

Why is the temperature, light intensity, and the balance of photosynthesis and cellular respiration important for farmers and their crops?

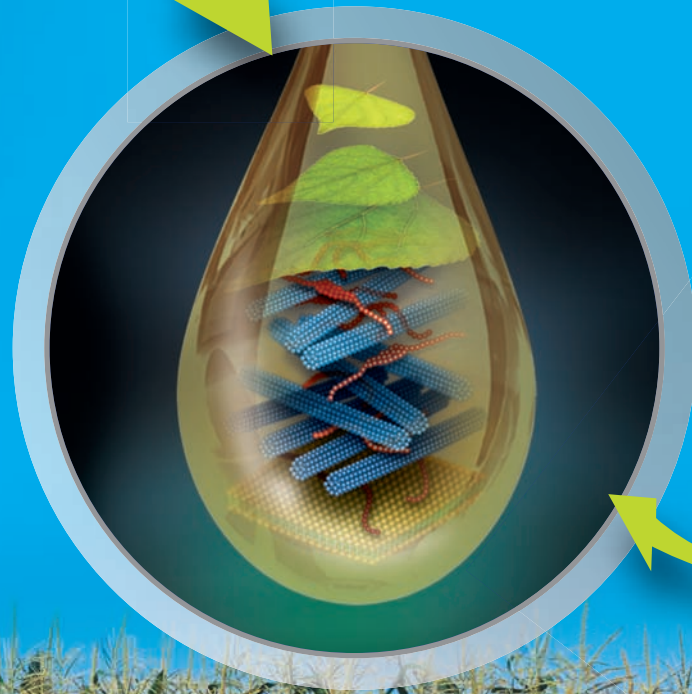


How is genetic engineering used in agriculture? How are these genes regulated?



How do we feed a growing global population and have the smallest environmental impact?

How can plant matter and biological processes like enzymes be used to generate alternative uses of energy?



GMO vs non-GMO. Why would a scientist develop genetically modified food?



Agricultural Science

Strengthen your students understanding of the connections between biological concepts and laboratory experiences by stranding labs around a central concept. The Agricultural Science strand provides an overarching theme of how scientists have leveraged biology's own machinery to tackle global issues like feeding the world's population with the least impact on the environment. Create dialogue in your classroom using prior knowledge about what students have heard in the news, what they know about agriculture, and the impact agriculture has had on both the environment and human health. From here, build your student's experience inside and outside the classroom to frame student understanding of more complex biological processes like photosynthesis and cellular respiration, bacterial transformation, macromolecules, and the importance of enzymatic reactions.

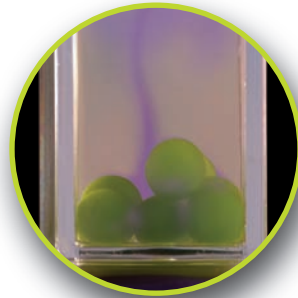
Tips and tricks to use this poster in the classroom:

1. Elicit student's prior knowledge using corn as a visual prompt.
2. Pose the individual questions (or your own questions) to your students. Have them brainstorm their ideas on how to answer these questions onto post its.
3. Have them walk up and place their post its beneath the question.
4. Facilitate conversation about their answers!

BIO-RAD
Explorer

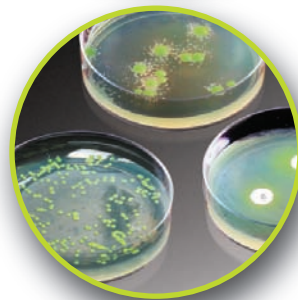
BIO-RAD

Bring Agricultural Science concepts alive in your classroom with Bio-Rad Explorer Kit Bundles for AP Biology! Purchase the listed kits and get **10% off the list price!** Order (Catalog #17005008EDU).



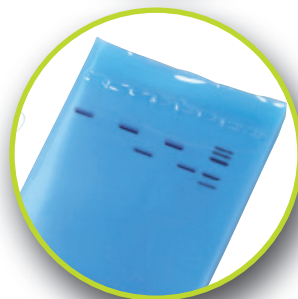
Photosynthesis and Cellular Respiration Kit for AP Biology (Catalog #17001238EDU)

Why is the rate of photosynthesis and cellular respiration important to agriculture? Are there conditions that would provide optimal growth for different types of crops?



pGLO Bacterial Transformation for AP Biology (Catalog #1660335EDU)

How do agricultural scientists genetically modify plants grown for consumption? Learn a biotechnology technique used in real labs where a jellyfish gene is inserted into bacteria to make it glow!



GMO Investigator Kit (Catalog #1662500EDU)

Want to test whether or not what you're eating is genetically modified? Use PCR and electrophoresis to determine if what is in your grocery store is genetically modified.



Biofuel Enzyme Reactions Kit for AP Biology (Catalog #17001235EDU)

Why are enzymes important when growing crops and with regards to ecology? How can we use what's considered plant refuse into something we can use?

Call 1-800-4BIORAD or visit explorer.bio-rad.com for more information.