



a WOW Lab  
**BLUEPRINT**

# Glowing Veggies

## Introduction

In lieu of the standard flame test, students will watch cucumbers and potatoes light up, spark and potentially explode. In this activity, simple light-sources are made out of vegetables and metal halide solutions. The metals are in the form of soluble halides dissolved in water. Various vegetables are then soaked in these solutions until they become saturated with the salts. Supplying a current, via electrodes, causes the vegetables to emit visible light. The light differs depending on the emission spectrum of the metal ion present in the solution. The current excites one or more valence shell electrons to jump to a higher energy level and when they fall back to their original levels, they release light at a certain frequency. Instead of analyzing the exact emission spectra, the samples chosen are varied enough that the dominant emission colour will provide enough information to identify each type of metal ion.

*Glowing Veggies* uses the same principles as the standard flame test, but it is more exciting and visually engaging. It can also be used to explain the physical mechanism of fluorescent light bulbs and gas discharge lamps.