Have you ever shouted "Eureka!" in the bath? That fun word comes from a brilliant man named **Archimedes**, who lived over 2,000 years ago in a city called Syracuse. He was one of the greatest scientists and mathematicians ever!

Archimedes loved solving puzzles. One day, the king asked him if his new crown was made of pure gold. Archimedes thought and thought. While getting into a full bathtub, he saw the water spill over the edge. He realized something amazing: the water that spilled out was exactly the same volume as his body. **He could use water to measure the crown!** He was so excited he jumped out and ran through the streets, shouting "Eureka!" (which means "I found it!"). His idea is called **buoyancy**, and it explains why huge metal ships can float.

Archimedes also had a super math brain. He worked out a very close number for **Pi** (π), the special number we use for circles. He loved the sphere and cylinder so much he wanted them carved on his tombstone.

To protect his city from enemy ships, people say he built a giant metal claw that could lift a ship right out of the sea!

Archimedes was so focused on his work that, according to legend, when a soldier disturbed him while he was drawing a math problem in the sand, he said, "Don't disturb my circles!" He shows us how powerful a curious mind can be, and how much fun it is to discover how the world works.

True or False

1. Archimedes shouted "Eureka!" when he solved the problem of the king's crown.
2. Archimedes discovered Pi (π), which is a number we use for triangles.
3. A story says Archimedes was drawing in the sand when a soldier came to him.

"Wh" Questions

1. **What** did Archimedes shout when he had his big idea in the bath?
2. **Why** did the king ask Archimedes to look at his new crown?
3. **What** two shapes did Archimedes love so much he wanted them on his tombstone?

Find the Misspelled Word

Read each sentence and find the word that is spelled incorrectly.

1. Archimedes was a brilliant **mathematishun** from long ago.
2. He used water to figure out the **volum** of the king's crown.
3. People say he built a giant **mashine** to lift ships out of the water.

Fill in the Gaps

Fill in the gaps with the following words:

Shapes, water, bath, thinker, Eureka, crown, math, circles

Archimedes was a very clever **.....1.....** from Syracuse. His most famous story is about him taking a **.....2.....** . He noticed the **.....3.....** rising and had a brilliant idea. He was so excited he yelled "**.....4.....** !" This idea helped him solve the mystery of the king's **.....5.....** . He also loved **.....6.....** and figured out a lot about **.....7.....** and **.....8.....** .

Grammar

Simple present

Exercise 1: Matching Exercise (Simple Present Verbs)

Instructions: Match the subject on the left with the correct form of the verb on the right to make a logical sentence.

Subjects:

1. I
2. She

3. The dog
4. We
5. My brother and I
6. The bus
7. Maria
8. Cats

Verbs:

A. plays the piano beautifully.
B. drink milk every morning.
C. starts its route at 7 a.m.
D. barks at the mail carrier.
E. enjoy playing video games on weekends.
F. live in a big blue house.
G. studies for her tests at the library.
H. sleep for many hours during the day.

Exercise 2: Fill-in-the-Blank (Simple Present Tense)

Instructions: Fill in each blank with the correct **Simple Present** form of the verb given in parentheses ( ).

The Park on Saturday

Every Saturday, my family and I (1. **go**) _____ to the city park. My mom (2. **pack**) _____ a big picnic basket. My little sister, Lily, (3. **love**) _____ to feed the ducks. She (4. **throw**) _____ small pieces of bread into the pond. My dad (5. **read**) _____ his book under a tall tree. I (6. **fly**) _____ my red kite when the wind is strong.

Our dog, Max, always (7. **come**) _____ with us. He (8. **chase** - negative) _____ the birds, but he (9. **watch**) _____ them very closely. We all (10. **have**) _____ a wonderful time together.

Cardinal Numbers:

0	zero, nought
1	one
2	two
3	three
4	four
5	five
6	six
7	seven
8	eight
9	nine
10	ten

11	eleven
12	twelve
13	thirteen
14	fourteen
15	fifteen
16	sixteen
17	seventeen
18	eighteen
19	nineteen
20	twenty

21	twenty-one
22	twenty-two
23	twenty-three
24	twenty-four
30	thirty
31	thirty-one
40	forty
50	fifty
60	sixty
70	seventy
80	eighty
90	ninety

100	one hundred
101	one hundred and one
152	one hundred and fifty-two
200	two hundred
1,000	one thousand
1,000,000	one million
1,000,000,000	one billion
1,000,000,000,000	one trillion

⚠ In English, when we write cardinal numbers, we separate thousands with a comma (,)

For numbers in the hundreds:
British English: 120 = *one hundred* ***and*** *twenty*
American English: 120 = *one hundred twenty*

For numbers in the thousands
British English: 3,486 = *three* ***thousand****, four hundred and eighty-six*
American English: 3,486 = *thirty-four* ***hundred****, eighty-six*

NOTE: British English takes "and" following "hundred". American English omits "and".

