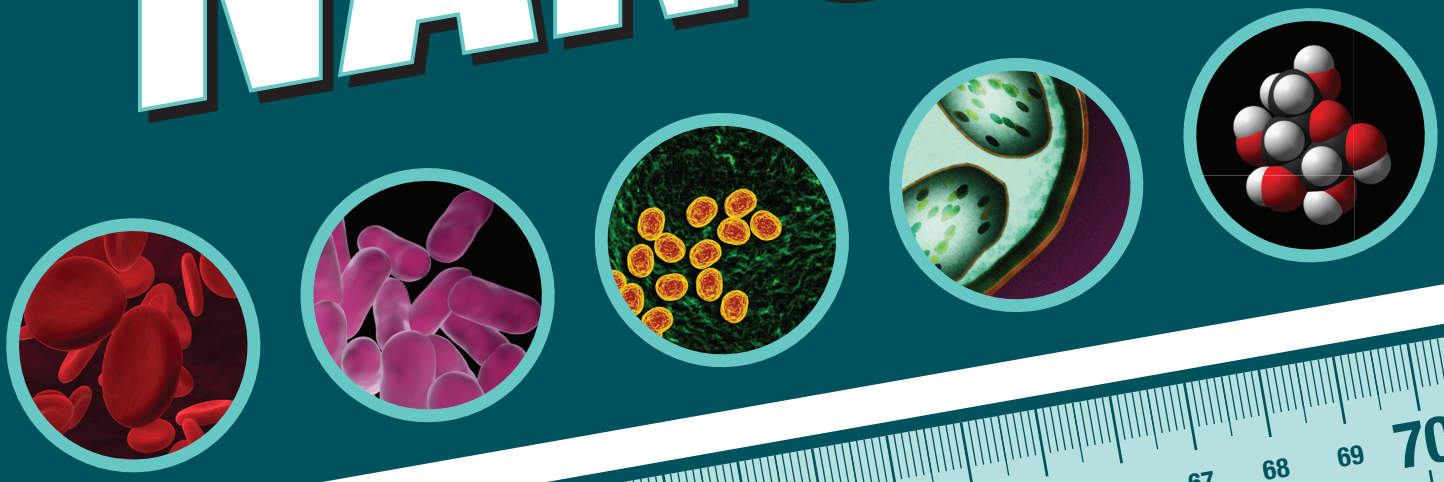
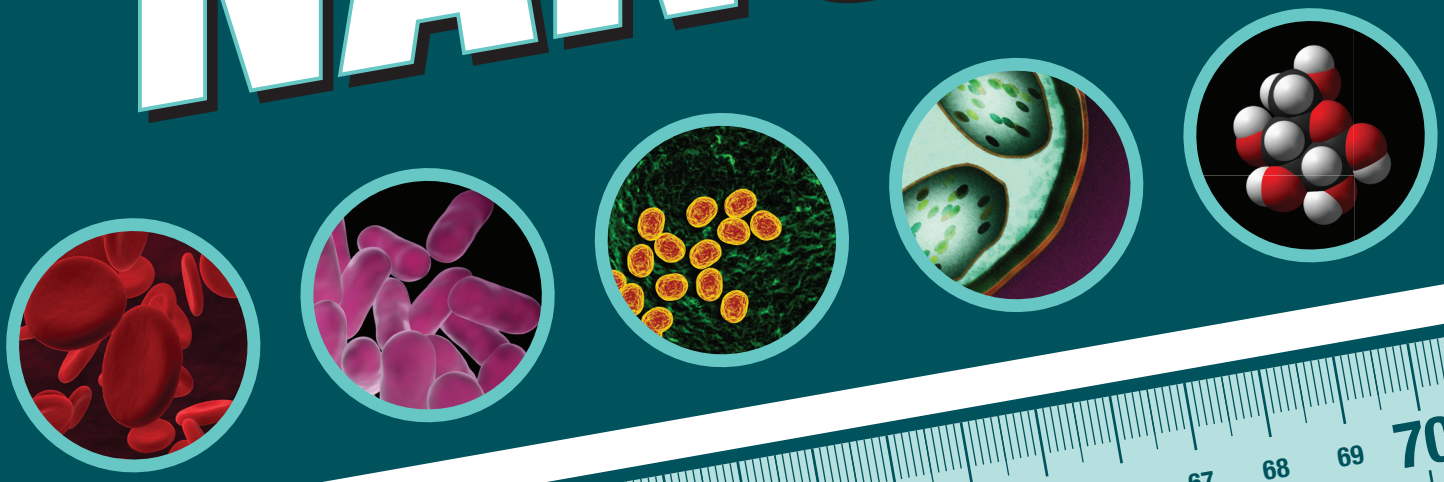
HOW SMALL IS NANO?



Measuring Different Things

By Catherine McCarthy, Rae Ostman, Emily Maletz, and Stephen Hale

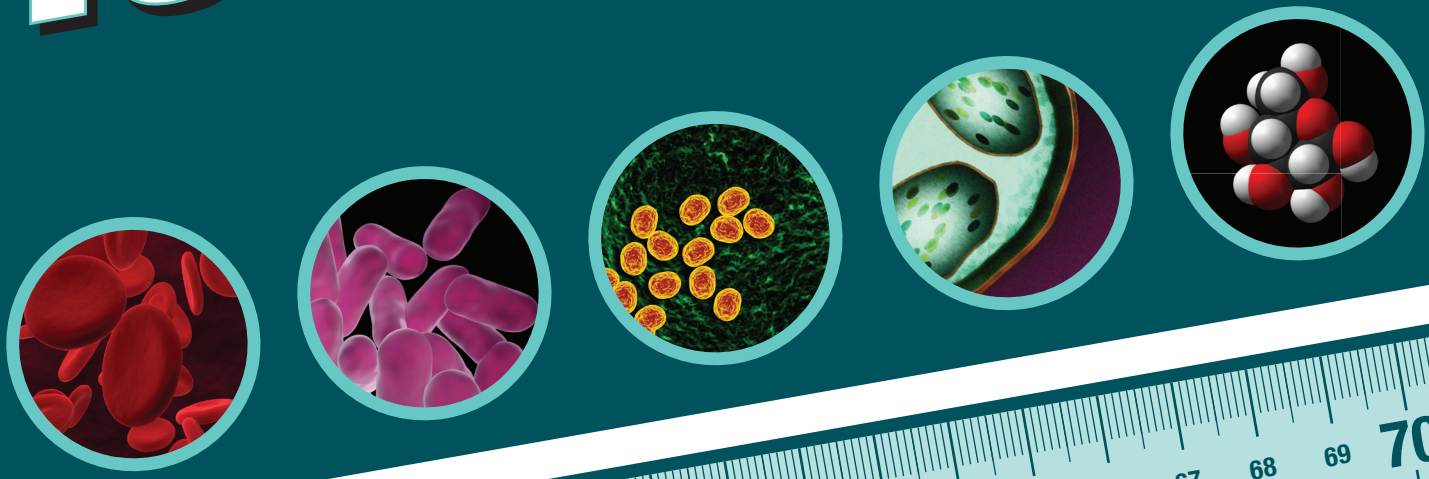
HOW SMALL IS NANO?

