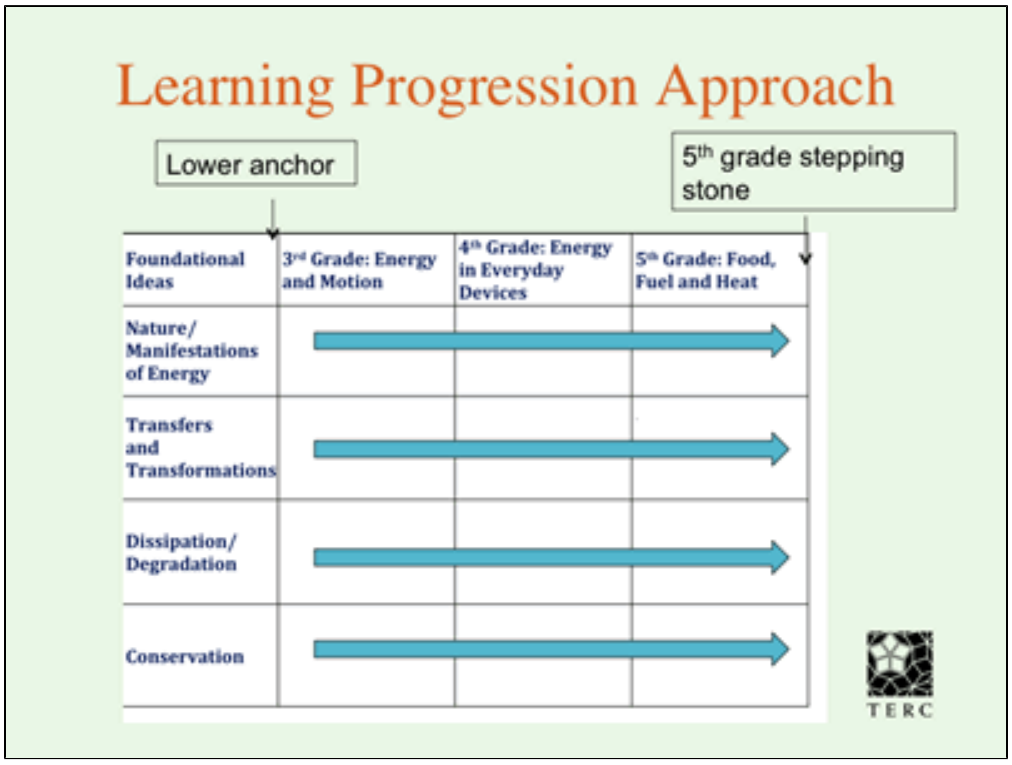
Rethinking How to Teach Energy

Laying the Foundations in Elementary School

Rethinking How to Teach Energy is a two-year exploratory research project to develop a grade 3–5 learning progression that will provide a coherent approach to teaching energy in elementary school and lay a strong foundation for further learning in middle school. Scientific understanding of phenomena in terms of energy requires a network of **foundational ideas** about energy. The project identifies young students' ideas about this network ideas and explores how students could progress from those initial ideas toward a scientific understanding of energy.



Questions we are asking:

- What are children's beginning ideas about energy (**lower anchor**)?
- What form of the network of foundational ideas is within reach of 5th graders (with proper instruction) and can allow productive learning about energy in middle school (**5th grade stepping stone**)?
- What specific learning experiences could promote the progressive transformation and integration of students' ideas from the lower anchor to the 5th grade stepping stone?

This project is a collaborative effort involving researchers, scientists, science educators, and teachers from TERC, Clark University, Tufts University, and urban Massachusetts schools. Our findings, reported here, are based on a careful consideration of the role of energy concepts in science and society and on prior research on children's understandings of energy, supplemented and shaped by our own interviews and exploratory interventions with students in 3rd and 5th grades and with teachers.