

Question-Understand-Experiment-Share-Think

Week of February 13, 2012



Science:

We have wrapped up our social studies unit and are now studying science- specifically electricity. In the science unit, students will review the basics of electricity before beginning a hands-on and problem-based unit. This week, we will use wires, bulbs and batteries to create both series and parallel circuits. We will discuss the difference between the two types of circuits and review the uses and benefits of each. Your child should come home with a “Laboratory Safety Sheet” that needs to be signed by both the student and the parent. As we are working with electricity, it is important to keep safety guidelines in mind. There is an extra copy of the safety sheet at the bottom of this newsletter.

As noted, the science unit will be hands-on. Students will work in groups to plan and wire a model city. By participating in the unit, students should accomplish the following goals:

1. Research and gather information
2. Make a blueprint of the model city by taking the concepts of scale and proportion into account
3. Plan the construction of the circuits necessary for lighting the model city and develop wiring diagrams for the model
4. Construct a model and electrical system within the model



Announcements:

I hope to have guest speakers visit the classroom in order to help students gain a better understanding of electricity, power outages, and building design. If you are an electrician, power company representative, architect, or other professional in the field, your expertise is needed! Please let me know if you would be able to come into the classroom and speak on one of the topics listed below (Exact dates are not yet determined, but will be sometime in March or April. If you are able to come in, we can work together to find an appropriate and convenient time).

1. General information on electricity (What is a current? What is a complete circuit? What is a direct current? What is an alternating current? What is voltage? What is resistance? What is the difference between a parallel and series circuit?)
2. Distribution of power (How is power delivered to different areas of the city? How are electrical services delivered to consumers? What is a power line? Where are power lines located? Who decides where power lines should be located? What is the role of a fuse box or circuit breaker in a building? How is electricity delivered within a building?)
3. Electrical hazards and precautions (What are safety issues to consider when dealing with power lines or electrical lines? What are some potential electrical hazards? What happens if there is a disruption in power in a building or city? What are possible hazards that could result from such a disruption?)
4. Model building/ architecture (What are blueprints? How are buildings planned and designed? What information is needed in order to plan a building design? Who does an architect need to work with in order to construct a building?)

Thank you in advance for any help and support you can provide! If you are interested in presenting information to the class, please email me at madderin@shenet.org to work out the details. I look forward to working with the students on this challenging and hands-on unit over the next several months!

Laboratory Safety Precautions

As this unit involves laboratory work, some general safety procedures must be observed at all times.

1. Appropriate behavior in the lab includes no running or horseplay.
2. Tools such as wire cutters, wire strippers, and hot glue guns should be used with great care and under teacher supervision (or with teacher permission).
3. Do not taste anything or put anything in your mouth.
4. Quiet voices are necessary in order to hear teacher direction and safety precautions.
5. Materials should be used for intended purposes only.
 - a. This unit uses circuit components, which can be dangerous if used inappropriately. Students must follow all directions and use materials in the appropriate, intended manner.
 - b. Do not touch or use a material until directed to do so.
 - c. Handle all materials with care. Many of the materials are fragile and may break if not handled carefully.

By signing below, I acknowledge that I understand and agree to the laboratory guidelines. I will follow all safety precautions and know that if I do not, I may not be able to participate in labs.

Student Signature

Parent Signature