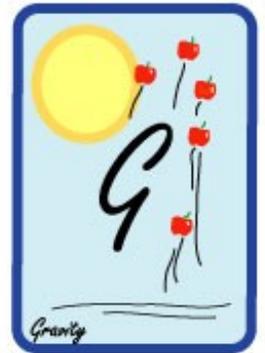


Connecting to Gravity & Balance IP

Connecting to Gravity & Balance The Connecting to Gravity & Balance IP is an interest project from the Girl Scouts of Eastern Massachusetts.



Skill Builders

1. *Complete Activity 1, Gravity and Air Resistance, from the Connecting to Gravity & Balance Module. Discuss how air resistance affects a coin and a feather as gravity pulls them toward the Earth. Which object reaches the Earth first and what causes to occur? How would these two objects be affected if they were to fall in a vacuum?
2. Complete Activity 3, An Object's Center of Gravity, from the Connecting to Gravity & Balance Module. Identify how a baby first learning to walk uses her arms to maintain balance. How does this relate to a tightrope walker's balance stick, or a ballet dancer's arm movements?
3. Complete two additional activities from the Connecting to Gravity and Balance Module. These can include creating paper gliders, locating your own center of gravity, using a plumb line tool, or balancing a parrot. How do these activities demonstrate the concept of gravitational force, finding the center of gravity, and locating balance points?
4. Complete the math exercises for one of the activities in the Connecting to Gravity & Balance Module. Describe how the math is related to the science concepts described in the gravity & balance activity.
5. Using a building toy or construction set, such as LEGOS or KNEX, design a structure using the principles of balance. You can also use blocks, toothpicks and marshmallows, or other building structures to explore gravity and balance. Draw a picture of your created design, and identify where you think the center of gravity point is in your structure.
6. Play a game with a small group of friends that uses the principles of gravity and balance. Examples of such games include JENGA, pick-up-sticks, or hopscotch. Observe where balance occurs and where the center of gravity is located in your game activity and motion.

Technology

1. Explore one of the web sites listed in the Resources for the Connecting to Gravity & Balance Module. Find an experiment on a science web site that demonstrates gravity, the center of gravity, or balance. Try this experiment.
2. Visit a hands-on exhibit at a science or children's museum that demonstrates the concepts of gravity and balance. Describe the ways in which this exhibit relates to the activities and science concepts presented in the Connecting to Gravity & Balance Module.
3. Visit a computer center or Computer Learning Center and create something on the computer and create something on the computer using simulation software.
4. List common machines, tools, toys, or other commonly used items that require finding the balance or the center of gravity to work. Use one of these items and identify how balance is at work.

Service Projects

1. Create a hands-on activity that explores gravity & balance and present to younger girls. Make a list of materials you would need for the activity, and briefly describe how the activity would be presented to the girls. Include a summary of what you would want them to learn from this activity.
2. Adapt one of the activities in the Connecting Gravity and Balance Module to present to a group of Brownies or younger girls, or create an activity of your own that uses gravity. Ask a younger group or troop of girls if you can come to one of their meetings to present your activity.
3. Invent a game that you could play with younger girls that uses balance and the center of gravity. Write the rules of the game, make a list of the materials needed to play the game, and what the object of the game is. Try out your game with several younger children.
4. Accompany a group of younger children to the Circus, or watch a circus performance on a rented video. How does gravity, the center of gravity, and balance affect the performers in their acts? What act seemed the most difficult to perform? Which act would you most enjoy learning how to do?

Career Exploration

1. Invite a mechanical engineer to your classroom or meeting to talk about how she uses science in her work. Ask her to identify how the knowledge of gravity, center of gravity, air resistance, friction and balance are used in her field of employment. Ask how she became interested in science as a career, what courses of study she chose, what she does in her job, and how she combines her work and home life. Write a thank you note after her visit, expressing your appreciation for her interest and time.
2. Correspond, using e-mail, with a woman scientist or engineer, or with a college student who is majoring in science, engineering or technology. Ask her questions about her life, her career, her course of study, and her interest in science. Share with her what you are taking in school, and what your science interests include.
3. Look through a college catalogue under various majors for science and Engineering. Identify courses that might use the basic knowledge of the science concepts demonstrated in the Connecting to Gravity & Balance Module. Make a list of the science courses that you have taken and would need to take to be considered for admission to this college. List five things about this college and major that you would enjoy if you were a student there. List five things that you would not like about this school.
4. Take part in a school or Council sponsored field trip to a science museum, technology museum, computer center, science event, or science fair. Identify activities, exhibits or software that demonstrate gravity and balance concepts. Briefly describe what you enjoyed the most about the science event or trip. Share your observations and thoughts with another individual, and jointly create an evaluation form that others can fill out that lists what they enjoyed the most, and what they would change about the visit or the event.

See also

[List of Council's Own Interest Projects](#)

External Links

[Girl Scouts of Patriots' Trail Council Badges, Patches, and Recognitions](#)
[Connecting to Gravity & Balance Interest Project Patch](#)

