AMI WORK FOR GRADES 8TH & UNDER

THERE ARE A TOTAL OF FIVE DAYS WORK TO BE USED FOR INCLEMENT WEATHER DAYS.

EACH DAY'S WORK IS MARKED. FOR EACH DAY MISSED DUE TO INCLEMENT WEATHER, DO ONE MARKED DAY OF WORK.

THE WORK FOR EACH DAY MISSED MUST BE RETURNED TO SIEBERT SCHOOL WITHIN THE WEEK THE DAY IS MISSED FOR THE ABSENCE NOT TO BE COUNTED AGAINST THE STUDENT.

IF YOU NEED EXTRA COPIES OF YOUR CHILD'S PACKET, GO TO OUR WEBSITE AT WWW.YOUTHHOME.ORG/DAY_TREATMENT.HTML.

AMI WORK PACKET

COMPLETE FOR INCLEMENT WEATHER

DAY 1

(*answer key* 0831811)

Name ______________________ Date ______________________

(Answer ID # 0831811)

Language Arts

Rewrite each sentence using the correct punctuation.

1. "Don't shoot your eye out" his mother warned.

____

2. "There is no way" the coach explained "to lose the game now."

____

Write a preposition to complete each sentence.

3. ______________ Dr. Mason said Julia couldn't go ____ her house for two weeks.

4. ______________ After falling ____ the pride, the lone lioness was pounced on by a pack of hungry hyenas.

5. ______________ George Washington led the American Revolutionary troops ____ the Delaware River in 1776.

6. ______________ I gave the money in my piggy bank ____ my brother to help him pay for Youth Camp.

Write <u>fact</u> if the sentence is a fact. Write <u>opinion</u> if the sentence is an opinion.

7. __________ Skipping rocks across the pond is more fun than playing baseball.

8. __________ The gardener chased the rabbits out of his cabbage field.

9. __________ The family went on vacation during the school break.

Name ____________________ edHelper.com Date ______________

Fill in the missing digits.

1. 6 . ☐☐ x 5 . 5 7 . 4 3 1 ☐ 3 . 0 8 0 0 + 3 0 . ☐☐☐ 0 3 ☐ . ☐ 1 1 2	2. 1 . 4 ☐ x ☐ . 1 8 . 1 ☐ 4 ☐ . ☐ 4 ☐ 0 + 4 . 2 9 0 0 ☐ . 5 4 ☐ 4

Complete.

3. 867,268 - 69,729	4. 341,235 - 70,854	5. 940,443 - 54,938	6. 89,877 - 17,526
7. 878,003 - 578,389	8. 279,249 - 131,117	9. 64,616 - 48,379	10. 912,504 - 71,650

Divide.

11. $9\overline{)789,642}$	12. $2\overline{)34,548}$	13. $8\overline{)4,118,648}$
14. $7\overline{)23,261}$	15. $3\overline{)4,650,765}$	16. $2\overline{)842,702}$

Name: ____________________________________

Neil Armstrong

When you are planning to go on a trip, you have to get things ready. You have to pack. If you're going to the beach for a vacation, maybe you pack swim suits, shorts, and T-shirts, but you might also pack a few warm clothes in case it gets cold at night. If you're planning a trip to someplace you've never been before, maybe you do a little research to find out what the weather is usually like there. Maybe you pack something to read, something to play with, or some sports equipment. If you're going on a business or study trip, you pack the materials that you will need while you are there. You might look up the best route on a map, or ask someone for directions. You might fill up the gas tank in your car, or buy a plane ticket.

In 1969, Neil Armstrong was planning a trip. For this trip, he couldn't choose a route from a road map, and there was no one who had taken the same trip before, so he couldn't just ask for directions. Neil Armstrong was planning a trip to the moon. If the trip went as he planned, he would be the first person ever to set foot on the moon.

Armstrong and the other scientists at NASA had a lot of planning to do. Since both the Earth and the moon are always moving, it would take a lot of very precise math to figure out how to get there and back. The weather would be unpredictable, as always, and might cause last minute changes in their plans. They had to choose a landing site. Since no one had ever been on the moon's surface, they had to make a scientific guess about where would be a good place to land. They chose a place named the Sea of Tranquility.

They had to pack too. Armstrong and his crew, Michael Collins and Edwin "Buzz" Aldrin, would have to take everything they would need for their eight-day journey. There would be no stopping for pizza on this trip. Not only would they have to pack all of their food, they would also need to take their own water, and even their own oxygen! They would need to pack special equipment to deal with the weightlessness in space and the low gravity on the moon. They needed to plan how they would keep warm in space. They also packed equipment for science experiments, including a seismograph, -- used to detect earthquakes (or moonquakes) -- and a laser that could be used to calculate the exact distance from the Earth to the moon. They took a camera, and containers to bring samples back to Earth.

Planning for this trip also involved lots of training. The three astronauts had to relearn many everyday things. Simple activities like eating and moving around would require new skills in the weightless atmosphere of the spaceship.

Finally it was time to go. Everything was ready, and the weather was right. On July 16, a huge Saturn V rocket blasted Armstrong, Collins, and Aldrin into orbit in their spacecraft, *Apollo 11.* For four days, they raced though space. Then, on July 20, while Collins orbited the moon in *Apollo 11,* Armstrong and Aldrin climbed into

Eagle, their lunar landing vehicle, and headed straight for the moon. The spot they had picked for a landing turned out to be too rocky, but the astronauts maneuvered to a smoother area and landed. Armstrong was the first one to step out onto the moon. He had a short speech prepared for the occasion: "That's one small step for man, one giant leap for mankind."

They took pictures of the moon, collected samples of moon rocks, set up their experiments, and all together spent just two and one-half hours on the moon. They left behind footprints that are probably still there today.

Then they started on their journey home. On July 24, they splashed down in the ocean, safely back on Earth. They must have been glad to be home, but what a trip it had been!

