

Science AMI Folders

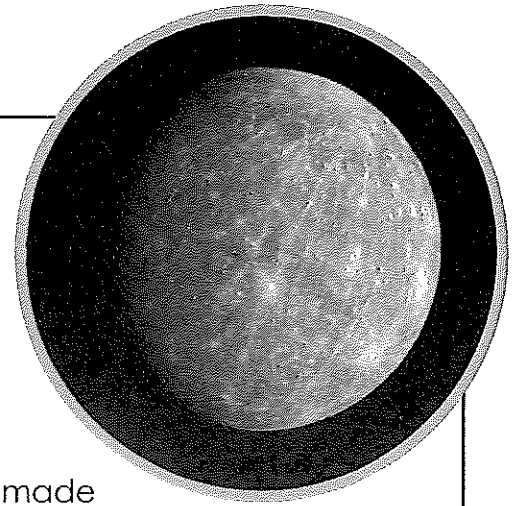
Please complete the following worksheets.

- Day 1
 - Mercury Worksheet
- Day 2
 - Why Does Matter Matter? Worksheet
- Day 3
 - Phases of the Moon Worksheet
- Day 4
 - The Water Cycle Worksheet
- Day 5
 - Scientific Method Worksheet

Name: _____

Mercury

By Cynthia Sherwood



Mercury is the planet nearest the sun. It's so close that if you were standing on Mercury, the sun would appear two and a half times bigger than what it looks like from here on Earth.

Even the best sunscreen wouldn't be enough on Mercury. The sun's rays are about seven times stronger than on Earth. Mercury is dry, very hot, and practically airless. Mercury is also the smallest planet in our solar system. Because it's often blocked by the glare of the sun, Mercury can be hard to see without a telescope.

Mercury is named after a Roman god who was a messenger known for his speed. As a planet, Mercury moves around the sun faster than any other. It revolves around the sun about once every 88 Earth days.

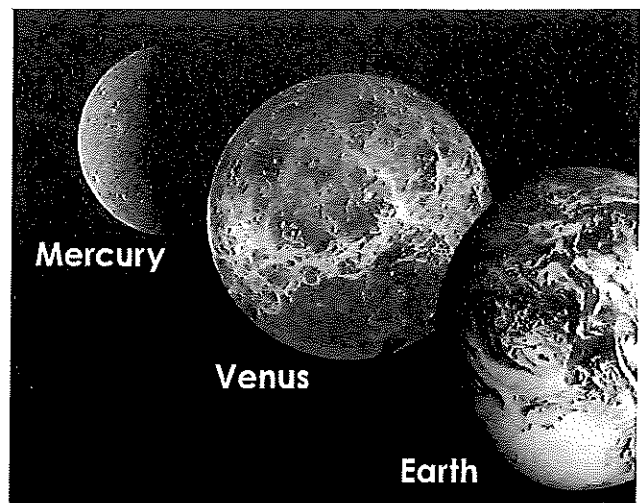
Mercury is made up of rock with iron at its core. Its surface looks a lot like our moon, with many craters. Radar images from Earth show that craters at Mercury's north and south poles may contain frozen water, or ice. Scientists couldn't believe it at first. Parts of Mercury reach 800 degrees Fahrenheit (427 degrees Celsius), so they definitely didn't expect to find ice! But it turns out the poles of Mercury are always in the shade of the sun, so they remain extremely cold.

By the way, you'd never be able to enjoy a blue sky on Mercury. Because there's no atmosphere, the sky always appears black. You might even see stars—during the daytime!

Did you know ...

Even though Mercury is the closest planet to the sun, it is not the hottest planet!

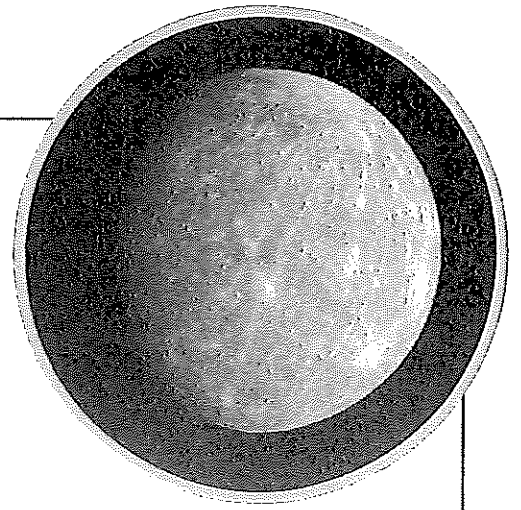
Venus, the second planet from the sun, has hotter temperatures than Mercury. This is because Venus has a thick layer of clouds that trap in heat like a blanket.



