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SCENIC SCIENCE

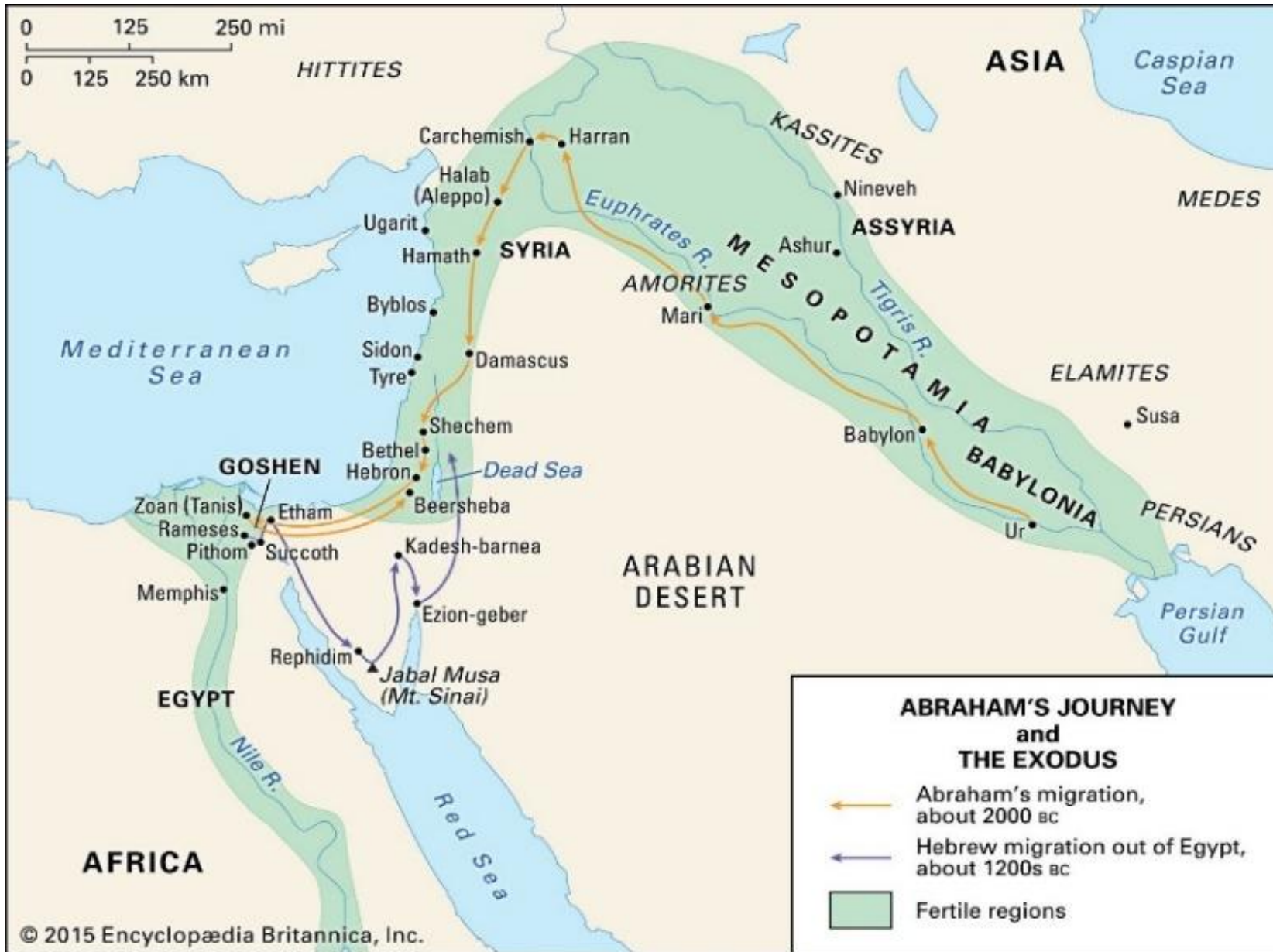
LESSONS 5B

WHAT IF YOU...

- Were asked to give up everything AND go wherever you were called to go, including a desert!

Would you follow GOD no matter what the “road ahead” looked like?





