Electronic Teacher Guide
Supporting Curriculum Implementation and Change in Teaching Practice

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The Initial Challenge

How to Make the Teacher Guide for *Foundation Science* More Accessible
Print Teacher Guides
Expected Change in Teaching Practice

- Enacted curriculum reflects the intentions of the curriculum developers
- Mindful modification of the curriculum to meet student and teacher needs
- Change in teaching practice over time
Four Features That Contribute to Teacher Learning

1. Aligns with the curriculum
2. Operationalizes teacher tasks for planning, teaching, and reflecting with interactive web tools
3. Supports changing teaching practice with a range of tools
4. Provides pathways for change over time; individual, self-paced, varied entry points
Supports for Implementation and Changing Practice

• Descriptions of Purpose and Rationale
• Teaching strategies
• Science Background
• Facilitating Activities
• Facilitating Discussions
• Formative Assessments
• Activation of Prior Knowledge
• Content Sequencing
In this learning experience, students consider transgenic plants as an approach to understanding the biochemical basis of traits. Transgenic plants and animals (that is, plants and animals expressing genes from other organisms) are being developed to generate products such as silk, insulin, growth hormone, and blood clotting factor K, and to improve the production and nutritive value of crops such as corn, potatoes, rice, and soy by making them resistant to pests and herbicides and by incorporating genes that make more starch and protein. Using the concept of transgenic organisms as a context can help students understand the relationship among genes, proteins, and traits, a relationship students often having difficulty understanding. It will also enable them to begin to consider the pros and cons of these genetically modified organisms (GMOs).

**Big Idea:**
Proteins encoded by DNA are responsible for traits

**DNA ➔ Protein ➔ Trait**

**PURPOSE:** The purpose of this slide is to introduce the Big Idea. The drawing informs students of what they're going to be looking at more closely in this LE. (Put this language into the first LE 2 slide)

**CLARIFY:** Explain to students that they will explore the biochemical basis of traits and the relationship among DNA, genes, proteins, and traits by looking at genetically modified organisms.

**REVIEW:** You may wish to connect this big idea relates to what students have already studied:
- DNA as the biomolecule responsible for traits
- The cellular processes involved in the translation of the information encoded in DNA into proteins

**The Big Question:**
Three Special Features of the eTG

Teaching Sequence Preview

Semantic Web

Lesson Planner
Discussion Supports

• Discussion questions
• Chart describing productive talk moves (TERC)
• Videos modeling brainstorming and take a position discussions
• Essay on how science talk supports learning
• Vignettes
How Can Technology Help?

- Merges content of teacher guide and student book in a comprehensive eReader
- Enables mindful modification of curriculum with fidelity to intentions of curriculum developers
- Allows selection of content as needed
- Operationalizes teacher tasks with interactive web tools
- Supports change in practice over time at individual pace
What Challenges Does Technology Pose?

Double Innovation

Inquiry and Technology
Challenge for Professional Development
Regardless of Mode

How do we promote that the goals of professional development work have an impact in the classroom?