Name: _____

Mercury

By Cynthia Sherwood



1. Why is Mercury usually hard to see without a telescope?

2. Mercury is the closest planet to the sun, but Venus is the hottest. Why?

3. Mercury was named after the Roman god of speed. Why is this an appropriate name for the planet?

4. How is it possible for Mercury to have frozen ice?

- a. Mercury is a cold planet.
- b. Mercury has a different type of ice that can form in warm temperatures.
- c. Parts of Mercury are cold because they always face away from the sun.
- d. Mercury has ice because it moves so quickly around the sun.

5. What does the underlined word mean in the sentence below?

Because there's no atmosphere, the sky always appears black.

- a. layer of air or gas
- b. living things
- c. soil or craters
- d. volcano activity

Name: _____

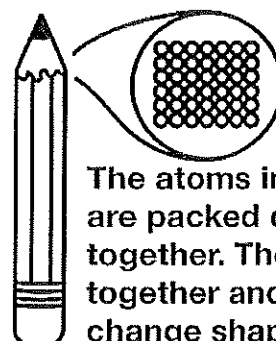
Why Does Matter Matter?

by Kelly Hashway

What do trees, air, and water have in common? They all have matter. That means they take up space. You might be wondering why these things look so different if they all have matter. Everything found on Earth can be grouped into one of three states of matter: solid, liquid, or gas. In order to figure out which state of matter an object fits in, we have to examine its properties. The properties we look at are shape, mass, and volume. Mass is the amount of matter an object has, and volume is the amount of space the matter takes up.

Solids are easy to recognize. They have definite shape, mass, and volume. Trees are solids. They are made up of tiny particles called atoms. These atoms are packed closely together, and they hold the solid in a definite shape that does not change. If you look around your house, you will see lots of solids. Televisions, beds, tables, chairs, and even the food you eat.

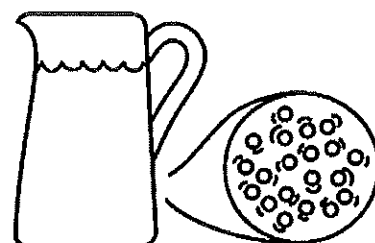
Solid



The atoms in a solid are packed closely together. They bond together and do not change shape.

Liquids do not have definite shape, but they do have definite mass and volume. Liquids are similar to solids because their atoms are close together, but what makes a liquid different is that those atoms can move around. Liquids can change shape by flowing. If you've ever spilled a glass of milk, then you know it spreads out across the floor. It does this because the milk is taking the shape of the floor. Since liquids do not have a definite shape of their own, they will take the shape of their containers. This is why the same amount of milk can look different in a tall glass, a wide mug, or spread out on your kitchen floor.

Liquid

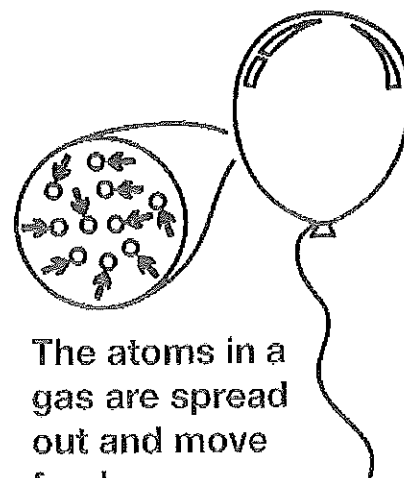


The atoms in a liquid are close together. They slide around.

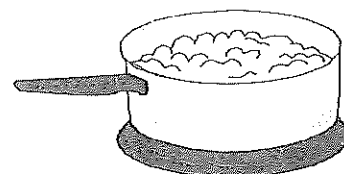
Gases do not have definite shape or volume. Like liquids, gasses will take the shape of their containers. If a gas is not in a container, it will spread out indefinitely. This is because the atoms in a gas are spaced farther apart than in a solid or a liquid. And being spread out like this allows them to move around freely. Think about the air you breathe everyday. That air is spread across the empty space around the earth. You've probably also noticed that you usually cannot see the air. This is another property of gases. Even though we cannot see them, you come in contact with them everyday. There's air in the tires of your family car and your bicycle. There are many different types of gas in the earth's atmosphere, such as oxygen, carbon dioxide, nitrogen, water vapor, and helium.

