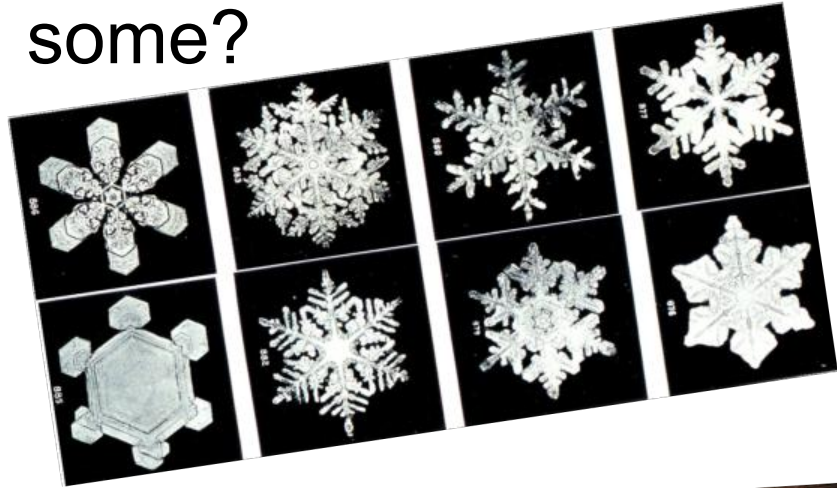




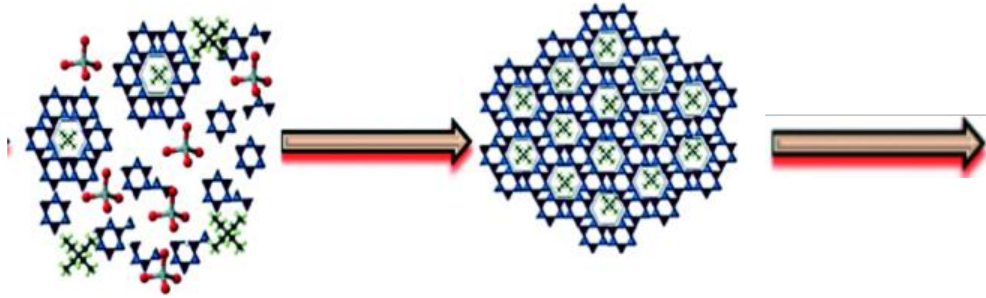
Exploring Crystallization and Color of Nanocrystals

Science Explorers, May 23rd 2019

Crystals Are All Around You! Can you think of some?

