



# Background Information—StretchAbility

## Macroscale objects on the game mat



This cruise ship is called the *Costa Fortuna*, and is 271 meters long.



A large oak tree is about 20 meters tall.



Humpback whales are about 14 meters long.



At age 6 or 7, children are around 1 meter tall.



A full-size soccer ball is 70 centimeters in diameter.



Chickens are around 30 centimeters tall.



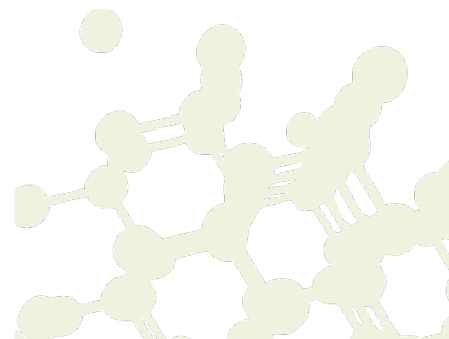
Blue Morpho butterflies have a wingspan of about 15 centimeters.



Gecko lizards are about 13 centimeters long.



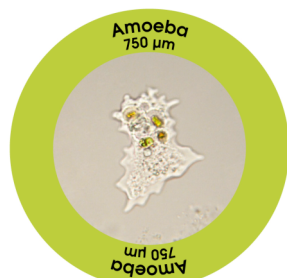
Raindrops are around 0.25 centimeters in diameter.





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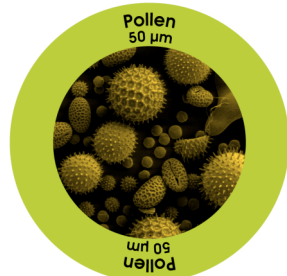
The average length of *Amoeba proteus*, a one-celled organism, is 750 micrometers.



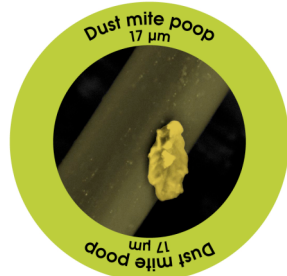
Dust mites, arachnids that eat flakes of dead skin, are 300 micrometers long.



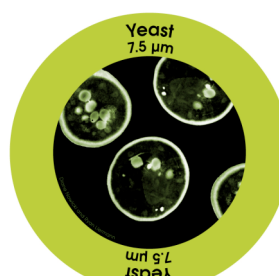
The diameter of human hairs ranges from 50-100 micrometers.



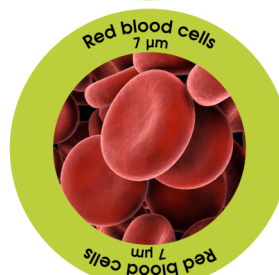
Pollen, which fertilizes seed plants, can be about 50 micrometers in diameter.



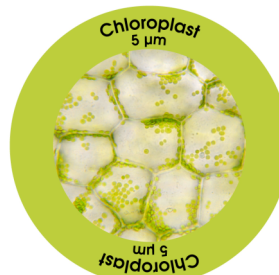
Tiny feces from dust mites are about 17 micrometers long.



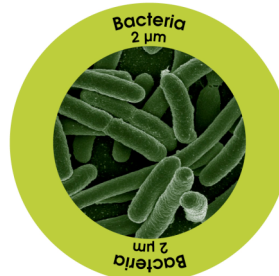
Yeast, a fungus used to make breads rise, is around 7.5 micrometers in diameter.



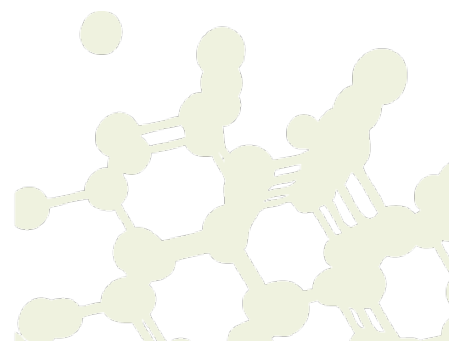
Red blood cells, which carry oxygen from our lungs to our bodies, are about 7 micrometers across.



Chloroplast, the organelle that's responsible for photosynthesis in plants, is about 5 micrometers wide.



*E. coli* bacteria, found in our intestines, are around 2 micrometers long.



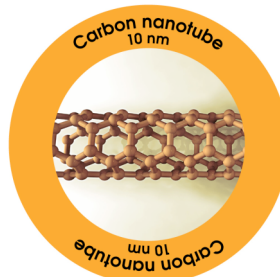


## Background Information—StretchAbility

### Nanoscale objects on the game mat



The 400-nanometer microribs in the Blue Morpho butterfly's wings reflect light to create a blue iridescent color.



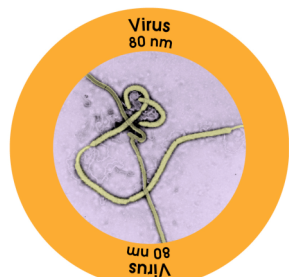
Carbon nanotubes are tiny structures made of carbon, several nanometers in diameter.



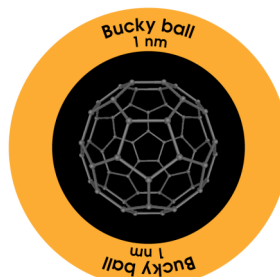
The 200-nanometer hairs on geckos' feet temporarily bond with surfaces, making them really good climbers.



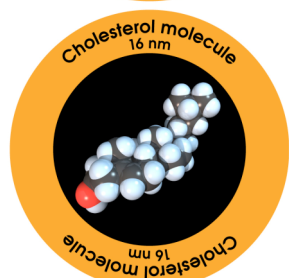
DNA molecules, which carry genetic code, are around 2.5 nanometers across.



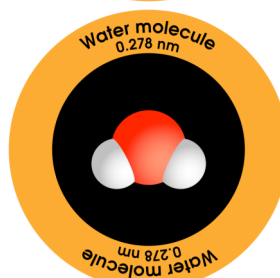
The *Ebola* virus, which causes a bleeding disease, is around 80 nanometers long.



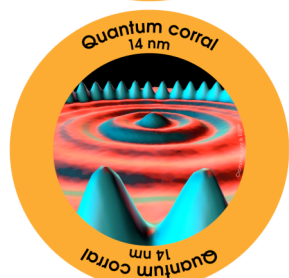
Buckyballs, molecules made of 60 carbon atoms, are 1 nanometer in diameter.



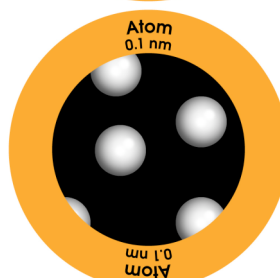
Molecules of cholesterol, 16 nanometers long, help cells produce membranes and perform other bodily functions.



Water molecules are 0.278 nanometers wide.



The quantum corral, a ring of 48-iron atoms arranged on a copper surface, was 14 nanometers across.



The largest naturally-occurring atom is uranium, which has an atomic radius of 0.175 nanometers.