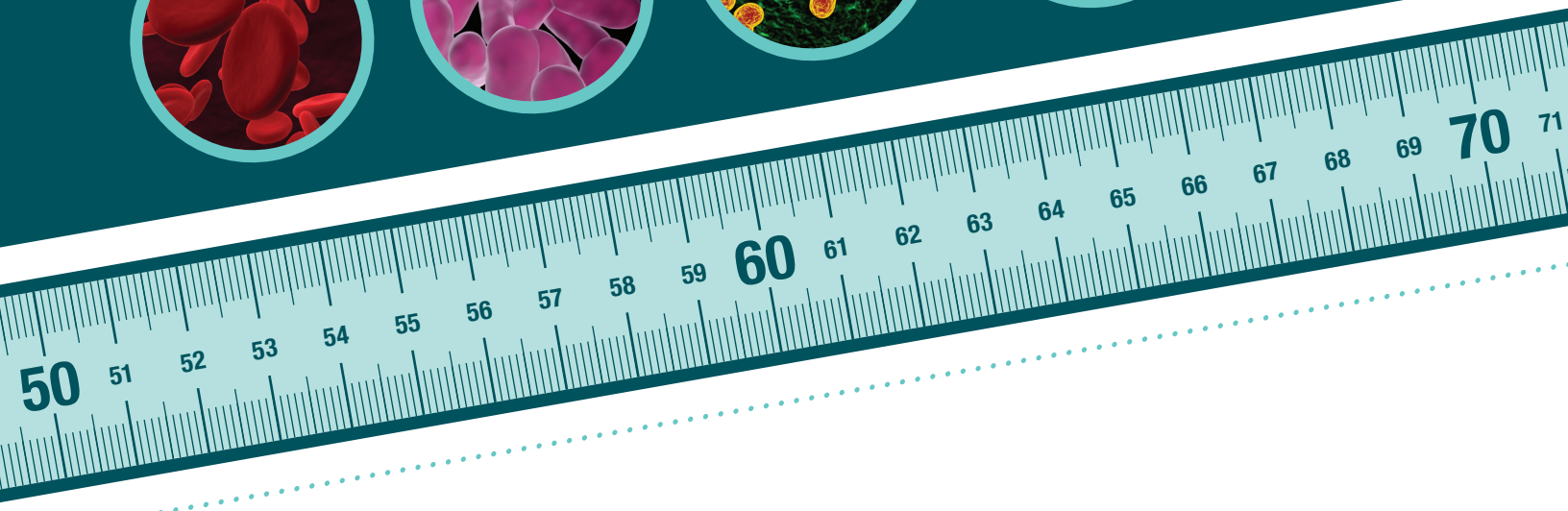


Measuring Different Things

HOW SMALL

IS NANO?



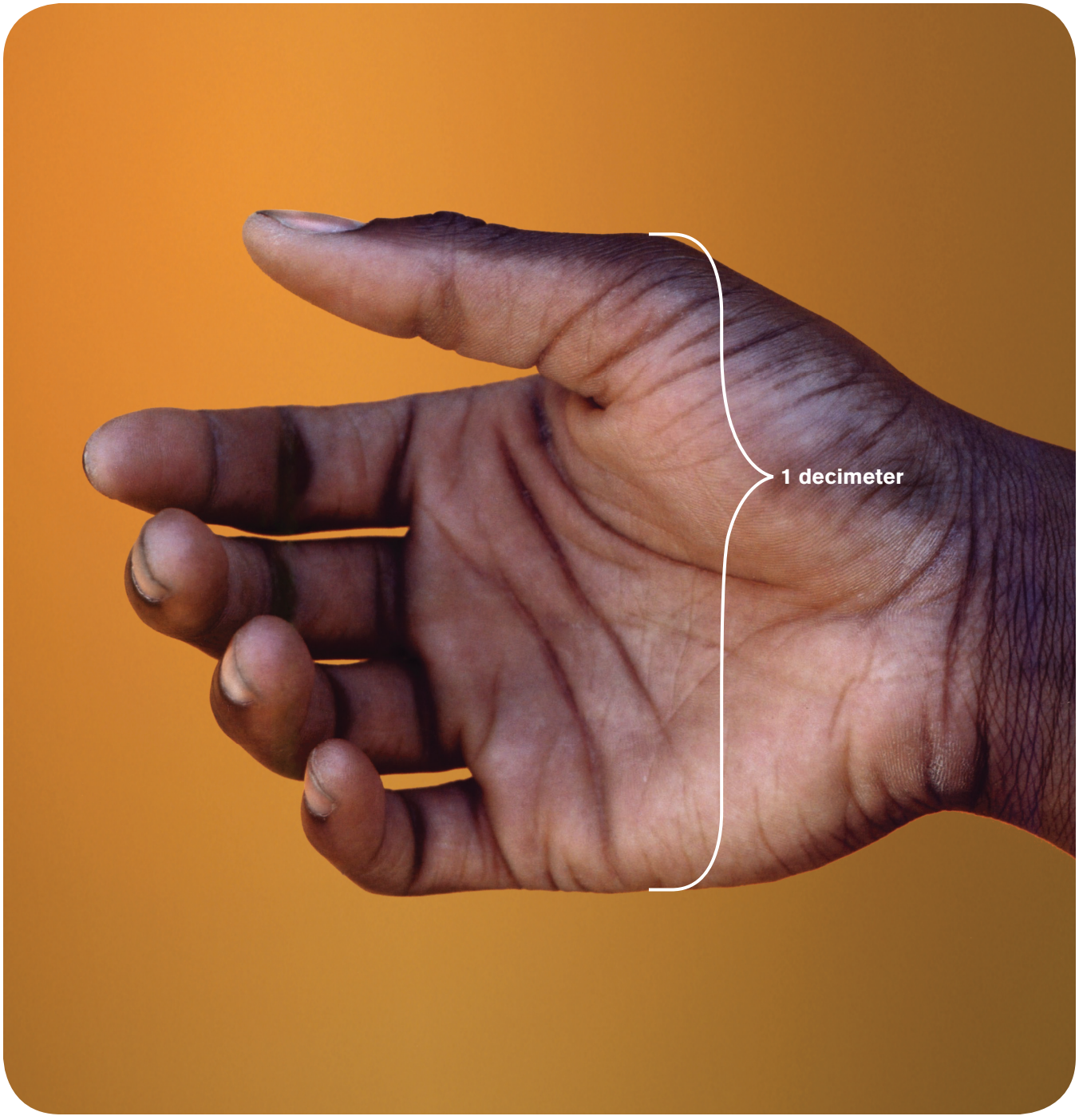


Child

A child is about 1 meter tall

1 meter = 1,000,000,000 nm (1 billion nanometers)