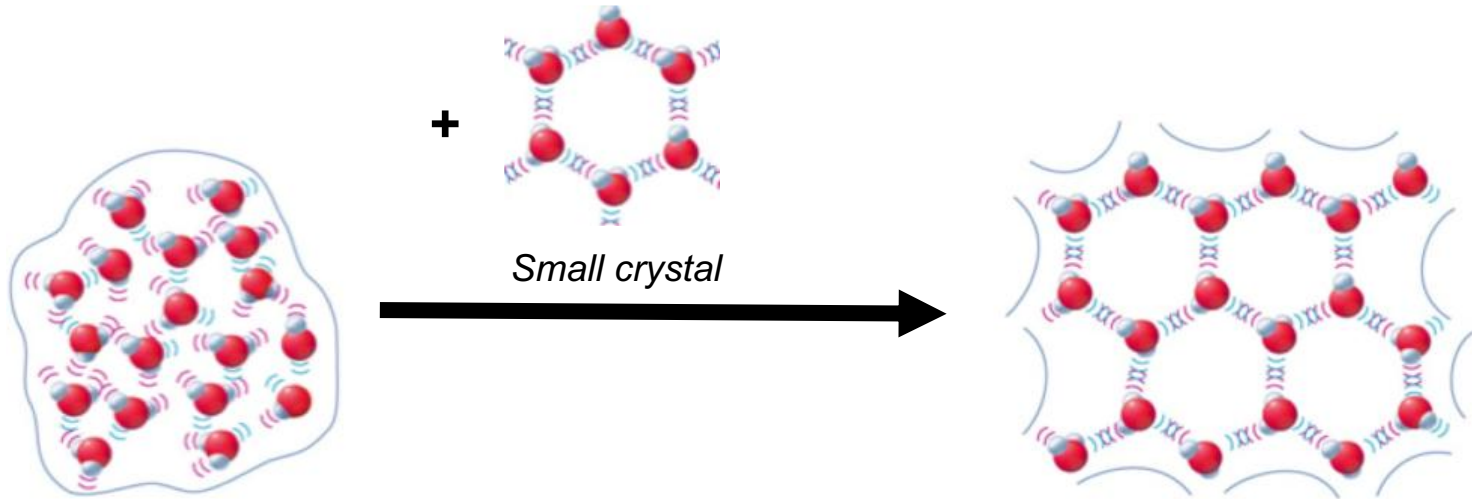


What are crystals?



- Crystals will grow in a solution that is SUPER-saturated!

Crystals need a starting point to grow
- this is called **nucleation!**



Pass around the egg geodes!



Make observations about the crystals.

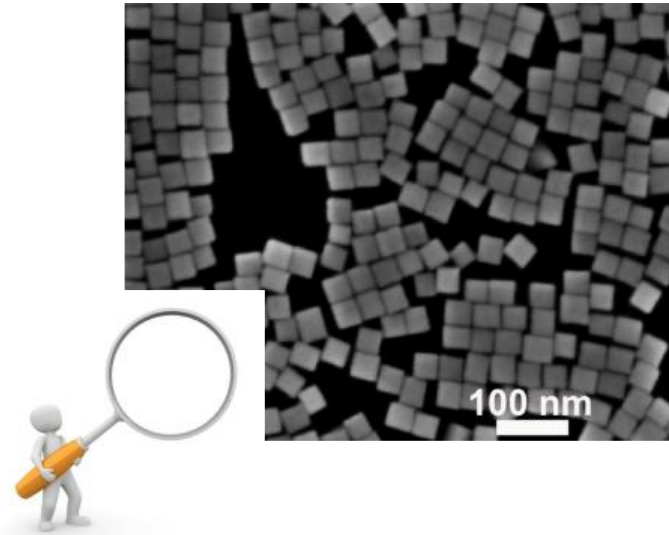
What do you notice about the sizes and shapes?

What else do you see?

Nanocrystals: very very tiny crystals

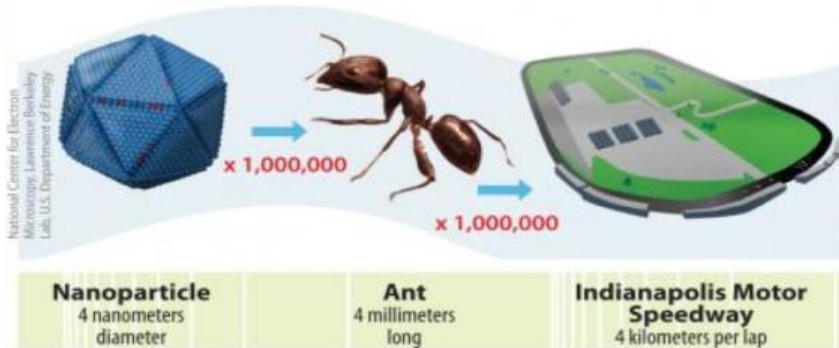


Macroscale (bulk)



Nanoscale

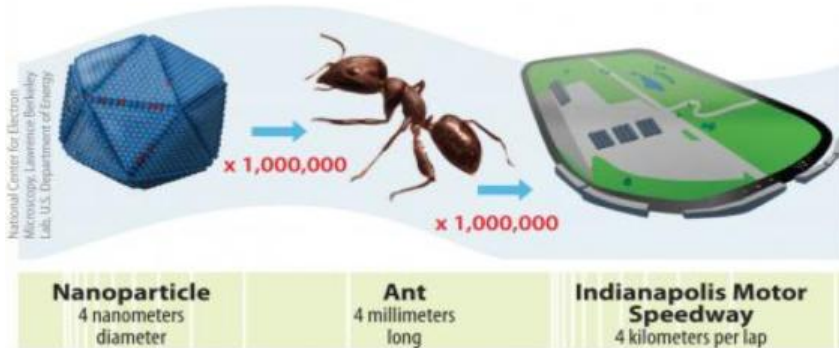
How small is a nanometer?



