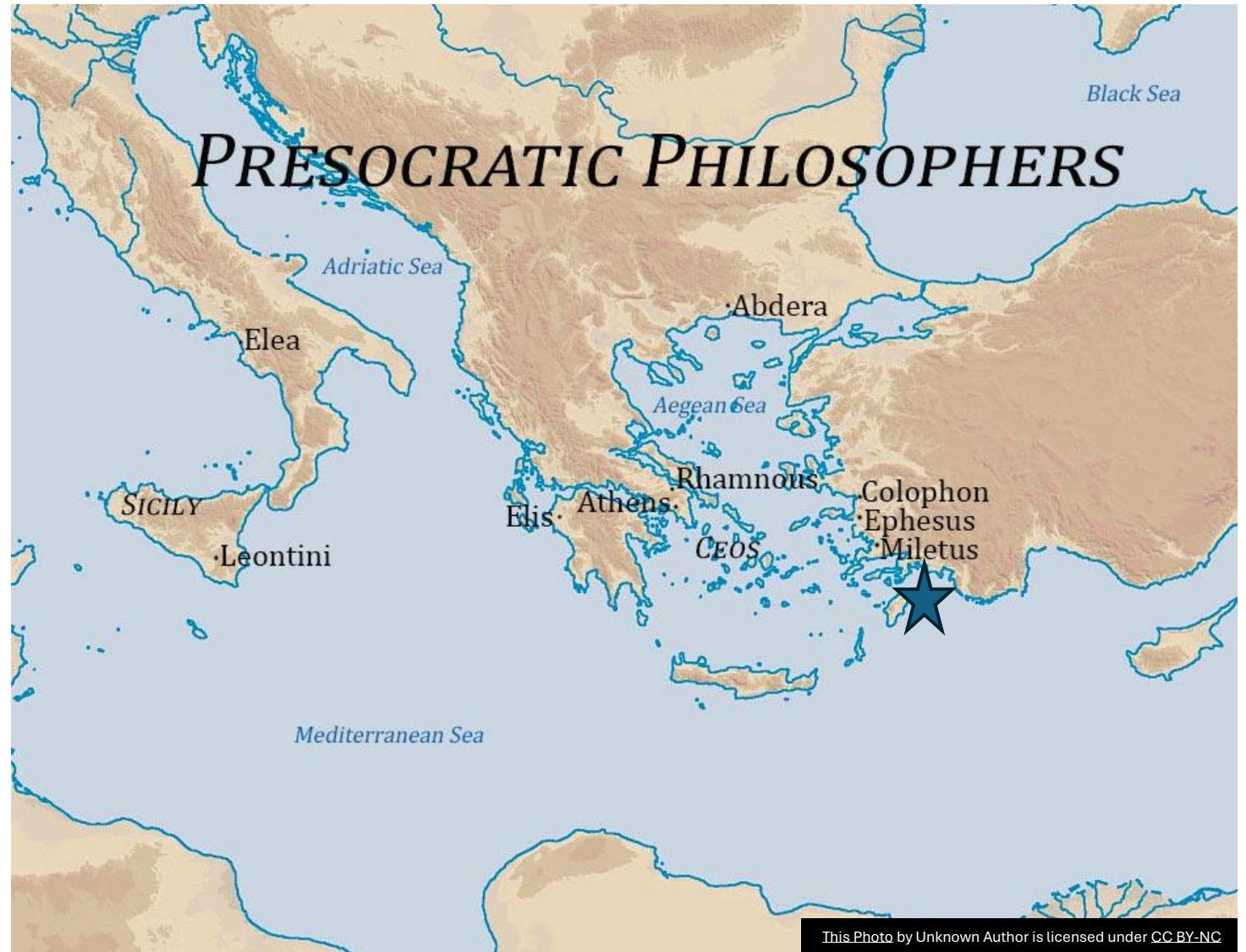
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# Thales of Miletus 600 BC

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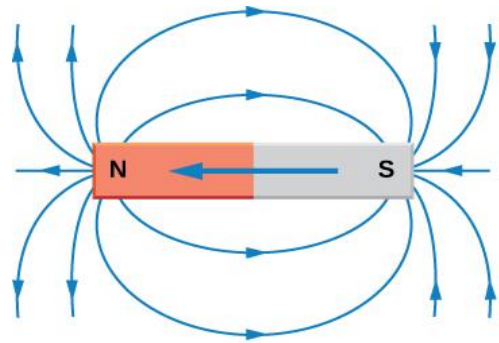
DEMONSTRATES & TEACHES  
PROPERTIES OF:

- **MAGNETISM**
- **STATIC ELECTRICITY**
- **EQUINOXES AND SOLSTICES**
- **ECLIPSES**
- **WEATHER**
- **AND DEDUCTIVE REASONING**



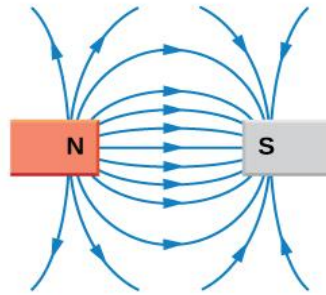


# THALES – ONE OF THE EARLIEST PHILOSOPHERS DEMONSTRATES PROPERTIES OF MAGNETISM



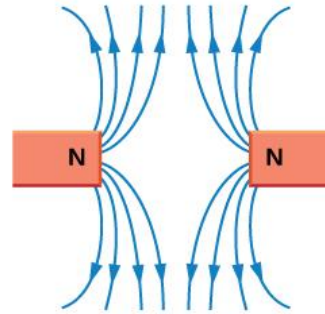
Magnetic field lines of a bar magnet

(a)