Hand



A hand is about 1 decimeter wide

1 decimeter = 100,000,000 nm (100 million nanometers)

What is smaller than a hand? >>

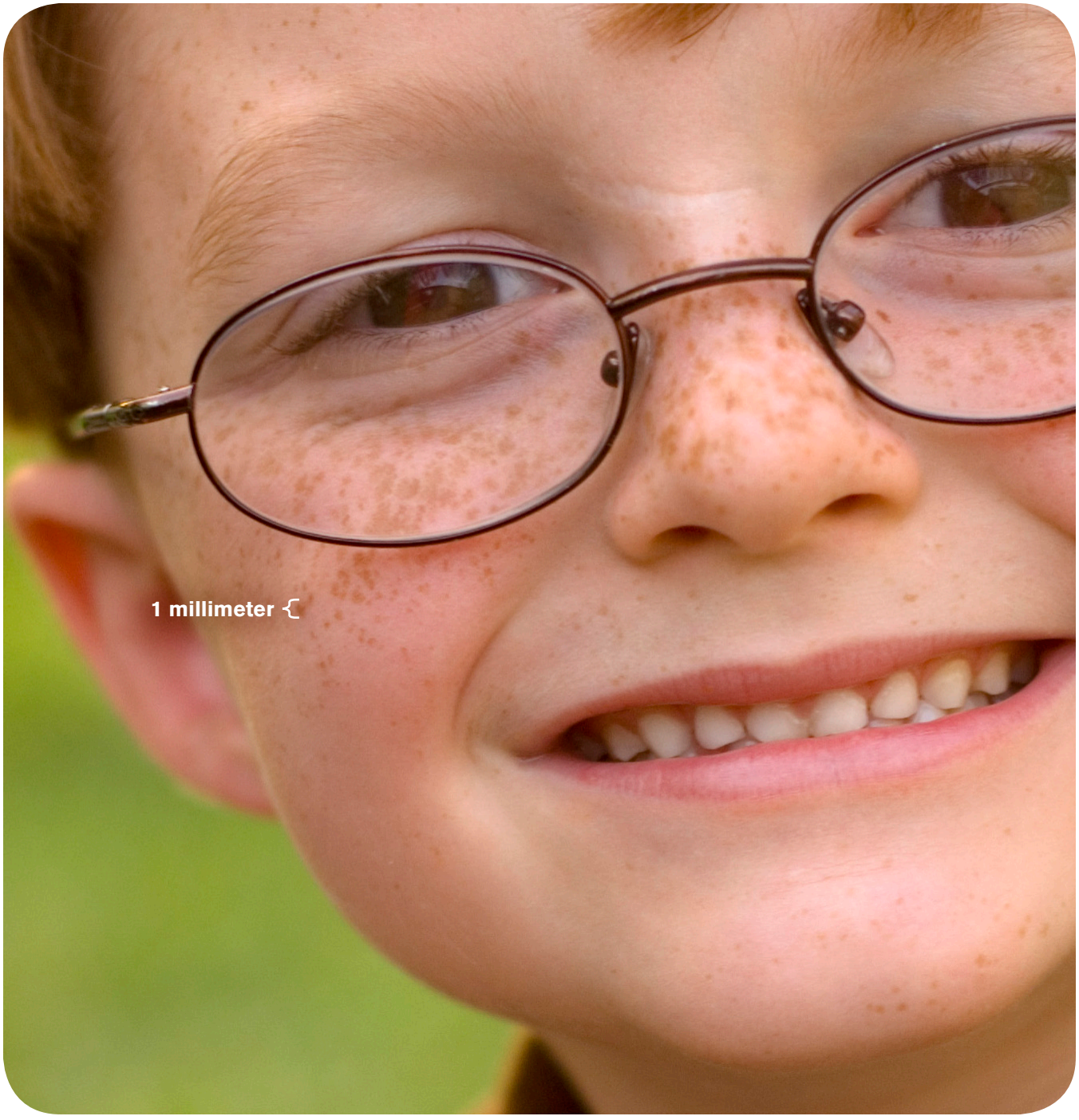
Pinky Finger

A pinky finger is about 1 centimeter wide

1 centimeter = 10,000,000 nm (10 million nanometers)

<< What is bigger than a pinky finger?