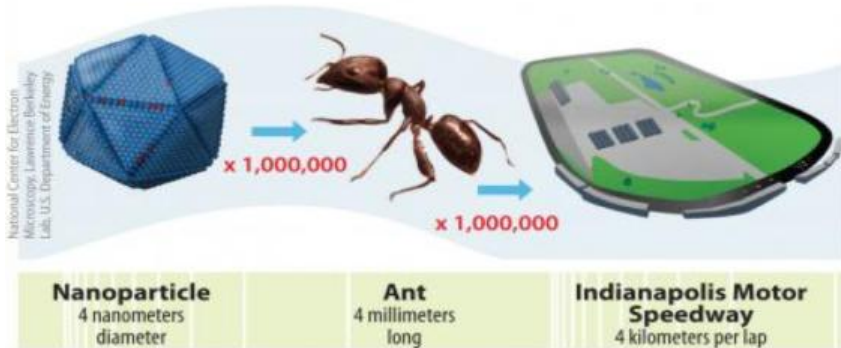
How small is a nanometer?



What are some examples of nanotechnology?



How small is a nanometer?

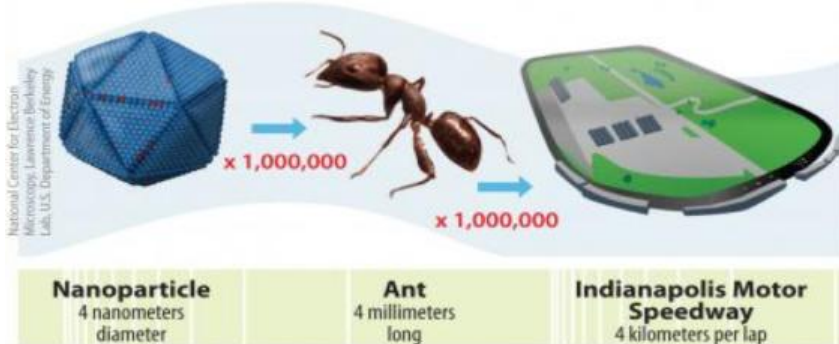


What are some examples of nanotechnology?



How small is a nanometer?