THE HEBREWS DESERT WANDERINGS

(see the key)

NOT FERTILE

SPARSE RAINFALL

SAND AND LITTLE
ORGANIC SOIL

ALMOST NO VEGETATION

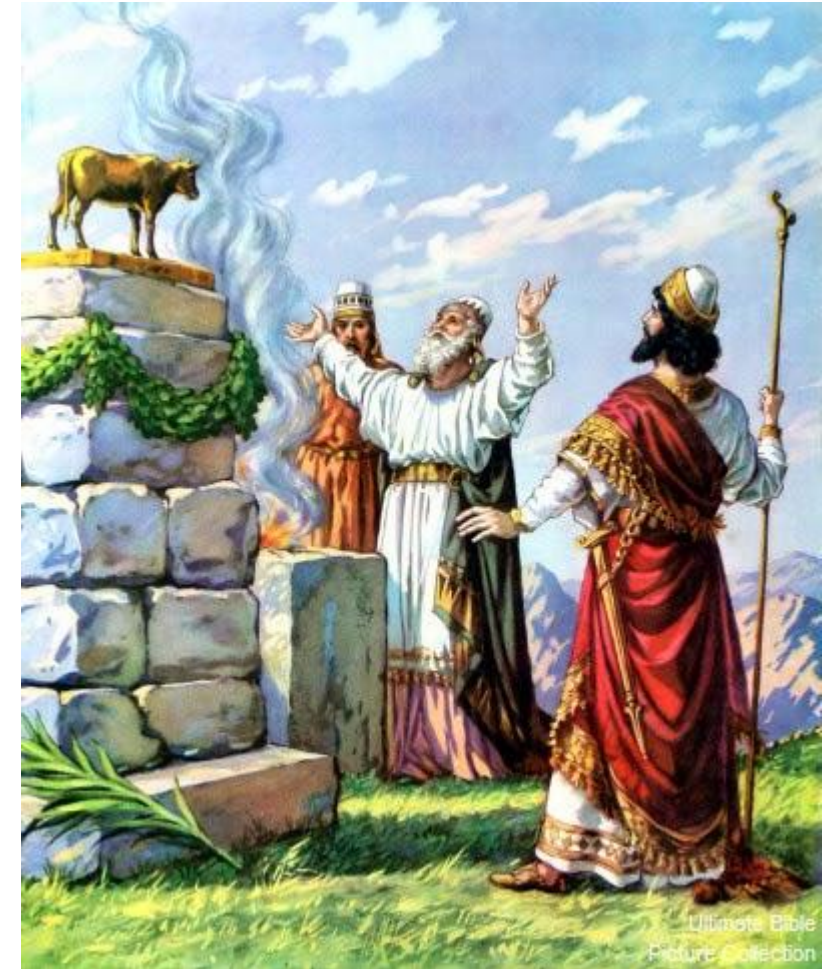
NO RIVERS

THE HEBREW NATION NEEDED TO LEARN TO **TRUST AND OBEY** GOD AFTER YEARS IN EGYPT

Biblical Examples:

- [Exodus 32:9](#): "I have seen this people, and, behold, it is a stiffnecked people".
- [Deuteronomy 9:6](#): "Know therefore that the Lord thy God giveth thee not this excellent land in possession for thy justices, for thou art a very stiffnecked people".

AFTER 40 YEARS, THE HEBREWS WERE ABLE TO RETURN TO CANAAN



THE IRON AGE TO COME

- God's Word seems to indicate that iron would be valuable to Israel's future (Deuteronomy 7:8-9)
- Iron Stones were in Canaan, the PROMISED LAND
- Iron, and the Iron Age, would dramatically change the world.
- God knows the future!

IRON ORE ROCKS – MINERALS

MAGNETITE (72%) aka Lodestone which is naturally magnetic, **HEMATITE (70%)**, **LIMONITE (60%)**, **SIDERITE (50%)**

Magnetite **streaks** are black-gray;
Hematite **streaks** are red-brown;

