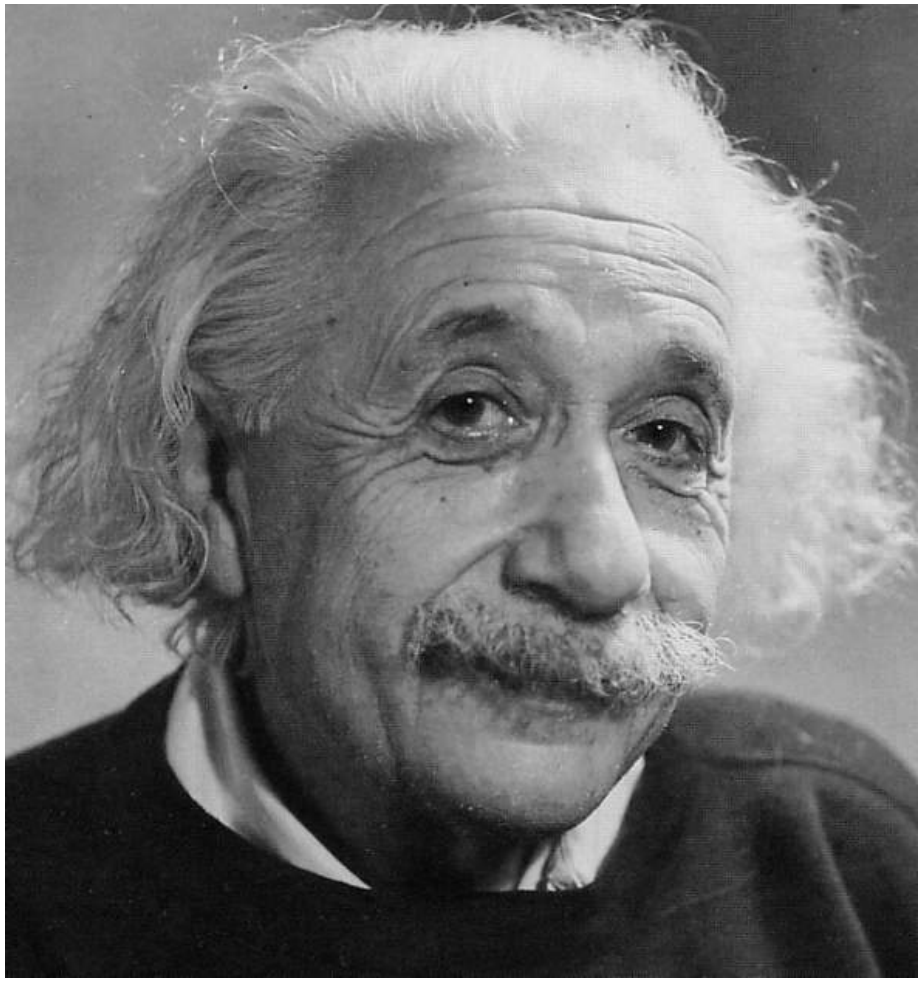
Science…What is It?

What Does A Scientist Look Like?

Typical Scientist?



Drawing of a Scientist

Use the table below to analyze your interpretation of science and scientists.

Drawing Element	Yes	No
Scientist is wearing a lab coat.		
Scientist is wearing eyeglasses or safety goggles.		
Scientist has a beard or a mustache.		
Scientist is male.		
Scientist is middle-age or elderly.		
Scientist is depicted as a "mad-scientist" -- like Frankenstein or Bill Nye.		
Scientist is working in a laboratory.		
Beakers, test tubes, and/or flasks are present in the scene.		
Scientist is standing behind, near, or in front of a cabinet or table.		
Totals		