Some examples of nanotechnology



whatisnano.org



Samsung



nanotechweb.org



nanosilver.eu

Gold vs gold nanoparticles



gazettereview.com

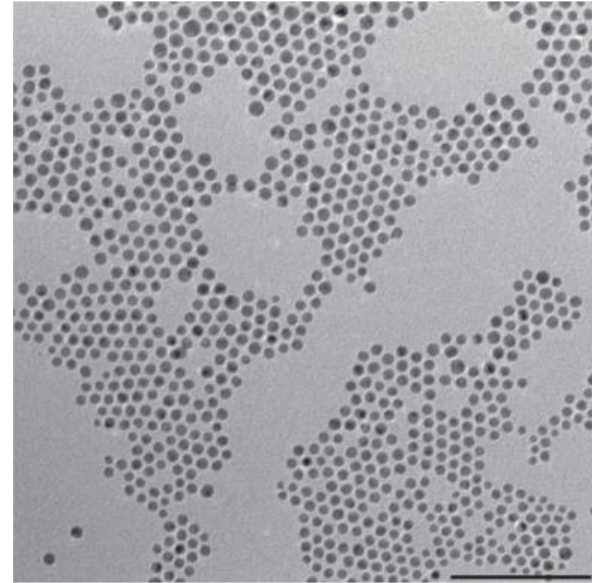


nanocomposix.com

Gold vs gold nanoparticles



gazettereview.com



Yang Lab, Berkeley

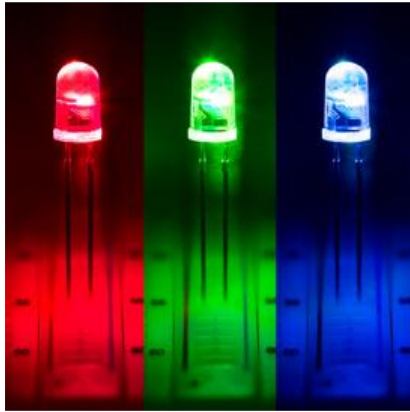
100 nm

How do the crystals form at the nanoscale?

Bawendi Lab CdSe synthesis <https://www.youtube.com/watch?v=MLJJkztIWfg>



From nanocrystals to high-definition TV



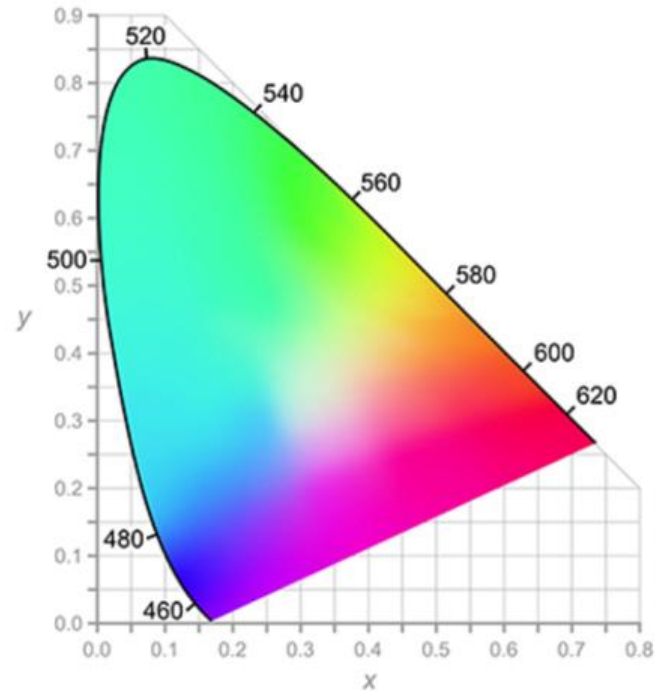
Is color the same thing as light?

What is color?

Absorption + reflection!



What is light?

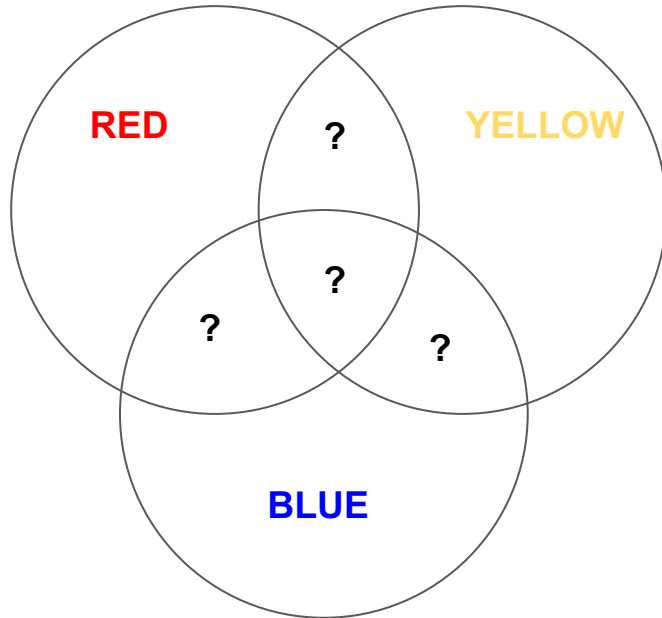


Let us do some mixing!



Record your observations on the pictures!!

COLOR



LIGHT