Neil Armstrong

Questions

_____ 1. *Apollo 11* carried ______ astronauts.

- A. four
- B. two
- C. one
- D. three

_____ 2. The module that landed on the moon was called ______.

- A. *Saturn V*
- B. *Tranquility*
- C. *Apollo 11*
- D. *Eagle*

_____ 3. The rocket that boosted them into space was called ______.

- A. *Apollo 11*
- B. *Saturn V*
- C. *Eagle*
- D. *Tranquility*

_____ 4. Their spacecraft that flew to the moon was called ______.

- A. *Saturn V*
- B. *Eagle*
- C. *Apollo 11*
- D. *Tranquility*

_____ 5. ______ astronauts landed on the moon.

- A. one
- B. two
- C. four
- D. three

Name: ________________________________

The Scientific Method

What is science? Chances are you have been studying science for a few years now. But science is more than just a few chapters in a textbook. Science is a process. It is a constant search for information about our universe.

The word science comes from the Latin word, "scire," meaning "to know." Scientists are like police investigators. They use a process to solve a mystery. The process they use is called the scientific method.

Scientists begin this method by making an observation or stating a problem. This becomes the purpose of their study. Have you ever wondered why the sky is blue? Or how your skin heals when you cut it? If so, you have taken the first step of the scientific method.

To focus their purpose, a scientist has to clearly define the problem. Usually they pose a question. For example, they might say, "Which warms faster, water or land?"

Another step in the scientific method is gathering information. The scientist might study a body of water and an area of land. She would write notes about what she sees. She might read books and scientific papers written by others who have studied this topic.

After all the information is gathered, the scientist gives a possible solution to the problem. This is called a hypothesis. For example, she might say, "Water warms faster than land."

Next, the scientist will test the hypothesis by doing experiments. An experiment has to be set up carefully. Every good experiment has at least one variable. A variable is the factor that is being tested. Experiments should also have a control. In a control experiment, everything is set up the same, but the variable is missing.

The next step in the scientific method is to record and analyze data. Data includes any measurements taken. Often the data is recorded in a table. Then it might be graphed. This helps the scientist to compare the measurements. Experiments must be run many times before the scientist can come to a conclusion. It also includes observations made during the experiment.

The steps in the scientific method do not have to be done in a certain order. They might be performed differently, depending on the problem. After a conclusion is formed, a theory may be developed. A theory is a logical explanation for events in nature.

Name: ____

After the theory is tested many times, it could become a law. A law is a theory that has been accepted as true. However, even laws can be changed if different findings are obtained by other experiments. This is the spirit of science: questions can always be asked. New explanations can always be considered in any event.

The Scientific Method

Questions

____ 1. A problem is usually posed in the form of a ______.

A. question
B. experiment
C. method

____ 2. A hypothesis is a ______.

A. law
B. possible solution
C. theory

3. How is a hypothesis tested?

____

____

____ 4. The factor being tested is called a ______.

A. hypothesis
B. control
C. variable

5. What is a theory?

____

____

____ 6. Observations and measurements are called ______.

A. data
B. control
C. law

AMI WORK PACKET

COMPLETE FOR
INCLEMENT WEATHER
DAY 2

(answer key 0301736)

Circle the form of the verb be that best completes each sentence.

11. While we **(was, were)** outside, the phone rang and I missed an important call.

12. I will copy my notes for you since you **(was, were)** not here.

13. We **(is, are, am)** taking ham sandwiches, potato salad, baked beans, and chocolate chip cookies to the picnic.

14. Natalie **(is, are)** doing a book report on *The Bridge to Terabithia.*

15. The three hostages managed to flee when the prisoners **(was, were)** discussing their demands.

In each sentence one adjective is missing. Write one adjective to complete the sentence.

16. The brown dress she was wearing looked very **(your adjective)** on her.

____

17. Jaguars and **(your adjective)** forest cats silently stalk their prey.

____

18. Each kind of music has its **(your adjective)** unique chord progressions.

____

19. The lack of rain may affect the **(your adjective)** crops.

____

Read each sentence. Mark the space for the answer that shows correct punctuation and capitalization for the underlined words.

20. "Are there enough pencils for everyone?" Steven asked.
- Ⓐ Everyone
- Ⓑ Everyone?"
- Ⓒ everyone
- Ⓓ Correct as is

21. thank you," said Sean, "for allowing me to speak at your banquet."
- Ⓐ "Thank
- Ⓑ "Thank,
- Ⓒ Thank
- Ⓓ "thank
- Ⓔ Correct as is

Circle the word that best completes each sentence.

22. I think that chocolate cake is **(our, ours, we)**, but I am not sure.

23. In the 1800's, life expectancy was much shorter than **(our, ours, we)** today.

24. The DVD's in that box are **(our, ours, we)**.

25. There's a lot of ivy growing up the side of **(our, ours, we)** house.

26. The gas station attendant cleaned our windows while **(our, ours, we)** pumped gas.

Name ______________________________

Write the value of the underlined digit in words.

10. 0.$\underline{9}$	11. 64.$\underline{1}$8	12. 3.13$\underline{7}$

Complete.

13. 53.8 - 7.6	14. 6.4 + 55.1	15. 37.5 - 5.1	16. 7.6 - 4.2	17. 60.5 + 31.1
18. 21.3 + 9.7	19. 64.7 - 3.9	20. 67.4 + 3.8	21. 5.5 - 2.8	22. 94.2 + 53.8

Complete.

23. 3,000 x 3	24. 900 x 1	25. 60 x 3	26. 40,000 x 3
27. 20 x 6	28. 70,000 x 4	29. 70 x 5	30. 5,000 x 3

Complete.

31. 1 x 5	32. 72 x 8	33. 3 x 8	34. 6 x 2	35. 70 x 5
36. 2 x 5	37. 88 x 1	38. 5 x 2	39. 2 x 3	40. 37 x 4

Name: ________________________________

Jane Goodall

Jane Goodall loved to read about wild animals. She hoped to work with animals when she grew up. Many young people who like animals grow up work in a veterinarian's office; others become farmers. Some work in zoos or parks. Some work in pet shops. Jane didn't want to do any of those things. She wanted to go to Africa to study the wild animals there.

