NanoDays_Purdue 2016 Activities

Exploring Properties - Electric Squeeze

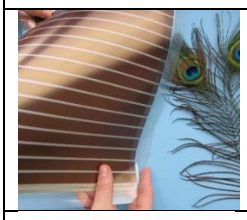
This is a hands on activity in which visitors investigate the properties of piezoelectric materials. They learn that piezoelectric materials have the special property to create electricity when their shape is changed and that when electricity is passed through them, they change shape.

http://www.nisenet.org/catalog/programs/exploring_properties_-_electric_squeeze

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.

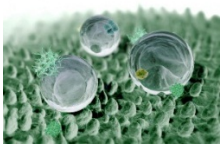
http://nisenet.org/catalog/programs/exploring_materials_-_graphene_nanodays_2012



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.

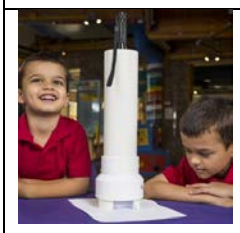
http://nisenet.org/catalog/programs/exploring_materials_-_thin_films_nanodays_2011



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.

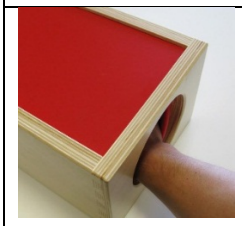
http://nisenet.org/catalog/programs/exploring_products_-_nano_fabrics_nanodays_10_11



Exploring Tools - Transmission Electron Microscopes

This is a hands-on activity in which visitors use a model of a transmission electron microscope to image an object by looking at its shadow. They learn that scientists use special tools and equipment to work on the nanoscale.

http://nisenet.org/catalog/exploring-tools-transmission-electron-microscopes



Exploring Tools - Mystery Shapes

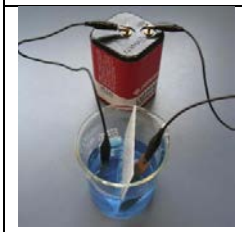
Exploring Tools - Mystery Shapes" is a hands-on activity in which visitors use their sense of touch to investigate hidden objects. They learn that researchers use special tools, including scanning probe microscopes, to detect and make images of nanoscale objects.

http://nisenet.org/catalog/programs/exploring_tools_-_mystery_shapes_nanodays_2013

Exploring Products - Nano Sand

Exploring Products - Nano Sand" is a hands-on activity exploring how water behaves differently when it comes in contact with nano sand and regular sand. Visitors learn about the hydrophobic properties of nano sand.

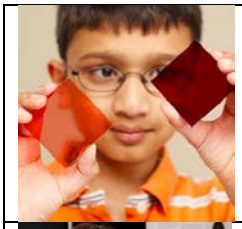
http://nisenet.org/catalog/programs/exploring_products_-_nano_sand_nanodays_2011



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.

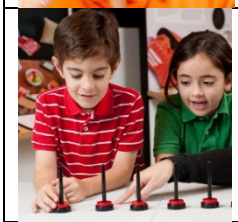
http://www.nisenet.org/catalog/programs/exploring_fabrication_-_electroplating



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.

http://nisenet.org/catalog/programs/exploring_materials_-_nano_gold_nanodays_2012



Exploring Products - Computer Hard Drives

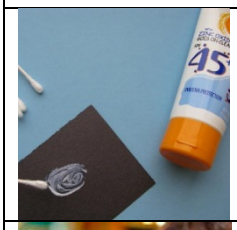
This is a hands on activity in which visitors use floating ring magnets to store data. They learn that computer hard drives are one of the most common applications of nanotechnology.

http://www.nisenet.org/catalog/programs/exploring_products_-_computer_hard_drives

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.

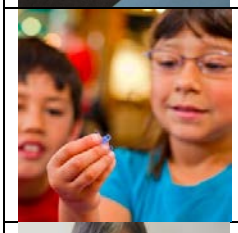
http://www.nisenet.org/catalog/programs/exploring_properties_-_invisibility



Exploring Products – Sunblock

This is a hands-on activity comparing sunblock containing nanoparticles to ointment. Visitors learn how some sunblocks that rub in clear contain nanoparticles that block harmful rays from the sun.

http://www.nisenet.org/catalog/programs/exploring_products_-_sunblock_nanodays_2011_2012



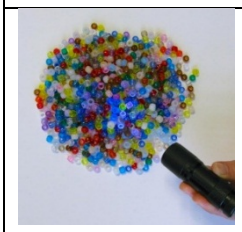
Exploring Fabrication - Gummy Capsules

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.
http://www.nisenet.org/catalog/programs/exploring_fabrication_-_gummy_capsules_nanodays_12_13

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



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.

http://www.nisenet.org/catalog/programs/exploring_properties_-_uv_bracelets_nanodays_2013

Exploring Size-What am I? mystery cards

Flip between macro and nanoscale images of familiar objects to learn about ways that nanotechnology is inspired by nature, surprising properties at the nanoscale, and new applications in nanotechnology. Includes print your own cards.

http://nisenet.org/catalog/programs/what_am_i_nanodays_2012

Exploring Tools - Mitten Challenge

This is a hands on activity in which visitors build a Lego® structure while wearing mittens. They learn that it is difficult to build small things when your tools are too big.

http://www.nisenet.org/catalog/programs/exploring_tools_-_mitten_challenge_nanodays_2011

Build a Giant Puzzle

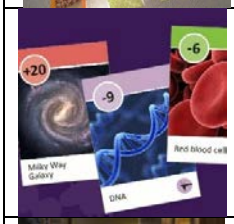
Build a Giant Puzzle!" is a hands-on activity in which visitors assembly large cubes to make nano related images. They learn how different objects are related to nano.

http://nisenet.org/catalog/programs/build_giant_puzzle_nanodays_2012

Macro, Micro and Nano Memory

Macro, Micro and Nano Memory" is a memory game that teaches visitors about the macroscale, microscale and nanoscale, the objects within those scales and the way we measure these objects

http://nisenet.org/catalog/programs/macro_micro_nano_memory



Exploring Size - Powers of Ten

Exploring Size - Powers of Ten" is a card game exploring the relative sizes of various objects. Visitors compete to organize their hand of cards into lists of objects from largest to smallest.

http://nisenet.org/catalog/programs/exploring_size_-_powers_ten_game_nanodays_2011_2012_2014

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