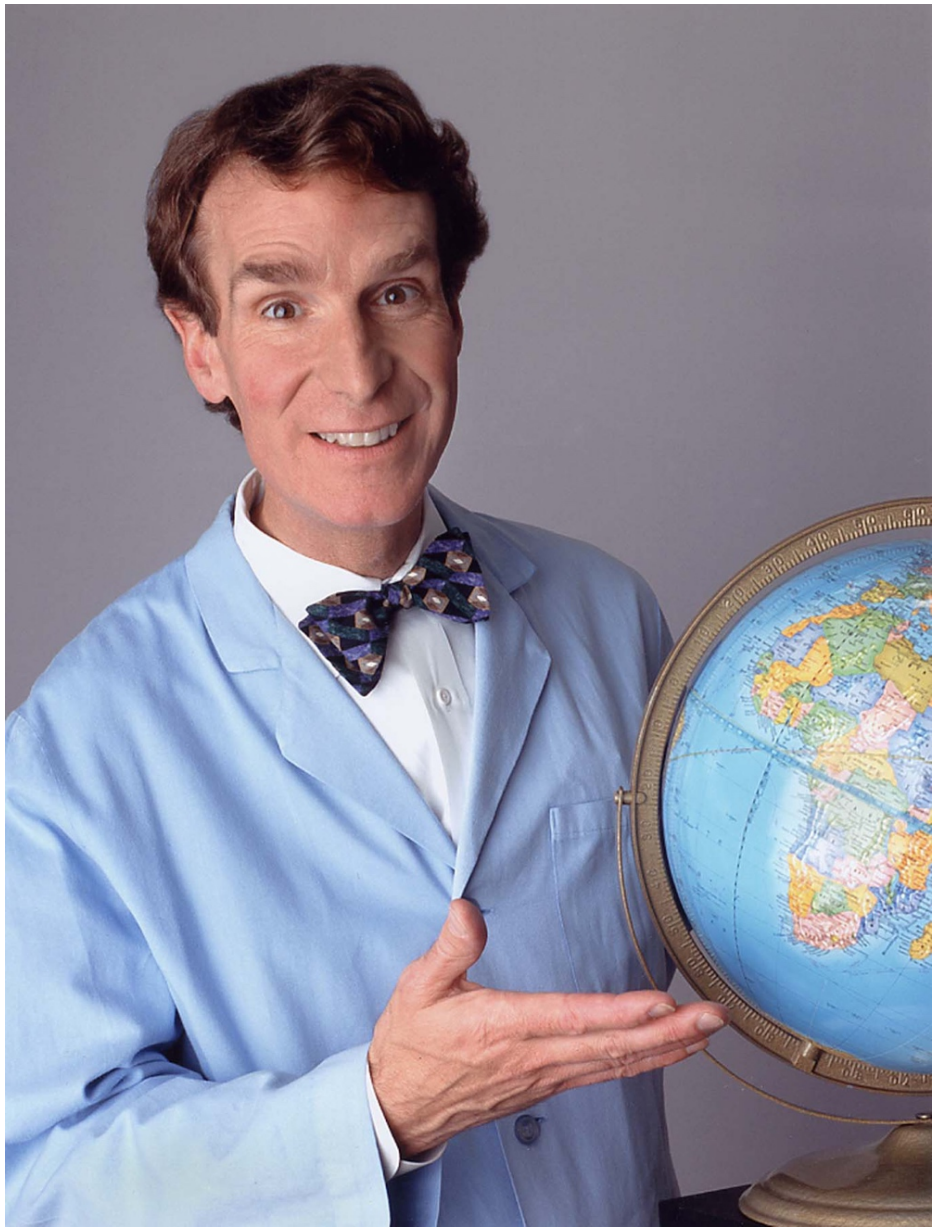
7-8	You have seen one too many Albert Einstein posters.
4-6	You are making progress toward learning more about science and scientists.
1-3	Baazinga! You have a good understanding that science is all around us and that scientists come in all shapes and sizes with different backgrounds, interests, passions, and more!
0	You are an enlightened one! Go forth, and teach others!

Scientist?

Neil deGrasse Tyson

Astrophysicist - Director of the Hayden Planetarium at the American Museum of Natural History on Manhattan's Upper West Side.