When she was 23 years old, Jane had the chance to visit Africa. While she was there, she contacted the famous anthropologist, Dr. Louis Leakey. Dr. Leakey offered her a job as his assistant. This gave Jane the chance to stay and work in Africa. It was interesting work, but it still wasn't what she really wanted to do. Jane wanted to work with living animals.

With Dr. Leakey's help, Jane found the perfect job - studying the wild chimpanzees in Gombe National Park in Tanzania.

Wild chimpanzees were not easy to study. They were afraid of humans and ran off whenever Jane Goodall approached them. It took months of patient work before she could get close enough to observe the chimps.

Her patience paid off. Gradually, her presence became accepted by the chimps. She spent whole days observing the chimps from the time they woke up in the morning until the time they went to sleep at night. She was able to observe their behavior as no one had done before.

Jane Goodall made some amazing discoveries about chimpanzees. She discovered that they were more like humans than anyone had suspected. She discovered that chimps are smart and sociable. She found that they developed close family ties but that they also liked to fight. She learned that chimps used tools, and even more surprising, that they were beginning to learn to make tools. This was one of her most amazing discoveries because, up to that time, it was believed that only humans could make tools.

She made this discovery while watching a chimpanzee catching termites to eat. The chimp took a small twig and stripped off its leaves. Now, he had a termite-hunting tool. Over and over, he poked the twig into a termite hole; it was a little bit like fishing for termites. When he pulled the twig out of the hole, it was coated with tasty termites. Later she learned that chimps used not only twigs, but also stems, branches, seeds, leaves, and rocks as tools to help them do their chores.

Jane continued to work with the chimpanzees at the Gombe National Park for almost 40 years, but now she has taken on a new role. She has started sanctuaries in Africa for orphan chimps. Many chimps are orphaned when their mothers are killed for meat by poachers. Sometimes, the baby chimps are sold for pets, but that is illegal; it is not good for chimps to live as pets. With the help of the government, chimps are rescued and sent to Jane's sanctuaries. There, they are cared for in an environment that is as close to their natural home as she can make it. They live outdoors in open spaces, eat healthy food, and enjoy the company of other chimpanzees.

Jane also writes and travels the world, giving speeches and lectures about the chimpanzees. She wants to make people aware of the problems faced by chimpanzees. She wants to let people know that the chimpanzees are on the verge of extinction. The number of chimps in Africa has decreased in the last 100 years, from well over a million to less than 200,000. If their numbers continue to decline, chimps could disappear from the earth altogether.

She has also started a web site to help the chimps. It encourages people to donate money to help the chimps and provides lots of information including "biographies" of several chimps. There you can read about Baluku, a two-year-old with scars around his waist from the time when poachers had him tied up with a rope and were trying to sell him. You can also read about Nani, a baby chimp who liked to roughhouse and once even broke her arm while playing with the other chimps.

Jane Goodall has led an unusual life. Her work is the kind that many people only dream about. Now, she is making good use of the opportunities that she has had by trying to give back to the chimpanzees. Everything that she does is part of her mission to save the chimps.

Jane Goodall

Questions

_____ 1. Jane Goodall studied ______.

A. Africa
B. chimpanzees
C. anthropology
D. elephants

_____ 2. Jane Goodall wanted to go to Africa to ______.

A. work with wild animals
B. start a farm
C. go to college
D. take a vacation

_____ 3. Which happened first?

A. Jane Goodall observed the chimps.
B. Jane Goodall contacted Dr. Leakey.
C. Jane Goodall went to Africa.
D. Jane Goodall started a web site.

Name: ______________________________________

Communication Is the Key

After scientists unlock mysteries in their laboratories, they need to provide the key for the rest of the world to understand their discoveries. That key comes in the form of the science process skill called **communication.** Once scientists have completed their observations, measurements, and experiments, they need to communicate their results. Scientists define words **operationally,** describe observations of objects and events, and construct visual aids to explain their results.

When scientists define words operationally, they describe the words by their actions. For example, let's say that you are researching an important test question in class. You are trying to find out how many licks it takes to get to the center of a Charms Blow Pop. Before you can start the actual experiment, you need to define the word *lick*. As a class, you determine that a complete lick would be "from the bottom of the lollipop to the top of the lollipop on one side." This is important because even though everyone eats lollipops by putting them in their mouths, we have different ways of licking the lollipops. Your class would also need to define operationally how you would know you reached the center of the lollipop. This could be accomplished by saying, "Reaching the center means the candy coating is not covering any portion of the bubblegum." Operational definitions help scientists to narrow the guidelines they will use to help study objects and events.

Once you have gathered data about your lollipop licks, you need to **record** that data. Like scientists, you can write your information in a data log or on a data sheet. Your information may include the average number of licks that students took before they reached the center of the lollipop. You may also include measurements taken of the lollipops before and after the experiment. This information would be useful to determine the thickness of the candy coating on the lollipop. Your partner could also write what he or she observed (drool and all) as you made your way to the center of the blow pop. If scientists did not record the data they acquired after experiments and observing events and objects over time, we would not have information about some of the world's most famous inventions.

When scientists record their data, some of that information is recorded in the form of visual aids. Scientists will draw graphs and charts to show changes in objects and events over time, for example plant growth over a period of months. They may make diagrams and pictures to show the steps of certain events like the life cycle of frogs. Maps would be designed to demonstrate how volcanologists can find the location of active volcanoes. A common way of displaying scientific results is to construct a **model** or to organize an **exhibit.** By using models and exhibits, scientists could demonstrate how objects work and how events occur.

There are many ways to find the answers to science's most probing questions. However, there is only one key to making these answers public, and that is through scientific communication.

