

names of these vibrational modes and describe the vibration of the molecule in each mode.

Note: A molecule may have more than one way it can vibrate in each mode (a “state.”) These are shown in the simulation by multiple molecules vibrating side-by-side, so you can compare their motions. Record the number of unique possible states for each mode in the table.

Type your response here:

Vibration Mode	Number of States in the Mode	Description

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- Close the simulation window for oxygen and return to the Cool Molecules Explore page.

Next, click **C** and **H** in the periodic table and repeat the process for methane (CH₄). In the table below, record the names of its vibrational modes and describe the vibration of the molecule in each mode. Also record the number of unique possible states for each mode.

Type your response here:

Vibration Mode	Number of States in the	Description
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