

Fourth Grade Blizzard Bag Day 7



FOURTH GRADE

BLIZZARD BAG

DIRECTIONS

Day 7

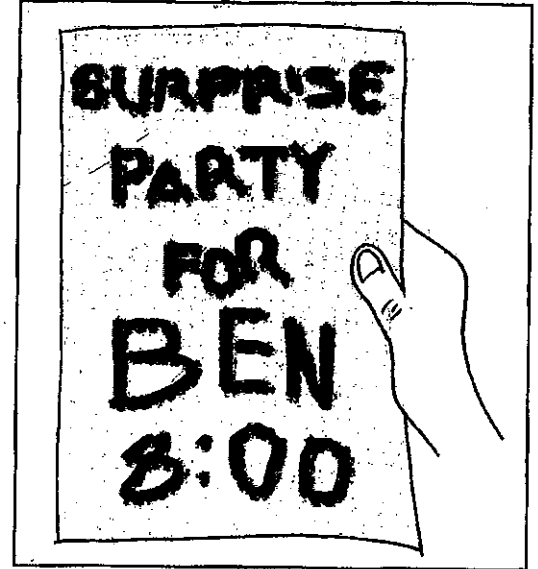
1. Reading: Read the attached article, Invisible Ink. Answer the questions attached.
2. Independent Reading Requirement (45 minutes).
3. ELA: Complete the "The Important Apostrophe: You're and Your" worksheet
4. Math: Complete the "Today's Number and the "Math" worksheet.
5. Science: Complete the "Rocks" worksheet.

Read the passage. Then answer the questions that follow.

Invisible Ink

by E. Conlon

1 Writing secret messages with invisible ink is a very old spy trick. In ancient Rome, soldiers communicated with invisible ink that became visible when heated. George Washington used invisible ink during the Revolutionary War. At that time, mail was not private as it is today. To keep battle plans from being discovered by the British army, Washington and his soldiers used invisible ink. They wrote secret messages between the lines of a regular letter. If anyone else read the letter, they would not know to look for the secret message. The person receiving the message could heat the paper to make the secret message show up. Spies used invisible ink during later wars, too. A special formula for invisible ink used during World War I is still a secret!



2 Would you like to write a message with invisible ink? You don't need to visit a top-secret spy supply store. You just need some common household items. First, you need something to write on. Plain, unlined paper is best. Next, you need something to write with. You can use a cotton swab or a toothpick as a "pen." Finally, you need some ink. Can you guess what it might be? You might be surprised. One of the best invisible inks is also very common. Many people already have some in their refrigerator. Some people like to add it to their tea. Give up? It's lemon juice!

3 Once you have all the supplies, writing a secret message with invisible ink is easy. Just dip the toothpick or cotton swab into the lemon juice. Use it to write a message on the paper. Write quickly. Once the lemon juice dries, you won't be able to see what you're writing. That's the point! It's invisible.

4 When the lemon juice dries, you have an invisible message. But what good is a message written in invisible ink if nobody ever reads it? To read the hidden message, you'll need to heat it up. Carefully hold the paper up to a lightbulb. Hold it by the edges so you don't burn your fingers. Now, move the paper around so the heat from the lightbulb reaches the entire surface. As the lightbulb heats the paper and the ink, the lemon juice turns brown. Your secret message has appeared!

5 How does it work? Lemon juice is a mild acid. The acid in the lemon juice weakens the paper. Because of this, the paper that has lemon juice on it turns brown first. Using this very simple process, anyone can write a secret message!

What is the purpose of the organization in paragraph 1?

- A to show how people have solved the problem of sending private messages
- B to compare ancient Rome and America during the Revolutionary War
- C to tell how some spy tricks can be used for everyday purposes
- D to contrast older ways of sending messages with modern ways

Why is plain, unlined paper best to use when writing a secret message with lemon juice?