Name: ____

Communication Is the Key

Questions

_____ 1. Scientists use different forms of communication to ______.

A. record their autobiographies
B. record their summer vacations
C. record their scientific results
D. none of the above

_____ 2. Defining words operationally means to describe the words based on their actions.

A. false
B. true

_____ 3. Scientists use models and exhibits to ______.

A. demonstrate how time is used in laboratories
B. demonstrate how measurement occurs
C. demonstrate how objects work and events occur
D. demonstrate how science changes over time

4. What would be the best forms of communication to describe changes in animal populations in a certain area over time?

____

____

5. What do scientists use to record data acquired from observations?

____

____

_____ 6. Scientists design maps to list changes in events over time.

A. true
B. false

_____ 7. Diagrams and pictures may be used to show ______.

A. the steps that occur in certain events
B. the results of stopping certain events
C. the growth of certain objects
D. the operational definitions of an experiment

8. What would be the best form of scientific communication to demonstrate a food chain that occurs in nature?

____

____

AMI WORK PACKET

COMPLETE FOR
INCLEMENT WEATHER
DAY 3

(answer key 0301736)

Name ______________________ edHelper.com Date ______________
(Answer ID # 0301736)

Language Arts

Circle the word that comes FIRST in alphabetical order.

1. droned	denim	digital	dip
2. aspires	eskimo	lately	shawl
3. loin	lopsided	lesson	laughing
4. pork	veer	short	them
5. impure	information	improvised	immunities

Circle the correct Latin root for the definition.

6. **seven** duc	vor	bene-	sept-
7. **to throw** duct	omni-	carn	ject
8. **law, word, reading** carni	lex	ceed	ann

Rewrite each sentence using the correct punctuation.

9. Courtney was wearing a red jacket black jeans and a yellow sweater.

____

10. We ordered veal cutlets boneless chicken and lamp chops for dinner.

____

Name ______________________________

Write each number in standard form.

15. eight and three tenths	16. seventy-nine hundredths

Fill in the missing digits.

17. ☐☐8 , 7 5 4 - 8 , 0 ☐☐ 4 1 ☐ , ☐ 7 4	18. 8 6 , ☐ 0 1 - 6 ☐ 3 8 ☐ , 1 3 ☐
19. ☐☐ , 8 ☐ 4 - 2 , 9 1 ☐ 8 9 , ☐ 4 8	20. 8 3 1 , 1 4 ☐ - 7 ☐ , ☐ 8 8 7 ☐ 2 , 8 ☐ 2

Complete.

21. Madison bought 5 bananas. Each banana had a different weight, and they were each between 32.3 and 32.5 grams. Make up a list of weights for the 5 bananas. Calculate the average weight.	22. Write a step-by-step procedure for converting any fraction to its decimal equivalent. Don't forget to explain what to do if the result is a repeating decimal.

Each letter in each question stands for a 1-digit number. In each question, no two letters may stand for the same number. Two separate problems are unrelated. Find a value for each letter.

23. HOP + SANG HAVE (Use the numbers: 5, 0, 1, 6, 4, 8, 7, 3, and 9)	24. ZOO + RUST GAVE (Use the numbers: 7, 1, 6, 3, 9, 4, 5, 0, 8, and 2)	25. SHAPE + TOOL CLASS (Use the numbers: 0, 2, 9, 8, 3, 4, 6, 1, and 7)

Name: ______________________________________

Charles Lindbergh

Charles Lindbergh's story is all about technology. It demonstrates the good effects and the bad effects of technological advances. The airplane was new technology at the time. Lindbergh's knowledge of airplane technology allowed him to make his record-breaking flight. Communications technology was also advancing at the time. The radio allowed people all over the world to listen for up-to-date news on Lindbergh's historic flight. Newspapers were also taking advantage of technology to get news faster, and to get it out to more and more people.

Charles Lindbergh wanted to fly. When he decided to do something about it and to make his dream become a reality, he signed up for flight school. In flight school in Lincoln, Nebraska, Lindbergh learned to pilot a plane. He learned a lot about how a plane works too, because, in those days, a pilot had to depend on himself to keep his plane flying. After completing his training, Lindbergh worked as a mechanic, a wing walker, and a parachute jumper.

Then he heard about a contest to see who would be the first to fly across the Atlantic Ocean. The prize, called the Ortiz Prize, would be $25,000 dollars. Other pilots besides Lindbergh wanted to win the prize too.

First, Lindbergh supervised the building of a plane designed just for a long flight across the ocean. It wasn't the largest, fanciest, or most expensive plane in the contest, but it was built just the way Lindbergh thought it should be built.

When he was ready to go, he packed only what he would absolutely need. He packed maps and charts, four sandwiches, and two canteens of water. He didn't take a radio or a parachute, in order to leave as much room as possible for fuel.

Early one morning, Charles Lindbergh and his plane, *The Spirit of St. Louis,* took off from Roosevelt Field near New York City. A crowd of 500 people watched. His route took him up the coast of North America, and then over Nova Scotia and Newfoundland. Then he began the long crossing of the Atlantic Ocean, heading towards Ireland. From Ireland he would head towards his destination of Paris, France.

There were a few problems along the way. The flight was to be about 33 hours long and since he was flying solo, Lindbergh would not be able to sleep at all. This was especially difficult since he had been too excited to sleep the night before the flight. The weather caused some worries too. At one point, sleet began to stick to the plane. Lindbergh considered turning back, but finally decided to continue on. Fog made flying difficult too. Sometimes he had to fly just above the ocean waves so that he would be under the fog and be able to see where he was going.

Lindbergh dealt with all of these obstacles and, 33 1/2 hours after he had left New York, he landed in Paris.

He was the first to make a nonstop solo flight across the Atlantic, and he had won the prize. This time, a crowd of 100,000 cheered his victory. The crowd was so big that when Lindbergh stepped out of the plane, he was immediately lifted up by several strong policemen and carried through the crowd for his own safety.

Thanks to radio and newspapers, news of Lindbergh's accomplishment had spread around the world and he was an instant hero. This was something that had not happened in the past; it was only with the latest advances in technology that news could travel so far and so fast.

Lindbergh was awarded the Legion of Honor pin by the president of France. In the US he was awarded the Congressional Medal of Honor and the Distinguished Flying Cross. He was honored by the largest-ever tickertape parade in New York City. With the help of technology, including his plane, *The Spirit of St. Louis,* and modern communication devices, Lindbergh had become so famous that he couldn't go anywhere without being recognized. Reporters followed him wherever he went, because Lindbergh was news.