Magnetic field lines  
between unlike poles

(b)



Magnetic field lines  
between like poles

(c)

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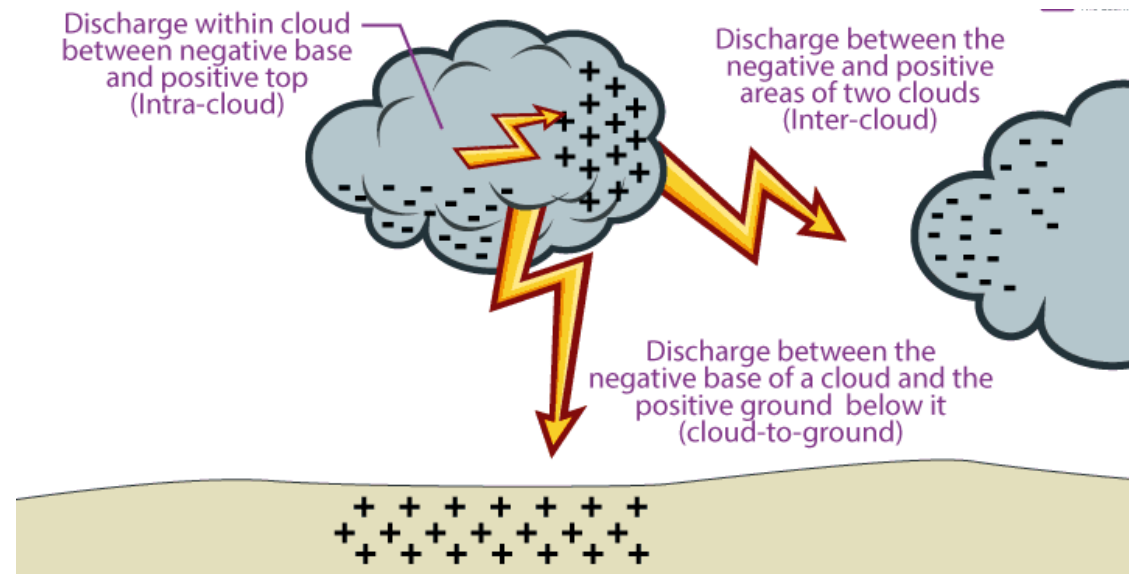
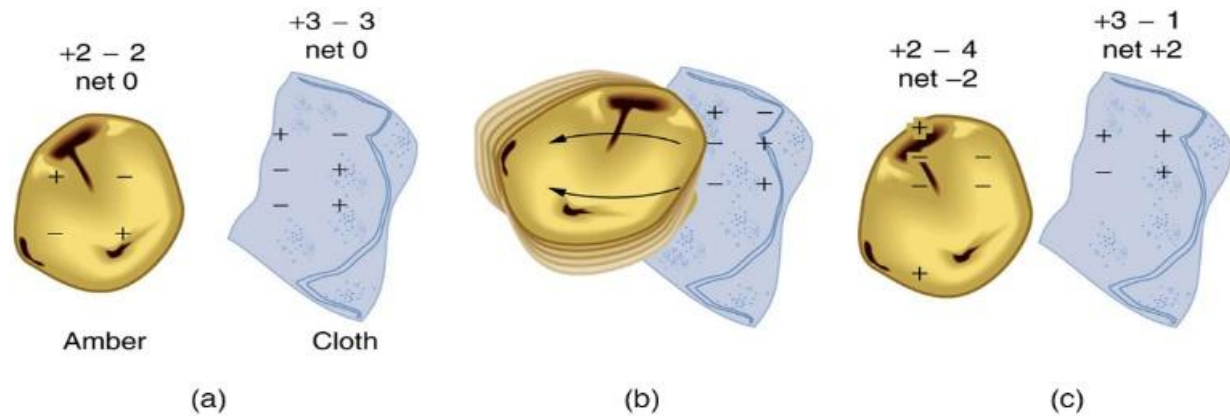
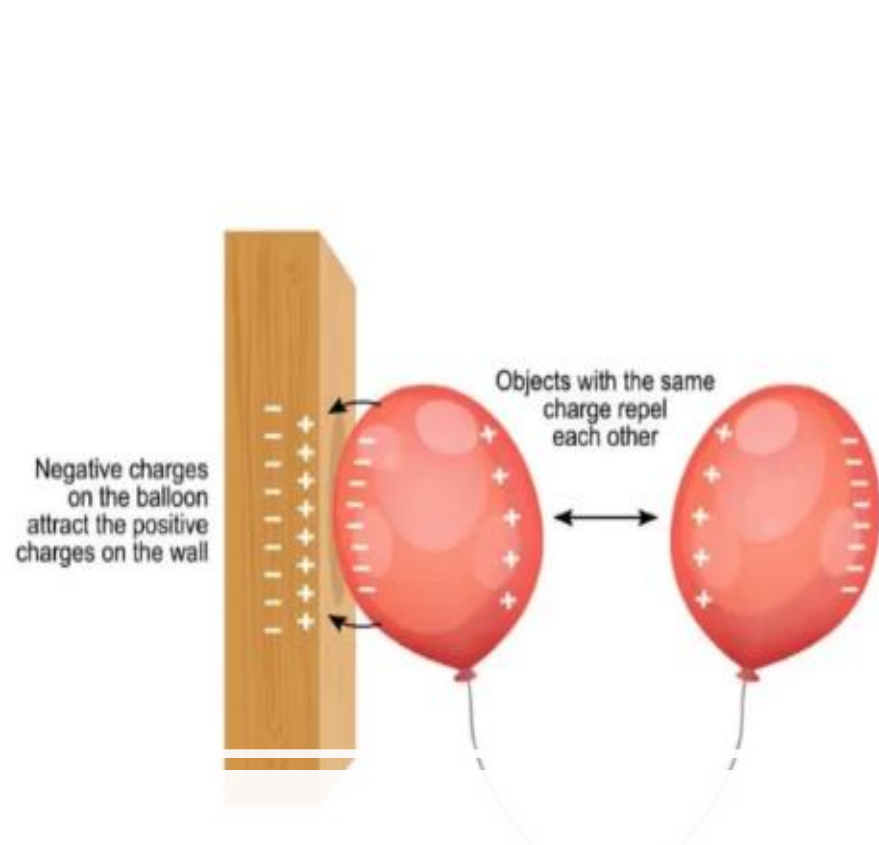
## OPPOSITES ATTRACT