When trying to remember the three states of matter, think about water. If it freezes into a solid, it becomes ice. Its atoms are packed together keeping its shape. Of course, we know water can also be a liquid. It flows in rivers or it can be poured from a glass. When water evaporates it becomes water vapor, a type of gas in the air. Try a little experiment of your own by placing an ice cube in a covered glass or container. You will be able to observe the ice first in its solid form and then watch as it melts into a liquid to become water. Eventually the water will turn to water vapor and your glass or container will be filled with this gas.

Gas



The atoms in a gas are spread out and move freely.



You can see three different states of matter in this picture. The pot is made of solid matter. The water inside the pot is liquid. When the liquid is heated it becomes water vapor, which is a gas.

Matter is everywhere! Can you find a solid, a liquid, and a gas around you right now?

Name: _____

Why Does Matter Matter?

by Kelly Hashway



solids	volume	container	matter	ice	juice
gases	mass	atoms	chair	oxygen	melting
liquids	shape	space	milk	helium	

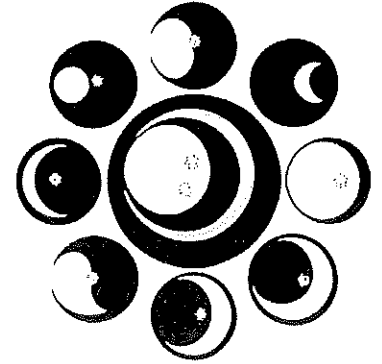
Choose a word from the box to complete each sentence.

1. The three basic properties of matter are _____,
_____, and _____.
2. All matter is made up of tiny particles called _____.
3. Volume is the amount of _____ that matter takes up.
4. Mass is the amount of _____ an object has.
5. Liquids take the shape of their _____.
6. _____ do not have a definite shape or volume.
7. _____ do not have a definite shape, but they do have a definite volume.
8. _____ have a definite shape and volume.
9. A _____ and _____ are examples of solids.
10. _____ and _____ are examples of liquids.
11. _____ and _____ are examples of gas.
12. Solid ice is _____ when it is changing into a liquid.

Phases of the Moon



The moon is Earth's only natural satellite, and it plays a significant role in our lives. One of the fascinating things about the moon is the way it changes shape throughout the month. These changes are called the phases of the moon. There are eight distinct phases, and each phase has its own unique appearance and name.



The first phase of the moon is called the New Moon. During this phase, the moon is not visible from Earth because the side of the moon that faces us is not illuminated by the sun. It is a dark circle in the sky. The New Moon marks the beginning of the lunar month.

The second phase is the Waxing Crescent. It occurs a few days after the New Moon. During this phase, a small sliver of the moon becomes visible. The illuminated part of the moon slowly increases each night.

Next comes the First Quarter, also known as the Half Moon. This phase occurs about a week after the New Moon. During this phase, half of the moon is visible from Earth. It looks like a semicircle in the sky.

Following the First Quarter is the Waxing Gibbous. This phase occurs a week after the New Moon. During this phase, more than half of the moon is visible, but it is not yet a full moon. The illuminated part of the moon continues to grow each night.

The fifth phase is the Full Moon. It occurs about two weeks after the New Moon. During this phase, the entire face of the moon is visible from Earth. It looks like a bright, round disk in the sky. The Full Moon is often associated with werewolves and other myths.

After the Full Moon comes the Waning Gibbous. This phase occurs about three weeks after the New Moon. During this phase, more than half of the moon is still visible, but it is gradually becoming smaller.

The next phase is the Third Quarter, also known as the Last Quarter or Half Moon. This phase occurs about three and a half weeks after the New Moon. During this phase, half of the moon is visible, just like in the First Quarter.

Finally, we have the Waning Crescent. This phase occurs about four weeks after the New Moon. During this phase, only a small sliver of the moon is visible. The illuminated part of the moon continues to decrease each night until it becomes a New Moon again.

