# Getting Started

**Uncovering students' conceptions about Earthquakes and the Earth System.**

The goal of **Getting Started** is not to seek closure (the "right answer"), but to find out what your students know and think about Earth systems. By the end of the module, if not by the end of the chapter, students will have developed more detailed and accurate understandings about earthquakes and the Earth system.

Have students answer the opening questions: "What causes an earthquake?" and "How can an earthquake affect your community?" Engage students in thinking about the chapter and draw out their initial ideas. Students are likely to think that earthquakes are caused by forces in the Earth, by moving plates, or by friction and pressure in the Earth. Some students may know about geological faults or plate boundaries, and may use these terms in their explanations. Students are asked to draw a cross section of the Earth's crust to show what causes an earthquake and how an earthquake affects a community. This should make it easier for students to reveal their thinking and ideas about earthquakes. You may see fault lines or forces on the drawings. Encourage students to label the objects and forces on their drawings to make the drawings easier to understand.

Some students may struggle with this question. Encourage them to share anything they know about the causes and effects of earthquakes. If they do not know what is meant by the crust, tell them that the crust is the uppermost layer of the Earth, including the ground on which the school is built. The goal of this introduction to the chapter is not to find "the answer" to the causes and effects of earthquakes — that is what the chapter is all about. Rather, it is to explore the likely diversity of ideas and thinking about a phenomenon that most people assume all high school students understand equally well. As a teacher, your challenge at this stage is to recognize the diversity of ideas without confirming any as right or wrong.

If you chose to discuss some of the students' ideas and drawings, have them stand up and present their ideas to the class. You could have some students do their drawings on overhead transparencies and project them right away. Focus on clarity of expression and detail (clearly worded, easy-to-understand captions, labels on drawings, and so on). Value the sharing of ideas in an understandable way rather than correctness of response at this point.