### Exploring Properties - Electric Squeeze

This is a hands-on activity in which visitors investigate the properties of piezoelectric materials. They learn that piezoelectric materials have the special property to create electricity when their shape is changed and that when electricity is passed through them, they change shape.

[http://www.nisenet.org/catalog/programs/exploring_properties_-_electric_squeeze](http://www.nisenet.org/catalog/programs/exploring_properties_-_electric_squeeze)

### Exploring Materials - Graphene

This is a hands-on activity in which visitors use tape and graphite to make graphene and test the conductivity of graphite. They learn that graphene is a single layer of carbon atoms arranged in a honeycomb pattern. There are two versions of this activity, one that uses an LED to test the conductivity and one that uses a buzzer.


### Exploring Materials - Thin Films

This is a hands-on activity in which visitors create a colorful bookmark using a super thin layer of nail polish on water. They learn that a thin film creates iridescent, rainbow colors.


### Exploring Products - Nano Fabric

This is a hands-on activity exploring how the application of nano-sized whiskers can protect clothing from stains. Visitors investigate the hydrophobic properties of pants made from nano fabric and ordinary fabric.

[http://nisenet.org/catalog/programs/exploring_products_-_nano_fabrics_nanodays_10_11](http://nisenet.org/catalog/programs/exploring_products_-_nano_fabrics_nanodays_10_11)

### Exploring Materials - Ferrofluid

This is a hands-on activity demonstrating that a material can act differently when it's nanometer-sized. Visitors investigate the properties of ferrofluid and magnetic black sand, learning that the surprising difference in the behavior of these two materials is due to size.


### Exploring Properties – Capillary Action

This is a hands on activity in which visitors explore how liquids flow in narrow spaces. Visitors investigate how this behavior allows liquids to flow against gravity and soak into coffee filters.


### Exploring Materials - Oobleck

"Exploring Materials—Oobleck" is a hands on activity in which visitors investigate the properties of a cornstarch and water mixture and test its ability to protect from impacts. Visitors learn that similar nanomaterials can be used in new personal protective equipment.


### Exploring Fabrication – Electroplating

This is a hands on activity in which visitors coat a nickel coin with copper using the electroplating process. They learn that electroplating can deposit nanometer-thin layers of materials.

**Exploring Materials - Nano Gold**

This is a hands-on activity in which visitors discover that nanoparticles of gold can appear red, orange or even blue. They learn that a material can act differently when it's nanometer-sized.


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**Exploring Products - Computer Hard Drives**

This is a hands-on activity in which visitors use floating ring magnets to store data. They learn that computer hard drives are one of the most common applications of nanotechnology.


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**Exploring Properties – Invisibility**

This is a hands-on activity in which visitors investigate how glass objects can be “hidden” in some liquids. They learn that researchers can use nanotechnology to engineer new materials that interact with light in special ways.


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**Exploring Materials – Liquid Crystals**

"Exploring Materials - Liquid Crystals" is a hands-on activity demonstrating that the way a material behaves on the macroscale is affected by its structure on the nanoscale. Visitors investigate the properties of a heat sensitive liquid crystal and make their own liquid crystal sensor to take home.


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**Exploring Fabrication - Gummy Capsules**

Exploring Fabrication - Gummy Capsules" lets visitors make self-assembled polymer spheres. They learn that self-assembly is a process by which molecules and cells form themselves into functional structures, and that self-assembly is used to make nanocapsules that can deliver medication.


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**Exploring Properties - Surface Area**

This is a hands-on activity demonstrating how a material can act differently when it's nanometer-sized. Visitors compare the reaction rate of an effervescent antacid tablet that is broken in half with one that is broken into many pieces.

[http://www.nisenet.org/catalog/programs/exploring_properties_-_surface_area_nanodays_08_09_10](http://www.nisenet.org/catalog/programs/exploring_properties_-_surface_area_nanodays_08_09_10)

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**Exploring Properties - UV Bracelets**

This is a hands-on activity in which visitors use ultraviolet light to change the color of beads that contain photochromic dye. They learn that the UV beads change color as a result of nanoscale shifts in the shape of the dye molecules.


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**Exploring Forces – Static Electricity**

"Exploring Forces - Static Electricity" is a hands-on activity in which visitors discover that electrostatic forces cause smaller balls to be suspended in a tube while larger ones fall to the bottom. They learn that size can affect the way a material behaves.

Exploring Materials - Hydrogel

"Exploring Materials - Hydrogel" is a hands-on activity in which visitors discover how a super absorbing material can be used to move a straw. They learn that hydrogels can be used on the nanoscale in a similar fashion to manipulate tiny structures.


Exploring Size – Ball Sorter

"Exploring Size - Ball Sorter" is a hands-on activity in which visitors use sieves with different-sized holes, to sort balls by size. They learn that researchers are developing new technologies that can sort nano-sized things, including filters with nano-sized holes.

http://www.nisenet.org/catalog/exploring-size-ball-sorter

Exploring Structures - DNA

"Exploring Structures - DNA" is a hands-on activity in which visitors create a necklace of wheat germ DNA. They learn that self-assembly is a process by which molecules and cells form themselves into functional structures.


Exploring Products – Liquid Crystal Displays

"Exploring Products - Liquid Crystal Displays" is a hands-on activity in which visitors investigate temperature-sensitive liquid crystal sheets and liquid crystal displays from a calculator. They learn that liquid crystals change color as a result of nanoscale shifts in the arrangement of their molecules.

http://www.nisenet.org/catalog/exploring-products-liquid-crystal-displays

Exploring Tools - Dress Up Like a Nanoscientist

This is a hands-on activity in which visitors see what they would look like in a cleanroom suit. They learn that to make tiny things, scientists need to work in a very clean place.

http://nisenet.org/catalog/exploring-tools-dress-nanoscientist

Exploring Size - Measure Yourself

This is a hands-on activity in which visitors mark their height on a height chart and discover how tall they are in nanometers. They learn that although being a billion nanometers tall sounds impressive, it doesn't mean they're super tall: it means a nanometer is super small. Visitors can also measure their hands in nanometers.

http://www.nisenet.org/catalog/programs/exploring_size_-_measure_yourself

Exploring Tools - Special Microscopes

This is a hands-on activity in which visitors use a flexible magnet as a model for a scanning probe microscope. They learn that SPMs are an example of a special tool that scientists use to work on the nanoscale.

http://www.nisenet.org/catalog/programs/exploring_tools_-_special_microscopes_nanodays_08_09_10_1

Nano Ice Cream!

This is a public presentation demonstrating how liquid nitrogen cools a creamy mixture at such a rapid rate that it precipitates super fine grained (nano) ice cream.

http://www.nisenet.org/catalog/programs/nano_ice_cream