Later in his life, tragedy struck Lindbergh's family. His baby son was kidnapped and murdered. Charles Lindbergh and many other people thought that his fame, caused by all of the media attention, had led to the kidnapping.

Maybe Lindbergh's story is about the human side of technology. It was technology that led to his family's loss. It was also technology that allowed him to accomplish something that people have admired ever since that day when he landed in Paris among the crowd of cheering fans.

Charles Lindbergh

Questions

_____ 1. Lindbergh's plane was named ______.

A. *The Legion of Honor*
B. *The Spirit of St. Louis*
C. *Lucky Lindy*
D. *Paris*

_____ 2. His nonstop flight across the Atlantic lasted ______.

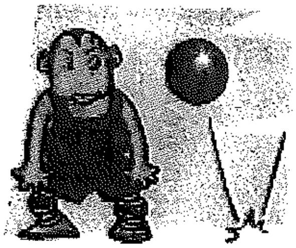
A. two days
B. less that one day
C. less than two days
D. one day

_____ 3. Lindbergh took ______ on his flight.

A. sandwiches
B. water
C. maps
D. all of the above

Name: ______________________________________

Experimenting for Answers



There are many questions in life. Some are answered after little research; however, some go unanswered for many years, possibly forever. The way scientists search for the answers to their questions is through the science process skill called **experimenting.**

When you experiment in your science class, you may think you are just "doing something to see what happens." However, to true scientists, when you experiment you carry out an operation or procedure under controlled conditions in order to discover an unknown effect or law. Experimenting is one of the most important process skills because it also includes the other six process skills: observing, classifying, communicating, inferring, predicting, and measuring. During an experiment scientists state a **hypothesis** (a possible answer to the question) and design **procedures** with **controlled variables** to test their hypothesis.

An **operational question,** or scientific question, includes an inference that can be tested. For example, you are helping your favorite physical education teacher clean out her equipment closet. As you are herding the various types of balls into their labeled bins, you observe one ball roll from the top shelf to the floor and bounce very high after it hits the floor. You began to wonder, "Does height at which the ball is dropped affect how high it will bounce?" You have just asked an operational question based on your observations. Operational questions help scientists to focus on the specific action they want to take to produce a result. In this case you want to determine if the ball's drop height will affect the ball's bounce height.

Now that you have your operational question to test, you need to develop procedures for your experiment. When scientists design experiment procedures, they think about the conditions they want to vary and the conditions they want to control within that experiment. Controlling variables is an important part of experimenting. As a scientist, you must control variables in order to determine what conditions in an experiment make a difference. Since you are testing whether drop height affects bounce height, you need to change the variable, drop height. You would keep the type of ball the same (i.e., large rubber playground ball), the way you measure bounce height the same (i.e., bouncing the ball near an upright meter stick), the manner in which you drop the ball the same, and change the drop height of the ball. You might choose three different levels at which to drop the ball. You may also include the same number of attempts for each drop height. Keep in mind that if the ball is not dropped in the same manner from each level of height in the same way for all attempts, you may have faulty conclusions at the end of your experiment. For example, let's say you decided to drop the ball with one hand for one attempt and both hands for the second attempt. This change, although slight, may impact your measurements - and as a result, your conclusions.

Once you have developed your procedures, you can begin the fun process of testing your hypothesis. You may also want to have some of your friends conduct the same experiment so that you can compare results. As scientists, you want to acquire as much data as possible so that you can make a sound conclusion or judgment about the data. You could also extend your operational question by observing if the type of ball or size of ball affects the bounce height. Give it a try. You may be surprised at the answers you acquire at the end of your experiment.

Experimenting for Answers

Questions

____ 1. When scientists make hypotheses, they are making ______.

A. conclusions about experiment data
B. predictions they want to test
C. guesses
D. observations about experiment data

____ 2. During scientific experiments, scientists do not control variables.

A. true
B. false

____ 3. Designing procedures helps scientists to ______.

A. think about the possible conclusions to the experiment
B. think about the predictions they made for the experiment
C. think about data from previous experiments
D. think about the variables they want to vary and control

4. You are using magnets in the classroom. During science you keep hearing your classmate drop the magnets. What testable question can you develop based on this observation?

____

____

5. In your science class you are studying properties of water, specifically buoyancy. Your teacher has given you a little toy boat for observing buoyancy. You have the option of using warm water and/or cold water. Keeping all of your available materials in mind, what question can you develop that is related to buoyancy?

____

____

6. You have developed the following hypothesis: The harder the ball, the higher it will bounce. What variables will you need to control in order to test this hypothesis?

____

____

AMI WORK PACKET

COMPLETE FOR
INCLEMENT WEATHER
DAY 4

(*answer key* 0956571)

Write the correct form of the adjective or adverb in parentheses to complete each sentence.

15. The ____ recorded temperature in North America, -145° F, was officially recorded on the Kluane Plateau. (cold)

____

16. The ____ air in the nation is found in Montana. (cold)

____

17. The ____ colleges were founded in the 15th century. (earlier)

____

Place the words in the word list on the correct page of the dictionary.

18. Write the following words on the correct page of the dictionary:

afoot again agrees agree afforded affronted

Dictionary Pages:

affirmed **affronts**	**afghan** **agile**	**agility** **aided**
________________________	________________________	________________________
________________________	________________________	________________________

Read each incomplete sentence. Circle the part that is <u>missing</u>.

19. subject predicate Said that I'd have to clean my room before I can go outside to play.
20. subject predicate Would eat the cookies that I baked from the new recipe I tried to create.
21. subject predicate Jose.
22. subject predicate We.
23. subject predicate Tried to console me when my hamster ran away.

Rewrite each sentence correctly.

24. please don't bother me because i've had a hard day.

____

25. jeff wants to be just like the cookie monster!

____

Divide. Round to the nearest thousandth.