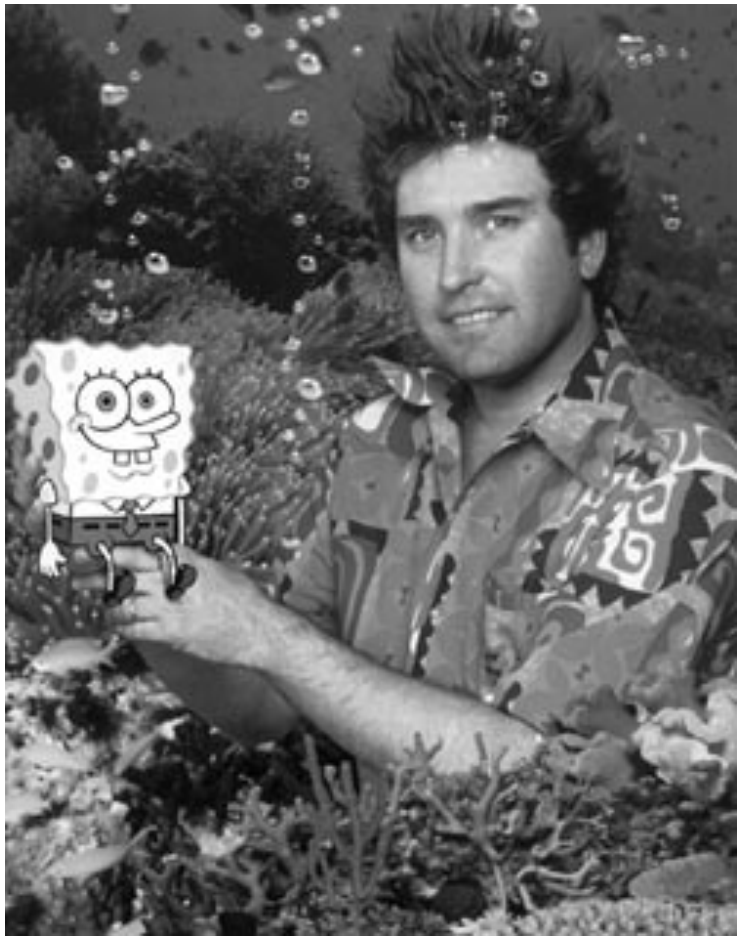
Scientist?



Bill Nye – The Science Guy

- Physics: Engineer for Boeing-designing fighter jets
- Bill Nye The Science Guy: Television show that combines science and FUN!
- "Leave the world better than you found it. Sometimes you gotta pick up somebody else's trash."

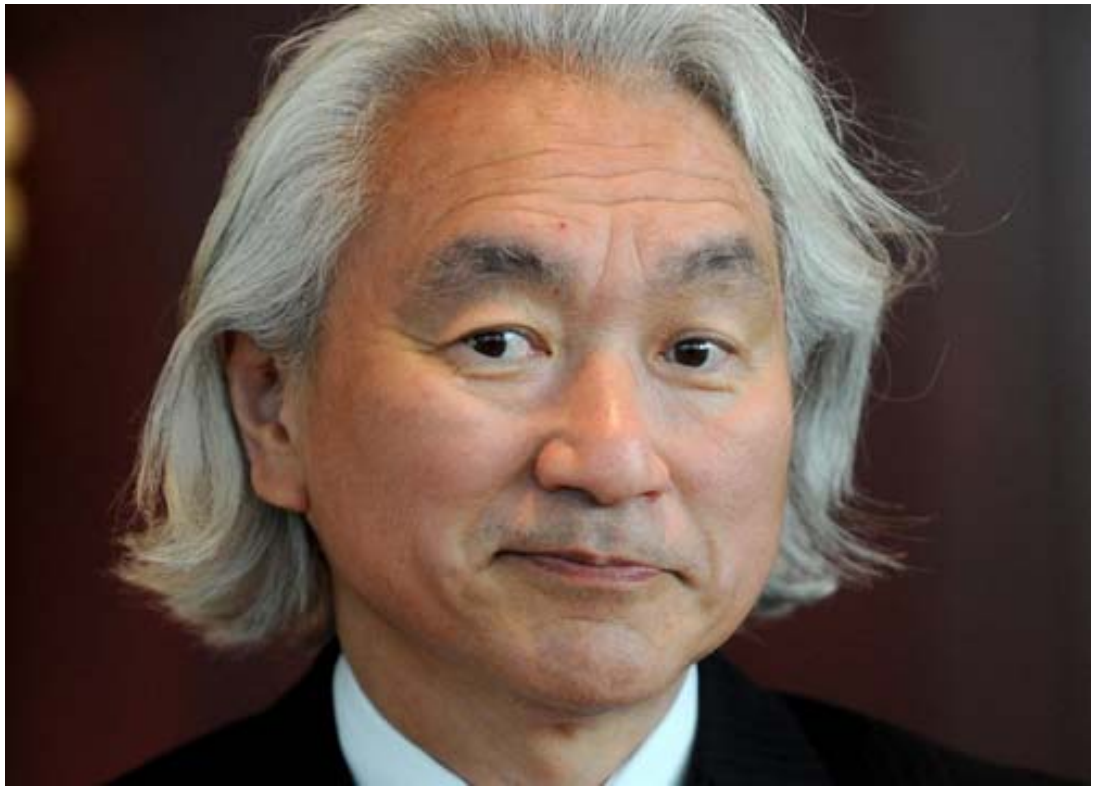
Scientist?