Freckle

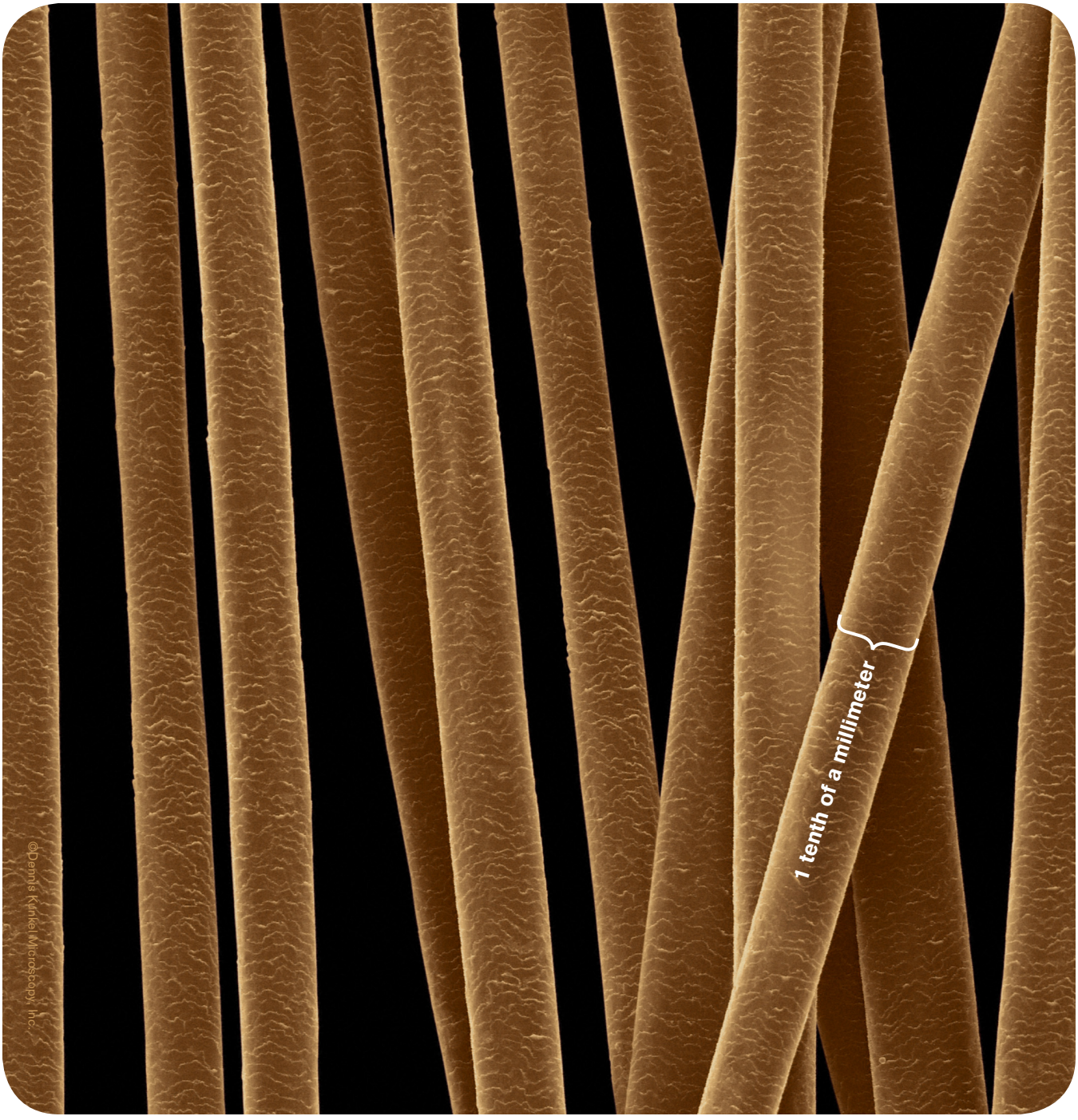


A freckle is about 1 millimeter wide

1 millimeter = 1,000,000 nm (1 million nanometers)

What is smaller than a freckle? >>

Strand of Hair



A hair is about 0.1 (one tenth) of a millimeter wide

0.1 millimeter = 100,000 nm (100 thousand nanometers)

<< What is bigger than a strand of hair?

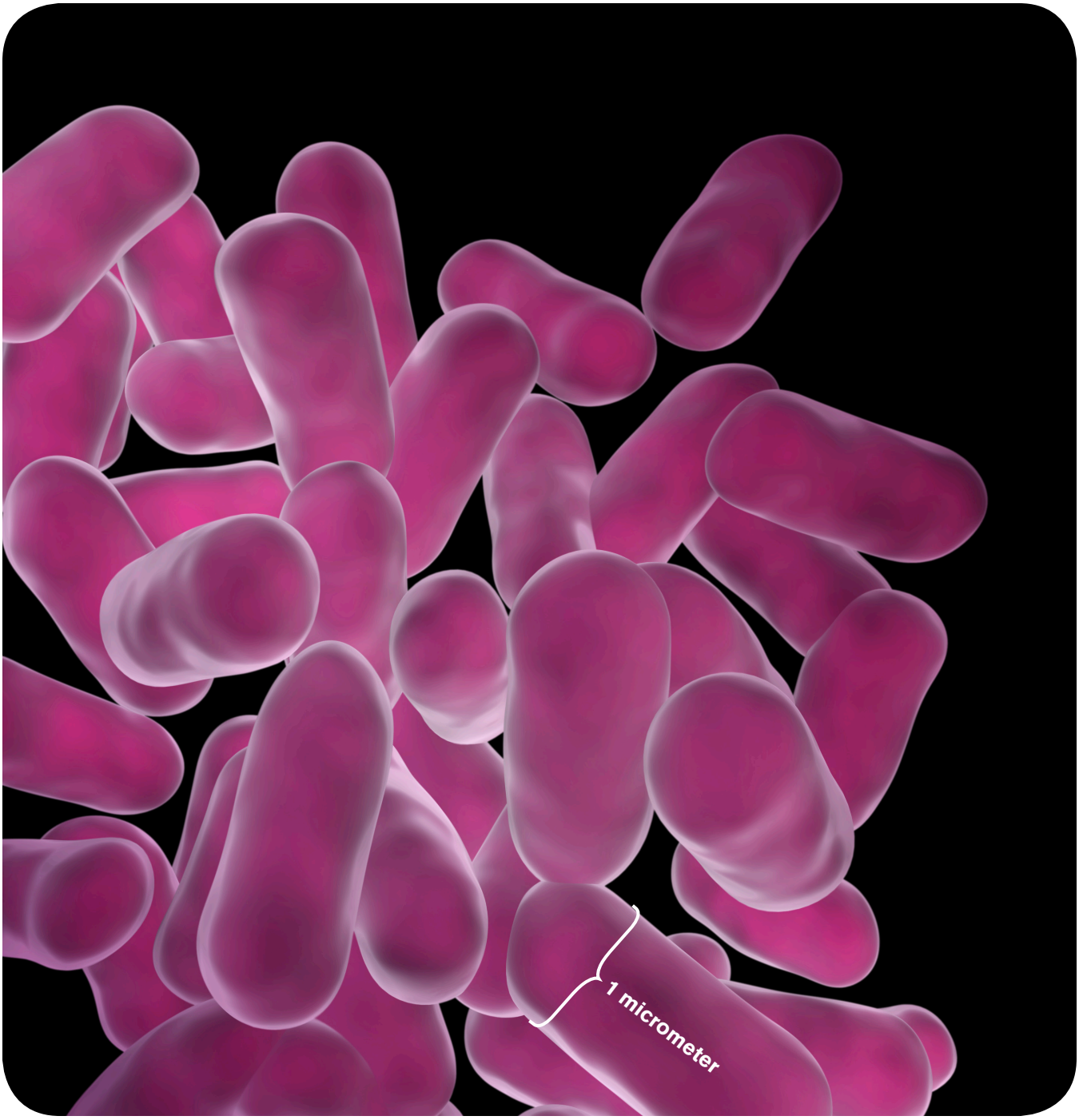
Red Blood Cell

A red blood cell is about 10 micrometers wide

10 micrometers = 10,000 nm (10 thousand nanometers)