1. $3.06\overline{)57}$
2. $6.94\overline{)619}$
3. $7.4\overline{)7}$
4. $2.77\overline{)71}$
5. $5.38\overline{)447}$
6. $2.5\overline{)3}$

Complete.

7. Ana Maria has applied for United States citizenship. She has studied American history and government for a long time and thinks she is ready to take the citizenship test. When she took the practice test online she answered thirty-six questions correctly and only missed four. What percent of the questions did she get right?

8. Jordan and Daniel bought a box of apples and divided the cost equally. The box of apples cost $12.56. How much did each boy have to pay for his half of the box of apples?

Complete.

9. $4 \times 8 \times (9 \times 3)$
10. $2 \times 6 \times 5$
11. $(7 \times 1) \times 3 \times (8 \times 7)$
12. $2 \times 1 \times 9 \times (6 \times 5)$
13. $4 \times 8 \times 7 \times 4$
14. $1 \times 9 \times 6$

Name: ______________________________________

Dame Catherine Cookson

If you write about what you know, you can write well. Many writers use their own experiences, even hard ones, to inspire their work. Catherine Cookson, a famous British novelist, used her own sad childhood as inspiration for her many novels.

Catherine Ann Cookson was born on June 27, 1906, in Northeast England. Her mother was an alcoholic, so Catherine was raised by her grandmother. She always thought that her mother was her sister. Catherine went to school until she was 13, but her family was poor so she began working as a maid in a wealthy house. She spent her spare time reading. She also noticed how differently rich people lived. This experience helped Catherine create characters that faced great hardships in her novels.

Catherine loved words. She turned to writing because telling stories always came naturally to her. She said, "I was a story-teller from the time I could talk...I used to pass the time, telling myself wonderful stories about us living in a nice house." Catherine also told stories about tiny green men who talked to her. She realized that her vivid imagination made her happy. She wrote her first story when she was 11 years old. It was called *The Wild Irish Girl.* She boldly sent it to a publisher, but her manuscript was rejected. She was a brave girl!

Catherine believed in hard work because she thought it would bring her success and happiness. From 1924 until 1929, she worked in a laundry and saved her money. She eventually bought a hotel and rented out the rooms. She got married but became sad at one point. She began writing again to help lift her spirits.

Catherine's first book was called *Kate Hannigan* and was published in 1950. Some people did not want her to publish it because it had some subjects that people thought were not appropriate. In the first few pages, Catherine wrote about a baby being born. This was a subject that most writers did not describe in their books. It was considered a very private experience and not something to put in a story. Other parts of the book were similar to Catherine's own life, so the book was also autobiographical.

Many scenes from her books came from scenes in the Northeast of England. Characters are often poor. They live and work in mines, shipyards, or on farms. Catherine did a lot of research for her books. She wrote her first sixteen books out in longhand, but later she used a tape recorder. She acted out the parts of the characters in her stories. Her husband helped her with grammar and spelling. She wrote about events from her childhood and friends that she had.

Catherine often wrote about education and hard work. She knew that people could overcome hard circumstances just like she did. In her time, many people stayed in the same class that they were born into. The wealthy people associated with other rich people; poor people remained poor. Education and hard work could help people reach a higher class. In one of Catherine's novels, a character named Kate Hannigan was educated by an employer. Another character named Tilly Trotter was taught to read by a parson's daughter. Perhaps

Catherine's own overcoming of poverty made her write about the same thing with her characters.

Catherine became a spectacular success. She published over 90 popular novels. Her books were translated into twenty languages and sold 90 million copies in the 1990s. She became a multimillionaire, but she remained frugal. She never forgot those who were suffering, and she gave a lot of money to many charities. She also received many honors, ranging from an honorary degree from the University of Newcastle to the status of Dame Commander of the Order of the British Empire. This was the equivalent of becoming a knight and was a great honor for the feisty author. The Order's motto was "For God and the Empire."

Dame Catherine died in Newcastle just 16 days before she turned 92. Her novels were even published after her death until 2002. She had an amazing ability to use her own difficult experiences to create wonderful stories. All classes of people read and loved her books. They also loved her very much. Millions of her fans fondly called her "Our Kate."

Dame Catherine Cookson

Questions

_____ 1. Where did Catherine Cookson grow up?

A. Great Britain
B. America
C. France
D. Germany

_____ 2. Which of the following influenced Catherine's novels?

A. her father
B. her extensive education
C. her poverty
D. her wealth

_____ 3. Which of the following appeared in Catherine's stories when she was young?

A. green peas
B. green fairies
C. tiny green men
D. green giants

_____ 4. What did Catherine like to do in her spare time?

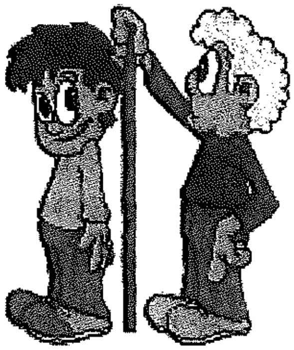
A. sunbathe
B. art projects
C. read books
D. laundry

_____ 5. How old was Catherine when she first submitted a manuscript?

A. 21
B. 41
C. 31
D. 11

Name: ______________________________________

The Measures of Science



Imagine a world where we did not know the boiling point of water. What if we could not record growth of plants and animals? How would you know the weekend had begun if you could not keep count of days, weeks, and months? **Measurement** has been an important part of our lives for centuries, and it is the reason that scientists can compare objects and events **quantitatively.** Scientists rely on measuring to describe comparisons numerically by using standard tools, models, scaling, sampling, and estimating.

Before standard tools like rulers, clocks, and scales, people used everyday objects to help find measurements or quantities of other objects. For example, an adult foot was used to measure length. Large stones may have been used in simple balances to help measure the weight of objects. The sundial, the earliest form of the clock, used the shadows from the sun to help keep track of time. Today scientists use various tools like rulers, graduated cylinders, and scales to measure in English units (i.e., inches, feet, etc.) and metric units (i.e. centimeters, millimeters, etc.). Graduated cylinders are used to measure the volume of quantities of liquids in milliliters or fluid ounces. Scales can be used to measure the weight of objects in grams and milligrams or ounces and pounds. Scientists also use thermometers and barometers to measure temperature and air pressure.