The phases of the moon are caused by the positions of the moon, Earth, and the sun. As the moon orbits around the Earth, different amounts of sunlight reach its surface, creating the different phases. The moon takes about 29.5 days to go through all eight phases, which is why we have a lunar month. The phases of the moon have been observed and studied by people for thousands of years, and they continue to fascinate and inspire us today.

Phases of the Moon



Name: _____

Date: _____

1. What are the changes in the moon's appearance called?

- Phases of the Sun
- Phases of the Earth
- Phases of the Moon
- Phases of the Stars

3. Which phase marks the beginning of the lunar month?

- Waxing Crescent
- First Quarter
- Full Moon
- New Moon

5. Which phase occurs about a week after the New Moon?

- Waxing Crescent
- First Quarter
- Full Moon
- Waning Gibbous

7. When does the Full Moon occur?

- About a week after the New Moon
- About two weeks after the New Moon
- About three weeks after the New Moon
- About four weeks after the New Moon

9. What causes the phases of the moon?

- Positions of the moon, Earth, and the stars
- Positions of the moon, Earth, and the sun
- Positions of the moon, Earth, and the planets
- Positions of the moon and Earth

2. How many distinct phases of the moon are there?

- Six
- Seven
- Eight
- Nine

4. During which phase is the moon not visible from Earth?

- Waxing Crescent
- First Quarter
- Full Moon
- New Moon

6. During which phase is more than half of the moon visible, but it is not yet a full moon?

- Waxing Crescent
- First Quarter
- Waxing Gibbous
- Waning Gibbous

8. During which phase does the illuminated part of the moon continue to decrease each night?

- Waxing Crescent
- First Quarter
- Third Quarter
- Waning Crescent

10. How long does it take for the moon to go through all eight phases?

- 27 days
- 28 days
- 29.5 days
- 30 days

Name: _____

Date: _____

Phases of the Moon

Note: Words are hidden in all directions including backwards and diagonally.

J	A	S	D	C	H	W	K	X	P	G	Y	R	H	G	U	J	N	H	G
T	E	Z	U	O	R	B	W	B	H	A	L	F	E	I	F	U	L	L	E
P	O	L	W	O	W	E	R	K	K	Z	H	P	U	A	L	E	Y	D	I
I	Y	Q	H	H	B	T	S	G	X	I	I	L	D	N	V	L	P	K	V
V	X	C	I	T	W	B	P	C	Q	I	G	V	W	C	N	J	S	T	U
M	L	J	U	F	X	A	I	V	E	O	C	L	D	O	R	G	P	V	S
T	B	A	S	I	A	Y	X	G	N	N	V	A	Z	F	Q	T	L	K	P
C	M	O	R	F	H	D	E	I	V	M	T	E	H	E	M	L	V	G	V
N	V	H	B	U	J	O	Y	M	N	B	X	S	S	F	S	O	D	I	Z
I	T	Z	T	S	T	I	Q	R	J	G	A	U	C	S	C	I	O	F	S
T	G	J	W	N	L	A	T	U	D	T	N	V	C	S	F	U	I	N	P
S	S	W	S	S	O	W	N	Y	E	L	C	G	E	F	E	O	D	H	K
I	R	A	W	V	H	M	N	L	I	M	E	C	E	D	V	E	A	W	A
D	Q	N	G	X	N	P	L	G	R	P	O	R	S	L	A	S	O	J	D
X	A	I	N	N	Q	I	H	X	Q	N	E	N	O	G	E	A	Q	I	L
T	P	N	G	A	T	T	J	K	D	N	M	R	R	S	G	T	X	U	F
U	W	G	C	E	J	T	H	D	T	N	B	G	X	G	X	Z	N	I	Q
L	T	L	P	T	S	Y	K	D	O	D	S	W	V	E	H	A	R	V	C
F	X	P	X	N	U	F	E	I	P	C	I	L	N	H	R	S	J	H	J
V	V	B	S	E	T	V	Y	J	A	K	O	S	R	N	T	R	S	F	Y

MOON
FIRST
SECOND
GIBBOUS
DIFFERENT

SUNLIGHT
NATURAL
MONTH
WANING
NEXT

HALF
FIFTH
SATELLITE
LUNAR
WAXING

PHASES
CRESCENT
ONLY
DISTINCT
FULL

The Water Cycle



The water cycle is a very important process that happens on Earth. It is how water moves and changes from one form to another. Let's learn more about it!