TWO NEGATIVES OR  
TWO POSITIVES REPEL

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# THALES EXPLORED - STATIC ELECTRICITY WITH AMBER AND WEATHER

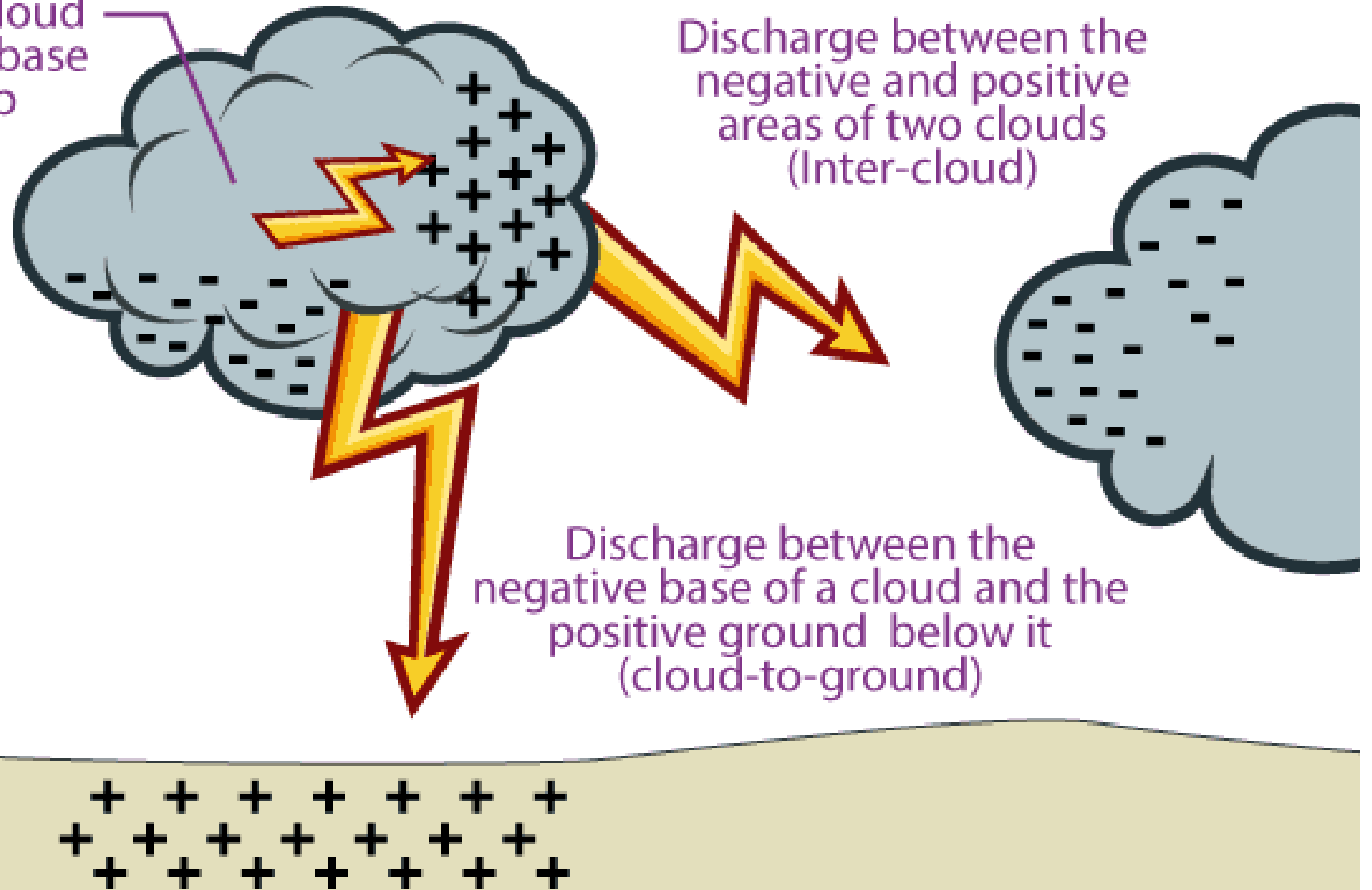




Discharge within cloud  
between negative base  
and positive top  
(Intra-cloud)

