**Prepare for Impact!**

Begin with the End in Mind: In this activity, you will examine the gravitational conditions on the surface of some near-Earth objects. Using the properties of asteroids and meteors, you can determine how easy it would be to function on such a body.

Instructions:

1. Visit NASA’s NEO site at <http://neo.jpl.nasa.gov/index.html>.
2. Use the “Close Approaches” and “Impact Risk” tabs.
3. Click on an NEO to visit the page for that object. Record mass and diameter information in the table.
4. Calculate surface gravity for the NEO (show your work on the back).
5. Choose two more NEOs and repeat the above process.
6. Finally answer the questions below.

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| NEO Name | Mass (kg) | Diameter (km) | Surface g (m/s2) |
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Questions:

1. Which of the three NEOs had the greatest surface gravity? Explain why, supporting your explanation with evidence and reasoning.
2. Calculate your weight on this body. What object on Earth would have a similar weight?
3. When this NEO is the same distance from Earth as the Moon is located (384,400 km), does the Earth or the NEO have a greater pull on a person on the NEO surface?
4. In the movie *Armageddon*, Bruce Willis and company attempt to drill a hole into an asteroid so they can explode it before it hits Earth. Using your calculation for the surface gravity of the NEO and Newton’s Laws of Motion, assess how difficult it would be to work on the surface.