GREAT INVENTIONS
THE THERMOMETER

Yesterday morning I woke up with a bad headache and was dizzy. I felt hot and didn't feel well. I called my father to have him check my temperature because I thought I had a fever. He got the thermometer from the bathroom shelf, checked that it had batteries, and put it under my armpit. We waited a few minutes for the beep to tell us that the measurement was done.

I did have a temperature; so, my father decided to take me to the doctor. That's when I started to think the thermometer was a great invention and imagined what people long ago did to know if they had a fever or not.

After spending a few days sick in bed, I had enough strength to research a little about the invention of the thermometer.

The first settlers did not have machines or precise mechanisms to measure the temperature. Usually, they used their hands to assess the temperature of a person or object. It was unreliable and depending on what they had to measure was dangerous. Can you imagine measuring the temperature of food cooking in the fire? They could get burned!

To find the beginning steps that led to the development of the thermometer, we have to go back to the time of Galileo Galilei. This brilliant scientist created the thermoscope. It was a tube of glass with an open part and a closed sphere on the top. A solution of water mixed with alcohol was poured into the open part. When the mixture was heated, it rose through the glass tube.

1.

At the beginning of the 17th century, a numerical scale was added to that glass tube to be able to make more precise measurements. It looked more like the thermometer we have now.
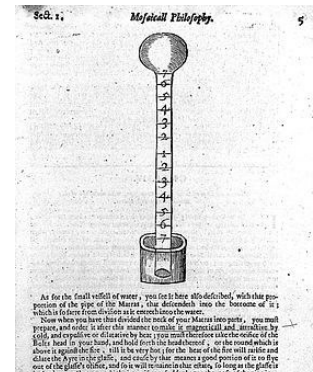
Years later, a new element was added called mercury. This is a type of liquid metal that moved inside the tube with the increase or decrease of the temperature. The higher the temperature, the higher the mercury rose, and the lower the temperature, the lower the mercury dropped.

Although they were the most commonly used thermometers for decades, some countries around the globe have banned them due to their toxic and polluting effect.

A few years ago, at the beginning of the 21st century, the first digital thermometers were manufactured. These were not made of glass or mercury. They were normally made of plastic and metal. It has several parts inside:

- A temperature sensor which is usually at the tip of the thermometer.

- A microprocessor which is responsible for transforming the information provided by the sensor into decimal numbers.

- A battery which powers the thermometer so it will work.

- A screen that shows the information about the measured temperature.

2.

There are many scales used to measure the temperature, but there are two scales that are used most: Celsius and Fahrenheit.

Celsius is the most used scale in the world. It is indicated with the symbol ° C. The temperature for boiling water would show 100° C, and the temperature for freezing water would be 0° C. Fahrenheit is mainly used in the United States. It is indicated by the symbol ° F.

Centígrados   Fahrenheit
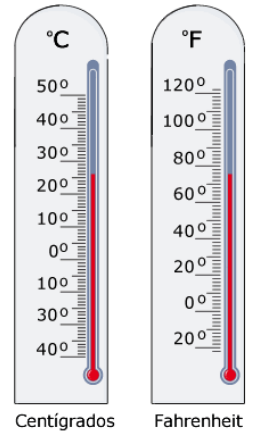
Not all thermometers are the same or are used to measure the same things. So, there are different thermometers, depending on what we want to measure. For example, pyrometers are the most commonly used thermometers for measuring things at high temperatures. These are used mainly in factories, workshops, and cooking ovens.

Health centers and hospitals usually use digital thermometers since they are accurate and easy to use.

An interesting fact is that the word thermometer comes from two Greek words, thermos, which means heat and metron, which means measure. It makes sense if you think about what the thermometer is used for.

Now that you know all these details about thermometers, how do you think temperatures will be measured in the future?

3.

Name_____   Date_____

THE THERMOMETER

Answer the questions.

1. What does the word thermoscope mean in the text?
   - a. It is a thermometer made of glass and metal.
   - b. It is an invention that serves to measure the temperature.
   - c. It is an object that is used to heat things.
   - d. It is a microprocessor that serves to measure the temperature.

2. What is the synonym for fever?
   - a. disease
   - b. hot
   - c. temperature
   - d. cold

3. Why did they stop using mercury thermometers in some countries?
   - a. They were inaccurate.
   - b. They were toxic and dangerous.
   - c. They had both measuring scales.
   - d. They were accurate and easy to use.

4. Why do you think there are two main scales for measuring temperature?
   - a. In some countries they use one scale and in others they use another.
   - b. They wanted to use a different kind in the north than they did in the south.
   - c. Depending on how expensive the thermometer is, they use one or the other.
   - d. The Celsius scale is better than the Fahrenheit.

5. What part of the text explains the use of the different thermometers?
   - a. the beginning
   - b. the middle
   - c. the end
   - d. does not say

THE THERMOMETER

6. What is the main idea of the text?

        a. the evolution of thermometers throughout history

        b. different thermometers are used to measure different things

        c. the temperature measurements

        d. the toxicity of mercury and its environmental impact

7. After reading the story, it can be deduced that _____

        a. most countries use the Fahrenheit scale because it is better than the Celsius scale.

        b. if your child has a fever, you have to give him medicines and use the thermometer.

        c. in the future, intelligent thermometers of the latest generation will be created.

        d. in ancient times, it was difficult to measure the temperature of things and persons.

8. What uses can a thermometer have?

        a. measures the density of water

        b. measures the height of a building in hot weather

        c. measures the weight of the water

        d. measures the heat or cold of something
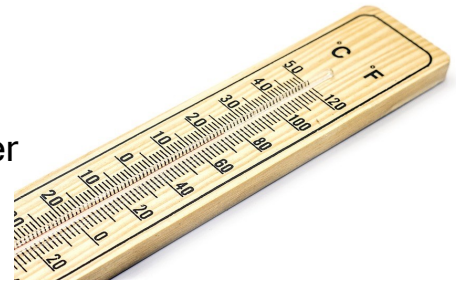
9. Why is it easier to use a digital thermometer than a mercury one?

        a. It is smaller and lighter.

        b. It is more accurate.

        c. It is plastic and metal.

        d. It is lighter and measures temperature better.

10. We don't know for sure what the thermometers of the future will be like, but they will likely measure temperature better, quicker, and safer.

        a. True

        b. False