What is smaller than a red blood cell? >>

Bacteria

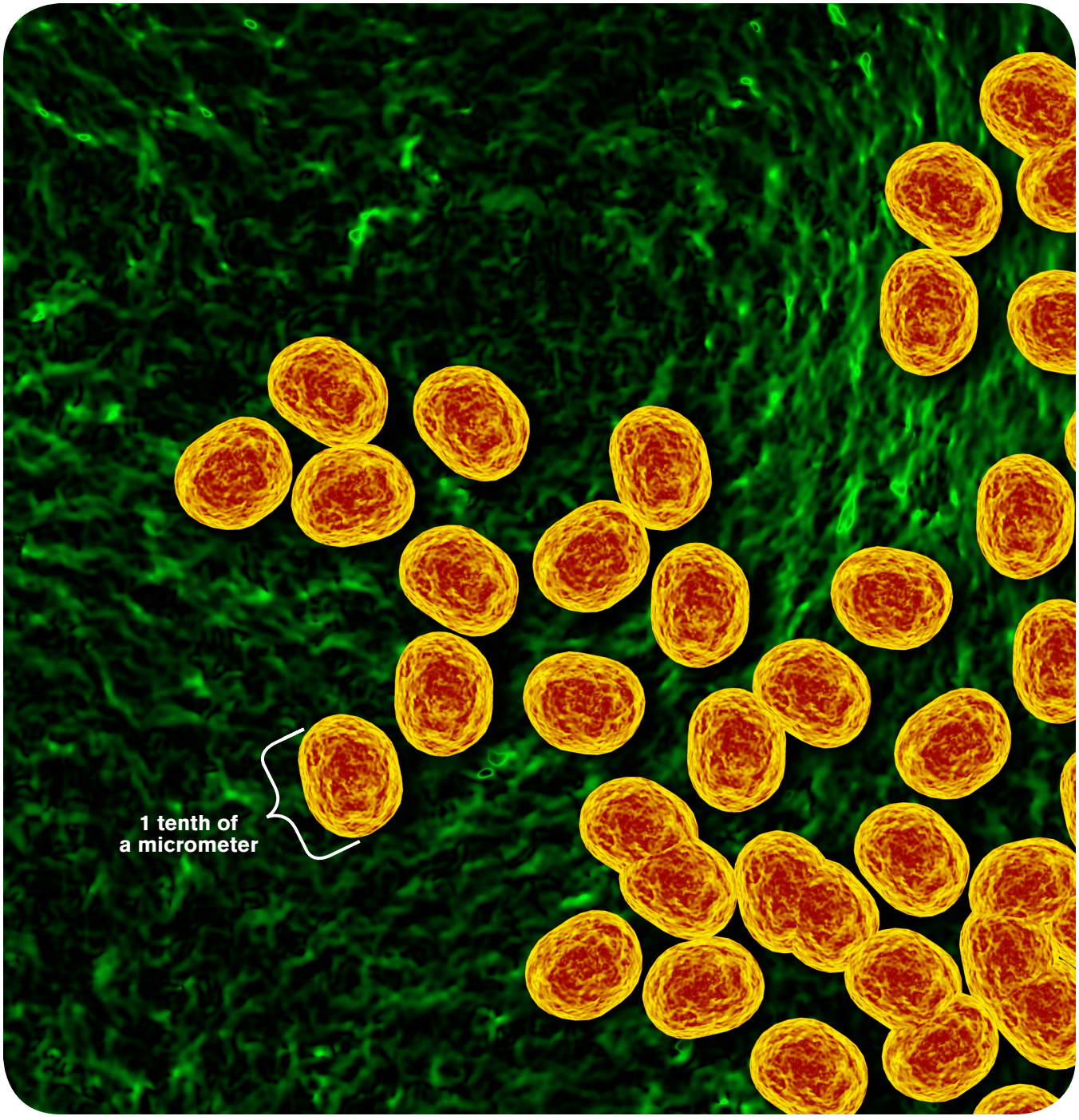


A bacteria cell is about 1 micrometer wide

1 micrometer = 1,000 nm (1 thousand nanometers)

<< What is bigger than a bacteria cell?