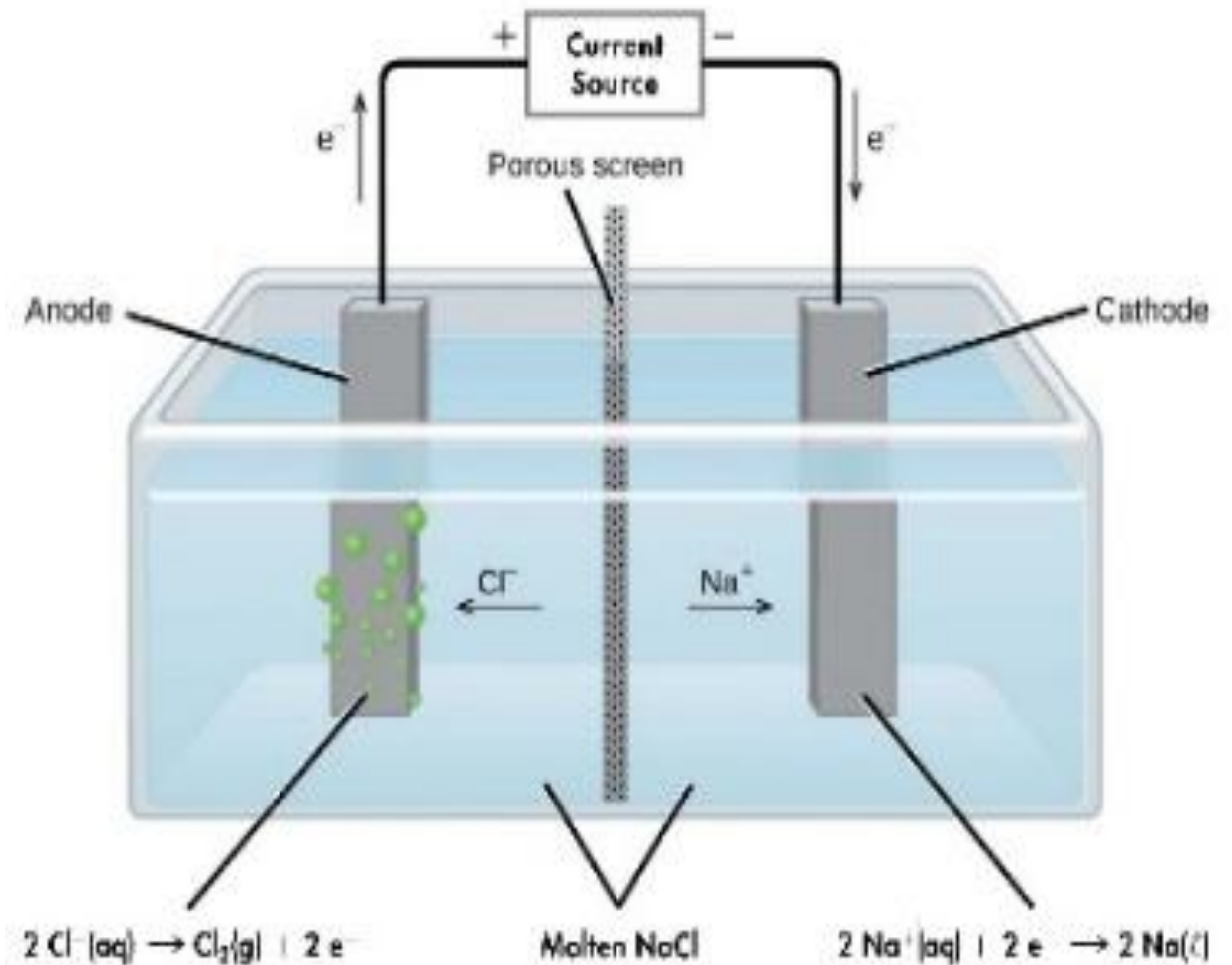
Discharge between the  
negative and positive  
areas of two clouds  
(Inter-cloud)

Discharge between the  
negative base of a cloud and the  
positive ground below it  
(cloud-to-ground)