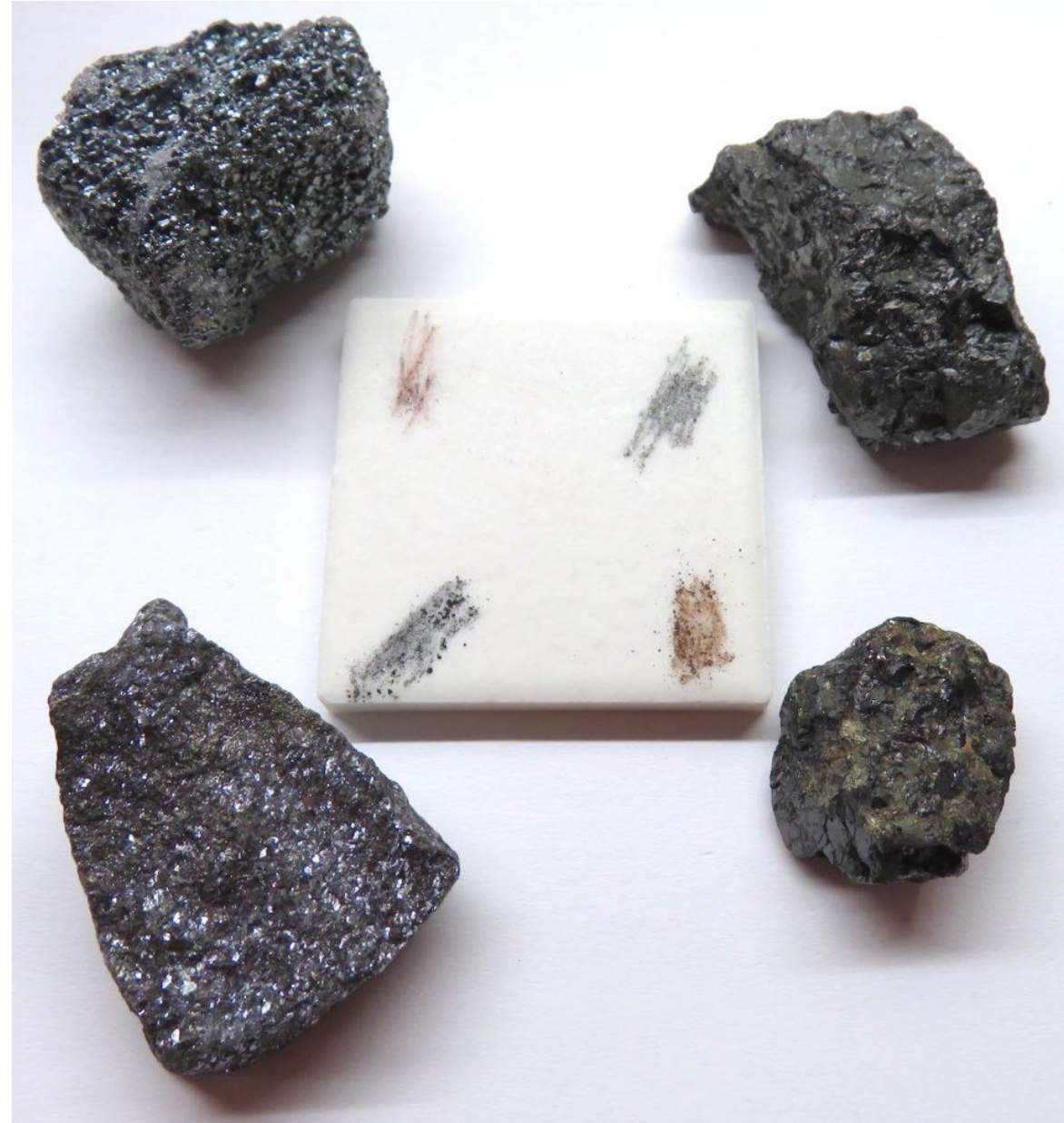
Magnetite (Fe_3O_4) has enough iron to attract a magnet.



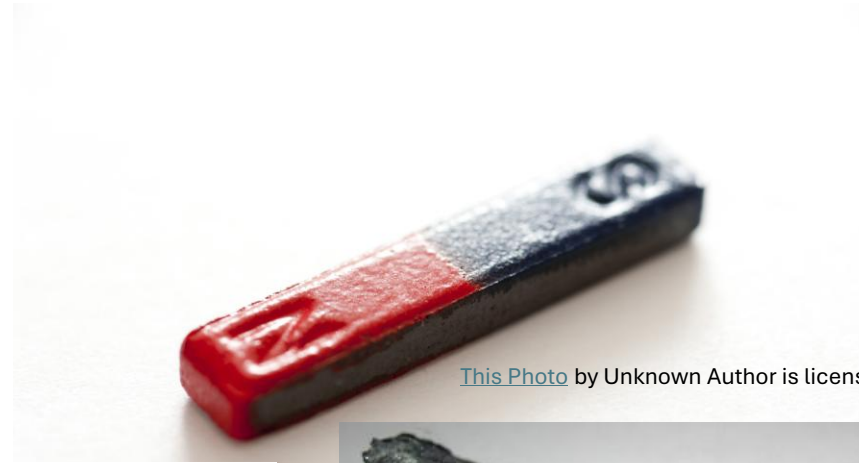
MINERALS
WITH IRON
may look
alike, but...