Stephen Hillenburg

- Marine Biologist
- Sponge Bob's Creator

Scientist?



Michio Kaku

American theoretical physicist

Scientist?

Jane Goodall

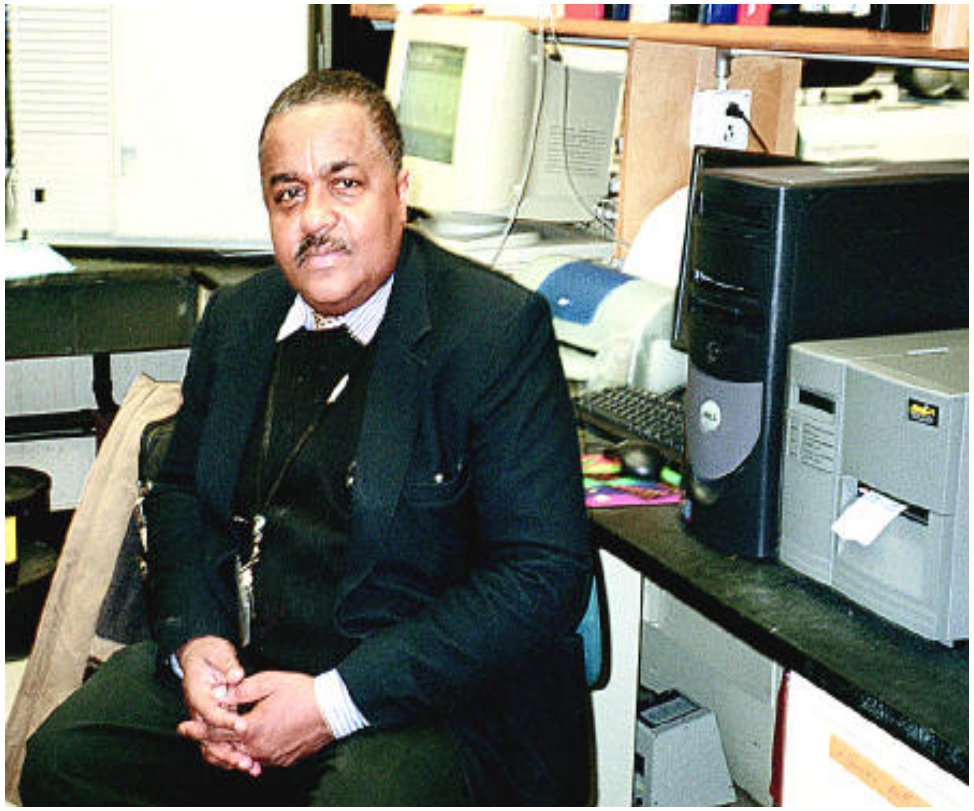
- Primatologist

Scientists?