Scientists build **models** and use **scaling** to represent objects that are far too large to show at their true size. Models are smaller objects that are built to represent the detail of larger objects. Scientists use smaller measurements that are in proportion or scaled to the measurements of the larger object the model represents. Scaling is also done to represent extremely large distances between objects, such as the planets in our solar system. Another example of scaling would be when architects build models of buildings. These models may have a scale where every inch on the model is scaled to a certain amount of feet in height for the real buildings. When scientists build models, they are providing a visual image that helps others to understand scientific concepts (such as planetary motion) and objects (such as high speed trains).

There are times when scientists need to study populations of beings or sets of objects that are extremely large. **Sampling and estimating** are good methods for accomplishing this goal. When scientists sample populations or sets, they are looking at a small part of that population or set. After they have studied that small part, they use it to make **generalizations** or judgments about the whole population or set. Scientists who study events, like weather patterns, may need to estimate or form opinions about numerical data. An example would be when a meteorologist estimates how many inches of snow your town will receive that evening. Based on past records of similar weather patterns, he or she is able to predict a range of snowfall to come.

Measurement is an important part of scientific investigating and our daily lives. When scientists measure objects and events, they are communicating comparisons that help us to better understand our world.

Name: ____

The Measures of Science

Questions

_____ 1. Scientists use measurement to ______.

A. record the procedures in their experiments
B. communicate comparisons numerically about objects or events
C. estimate the amount of hours an experiment will take
D. none of the above

_____ 2. Before there were standard tools to use for measurement, people used ______.

A. scaling to determine measurements of objects
B. everyday objects to measure and compare with other objects

3. How does scaling help scientists to represent models of our solar system?

____

____

_____ 4. When scientists make predictions, they use past patterns of events to make numerical judgments about future events.

A. false
B. true

_____ 5. Graduated cylinders are used to measure ______.

A. weight of small objects
B. width of small objects
C. volume of quantities of liquid
D. length of objects

6. Look around your classroom. Locate several small items (about ten) that you can measure. Imagine you did not have standard tools to measure these items. What could you use to help measure these items? List the items you chose and the non-standard tools you used to measure them.

____

____

AMI WORK PACKET

COMPLETE FOR
INCLEMENT WEATHER
DAY 5

(*answer key* 0956571)

Name ______________________ Date ______________________

(Answer ID # 0956571)

Language Arts

Rewrite each sentence using the correct punctuation.

1. We traveled to Denver last February but we did not get to see any snow.
2. Katya Jeff's wife is from Russia.
3. I learned Spanish in fourth grade French in ninth grade and Latin in eleventh grade.

Circle the form of the verb be that best completes each sentence.

4. Uncle John, my mom's brother, **(is, are)** coming to visit us next month.
5. We **(is, are)** going to the mountains to see some snow.
6. Sometimes it **(is, are, am)** hard to summon your courage to do something you haven't tried before.
7. There **(was, were)** many crabs on the beach.
8. I am so glad that it **(is, are, am)** finally my birthday.

Write a synonym for each word.

9. rich
10. correct
11. leisure
12. begin
13. tiny
14. kindness

Name ______________________ edHelper.com Date ______________

Complete.

1. 90,320 - 63,886	2. 317,900 - 40,752	3. 687,911 - 60,597
4. 86,581 - 78,533	5. 25,128 - 18,680	6. 694,914 - 599,523
7. 66,777 - 30,214	8. 95,117 - 84,467	9. 639,552 - 94,386

Divide. Write your answer as a mixed number in simplest form.

10. $7 \div \frac{1}{10} =$	11. $\frac{2}{5} \div 2\frac{3}{4} =$	12. $\frac{1}{2} \div 3\frac{1}{2} =$	13. $\frac{5}{10} \div \frac{4}{5} =$
14. $3\frac{9}{11} \div 1 =$	15. $1\frac{3}{8} \div 1\frac{2}{4} =$	16. $\frac{1}{7} \div \frac{1}{2} =$	17. $2\frac{2}{4} \div 7 =$

Is each fraction in simplest form? Write *yes* or *no*.

18. $\frac{35}{50}$	19. $\frac{15}{17}$	20. $\frac{3}{12}$	21. $\frac{16}{20}$	22. $\frac{1}{11}$
23. $\frac{2}{16}$	24. $\frac{1}{2}$	25. $\frac{17}{21}$	26. $\frac{8}{9}$	27. $\frac{1}{29}$
28. $\frac{24}{48}$	29. $\frac{1}{4}$	30. $\frac{12}{32}$	31. $\frac{2}{3}$	32. $\frac{2}{5}$

Name: ____________________________________

Dick Van Dyke

This actor's work can be seen in the movie *Mary Poppins.* You might have seen him in the role of inventor/father Caractacus Pott in the movie *Chitty Chitty Bang Bang.* Besides finding fame in movies, he was also a successful TV star. He starred as Rob Petrie in *The Dick Van Dyke Show* in the 1960s and as Dr. Mark Sloan in *Diagnosis: Murder* in the 1990s. His fame is a result of his flair for comedy. He is the famous Dick Van Dyke.

He was given the name Richard Wayne Van Dyke at his birth on December 13, 1925, in Missouri. His parents raised him and his younger brother, actor Jerry Van Dyke, in Illinois. He got an early start preparing for his career as an entertainer by being involved in high school and community plays. He grew up to be six feet one inch in his socks! Before he joined the United States Army Air Corps, he considered becoming a minister.

Van Dyke has enjoyed a long career. While he was in the U.S. Army Air Corps, he became a radio deejay. This was during WWII, and it was just the beginning. Van Dyke returned to the States. After a brief excursion into the field of advertising, he turned back to show biz. He went from radio to stage to television to movies and back to television. Fans enjoyed his comic routines as much as his singing and dancing. He has been described as having "ageless charm."