Hematite –
red/brown

Magnetite –
gray/black



Magnetite, a solid mineral, responds to a Magnet



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Solid

Has fixed shape and volume



Liquid

Takes shape of container
Forms horizontal surface
Has fixed volume



Gas

Expands to fill container

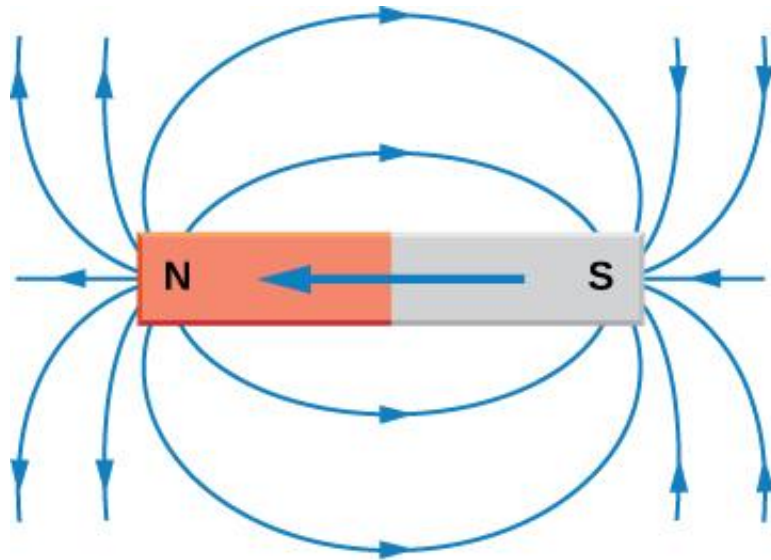


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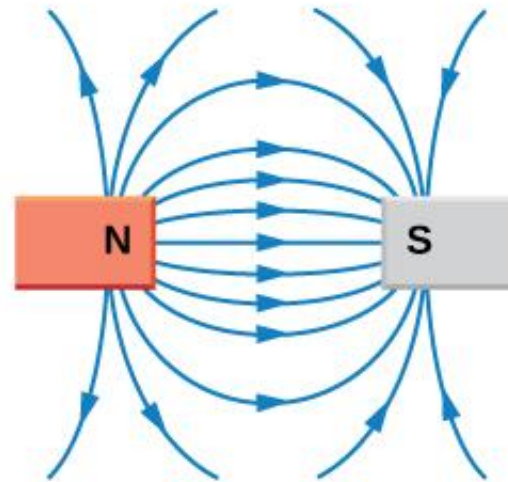
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Magnetic Poles on Bar Magnets



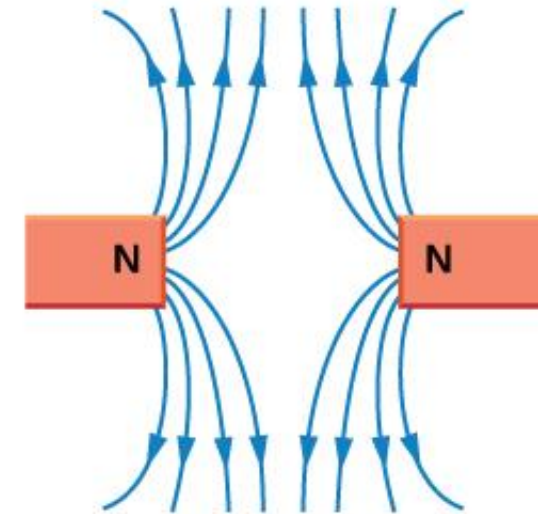
Magnetic field lines of a bar magnet

(a)



Magnetic field lines
between unlike poles

(b)



Magnetic field lines
between like poles

(c)