# SALT BATTERY

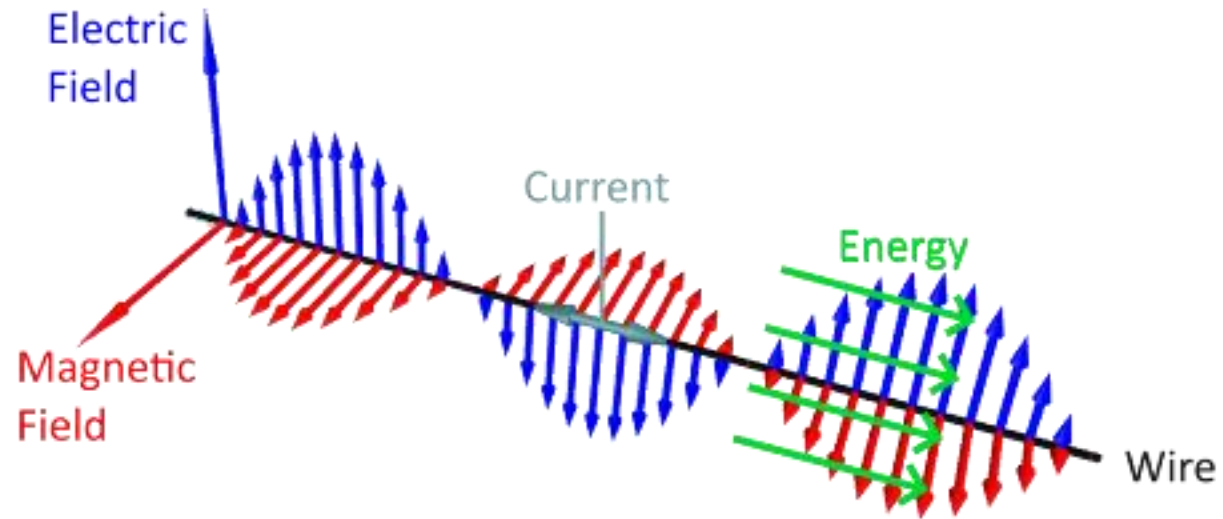
- Harnessing electron motion to create a power source
- Positive & Negative charges
- Example – Na<sup>+</sup> and Cl<sup>-</sup>

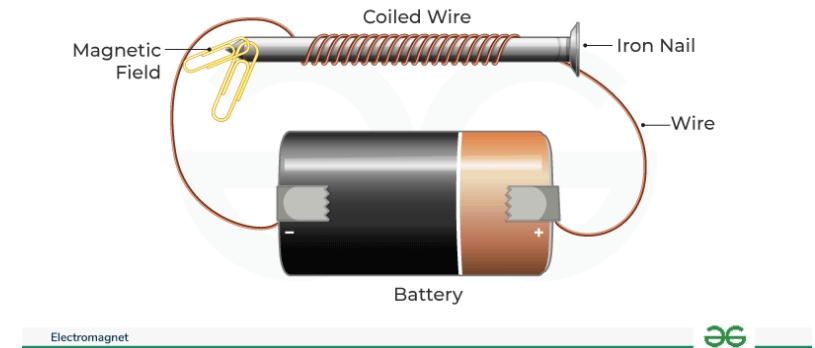
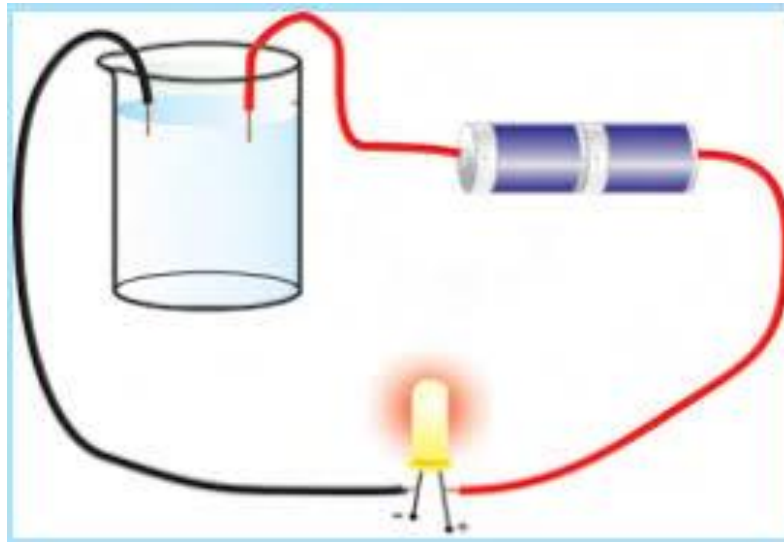
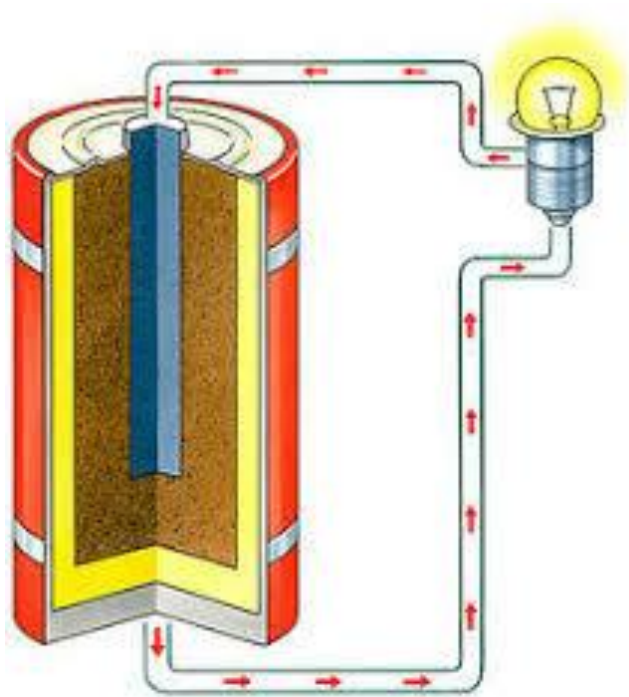


