

KIT TITLE: Ultraviolet light

GRADE LEVEL: 6 - 8+

OBJECTIVES:

Students will understand that:

- The way a material behaves on the macro scale is affected by its structures on the nanoscale
- The UV beads in this activity change color as a result of nanoscale shifts in the shapes of their molecules
- There are ways to protect our skin from the damaging effects of the ultraviolet rays from the sun

NEXT GENERATION SCIENCE STANDARDS

NGSS Performance Tasks	MS-PS4-2. <ul style="list-style-type: none"> • Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. • Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
NGSS Disciplinary Core Ideas (DCI)	PS4.A: Wave Properties <ul style="list-style-type: none"> • A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude. PS4.B: Electromagnetic Radiation <ul style="list-style-type: none"> • An object can be seen when light reflected from its surface enters the eyes. • When light shines on an object, it is reflected, absorbed, or transmitted through the object, depending on the object's material and the frequency (color) of the light. • However, because light can travel through space, it cannot be a matter wave, like sound or water waves.
NGSS Cross Cutting-Concepts (CC)	CC-2 Cause and Effect <ul style="list-style-type: none"> • Cause and effect relationships are routinely identified. CC-6 Structure and Function <ul style="list-style-type: none"> • Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used.

	Interdependence of Science, Engineering, and Technology <ul style="list-style-type: none"> Science and engineering complement each other in the cycle known as research and development (R&D). Influence of Engineering, Technology, and Science on Society and the Natural World
NGSS Science and Engineering Practices (SEP)	SEP 2 – Developing and Using Models <ul style="list-style-type: none"> Use models to describe phenomena. SEP 7- Obtaining, Evaluating and Communicating Data <ul style="list-style-type: none"> Communicate technical information or ideas (e.g. about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).