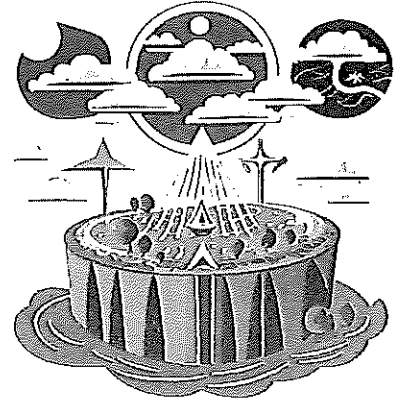
The water cycle has four main stages. The first stage is evaporation. This is when the sun heats up water in oceans, lakes, and rivers, and turns it into vapor or steam. The water rises up into the air and becomes part of the atmosphere.

The second stage is called condensation. This is when the water vapor cools down and turns back into liquid. It forms tiny droplets that come together to make clouds. Have you ever looked up at the sky and seen fluffy white clouds? Those are made of condensed water!

The third stage is precipitation. This is when the water in the clouds gets too heavy and falls back to Earth as rain, snow, sleet, or hail. Rain is the most common form of precipitation. It helps plants grow and fills up rivers, lakes, and oceans.

The last stage is called collection. This is when the water from rain, snow, or other forms of precipitation gathers in rivers, lakes, and oceans. Some of it also soaks into the ground and becomes groundwater. The water in rivers and lakes eventually flows back into the oceans, and the cycle starts all over again!

The water cycle is important because it helps distribute water all around the world. Without the water cycle, we wouldn't have rain or fresh water to drink. It also helps regulate the Earth's temperature by carrying heat from the sun to different parts of the planet. So, the next time you see rain or a cloud in the sky, remember that it's all part of the amazing water cycle!



The Water Cycle



Name: _____

Date: _____

1. What is the first stage of the water cycle?

- Evaporation
- Condensation
- Precipitation
- Collection

2. What happens during the second stage of the water cycle?

- Evaporation
- Condensation
- Precipitation
- Collection

3. What is formed during the condensation stage?

- Clouds
- Rain
- Snow
- Hail

4. Which form of precipitation is the most common?

- Rain
- Snow
- Sleet
- Hail

5. What is the last stage of the water cycle called?

- Evaporation
- Condensation
- Precipitation
- Collection

6. Where does the water in rivers and lakes eventually flow?

- Ground
- Atmosphere
- Oceans
- Clouds

7. What is the purpose of the water cycle?

- To distribute water worldwide
- To create clouds
- To regulate temperature
- All of the above

8. What does the water cycle help regulate?

- Sunlight
- Air pressure
- Earth's temperature
- Wind speed

9. What happens when the water vapor cools down?

- Evaporation
- Condensation
- Precipitation
- Collection

10. What does the water cycle convert water into?

- Vapor
- Steam
- Liquid
- All of the above

The Water Cycle

Note: Words are hidden in all directions including backwards and diagonally.

S	N	P	J	E	Z	F	L	U	F	F	Y	Q	F	Y	O	H	C	Z	F
N	V	I	P	C	O	T	S	N	V	O	E	J	G	L	A	K	E	S	L
R	O	D	A	T	V	H	R	S	I	J	B	W	U	F	B	Q	Y	T	V
E	I	K	S	R	Y	E	A	A	Q	V	W	N	B	W	S	K	W	L	U
T	Z	R	O	N	O	I	T	A	T	I	P	I	C	E	R	P	G	U	F
A	Y	Q	O	S	E	U	L	V	G	Q	L	G	K	G	G	E	C	V	F
W	E	S	N	P	F	V	U	A	M	A	Z	I	N	G	J	U	P	U	T
D	L	M	O	F	A	H	A	L	C	S	C	F	I	S	D	U	O	L	C
N	W	L	I	G	R	V	M	P	I	A	T	P	L	A	N	T	S	O	K
U	Q	W	T	F	E	B	T	A	O	L	M	A	L	N	J	E	U	P	E
O	C	D	A	Q	J	Q	Y	S	I	R	L	D	G	D	V	R	W	D	Z
R	Y	I	S	H	P	A	K	Z	F	N	A	Q	K	E	F	E	H	Z	P
G	W	Z	N	S	E	V	O	M	W	L	C	T	J	O	S	H	X	D	R
M	Z	H	E	B	S	R	E	H	T	A	G	Y	I	Z	J	P	O	G	M
A	P	L	D	Y	E	K	B	O	H	W	T	Q	C	O	L	S	A	K	R
G	Q	H	N	H	F	L	F	P	H	H	F	E	U	L	N	O	Z	X	Z
I	N	V	O	G	D	Y	Y	I	W	O	R	A	R	G	E	M	J	B	L
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G	J	T	B	E	Y	E	X	M	Y	J	S	F	E	F	S	A	B	W	K
T	O	F	V	K	U	B	J	S	L	J	H	K	H	H	X	H	A	M	I