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# ELECTRICAL POWER





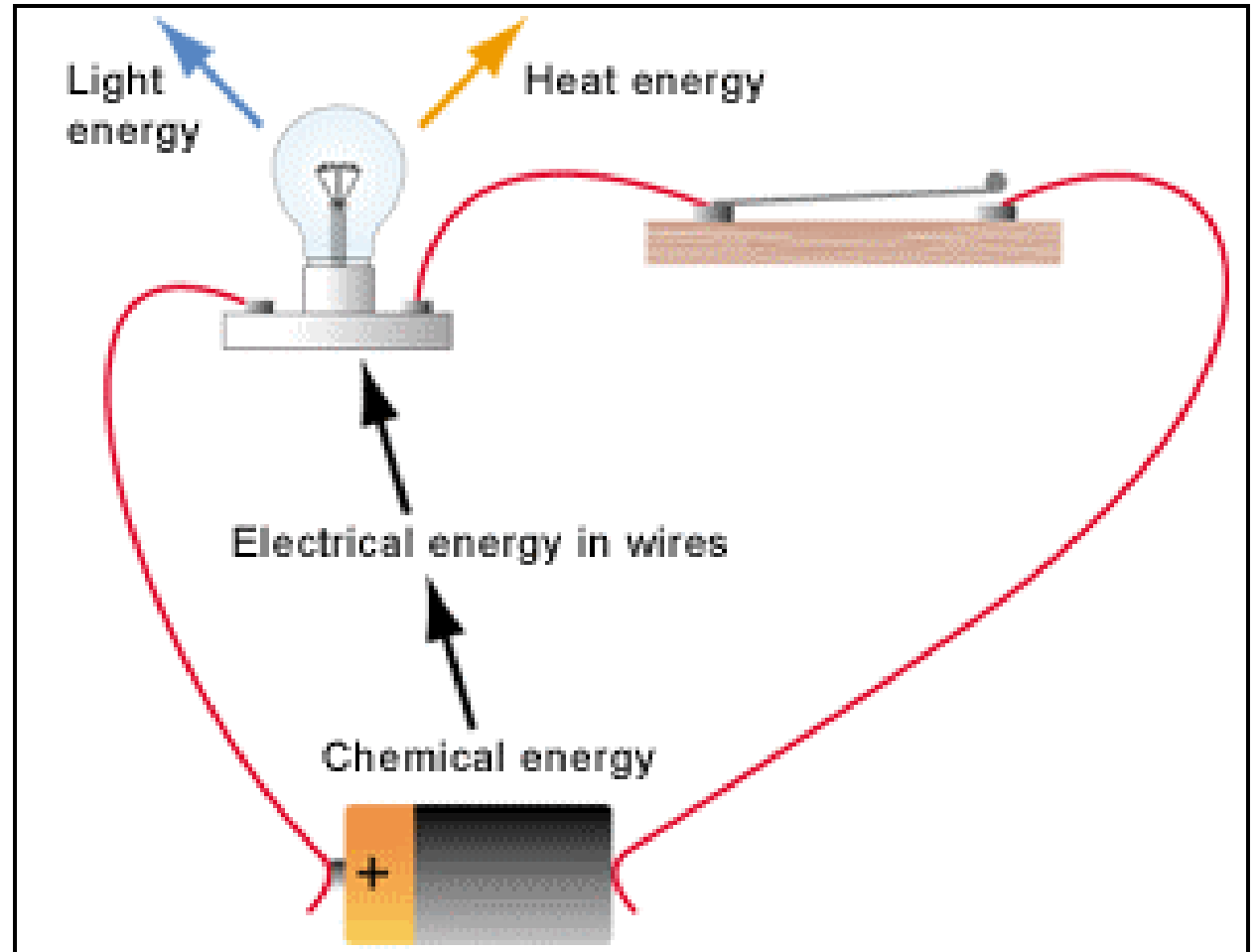
# BATTERY POWER AT WORK

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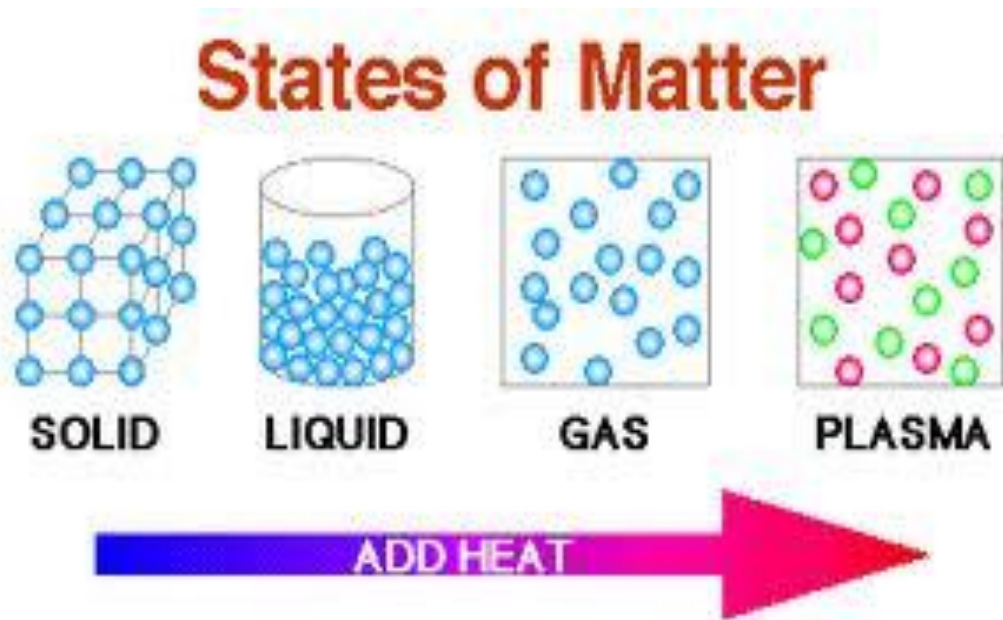
# ENERGY IS...

