Science Investigation

SESSION

50 MINUTES



🕩 Identifying energy

- **a.** Play with a wind-up toy for a few minutes. Discuss the energies involved as it moves around, bumps into things, falls off the table, and so on.
- **b.** Draw a picture showing your wind-up toy's adventure and label the types of energy you identify.

- **c.** Ask for "Handout A: Types of Energy" from your facilitator. Individually, read the background information and make notes to yourself, including questions, or rephrase the descriptions in your own words.
- **d.** Discuss how the descriptions on the handout relate to the way you described energy in your picture of the wind-up toy's adventure.

15 MINUTES 2 Tracking energy

a. As a group, make an energy tree diagram to track what happens with energy in your toy's adventure.

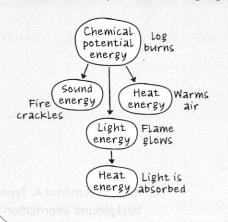
- **b.** Discuss your system and how the energy associated with the wind-up toy changes.
 - How did you define your toy system? Which objects are included? When does your energy tree diagram start and end?

* MAKING ENERGY TREE DIAGRAMS

Energy tree diagrams show the types of energy involved in an interaction, along with energy transfers that occur. In energy tree diagrams:

- Ovals indicate the types of energy (e.g., kinetic energy or heat energy) associated with an interaction.
 - Arrows indicate the energy transfers, either from type to type or from one interaction to another.
 - Descriptions explain the event linked to the energy transfer.

Here is an example for a burning log:



- What types of energy are associated with the toy when it's stationary on the table?
 And when it moves?
- What are some ways to increase the toy's energy? And to decrease its energy?