- A Plain, unlined paper is stronger than other kinds of paper.
- B Plain, unlined paper costs less money than other kinds of paper.
- C Plain, unlined paper makes it easy to see the brown message.
- D Plain, unlined paper makes it easy to use a cotton swab.

How are paragraphs 2, 3, and 4 presented?

- A to tell how to solve the problem of disappearing ink
- B to compare and contrast different ways of writing a secret message
- C to give steps to follow for writing a secret message
- D to explain several possible effects of writing a secret message

Which sentence from the passage provides the **strongest** support for the idea that writing messages in invisible ink is more than just an enjoyable activity?

- A "Writing secret messages with invisible ink is a very old spy trick."
- B "To keep battle plans from being discovered by the British army, Washington and his soldiers used invisible ink."
- C "If anyone else read the letter, they would not know to look for the secret message."
- D "The person receiving the message could heat the paper to make the secret message show up."

Go On



Read this sentence from paragraph 5 of the passage.

The acid in the lemon juice weakens the paper.

Which of the following is the **best** definition of the word “acid”?

- A** a liquid that eats away at something
- B** a material that is slightly sticky
- C** a seed that tastes sweet
- D** the juice of a small yellow fruit



What must be done to the paper in order for the secret message to show up?

- A** The edges must be burned.
- B** It must be dried under a lamp.
- C** Lemon juice must be poured on it.
- D** It must be heated by a lightbulb.



How does the illustration help the reader understand the ideas in the passage?

- A** It shows what size paper should be used with invisible ink.
- B** It outlines different purposes for writing with invisible ink.
- C** It shows exactly how to create a message with invisible ink.
- D** It gives an example of a message written with invisible ink.

The Important Apostrophe: You're and Your

The words *your* and *you're* are often confused. They sound the same, but they have entirely different meanings. *Your* is possessive, showing something that belongs to the person you are speaking to. *You're* is a contraction of the words *you are*. The apostrophe shows that the letter 'a' is missing.

Tip: To know which word is correct, try the sentence using the words *you are*. If the sentence makes sense with *you are*, then *you're* is the correct usage. If the sentence does not make sense, then use *your*.

Part I. Read each sentence below. If *you're* or *your* is used correctly in the sentence, circle *right* in the blank. If *you're* or *your* is not used correctly, circle *wrong*.

- | | | |
|--|-------|-------|
| 1. I want to ride your bike. | right | wrong |
| 2. She likes you're handwriting. | right | wrong |
| 3. You're supposed to wash the dishes. | right | wrong |
| 4. Your dog is so cute! | right | wrong |
| 5. You can't change you're mind. | right | wrong |
| 6. Have fun while your young. | right | wrong |
| 7. When you're ready, we'll leave. | right | wrong |
| 8. Your not going with us. | right | wrong |

Part II. In the blanks below, write the correct word: *your* or *you're*.

- _____ mother makes wonderful cupcakes.
- If _____ friendly, you'll have lots of friends.
- What time is _____ practice?
- _____ a great dancer!
- Rupert thinks _____ the right person for the team.
- Please turn _____ phone off!
- Call me if _____ going to the party.
- Please tell me _____ ideas on the project.

Write in expanded form.

Write in word form.



What is the value of the 4?

Is this number odd or even?

complete the place value table.

Thousands	Hundreds	Tens	Ones

What is...

100 more _____

100 less _____

1,000 more _____

1,000 less _____

Add 'em up!

Add the first two digits to the last two digits to find the sum.

+ _____

Compare Numbers

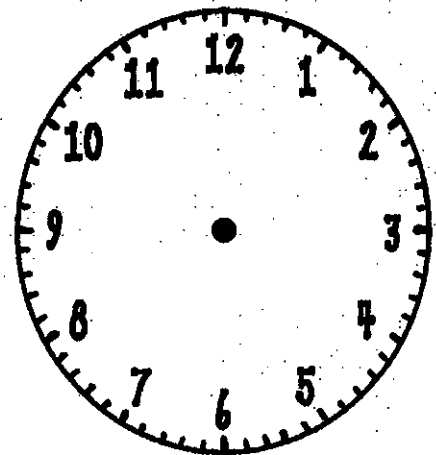
Compare the first 2 digits with the last 2 digits using $>$, $<$, or $=$.