Virus

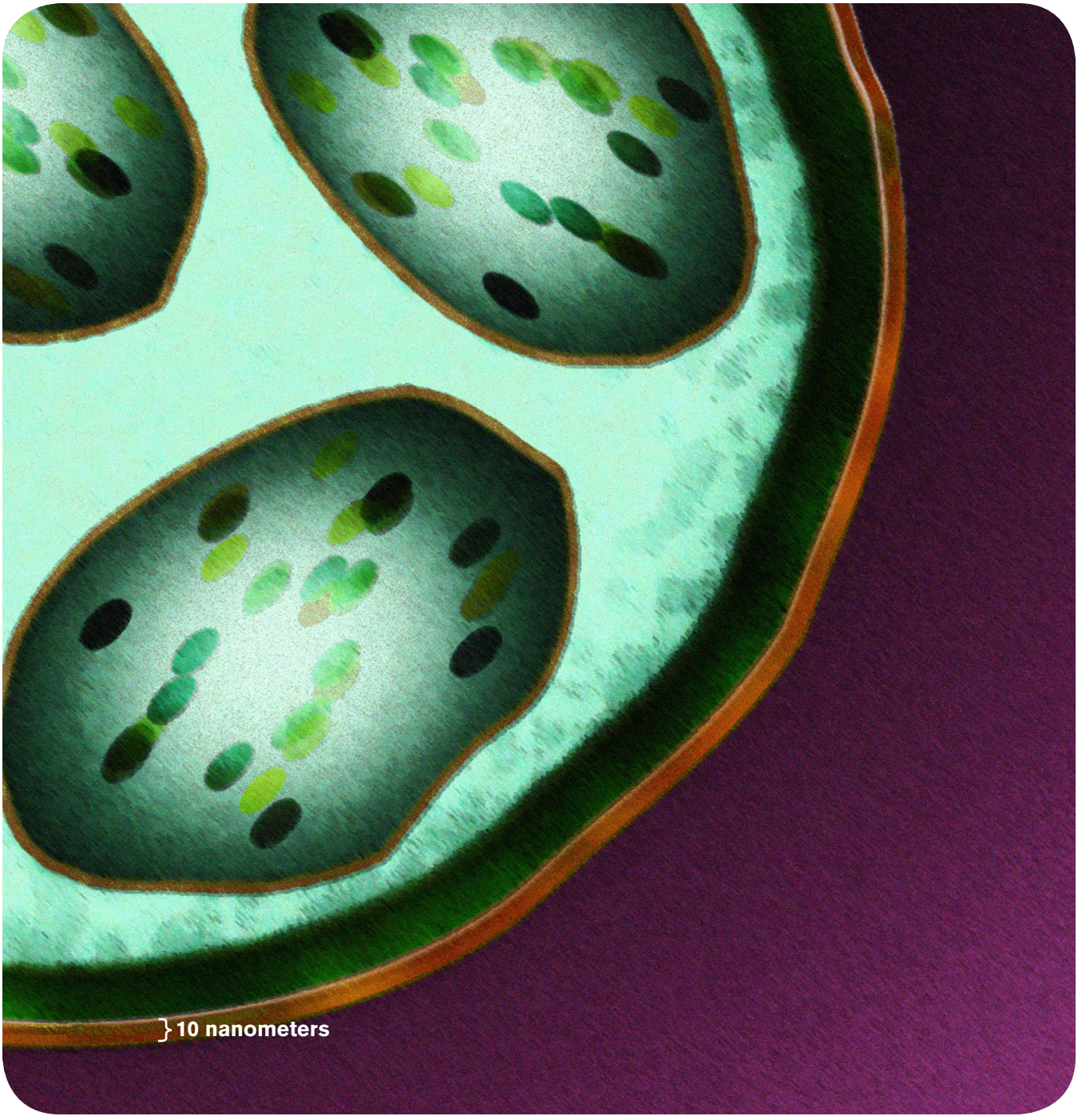


A virus is about 0.1 (one tenth) of a micrometer wide

0.1 micrometer = 100 nm (1 hundred nanometers)

What is smaller than a virus? >>

Cell Membrane

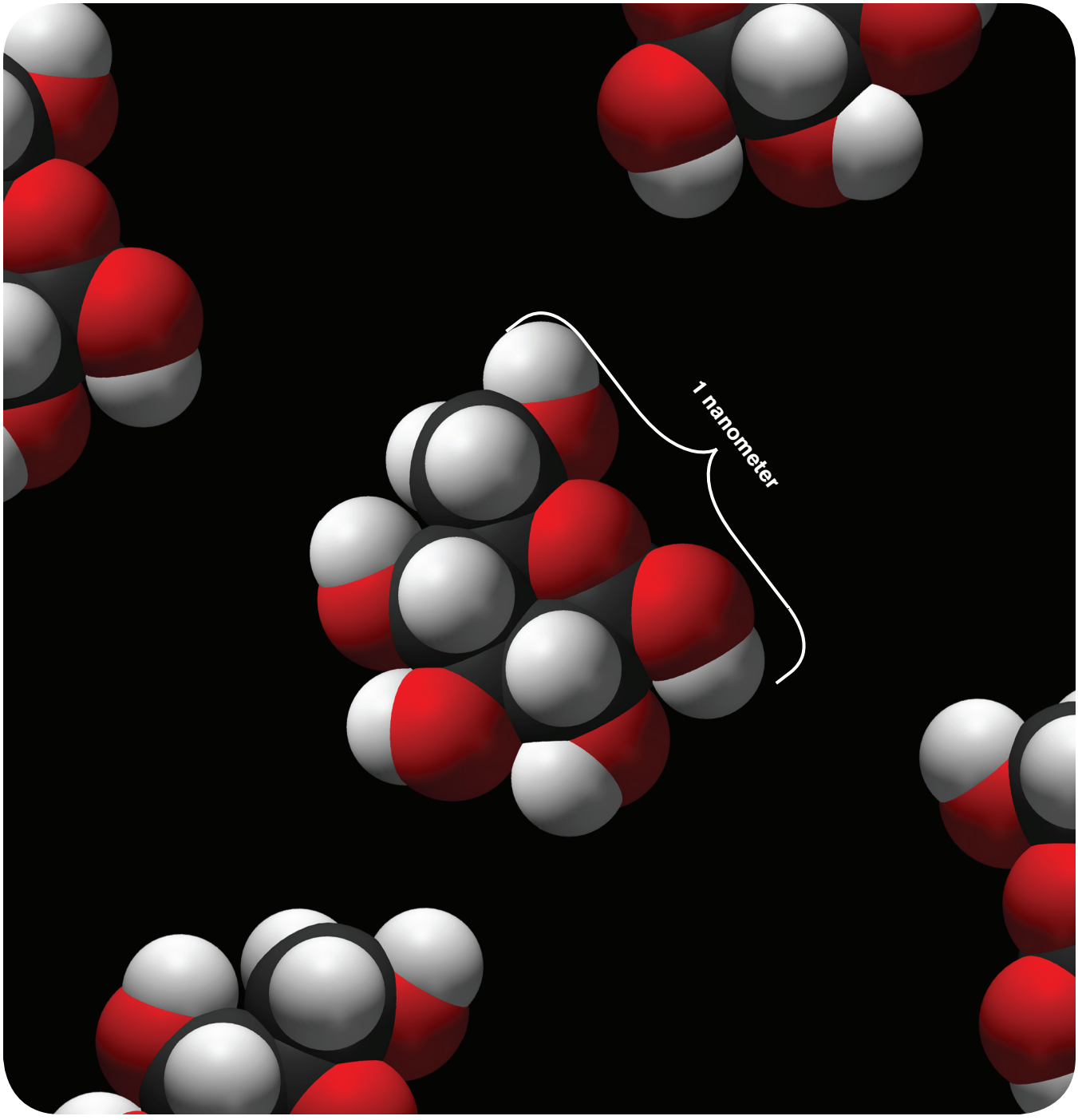


A cell membrane is about 10 nanometers wide

10 nanometers

<< What is bigger than a cell membrane?

