



# ECBC STEM Classroom Activities

## Middle and High School

Listed below is a sampling of some of our middle and high school activities that can be facilitated by one of our scientists or engineers right in your classroom. ECBC provides all necessary supplies and presentation materials tailored to your curriculum needs.

Activity Name	Activity Description
Chromatography of Plant Pigments	This activity introduces students to one of the most widely used analytical techniques used to separate chemical or biological samples into their individual components. Students will create a pigment extract from spinach leaves and will separate the various chlorophyll pigments using a paper chromatography technique.
DIY Spectrometry: An Absorbing Experience	In this activity, students will construct DIY spectrometers using USB webcams, diffraction gratings made from DVD-R discs, and materials found in any home improvement store. Students will then perform calibrations on the spectrometers using standard compact fluorescent (CFL) bulbs and open-source "Spectral Workbench" software. Through the process of building and calibrating their "DIY" lab instruments, they'll develop a better understanding of the relationship between light intensity, transmittance, absorbance, and diffraction. NOTE: Access to PCs and the internet is required.
Fascination DNA	DNA fingerprinting is a common laboratory technique used to identify genetic patterns. Students will use Agarose Gel Electrophoresis to separate DNA. The gel acts as a sieve to separate the DNA according to size creating a unique DNA marker.
Manipulating Microbes	Students will learn how scientists handle unknown microbial threats and will get an opportunity to manipulate bacterial cultures. Exercises will include bacterial inoculation of growth media, sub-culturing, and microbial identification using common assay techniques. NOTE: Only simulated microbes are used during this activity.

## Have an idea you would like to see turned into a STEM activity?

Contact us today and we can help create a new, custom activity just for you!

### STEM Contact Information

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