



### About the Experiment

Luminescence is a source that gives light without heat. There are many different types of luminescence. In this experiment we will be looking at Fluorescence in food and plants. Fluorescence is an optical phenomenon that occurs when the atoms inside a fluorescent material become excited after absorbing light energy (such as UV-light) and the material emits visible light. The visible light is emitted as the energy of the material is returned to normal. This all takes place in less than a second. The visible light given off are tiny particles called photons.



**Ages – 5-12**



**Time – 15-20 minutes**



## Difficulty – Easy

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### What You'll Need for the Experiment

- Scotch Tape
  - Flashlight (can be \$1 flashlight)
  - Blue and Purple sharpie pen
  - 4-5 food items (orange juice, organic honey, milk, eggs, olive oil)
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### Let's Do This!

#### Making your own black Light

**\*Safety** - Never shine a UV-Visible light directly into your eyes or the eyes of other people or animals.

1. Place a layer of tape (2-3 pieces) over the flashlight lens all in the same direction. Make sure the flashlight is off.



2. Color the layer of tape with the blue sharpie



3. Place a layer of scotch tape perpendicular (90°) to the layer of tape you placed in step 1



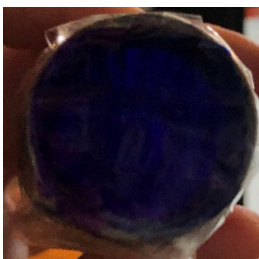
4. Color the layer in step 3 with the blue sharpie



5. Place another layer of scotch tape perpendicular to the layer of tape you placed in step 3



6. Color the layer in step 5 with the purple sharpie. Turn on your flashlight, which has been transformed into a fluorescent light!



7. Observe the Fluorescence of Food and Plants

Using the UV-light you just made, look at the fluorescence of different food items and plants around your house and yard. Some items will show fluorescence and some items will not. Below are some pictures of fluorescence of items and a list of some items that will fluoresce.



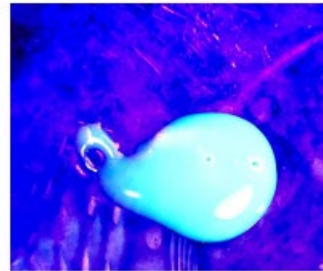
Olive Oil



Eggs



Orange Juice



Organic Honey

#### Other things to try

- Milk
- Ketchup
- Bananas
- Oranges
- Spices