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OPPOSITES POLES ATTRACT – SIMILAR POLES REPEL

- A Negative Charge Pole is shown as: -
- A Positive Charge Pole is shown as: +

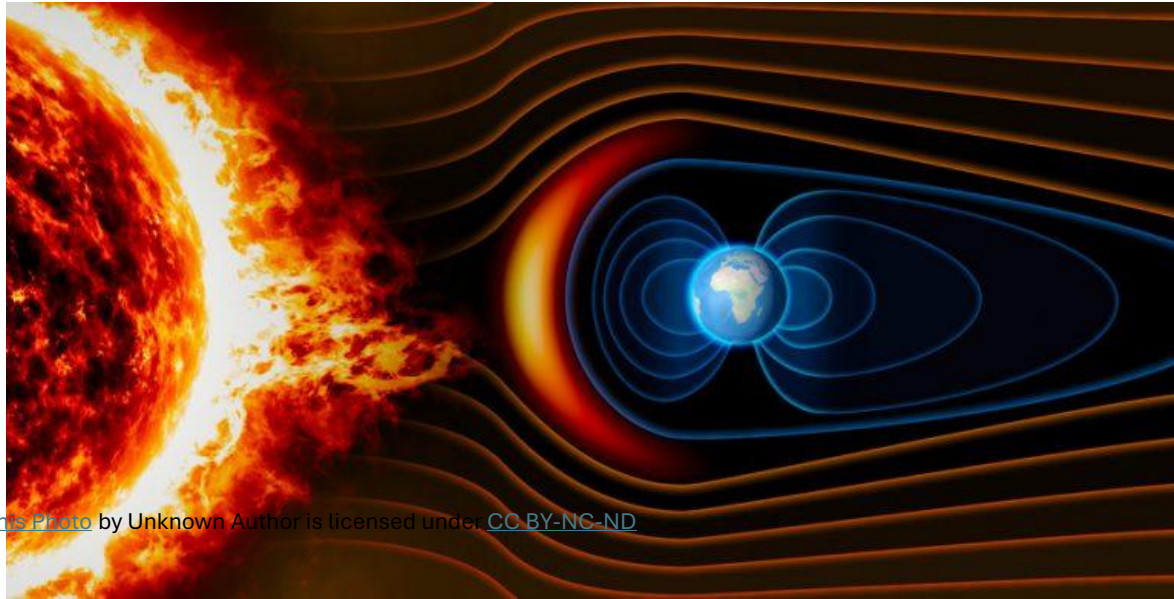
OPPOSITES ATTRACT



TWO NEGATIVES OR
TWO POSITIVES REPEL



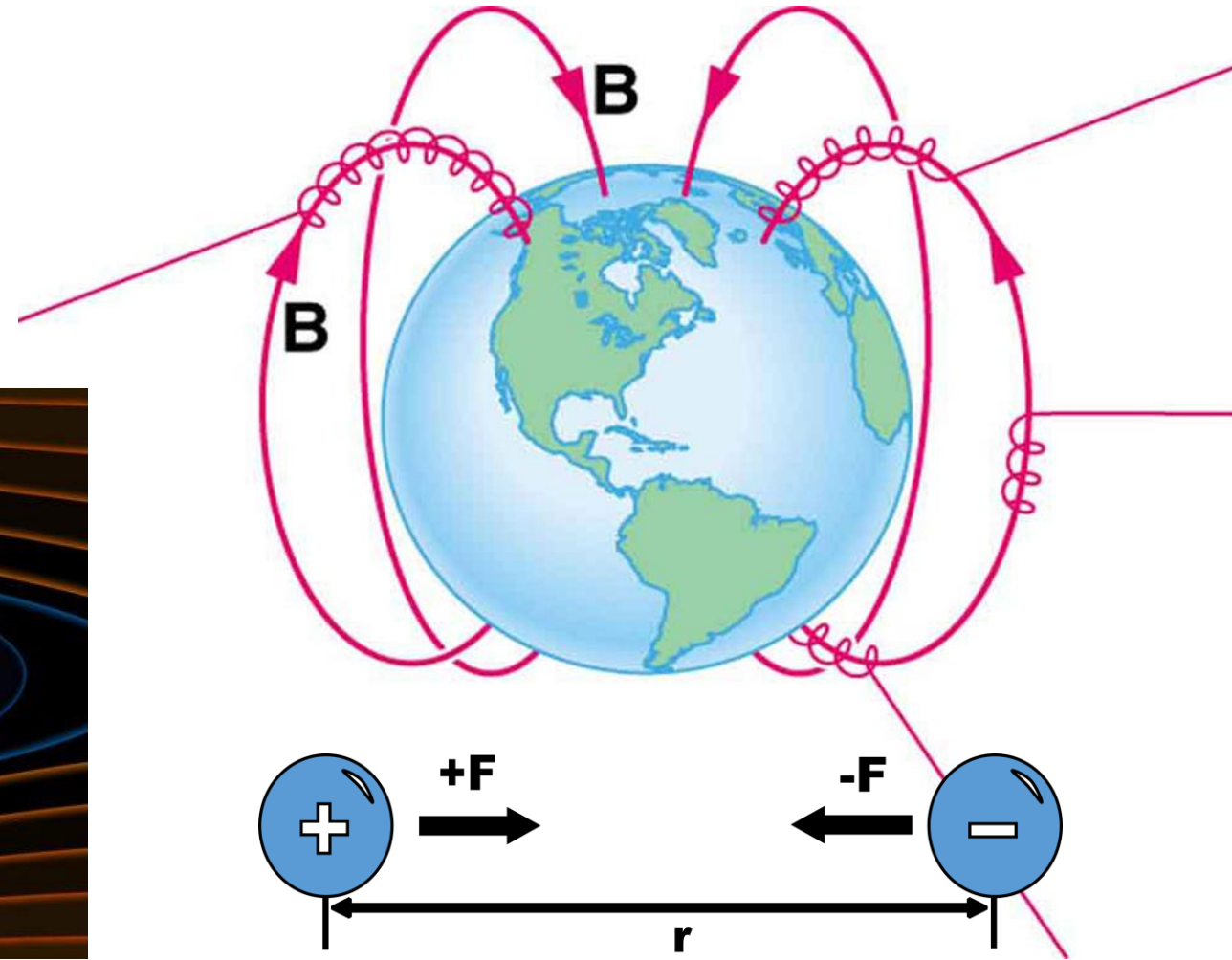
Earth's Iron Core Creates Magnetism



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HEAT/KINETIC ENERGY CHANGES MATTER

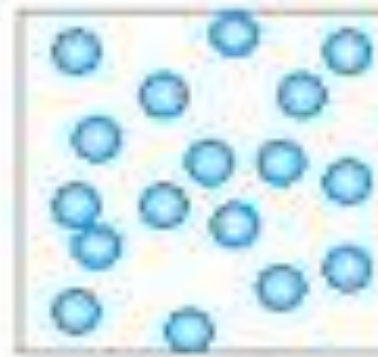
States of Matter



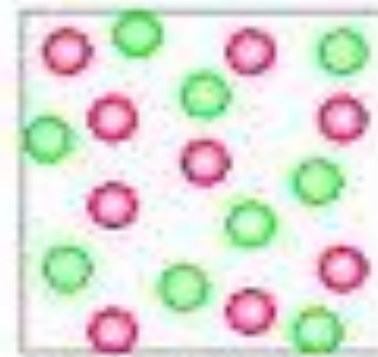
SOLID



LIQUID



GAS



PLASMA



Which one assumes the container shape without completely filling it?

