

■ **CLASS DISCUSSION ITEM 4.1**

Musical Harmonics

Using your knowledge of harmonics, explain each of the following musical phenomena:

- n Why does a C on a flute sound different from the same C on a violin?
- n Guitar players achieve an effect called *harmonics* by lightly placing a finger on the midpoint of a string before picking. Explain why this changes the quality of the sound produced.
- n When striking middle C on a piano while holding the damper pedal down (allowing all strings to ring freely), why do strings other than middle C begin to vibrate? Which strings vibrate with the largest amplitude?

