This workshop has been designed to give K-8 teachers who teach science a deeper understanding of the content in the area of Energy & Waves. Participants will explore scientific vocabulary associated with each standard and learn ways to introduce these terms to their students using a variety of resources including technology. The instructor will model effective ways to teach science vocabulary while the participants learn or re-learn the content in these areas. Participants will walk away with a deeper understanding of the science content and critical thinking skills associated with the new 2016 MA STE standards. After completing this workshop, teachers should feel confident about their understanding of the content and better equipped to teach these standards to students. Topics of exploration include:

- Energy can be “produced” or “used” by converting stored energy.
- When objects collide, contact forces transfer energy so as to change the objects’ motions.
- Kinetic energy can be distinguished from the various forms of potential energy.
- Energy changes to and from each type can be tracked through physical or chemical interactions.
- The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter.
- When two objects interact in contact or at a distance, each one exerts a force on the other, and these forces can transfer energy between them.
- Waves are regular patterns of motion, which can be made in water by disturbing the surface.
- Waves of the same type can differ in amplitude and wavelength.
- Waves can make objects move.
- A simple wave model has a repeating pattern with a specific wavelength, frequency, and amplitude, and mechanical waves need a medium through which they are transmitted.
- The construct of a wave is used to model how light interacts with objects.

Intended Audience: K–8 Elementary Teachers, Science Teachers, Departments Heads, STE Curriculum Leaders