Energy Literacy

Putting students in charge of their learning. Pun intended
About me...

Teach everything... 7th grade, 9th grade, 12th grade, high school electives

12+ years teaching experience

Liberty Bell High School

Winthrop, Wa
What is Energy Literacy?

Turn to a neighbor…

What does it mean to be Energy Literate?
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What does it mean to be Energy Literate?
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Trace energy

Know where energy is used

Communicate about energy

Assess credibility of sources

Make decisions about energy
What does it mean to be Energy Literate?

- Trace energy
- Know where energy is used
- Communicate about energy
- Make decisions about energy
- Assess credibility of sources
Students in Charge of their Learning  
(pun intended)

1. **Pre-assessment** - Concept Maps, KWL

2. **Building Background knowledge** - Energy describes motion - Angel Chimes, Roller Coasters

3. **Demonstration of knowledge gained in class** - Angel Chimes/Rube Goldberg Machines/Value of a Tree

4. **Research and Application in authentic situations** - Science Symposium

= Increased Energy Literacy
My students start with misconceptions:

“Energy is created as a result of doing something.”

“Energy comes from a force applied to an object.”

“Objects at rest have no energy.”

“There are only a few types of energy.”

“There is only a certain amount of energy in the world, when it’s gone, that is it.”
Build Background Knowledge

Rube Goldberg Machine pictures
Build Background Knowledge
How does this lead to Energy Literacy?

What is energy?
Can energy be destroyed?
What are the types of energy?

How do you compare the value of a tree as jet fuel vs. a barrel of oil?

How do energy transformations add to our current situation regarding climate change?
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Assess credibility of sources

Researching - determine validity of sources, use of google scholar as a tool, multiple sources to support thesis statements.

Student Thesis Example:

In order to mitigate the disastrous environmental effects of climate change, everyone from around the world must unite in changing their habits, incorporating eco-friendly technologies into their everyday lives, and building cities run entirely on eco-friendly renewable energy.
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Trace energy

- Research paper - Students analyze a real world problem

Know where energy is used

- Research Paper - Students discuss where energy is used and how usage could be changed
- Experiment - Students analyze data
Trace energy

- Research paper - Students analyze a real world problem

Know where energy is used

- Research Paper - Students discuss where energy is used and how usage could be changed
- Experiment - Students analyze data
Communicate about energy

Research Paper - writing about global problems and possible solutions

Presentation - presenting to an authentic audience
Make decisions about energy

Students design experiments

Reflect on their data and learning
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= Increased Energy Literacy and Engagement