Nanotechnology

WHAT IS NANO-TECHNOLOGY?
SAFETY SLIDE

- Lab Coat
- Safety Glasses
- Gloves
- Close-Toed Shoes
- Long hair tied back
Introduction

Why is it you wash your hands before you eating and after using the bathroom?
How many times do you think you have you touched your face today?
Is there anything on the table in front of you?
Is there bacteria in front of you on the table??
Synopsis

Children are getting sick on a regular basis even though we could prevent many of these incidents. They need to know what is around them and how to handle the things around them they cannot see.
Making Agar Dishes

15 minutes to set:

On the bottom of the petri dish, draw a line dividing it in half and label the sides for each partner.
Nanoparticles

Nanospheres

Nanostars

Nanocubes

What are nanoparticles?

Nanorods

Nanoprisms

Nanopyramids
Our Nanoparticles!

Titanium Dioxide - Absorbs ultraviolet light

Places you can find titanium dioxide: sunscreen, paper, makeup, food, plastics, and rubber.

Zinc Oxide - Pain relief

Places you will find zinc oxide: rubbers, plastics, ceramics, glass, cement, lubricants, paints, ointments, adhesives, sealants, pigment, food, batteries, ferrites, and bandages.
Acquiring your sample:

1. Flip petri dish over and draw a line cutting the dish into fourths and label each side with initials.

2. Students will use their swab to take a sample of one item in the classroom. Each partner will then streak their half the dish.

3. Divide the dish into quarters. Apply a pinch of titanium dioxide to one quarter. On the other side put zinc oxide.

4. Close the petri dish and apply parafilm to seal the dish.

5. Place dish in incubator.
Making Observations

Create a data table in your notebooks.

Record observations of your petri dish.

- Observations should include color, shape, size, and any other interesting characteristics

Use the image to the right to assist with descriptions.

Compare your quarters with and without titanium dioxide/zinc oxide.
Discuss your Bacteria!

Compare your bacteria to your partners, including how are they alike, how are they different, and how the titanium dioxide affected their samples.

Find another pair to share and discuss their results.

Complete the Exit Ticket!
Bacteria Links

Quick Follow-up Article #1 – The Five Dirtiest Things You Touch Everyday

Follow-up Article #2 – Your Towels Are Way Dirtier Than You Think

Follow-up Video – Cell-like nanorobots!