Astronauts – Apollo 11

Neil Armstrong, Michael Collins, and Buzz Aldrin

Scientist?



Dr. Bruce Jackson

- Co-founder of the African-American DNA Roots Project.

Scientist?

Anna McGowan

- A scientist at NASA
- She leads a research group that is developing material to allow airplane wings to repair themselves

Scientist?

Dr. Mae Jemison

- degree in chemical engineering and Doctor of Medicine
- First African-American woman to enter space
- Grew up in Chicago!

Scientist?

Stephen Hawking

- Motor neurone disease
- Uses a motorized wheelchair, and a computerized speech-synthesizer
- Developed several theories about the nature and origins of our universe

Scientist?

Ellen Ochoa

- Astronaut – First Hispanic-American Woman in Space

Scientist?

Marie Curie (1867-1934)

- Physicist and chemist
- Worked on radioactivity
- First person honored with two Nobel prizes

Scientist?

Dian Fossey

- Field researcher and anthropologist.
- Groundbreaking work with Mountain Gorillas of Africa.

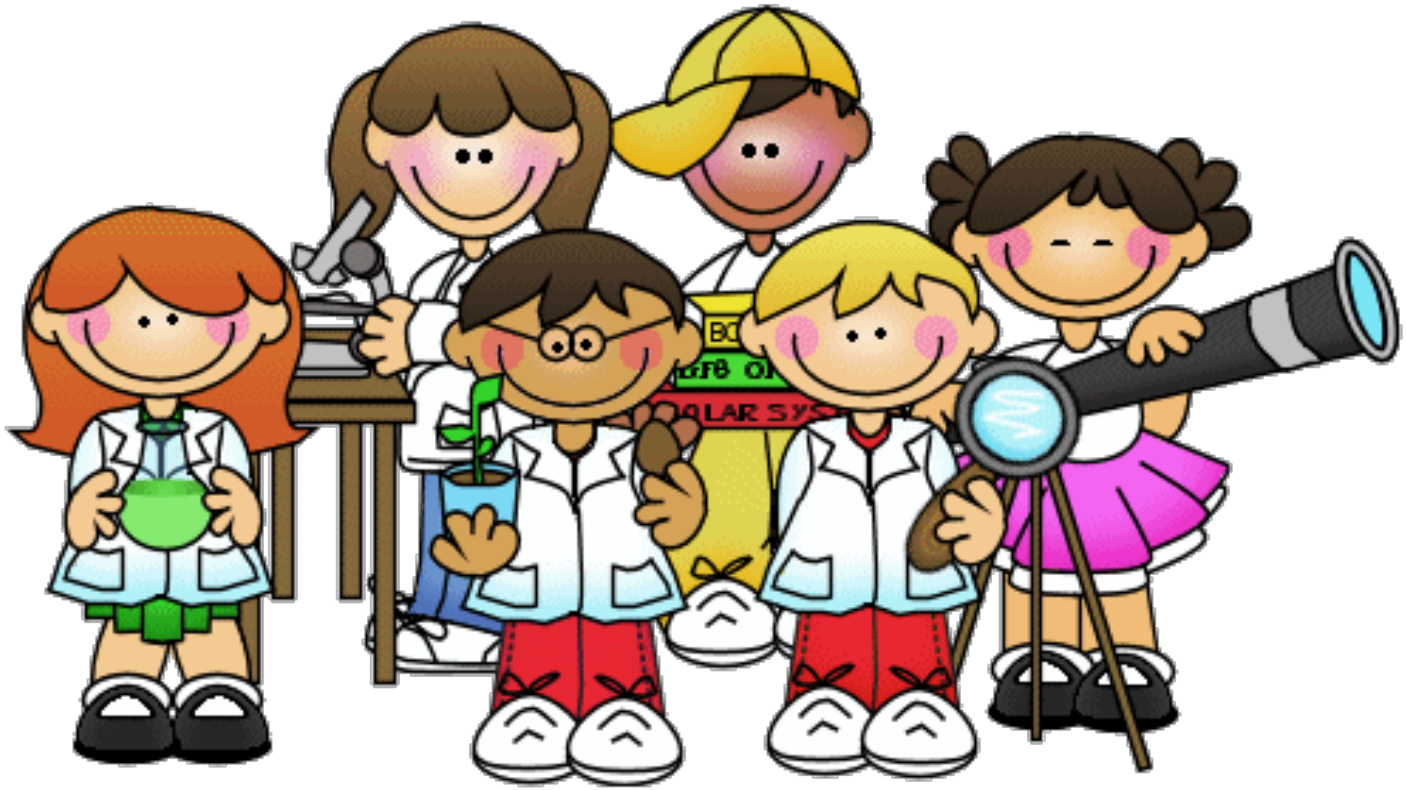
Scientist?

