

Connecting to Motion IP

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



Skill Builders

1. *Complete Activity 1, Energy and Friction, from the Connecting to Motion Module. Describe through the use of drawing or writing, the concepts of friction, energy, speed and mass as they relate to the motion of the marbles.
2. Complete Activity 2, Energy Transfer, from the Connecting to Motion Module. Describe, through the use of writing or drawing, the concept of energy transfer from one object to another, and the way in which speed and mass are related to the transfer of energy between marbles.
3. Complete two additional activities from the Connecting to Motion Module. These can include exploring direction of motion, designing a ski jump, creating a roller coaster run, or designing an amusement park slide, using marbles and pipe insulation.
4. Identify the three Principles of Motion discovered by Sir Isaac Newton, and explore how these Principles can be observed in one of the selected activities.
5. Complete the math exercises for one of the activities in the Connecting to Motion Module. Describe how the math is related to the scientific concepts described in the motion activity.
6. Complete activity 7 from the Connecting to Motion Module, using LEGOS, KNEX, or another building set to create a roller coaster or an amusement park ride. Identify potential energy and kinetic energy in the ride, and note where friction causes the ride to slow down. Identify other physics or science concepts that can be observed in the ride. Share what you have created with other students or troop members.

Technology

1. Explore one of the web sites listed in the Resources for the Connecting to Motion Module. Try an experiment, design a roller coaster on the computer, or learn how a machine works. Write a brief description of what you learned.
2. Visit a hands-on exhibit at a science or children's museum that uses Newton's Principles of Motion. Describe the ways in which this exhibit relates to the science concepts introduced in the Connecting to Motion Module.
3. Visit a computer center or Computer Learning Center and create something on the computer using simulation software.
4. Take part in a physics day for students at an amusement park that explains how physics and science are related to rides. Write a brief description of your favorite ride, and how it relates to physics and motion.

Service Projects

1. Create a hands-on activity that explores motion that you could 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. Draw a poster that describes the life and contribution of Sir Isaac Newton to science. Include a description of the Principles of Motion that he discovered. Display this poster in a science exhibit, or give it to a classroom of younger students in your school, or to a younger troop.
3. Visit an amusement park or playground.. Observe the ways that physics or science concepts are at work as children play. Identify the different ways that motion is at work on the playground or at the park. Describe the rides or playground equipment in terms of potential and kinetic energy, and identify where friction occurs to slow down the motion. Observe where an outside force is applied to a ride or to the use of the playground equipment to cause motion to occur.
4. After completing one of the activities in the Connecting to Motion Module, adapt the activity to present to a class or troop of younger girls. Ask the teacher or troop leader if you can set up a time to work with the girls on this activity. Briefly describe what you will do with the girls, how you will present the activity, what materials you will need, and what you want them to learn from the experience.

Career Exploration

1. Invite a woman who is a scientist, an engineer, or a professional who teaches or works in a science field to come to your classroom or troop meeting. Ask her to explain how she became interested in science, 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. Take part in an engineering or science day presented by college students or professors for middle or high school students. Find out what the college is like, and ask the college students how they became interested in the college and in science as a career.
3. Look at a college catalogue for a School of Engineering, or other science major. Identify the science and math courses, and the other credentials that are necessary to be admitted to this college. Note the courses that you have taken already that will help you to be admitted to this school as a science or engineering major. Identify the courses that you would still need to take. List five things about this college 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 field trip to a science museum, a technology museum, a computer center, a science event, a science fair, or any other site that explores science concepts. Briefly describe what you liked the most and what you liked the least about the visit. Evaluate what you would do to make the visit better the next time. Share your observations and thoughts with another individual. Include in your evaluation something new that you learned that day.
5. 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.

See also

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

External Links

Girl Scouts of Patriots' Trail Council Badges, Patches, and Recognitions
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