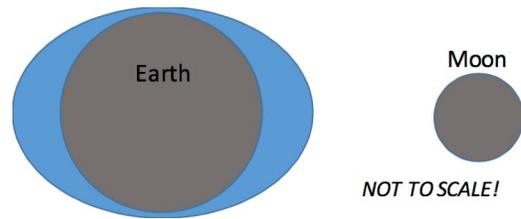


Activity: Tides and the Revolution of the Moon

Tides are caused by gravitational interactions between the Earth, Sun, and Moon. In this activity, the influence of the position of the Moon (relative to the Earth) is modeled. There are two tidal bulges on the Earth: one on the side that faces the Moon and the other on the opposite side of the Earth.



1. Have the class form a tight circle in an area large enough to accommodate the activity such as a lawn or gymnasium. All of the students may sit on the ground or stand next to one another in the circle. The students in the circle represent the surface of the Earth.
2. One person will represent the Moon and orbit the "Earth." The person representing the Moon could hold a lunar globe (inflatable lunar globes are easily available).
3. The "Moon" should slowly walk around the outside of the circle (holding the Moon globe high). Students nearest the Moon should raise their arms toward the Moon to represent one of the tidal bulges. Students on the opposite side of the circle should also raise their arms away from the Moon to represent the second tidal bulge on the opposite side of the Earth.
4. As the "Moon" orbits the "Earth," students should raise and lower their arms in response to the orbit of the Moon to represent the migration of the Earth's tidal bulges.
5. The "Moon" should stop periodically for students to examine the model and the location of the tidal bulges. During each of these opportunities to examine the model and students should be asked where low tide would occur.
6. This is a model that has important boundary conditions. Students should be asked to evaluate the model and possible oversimplifications or misconceptions:
 - This model does not demonstrate the rotation of Earth through the tidal bulges that results in the daily tide cycle. This model only demonstrates the orientation of the tidal bulges relative to the position of the Moon.
 - It is important that students also know that the Sun also has an influence on Earth's tides. This model only demonstrates the Moon's contribution to Earth's tides.Students should discuss how they might change the model to make it more accurate.