- Energy is released/generated in various forms
- Seen in simple circuits:
  - Chemical Energy
  - Heat & Kinetic
  - Light Energy
- Kinetic, if the energy is in motion
- Potential, if the energy is in storage

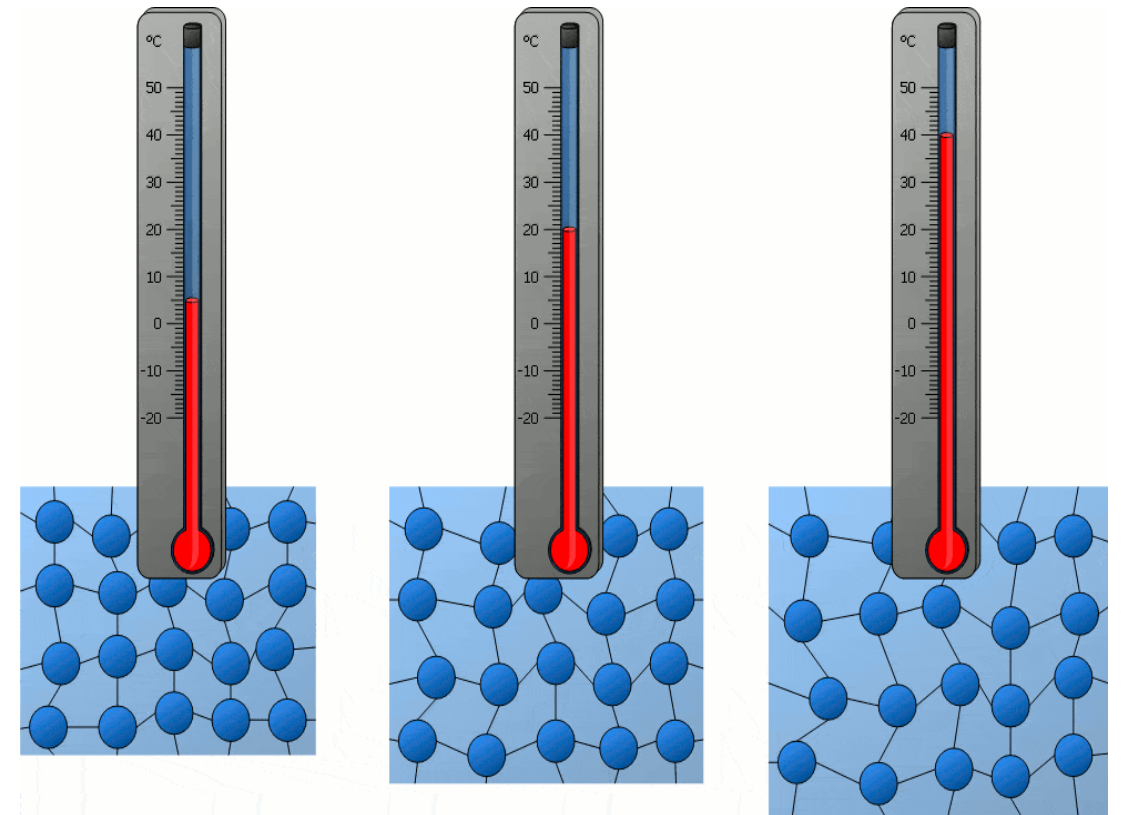


# THE KINETIC ENERGY OF MATTER AT ABSOLUTE 0 KELVIN IS “ZERO”

Temperature is a measure of the motion of atoms.

