Unit 1

Energy Flow from Earth's Systems

How can we design more reliable systems to meet our communities' energy needs?

STUDENT WORKBOOK

OpenSciEd

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Name: _____ Date: _____

Collecting Stories

Ask your friends and family if they have ever experienced a blackout. If so, what was it like? What do they think caused the blackout?

Interview at least 1 person besides yourself. Keep track of your interviewees' ideas here, or on a separate piece of paper, to put in your notebook. If you have experienced something like this and feel comfortable sharing it with your class, record your own story as well.

Interviewee's name:

Notes:

Interviewee:

Notes:

Name: _____ Date: _____

Community Agreements

Physics Community Agreements	
Respectful Our classroom is a safe space to share.	
Equitable Everyone's participation and ideas are valuable.	
Committed to our community We learn together.	
Moving our science thinking forward We work together to figure things out.	

Name: _____ Date: _____

DQB Student Reference

1. Choose a volunteer to go first. This student reads their question and puts it on the DQB.
2. Raise your hand if you have a question that is related or the same. The first volunteer selects the next student whose hand is raised. The student who is called on reads their related question, says why or how it relates, and then moves it onto the DQB with the original question.
3. Repeat step 2 until the class agrees that all related questions are up. Then go back to step 1, and choose a volunteer with a different question to start a new cluster. Continue until everyone has shared 1-3 questions.

Name: _____ Date: _____

Initial Models

Make a model to help show and explain... *Why might some buildings in a community experience a blackout while others don't?*

1. Choose any 2 buildings in your community that have electricity. They can be close to each other or far apart. Make a model to show what structures transfer **energy** to those buildings to power them.

2. Add to your model to explain why one building might get enough energy to power lights and devices while the other does not.

Use your model to answer the following questions about blackouts and power:

3. Where does the **energy** come from to power the electrical devices in each of those buildings?

4. What happens to the **energy** in this system that would have been used to power the electrical devices in each building during a blackout?

Name: _____ Date: _____

Progress Tracker

Question	What did we figure out?	How did we figure this out?