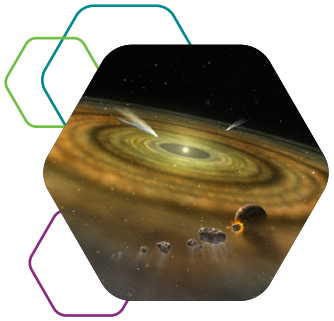
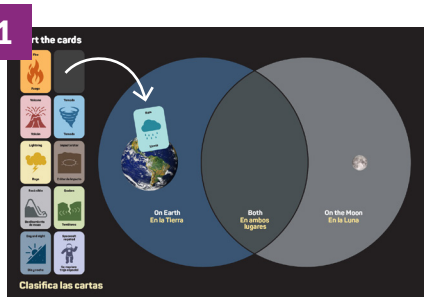


EXPLORING THE SOLAR SYSTEM
Moonquakes

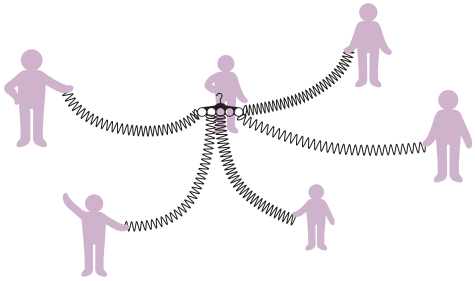
Try this!

1



Sort the cards into groups based on what you think happens on the Earth, on the Moon, or on both. *How are the Earth and Moon different? How are they similar? What surprised you?*

2



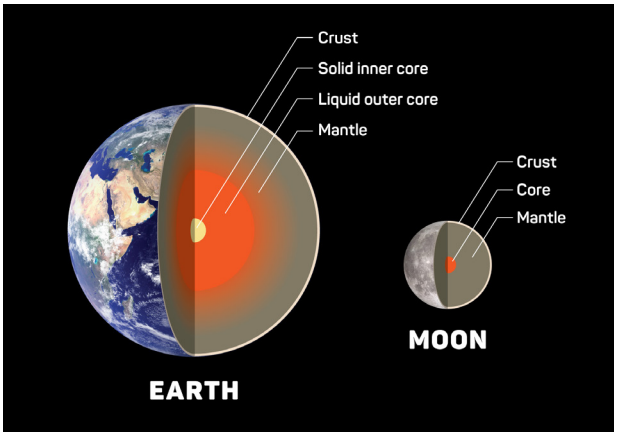
Now, follow the steps on the **Make a Moonquake** sheet to model a moonquake using the spring toys. *What do you notice? How does each spring toy move?*

3

Find the sites on the Moon globe showing where NASA's Apollo missions left behind seismographs to record moonquakes. *Why do you think it's important to have more than one seismograph on the Moon? Why would it be good to know more about moonquakes before astronauts return to the Moon?*

The Moon is a very different place from our home planet, but there are similarities.

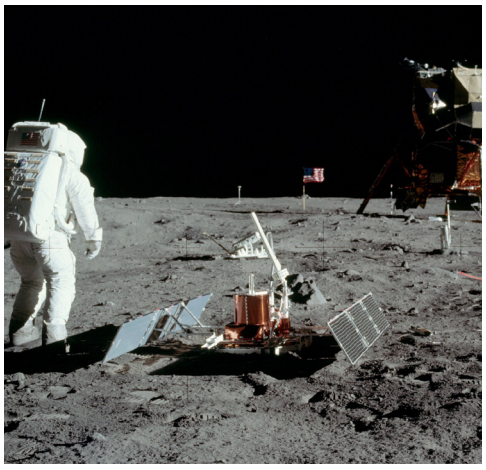
Both earthquakes and moonquakes result from a sudden release of energy and cause the ground to move and shake. Most quakes on Earth (*earthquakes*) are caused by the patchwork of crust (*tectonic plates*) colliding, moving apart, or sliding next to each other as they drift on the hot mantle. The Moon's mantle is too cool to keep its crust moving—so there are no active tectonic plates. This means less movement inside the Moon, and fewer quakes (*moonquakes*).



The Moon and the Earth have differences in their internal structures—for example, scientists believe that the Moon has an inner core that is relatively small compared with the Earth's.

Just like you felt in the spring toy demonstration, vibrations in the ground (*seismic waves*) move through the Moon. Similar to you raising your hand when you felt movement, seismographs left on the Moon by NASA's Apollo missions are able to detect and measure movement on the Moon's surface.

NASA missions study moonquakes and other processes on the Moon's surface to learn more about the Moon itself and to prepare for the return of humans.



Astronaut Buzz Aldrin deploys a seismograph in the Sea of Tranquility in 1969.

No breathable air, extreme temperatures, and dust with sharp jagged edges all make the Moon a very dangerous place for astronauts and their equipment. But studying the Moon also offers scientists the chance to collect valuable data about craters and other features of rocky solar system bodies, and to continue searching for the water ice necessary to sustain a permanent human presence on the Moon. NASA missions have collected data about moonquakes, radiation, and other surface conditions to better understand how the Moon is changing and to prepare for future long-term lunar missions.