FRESH
GROUNDWATER
MOVES
CYCLE
FLUFFY

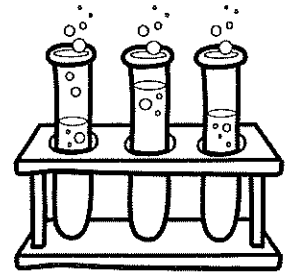
LAKES
CONDENSATION
CLOUDS
ATMOSPHERE
GATHERS

EVAPORATION
MAIN
AMAZING
WHITE
WATER

VAPOR
RAIN
PRECIPITATION
STAGES
PLANTS

SCIENTIFIC METHOD

Have you ever had a question about the world around you? Ever wondered why the sky is blue? Why the grass is green? Scientists ask questions all the time. Then, they follow steps to find the answer! This method for finding answers to science questions is called the **scientific method**.



The first step of the scientific method is to make an observation. To observe something is to look at it and realize something. For example, you may be looking out the window and notice that all the grass on the playground is green. In the winter, you may notice that the grass turns brown. You have just made an observation.

The second step is to ask a question. What do you want to find out? Maybe your question is "why does the grass change from green to brown in the winter?" Your question should be something you do not already know the answer to.

The third step is to form a **hypothesis**. A hypothesis is like an educated guess. What do you think the answer to your question is? You may want to do some research about your question before you come up with your hypothesis. A hypothesis is usually an "if... then" statement. For example, your hypothesis might be: "if there is less sunlight, then the grass turns brown," or "if the air is colder, then the grass turns brown."

The fourth step is to test your hypothesis. This is the fun part! To test a hypothesis, scientists conduct experiments. Coming up with an experiment can be tricky. What can you do to find the answer to your question? Maybe you will grow grass in different environments, changing the levels of light and the temperature. You could observe the grass and take notes, recording whether or not the grass turns brown.

The fifth and final step is to analyze your data and draw a **conclusion**. Let's say that looking back through your notes, you notice that the grasses that were kept cold turned brown while the grasses that were kept warm stayed green. You may come to the conclusion that grass turns brown in the winter because of the colder temperatures. Once your hypothesis has been proven, it becomes a **theory**.

Name: _____

Score: _____

SCIENTIFIC METHOD

1.) What is the scientific method?

- A. a school for scientists
- B. a way to find answers to questions
- C. a type of science experiment
- D. a question about the world

2.) What is the first step of the scientific method?

- A. draw a conclusion
- B. form a hypothesis
- C. ask a question
- D. make an observation

3.) What is an observation?

- A. a question
- B. a conclusion
- C. something you notice
- D. a guess

4.) You should choose a science question that you already know the answer to.

- A. true
- B. false

5.) What is a hypothesis?

- A. a question
- B. a theory
- C. a conclusion
- D. an educated guess

6.) You may want to do some research before you come up with your hypothesis.

- A. true
- B. false

7.) Which of the following is an "if... then" statement?

- A. it breaks when I drop it
- B. if I drop it, then it breaks
- C. it will break when it is dropped
- D. if dropped, it might break

8.) What is the fourth step in the scientific method?

- A. draw a conclusion
- B. form a hypothesis
- C. conduct an experiment
- D. ask a question

9.) Which word has a similar meaning to the word conclusion?

- A. answer
- B. question
- C. guess
- D. problem

10.) What is the difference between a hypothesis and a theory?

- A. they are the same thing
- B. a hypothesis is true and a theory is not
- C. a theory is proven and a hypothesis is not
- D. a theory is a question and a hypothesis is an answer.