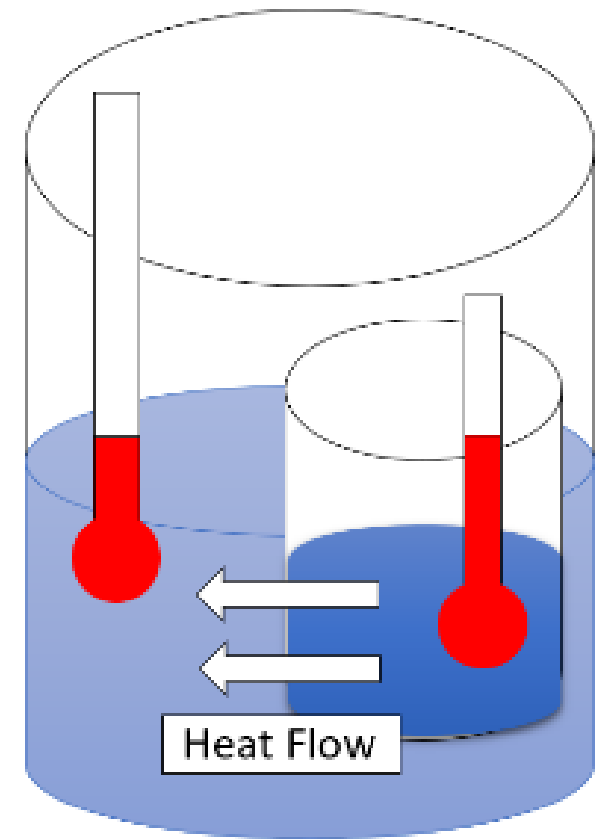


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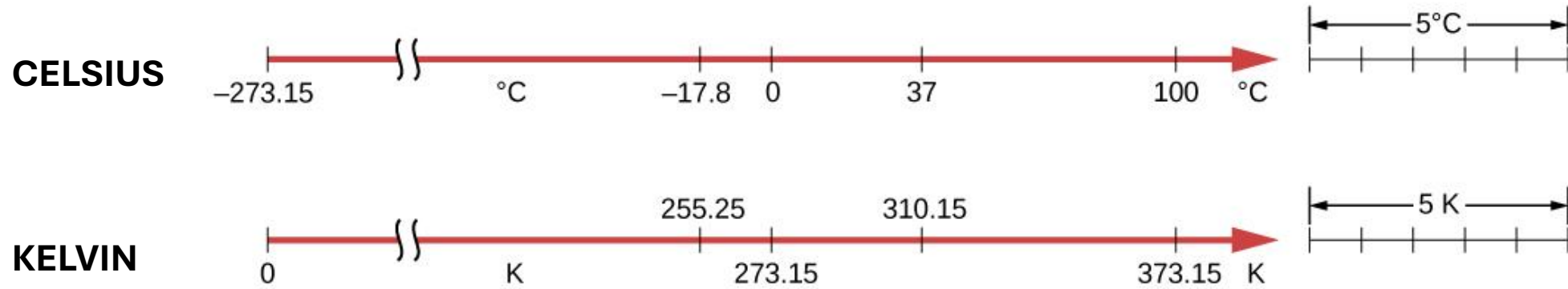


# Laws of Thermal Energy

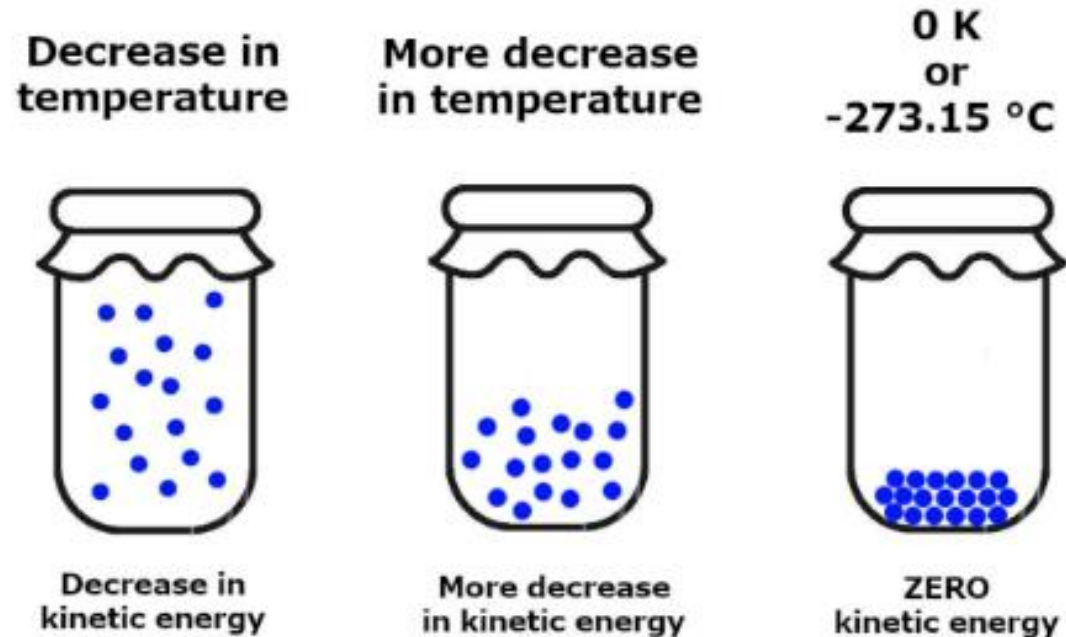
- **Law 1:** Energy can be changed from one form to another.
- **Law 2:** Heat naturally flows from higher to lower-temperature







Absolute 0 Kelvin equals the “**heat death**” of the universe and every thing in it.



## REMEMBER THESE THINGS

Power isn't over-rated, it's undercharged. We've rarely been charged with defeating giants even though we have been infused with power from above. Our fears tell us to avoid tough tasks or talk such as, "You can't talk about Christ here!" But, Ephesians 1:19b-20a command us to, "understand the incredible greatness of God's power for us who believe in Him. This is the same mighty power <sup>20</sup> that raised Christ from the dead..."



**Ephesians 6:10-12** <sup>10</sup> Finally, be strong in the Lord and in his mighty power. <sup>11</sup> Put on the full armor of God, so that you can take your stand against the devil's schemes. <sup>12</sup> For our struggle is not against flesh and blood, but against the rulers, against the authorities, against the powers of this dark world and against the spiritual forces of evil in the heavenly realms.