How to Say Numbers in the Hundreds:
Say numbers in the hundreds by beginning with numerals one through nine followed by "hundred". Finish by saying the last two digits:

- 350 – three hundred fifty
- 425 – four hundred twenty-five
- 873 - eight hundred seventy-three
- 112 - one hundred twelve

How to Say Numbers in the Thousands:
Say a number up to 999 followed by "thousand." Finish by reading the hundreds when applicable:

- 15,560 – **fifteen thousand** *five hundred sixty*
- 786,450 – **seven hundred eighty-six thousand** *four hundred fifty*
- 342,713 - **three hundred forty-two thousand** *seven hundred thirteen*
- 569,045 - **five hundred sixty-nine thousand** *forty-five*

How to Say Numbers in the Millions
For millions, say a number up to 999 followed by "million." Finish by saying first the thousands and then the hundreds when applicable:

- 2,450,000 – **two million** four hundred fifty thousand
- 27,805,234 - **twenty-seven million eight** hundred five thousand two hundred thirty-four
- 934,700,000 – **nine hundred thirty-four million** seven hundred thousand
- 589,432,420 - **five hundred eighty-nine million** four hundred thirty-two thousand four hundred twenty

Part 1: Hundreds

Write the number in words.

1. 218 → _____
2. 645 → _____
3. 999 → _____
4. 103 → _____

Part 2: Thousands

Write the number in words.

1. 12,430 → _____
2. 305,210 → _____
3. 478,009 → _____
4. 891,765 → _____

Part 3: Millions

Write the number in words.

1. 3,000,000 → _____
2. 45,320,100 → _____
3. 789,654,321 → _____
4. 120,005,000 → _____

Ordinal numbers:

We use **ordinal numbers** to talk about the "order" of things or to define a thing's position in a series.

first	1**st**	**eleventh**	11th	**twenty-first**	21**st**	**eighthieth**	80th
second	2**nd**	**twelfth**	12th	**twenty-second**	22**nd**	**ninetieth**	90th
third	3**rd**	**thirteenth**	13th	**twenty-third**	23**rd**	**hundredth**	100th
fourth	4**th**	**fourteenth**	14th	**twenty-fourth**	24th	**hundred and first**	101**st**
fifth	5th	**fifteenth**	15th	**thirtieth**	30th	**hundred and fifty-second**	152**nd**
sixth	6th	**sixteenth**	16th	**thirty-first**	31**st**	**two hundredth**	200th
seventh	7th	**seventeenth**	17th	**fortieth**	40th	**thousandth**	1,000th
eighth	8th	**eighteenth**	18th	**fiftieth**	50th	**millionth**	1,000,000th
ninth	9th	**nineteenth**	19th	**sixtieth**	60th	**billionth**	1,000,000,000th
tenth	10th	**twentieth**	20th	**seventieth**	70th	**trillionth**	1,000,000,000,000th

Fractions:

In the fraction $\frac{a}{b}$ (a over b):

- a is called the **numerator**
- b is called the **denominator**.

A **proper fraction** has its numerator less than its denominator, e.g. $\frac{3}{4}$

An **improper fraction** has its numerator more than its denominator, e.g. $\frac{9}{2}$

½	**a half OR one half**
⅓	**a third OR one third**
¼	**a quarter OR one quarter**
⅕	**a fifth OR one fifth**
¾	**three quarters**
⅛	**an eighth OR one eighth**
⅔	**two thirds**
⅗	**three fifths**
⅝	**five eighths**
1½	**one and a half**
5¾	**five and three quarters**

How to Talk About Fractions:

Say the top number as a cardinal number, followed by the ordinal number + "s:"

- 3/8 - three-eighth**s**
- 5/16 - five-sixteenth**s**
- 2/32 - two thirty-second**s**

Exceptions to this rule are:

- 1/4, 3/4 - one-quarter, three quarters
- 1/3, 2/3 - one third, two-thirds

Read numbers together with fractions by first stating the number followed by "and" and then the fraction:

- 4 7/8 - four and seven-eighths