NANO CAMP
BRIGHT LIGHTS
AT UNIVERSITY OF NEBRASKA-LINCOLN
The complex structure of snowflakes results from the nanoscale arrangement of water molecules in an ice crystal.
WHY DO SNOWFLAKES HAVE 6 SIDES?

Oxygen atoms self-assemble into a hexagonal shape through hydrogen bonds.
NOW YOU GET TO SELF-ASSEMBLE!

• Look at your "Exploring Fabrication - Self Assembly" sheet - play Game 3 to build a human snowflake using the nanostructure model.
LOTUS LEAF - NANOFABRIC

• Nanoscale features on surface influence how a material behaves on macroscale.
WHAT MAKES THINGS HYDROPHOBIC?

- Surface of lotus leaves have waxy, nanometer-sized bumps that keep water and dirt from sticking.

- Normally, water and dirty can attack a fabric from many angles, but adding a layer of hydrophobic solution covers fabric so that water and dirt collect on top of the 'whiskers' of the solution and roll off.
USE NANO FABRIC!

• Look at your "Exploring Products - Nano Fabric" sheet - follow directions.
• Demo - Nano Shirt with koolaid
UV beads contain special material (*photocromic dye*) that changes color when exposed to UV light because... the UV light breaks a bond in dye molecule so molecules rearranges shape. New shape needs more energy to have its bonds broken.
Blue Morpho butterflies have wings with overlapping scales covered with ribs. There is air space a few nanometers between ribs so light waves bouncing off top and bottom surfaces of neighboring ribs interfere.

Spaces between gold particles cause different colors of gold.