LIQUID



Solid

Has fixed shape and volume



Liquid

Takes shape of container
Forms horizontal surface
Has fixed volume



Gas

Expands to fill container

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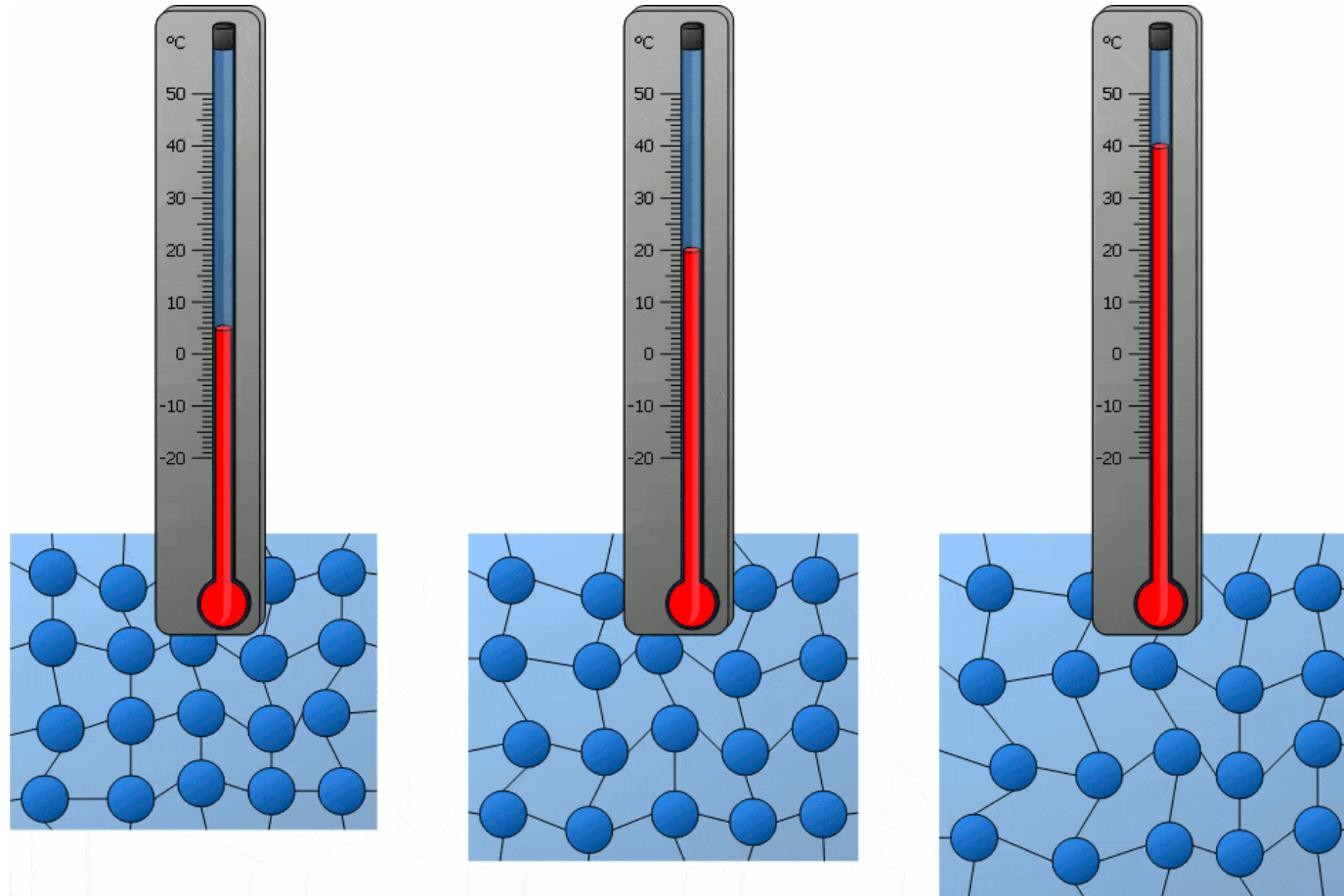
Gas Expands to Fill the Container

Gas expands to fill a container and even cause it to expand!

Molecules move faster as a gas, than liquid or solid.



KINETIC ENERGY AND TEMPERATURE



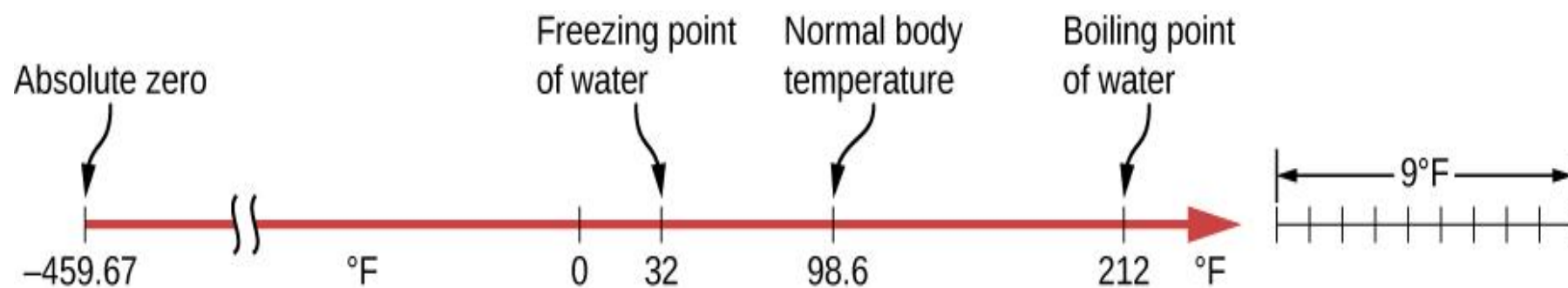
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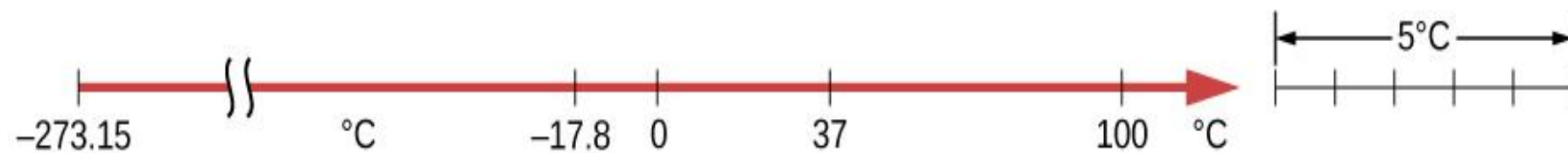
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TEMPERATURE SCALES

