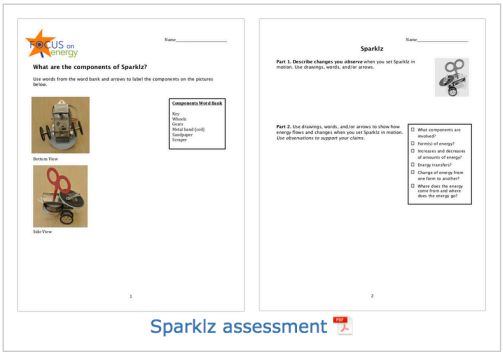
The Optional Sparklz™ Assessment

Sparklz is an open-ended paper-and-pencil assessment that probes both students' basic knowledge about energy and their ability to use that knowledge to track energy flow in a real system. The assessment instrument looks at the energy story of a wind-up toy known as Sparklz™. After being wound up and released, the toy wobbles around, makes a whirring noise, and generates sparks by rotating an arm fitted with flints over a piece of sandpaper. Its mechanism is fully visible. The Sparklz Assessment can be used as a formative assessment or as a part of a summative assessment, in combination with more conventional questions.

Students are given an opportunity to play with, observe and examine the toy. If enough toys are available, give one to each pair of students. The first page of the assessment sheet shows two pictures of the toy from different angles, along with a Word Bank listing the names of several of the components, and asks students to identify the named components in the picture. This page is not scored, but it stimulates the students to closely examine the mechanism, and gives them words to use in their subsequent descriptions.



The second page, which is scored, asks them first to describe the changes they see when the toy is set in motion, and, second, to describe how energy flows and changes during that process. Students decide for themselves what aspects of the energy flows and changes to include. A checklist is provided for guidance, but there is no requirement that it be used. Students are free to choose or combine words, pictures or diagrams. (This is particularly helpful for English-language learners and other children for whom extended writing is a challenge.)

Focus on Energy: Preparing Elementary Teachers to Meet New Science Standards.
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