Sugar Molecule

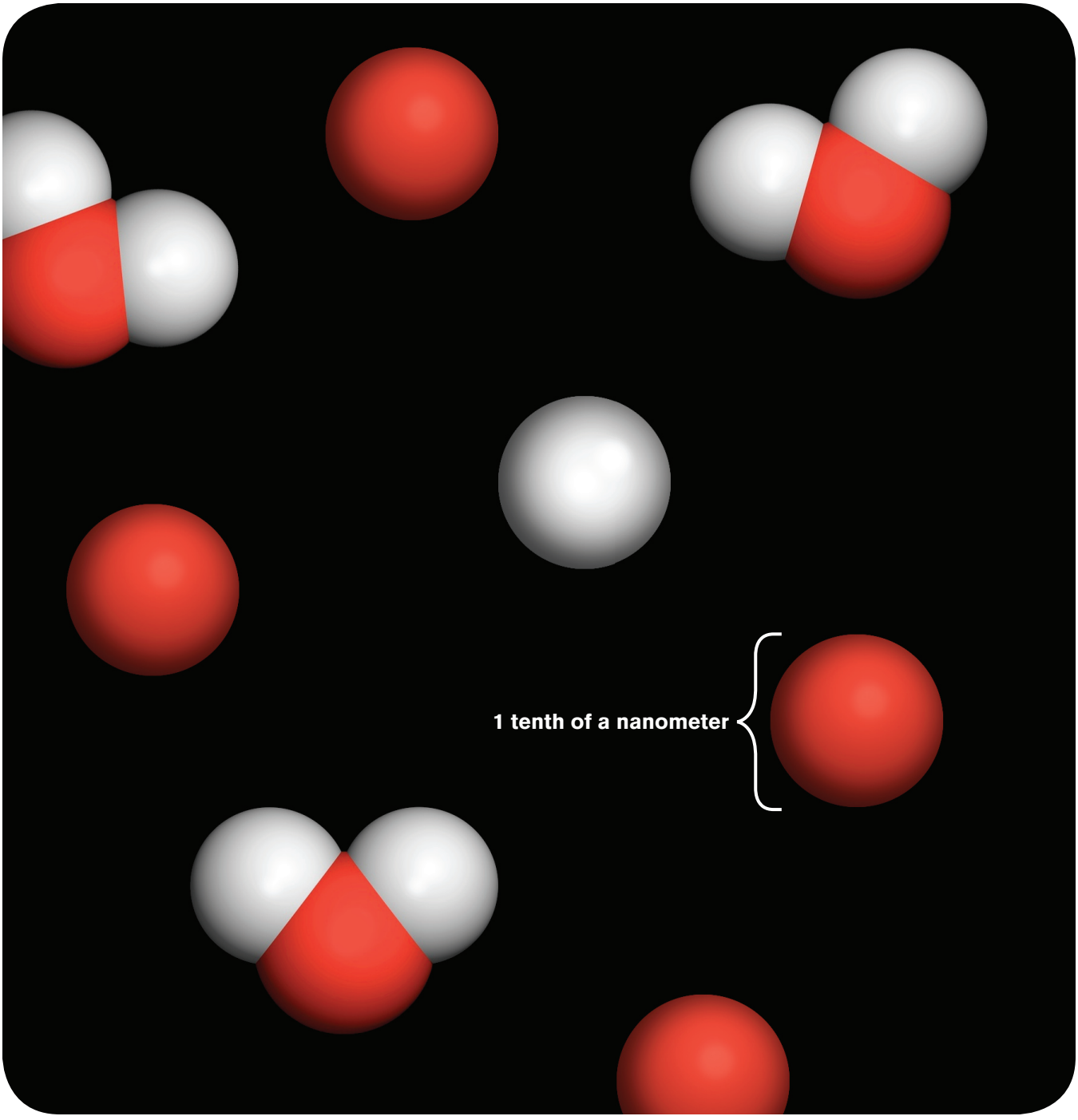


A sugar molecule is about 1 nanometer wide

1 nanometer

What is smaller than a sugar molecule? >>

Atom

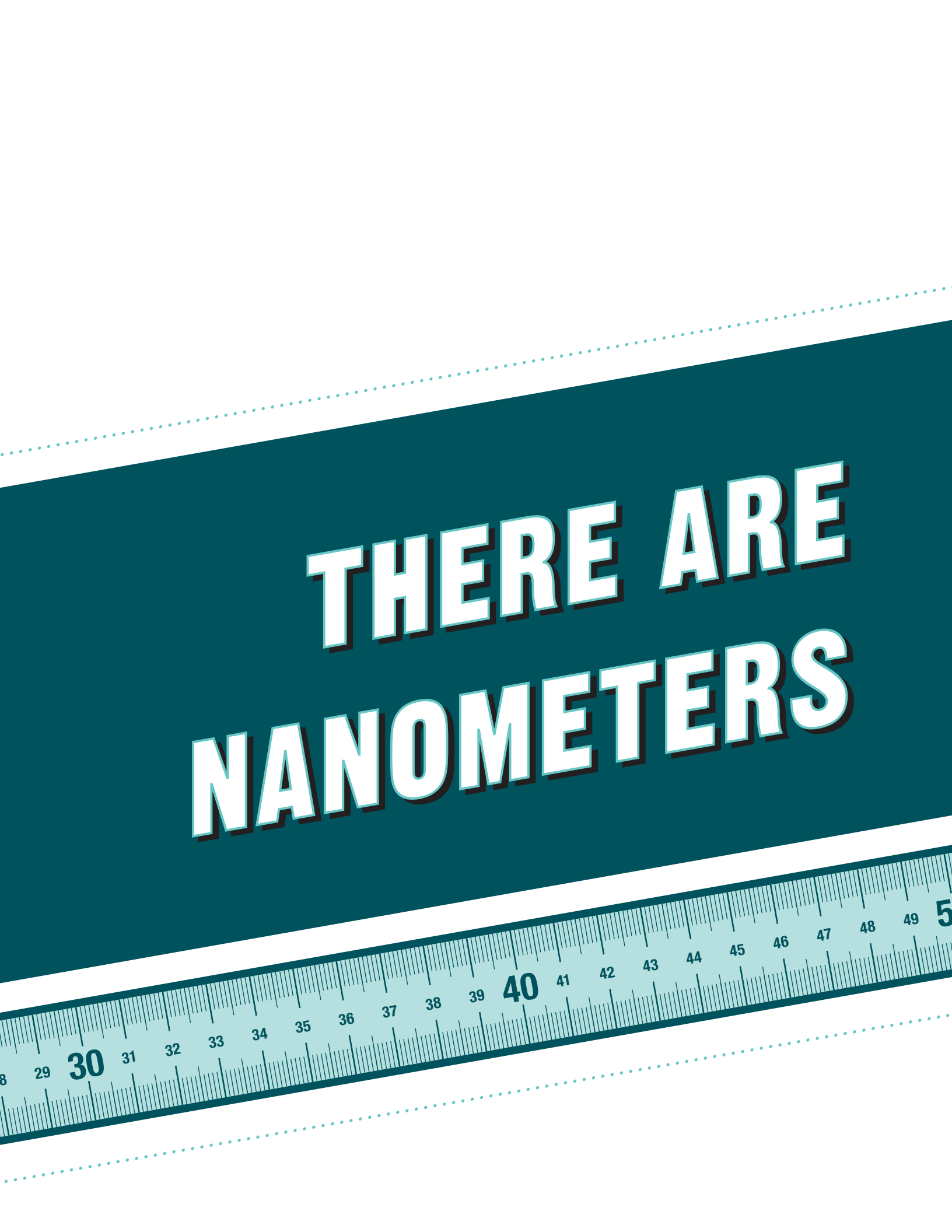


An atom is about 0.1 (one tenth) of a nanometer wide

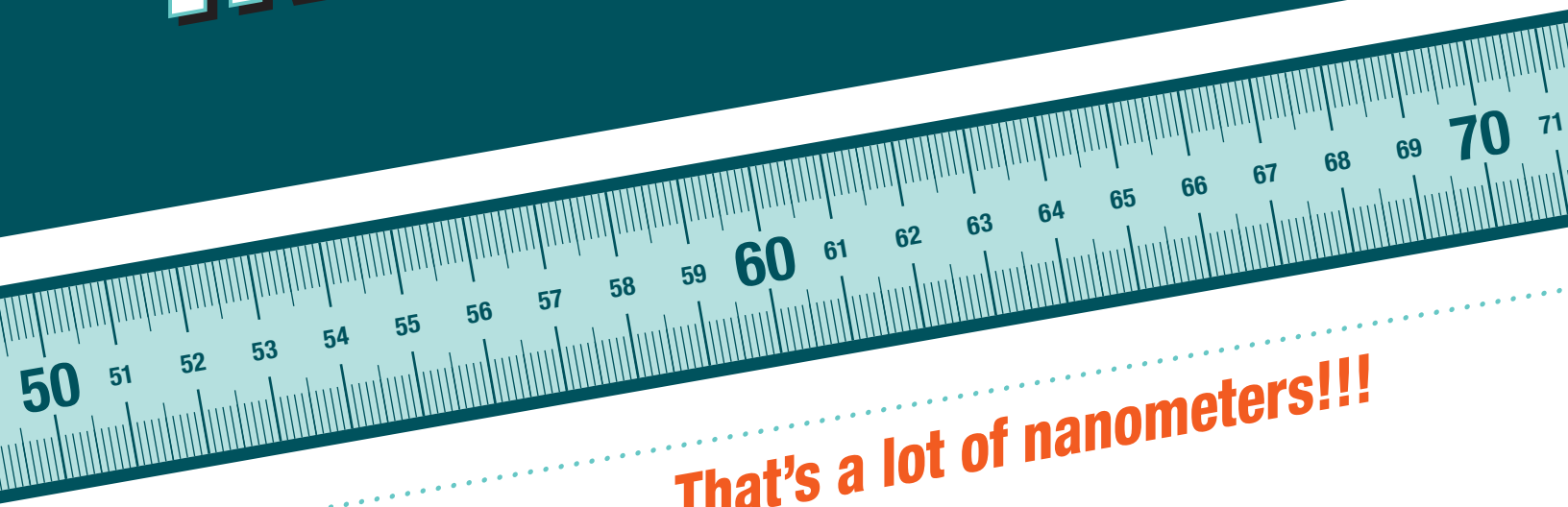
0.1 nanometer

<< What is bigger than an atom?

How many nanometers are in a meter?


THERE ARE
NANOMETERS
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49

1 BILLION IN A METER!



That's a lot of nanometers!!!

HOW SMALL IS NANO?

Macrosize

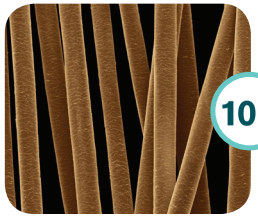
Child
A child is about 1 meter tall
1 meter = 1,000,000,000 nm (1 billion nanometers)

Hand
A hand is about 1 decimeter wide
1 decimeter = 100,000,000 nm (100 million nanometers)

Pinky Finger
A pinky finger is about 1 centimeter wide
1 centimeter = 10,000,000 nm (10 million nanometers)

Freckle
A freckle is about 1 millimeter wide
1 millimeter = 1,000,000 nm (1 million nanometers)

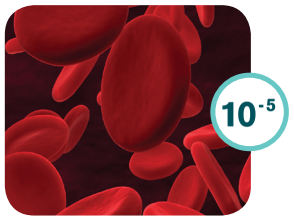
Strand of Hair
A hair is about 0.1 (one tenth) of a millimeter wide
0.1 millimeter = 100,000 nm (100 thousand nanometers)



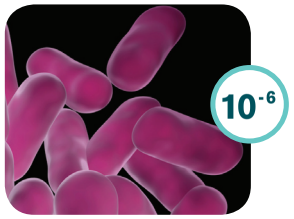
Macrosize
meters, decimeters, centimeters, millimeters