Kanesa Duncan Seraphin

- Marine biologist and educator
- Worked on shark research in Hawaii

Anyone Can Be a Scientist!

Including YOU!



What is science?

1. Way of **knowing**
2. Study of the **natural world**
3. Involves **observing**, and **proposing/testing** explanations
4. Evidence-based

USING CURIOSITY!...
ASKING WHY and HOW

Scientific Skills

- Know, use and interpret scientific explanations of the natural world
  - scientific knowledge (content)
- Generate and evaluate evidence and explanations
  - scientific reasoning, using evidence (process)
- Understand the nature and development of scientific knowledge
  - how science works (nature of science)
- Participate productively in scientific practices and discourse
  - how to talk/think about science, how to use scientific knowledge, engage in scientific practice

How do they do this?

(National Research Council, 2007, *Taking Science to School*)

How do scientists do science?

- Scientists learn by looking carefully at things by making observations

Observations

- Use one or more of the 5 senses to gather information
- *Example:* There is one overhead projector in the room.

Lemon Observations Mini Lab

Part 1:

- With your partner, chose a lemon from the bowl. Study your lemon. **Make as many OBSERVATIONS** of your lemon as you can (ex. Its measurement, its smell, its shape…)

- Make a **colored sketch** of your lemon

Part 2:

- How could you take all your observations and **divide them into two separate groups**? What characteristic did you use to separate the two groups?

Part 3:

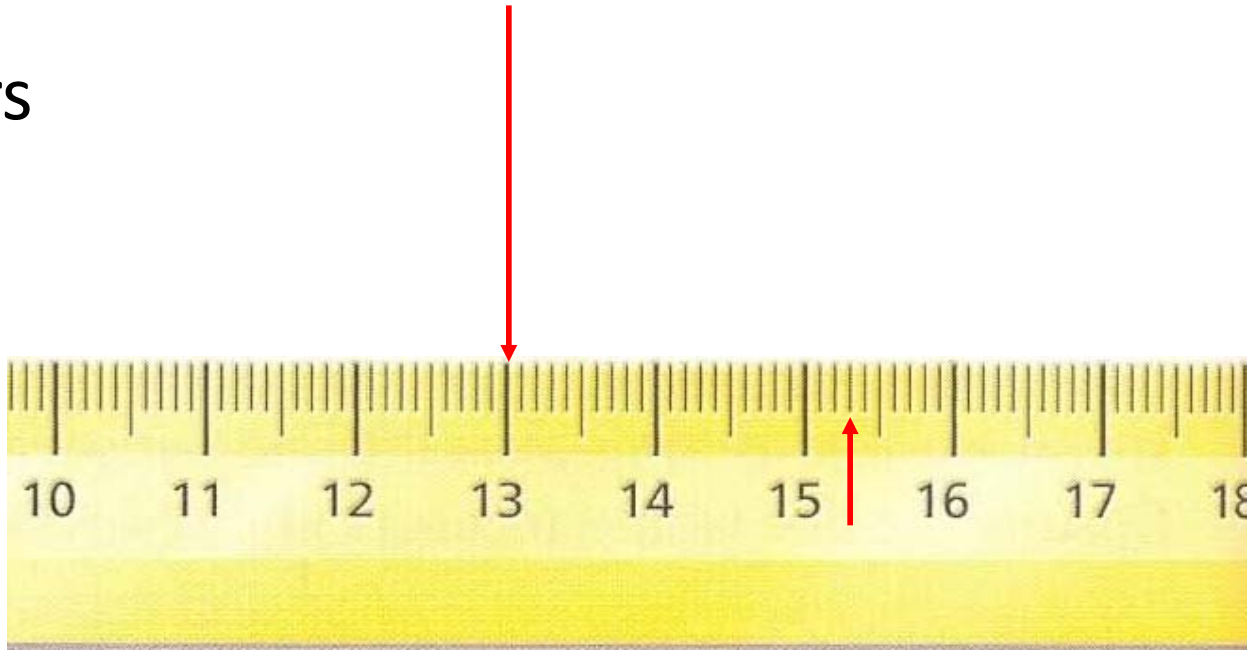
- After you were asked to find your lemon when it was placed back in the bowl, **were you successful**? Why or why not?

