



Drexel-SDP GK-12 ACTIVITY

Grade 5 Science

Solar Energy

Other Forms of Energy: Mag Lev

Grade Level 5

Lesson # 1 of 1

Lesson Dependency: Solar Oven, Insulation

Time Required 1 Day

Summary

- After discussing concepts of solar energy, tell students that other forms of energy also exist, such as that produced by magnetic fields. Have students observe and test the polarity of magnets by attracting and repelling (“chasing away”) two magnets on a surface.

In this simple demonstration, students will observe an existing MagLev track, on which a vehicle will travel.

Keywords

Solar Energy, Mag Lev

Educational Standards: 2.3.3, 2.3.5

Engineering Connection

Students will realize connections between magnetism and force by utilizing the repelling forces of magnets to move a car down a track. Harnessing phenomena that exists naturally into something useful (i.e. solar energy, pulleys, etc.) is at the heart of engineering.

Procedure

- Discuss with students how magnets work. Have them identify magnets in the real world, even as simple as the refrigerator magnets in their homes. Ask if magnets can repel objects as well. As an advanced topic, discuss polar opposites.

- Tell students that they will (if time permits) construct a mag lev by gluing magnets to a rail and using the same polar magnet side to create a small wooden “car” which will travel along that rail.
- Measure the distance of the mag lev.
- Use the stopwatch to determine the time taken by the mag lev vehicle on three passes through the track.
- Compute the average time.
- Determine, using “unit math,” the units required to determine speed as distance / time. Then compute the average mag lev speed.

References

<http://amasci.com/maglev/train.html>

Owner

Drexel University

Author

William Mongan

Date

9/11/2007