Microsize

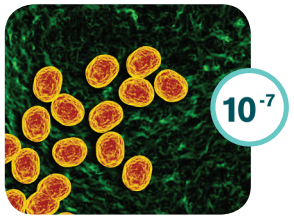
Red Blood Cell
A red blood cell is about 10 micrometers wide
10 micrometers = 10,000 nm (10 thousand nanometers)



Bacteria
A bacteria cell is about 1 micrometer wide
1 micrometer = 1,000 nm (1 thousand nanometers)



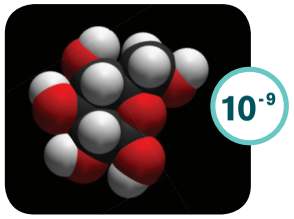
Virus
A virus is about 0.1 (one tenth) of a micrometer wide
0.1 micrometer = 100 nm (1 hundred nanometers)



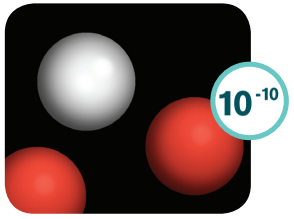
Nanosize

Cell Membrane
A cell membrane is about 10 nanometers wide
10 nanometers = 10 nm

Sugar Molecule
A sugar molecule is about 1 nanometer wide
1 nanometer = 1 nm



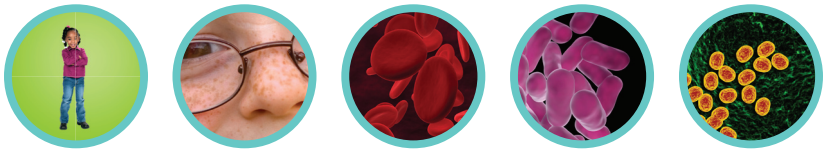
Atom
An atom is about 0.1 (one tenth) of a nanometer wide
0.1 nanometer = 01. nm



Microsize
micrometers

Nanosize
nanometers

Image sources:



Girl, Freckle, Red Blood Cells, Bacteria, Virus
www.istockphoto.com

Hand, Fingers, Cell Membrane, Atoms
Emily Maletz and Sciencenter
www.emilymaletz.com, www.sciencenter.org

Hair Strands
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Glucose Molecule
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By Catherine McCarthy, Rae Ostman, Emily Maletz, and Stephen Hale

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