Background Information:

- Some nutrients are positively charged, some are negatively charged

- "CEC" – Cation Exchange Capacity – measures how many positively charged nutrients soil can hang on to

- Plants need both positively and negatively charged nutrients – so it's best for most plants if there's at least some balance

- Opposite charges attract each other, similar charges repel each other

- All soil is negatively charged overall, but clay is more negatively charged than other particle sizes

Experimental Setup:

- Take the dried soils from each site (forest and creek) and grind them separately
- Put a small amount (enough to cover the filter) into the plastic filter towers
- Cover with ½ a coffee filter (to keep the soil from scattering)
- Use a pipette to add either methyl orange (negatively charged) or methylene blue (positively charged) stain (note that these stains are not dangerous but they WILL stain your skin temporarily!)
- Make a data table showing the color of the water that passes through the filter tower:

	Orange Water Added (−)	Blue Water Added (+)
Forest Soil		
Creek Soil		

Questions:

- Which of your soils had the most clay?
- Which of your soils had the least clay?
- HOW DO YOU KNOW?!?!?