One fun fact from Van Dyke's life is that in 1948 he got married on a radio program! The show was called *Bride and Groom.* The radio station paid for the ceremony. He and his first wife had four children together. One, Barry Van Dyke, enjoyed a starring role alongside his father in *Diagnosis: Murder,* which ran from 1993 to 2001.

Dick Van Dyke is also an author. The titles of some of his books are *Faith, Hope and Hilarity, My Lucky Life In and Out of Show Business,* and *Those Funny Kids.*

Over his lifetime, Dick Van Dyke has won eight Emmys, one Tony, a Grammy, and a People's Choice Award. He also received Lifetime Achievement Awards from the Screen Actors Guild and from American Comedy Awards. In 1995, he was inducted into the Television Academy Hall of Fame. In 1998, he was given the Disney Legends Award for his turn as the chimney sweep named Bert who is fond of the magical nanny in the classic Disney movie, *Mary Poppins.* Dick Van Dyke has been a popular performer for many years, and with his performances available on video and DVD, his popularity will continue for many years to come.

Name: ____

Dick Van Dyke

Questions

_____ 1. What is the purpose of this article?

A. to persuade the reader to be a fan of Van Dyke's work
B. to provide information on the career of Van Dyke
C. to entertain the reader with funny anecdotes
D. to tell the reader how to become a successful entertainer

_____ 2. Which one of these people is **not** an actor?

A. Dick Van Dyke
B. Barry Van Dyke
C. Mary Poppins
D. Jerry Van Dyke

_____ 3. What did Van Dyke do that was unusual?

A. He thought about becoming a preacher.
B. He raised four children.
C. He got married on a radio program.
D. He served in the United States Army Air Corps during WWII.

_____ 4. ______ was/is one of Van Dyke's strong points.

A. comedy
B. fantasy
C. tragedy
D. action adventure

_____ 5. Because the Disney movie *Mary Poppins* became a classic:

A. Everyone wants to star in Disney movies.
B. People confuse Van Dyke with Bert the chimney sweep.
C. Van Dyke learned to sing and dance with a broom.
D. Van Dyke received the Disney Legends Award.

_____ 6. We can assume that Dick Van Dyke can't really:

A. perform surgery
B. dance
C. write books
D. sing

_____ 7. Dick Van Dyke gained experience in all media outlets except stage.

A. false
B. true

Name: ______________________________

Infer or Not To Infer

Everyday we make judgments based on our observations. Your friend's dog may not like you because every time you go to pet the dog it growls. When your teacher hands back your geography test, he smiles which makes you think that you did very well. When you step outside in the morning, you notice it is very cloudy. You have a feeling it will rain, so you decide to carry your umbrella in your backpack. You have used two very important science process skills used by all scientists. These skills are called **inferring** and **predicting.**

When scientists infer, they draw conclusions, interpret, and try to explain their observations. For example, if a scientist observes that Plant A has a higher rate of growth when it is placed on the counter than when it is on the window sill, the scientist might infer that this plant grows better in the shade than in the sun. Inferences can also be made from recorded data. One example would be when students examine results from an experiment on bounce height of three different types of balls. Students would examine the bounce height of ping-pong balls, marbles, and rubber balls. Based on the data, students could explain whether the height at which the balls were dropped would affect the height the ball would bounce. Scientists also make inferences from data that is received indirectly. There are many places scientists cannot visit due to safety or lack of access. When scientists study volcanoes, they use evidence from the area surrounding the volcano to make inferences about the qualities of materials inside the volcano. This type of inferential thinking also leads to another science process skill called **prediction.**

Inferring about scientific data also leads to predicting. Scientists use current observations about events to help **forecast** or make **generalizations** about future events. These predictions usually follow after numerous testing situations and observations based on these situations. An example would be when scientists study the migration habits of Canadian geese. After observing year after year how gaggles of geese invade your town's beautiful park, scientists may be able to predict the time of year the gaggles arrive and when they will depart. They may also predict if the numbers of geese within these gaggles will increase or decrease based on environmental conditions. Two other parts of predicting are **interpolating** and **extrapolating.** When scientists interpolate, they take observation data and make predictions within the range of the present data. For example, if you collected data on the growth rate of plants in five inch, eight inch, and ten inch wide pots, you could use this data to make a prediction about plant growth in a seven inch pot. If you wanted to extrapolate this data, you might try to predict the growth rate of plants in twenty or thirty inch pots. When you extrapolate data, you use current collected data to make predictions about amounts outside of that range of data. Remember, predicting is not absolute or the answer to scientific questions. It is one of the processes, along with inferring, that helps scientists to make sense of scientific mysteries.

Name: ____

Infer or Not To Infer

Questions

_____ 1. When scientists infer ______.

- A. they retest their hypothesis
- B. they rewrite their experimental questions
- C. they draw conclusions, interpret, and explain their observations
- D. none of the above

_____ 2. When scientists use prediction, they try to forecast future events based on observations of past events.

- A. No, scientists don't use the past to predict the future.
- B. Yes, predicting is based on numerous observations of events and this information is used to forecast future similar events.

_____ 3. Interpolating data means to ______.

- A. make predications about observation data
- B. make predictions without observation data
- C. make predictions outside of a given range of observation data
- D. make predictions within a given range of observation data

4. When you come home from school, you observe that your mother's favorite vase is broken on the floor. You also observe that your dog Fluffy is lying on the floor with a piece of the vase under his paw. What can you infer from this scene?

____

____

5. Your best friend has a cat named Friendly. When you go to visit your friend, you attempt to pet their cat. However, every time you try to pet the cat, it hisses and runs away. Based on your observations, what do you predict will happen when you attempt to pet the cat after you have visited your friend ten more times?

____

____

_____ 6. Scientists cannot make inferences about data that is received indirectly.

- A. False
- B. True

_____ 7. When scientists extrapolate data, they ______.

- A. make predictions without observation data
- B. make general observations about events and objects
- C. make predictions outside of a given range of observation data
- D. make predictions inside a given range of observation data

8. Explain how observations are different from inferences.

____

____