FARHENHEIT



CELSIUS



OUR BODIES KEEP WARM – AT JUST THE RIGHT RATE (UNLESS TOO HOT OR TOO COLD)



HOW LONG
YOU STAY IN
THE HOT OR
THE COLD
MAKES A
DIFFERENCE

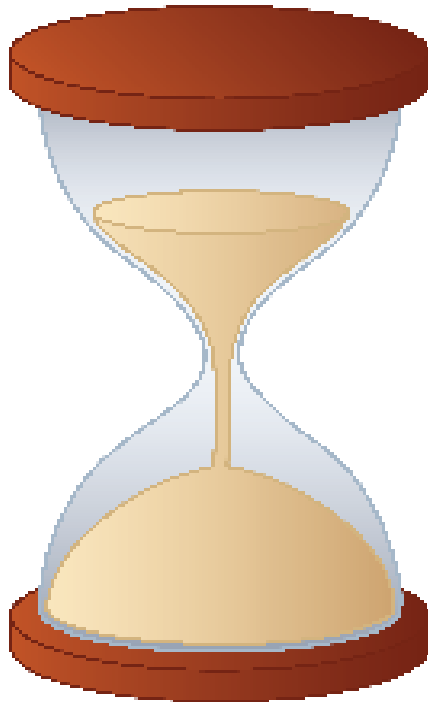
TIME IS KEY



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UNITS of TIME are IMPORTANT in SCIENCE



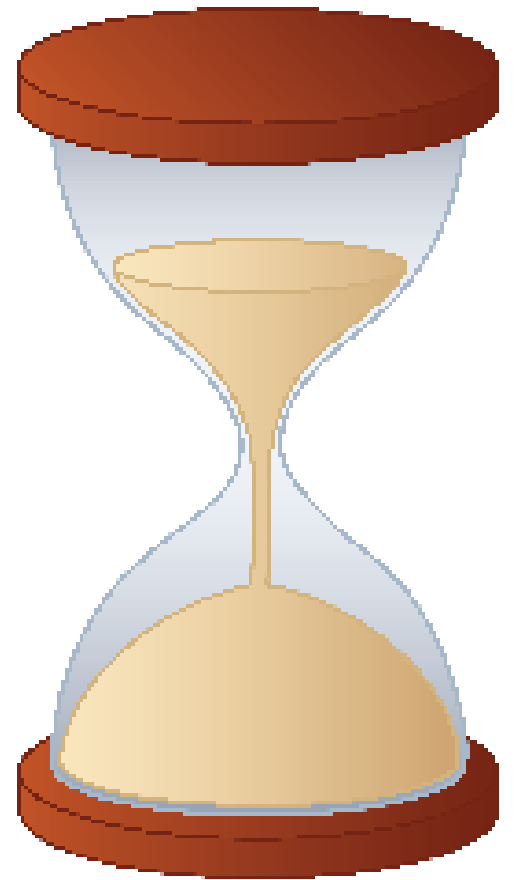
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REMEMBER THESE THINGS

Redeeming time" means making the most of our time. We must act/work/pray. Prayer is doing. "The prayer of the righteous is very powerful in its working."
James 5:16b) Time is irreversible.

Ephesians 5:15-16 *See then that you walk circumspectly, not as fools but as wise, redeeming the time, for the days are evil.*



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