Lemon Observations Mini Lab

Measuring Length

The longer lines on the metric ruler are called…

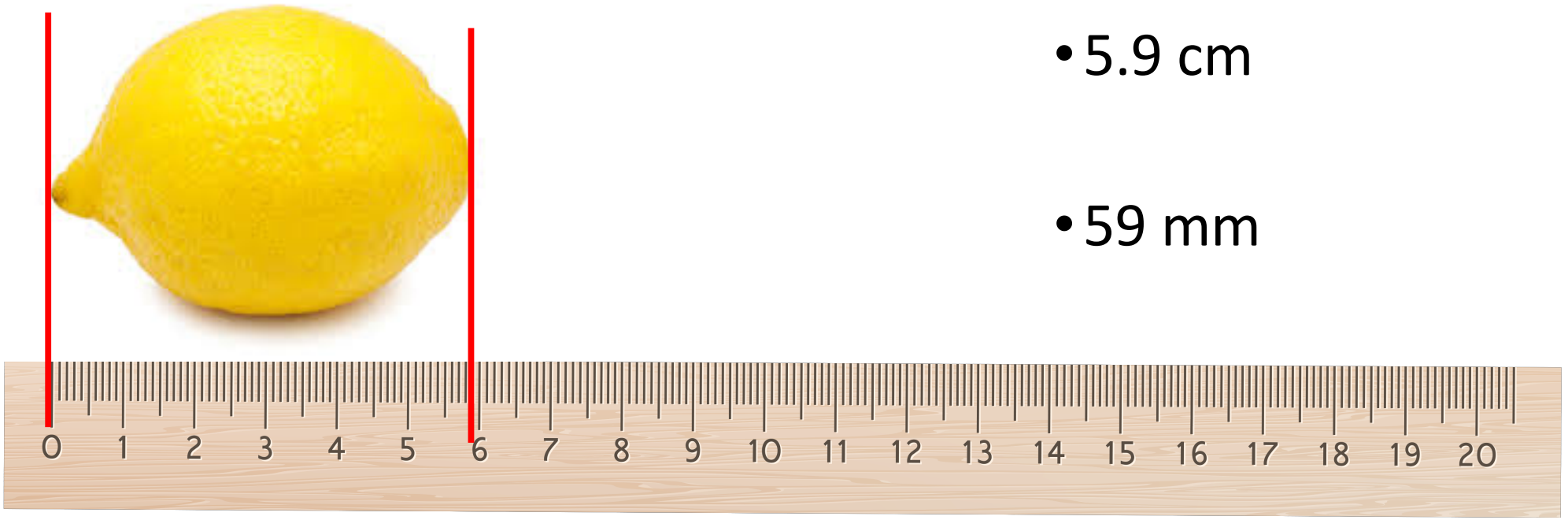
- centimeters



The shorter lines on the metric ruler are called…

- millimeters

Calculating: Measure the lemon from one end to the other. Record its length in both centimeters and millimeters.



- 5.9 cm
- 59 mm

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