What time is it?

Use the digit in the thousands place for the hour. Use the hundreds and tens place for the minutes.

Draw the hands on the clock.



Write the time.

Making New Numbers

Rearrange the digits in the number of the day to create new numbers.

What is the LARGEST number you can make? _____

What is the SMALLEST number you can make? _____

Make 5 other numbers.

Put those 5 numbers in order from LEAST to GREATEST.

Math Worksheet

1 a. $3 \overline{)42}$	1 b. $5 \overline{)70}$	1 c. $3 \overline{)45}$
2 a. $2 \overline{)48}$	2 b. $2 \overline{)68}$	2 c. $3 \overline{)54}$
3 a. $3 \overline{)87}$	3 b. $2 \overline{)38}$	3 c. $2 \overline{)70}$
4 a. $3 \overline{)48}$	4 b. $3 \overline{)66}$	4 c. $2 \overline{)78}$

Rocks

The outer layer of Earth is called the crust. It is made of **rocks**. The rocks themselves are made of **minerals**, and some minerals are made of smaller parts called **crystals**. Minerals are natural compounds of elements like calcium, iron, and aluminum. Crystals are solids that have a regular, geometric shape.

Rocks are solid, but they are also constantly changing. This change forms a cycle, the **rock cycle**. The rock cycle helps scientists to classify rocks according to the way rocks are formed:

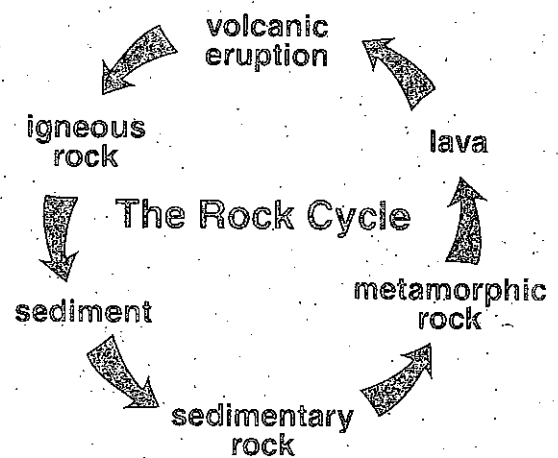
(1) When a volcano erupts, molten rock (called **lava**) flows onto the earth's surface. After the lava cools and hardens, it is called **igneous rock** (igneous = fire, like the word "ignite"). Igneous rock is also formed underground by cooling **magma** (lava that is underground). As erosion (wearing away by weather) occurs, the igneous rock formed from magma reaches the surface of Earth.

(2) As igneous rock on the earth's surface is eroded over many years, pieces of the eroded rock are carried by water (such as streams and rivers) to the ocean. The pieces settle on the ocean floor and are called sediment

(sedi = sit or settle). As more pieces settle on top of older pieces, layers of rock are created. The weight of newer layers turns the older, lower levels into **sedimentary rock**.

(3) When both igneous and sedimentary rocks experience great pressure or heat, the minerals in the rocks can change the rocks into **metamorphic rocks** (morph = change).

One example of igneous rock is granite, which is a very hard rock. Limestone is an example of sedimentary rock, and chalk is a very soft type of limestone. Marble is metamorphic. Because the inside of the earth is so hot, some rocks are melted and become lava, and the rock cycle starts over.



Answer the Following

1. Name the three types of rock. _____
2. What is igneous rock, and how is it formed? _____

3. How does igneous rock form sedimentary rock? _____

4. How is metamorphic rock formed? _____

