

Energy & Me

Storyline

Central Hudson, our local utility company, is looking to expand the “Kids Corner” on their webpage. Central Hudson aims to educate the community about energy transmission, and distribution through the innovative use of virtual reality. As part of this endeavor, they would also like a community-based initiative to promote responsible energy use. They would like to partner with Grade 4 students from Wappingers Central Schools because of your understanding of energy and the human impact on natural resources. Central Hudson is actively committed to a cleaner energy future while continuing to provide reliable, resilient, and affordable power.

They would like you to...

- Create a virtual reality experience about energy transmission and distribution.
- Create a community based initiative about sensible solutions to reduce energy usage.

Central Hudson’s public relations department will share your work through social media and on their Kids Corner section of their webpage.

Driving Questions

How might we create a VR experience about energy transmission and distribution for Central Hudson’s Kids Corner?

How might we create a community based initiative about sensible solutions to reduce energy usage to be shared on social media?

PBL Turning Points Grade 4 Energy & Me

Support a storyline by indicating the six pivotal turning points with each formative assessment for the unit. Align the student artifacts/formative assessments from each milestone with the public product. By doing this, the product authentically becomes part of the learning.

Turning Point 1:

1. The storyline/phenomena.
2. Develop initial "Need to Know Questions"
3. PCOI relating to the relationship between potential/ kinetic energy, gravitational force and energy transfer
4. Analyze and interpret data about the relationship between potential/ kinetic energy, gravitational force and energy transfer
5. Sketchnoting : Use media and text to further develop an understanding of the relationship between potential/ kinetic energy, gravitational force and energy transfer
6. Draft a Claim Evidence Reasoning (transfer of energy)

Formative Assessment:

1. Need to Know Questions
2. Investigation artifacts
3. Analyzed and interpreted data
4. Sketchnotes
5. Claim Evidence Reasoning

Turning Point 2:

1. Revisit the Storyline/Phenomena
2. Revisit "Need to Know Questions"
3. Make observations to provide evidence that energy is conserved as it is transferred and/or converted from one form to another.
4. Use stations to explore different forms of energy transfer (heat, motion, electric, sound and chemical)
5. Develop a model with written explanations to demonstrate how energy is transferred.
6. Peer/Teacher Reflection & Feedback

Formative Assessment:

1. Need to Know Questions
2. Investigation artifacts
3. Energy transfer model and written explanations

Turning Point 3:

1. Visit from Central Hudson lineman exploring model distribution line, transformer and embedded coil.
2. Launch Design Thinking Process
 - Sandbox: Thinglink
 - Sandbox Virtual Reality
 - Empathy: Central Hudson Google Meet
 - Define: Solidify needs and wants for Central Hudson
 - Ideate: Fab 4 iterations
 - Prototype: Drawings and mock up
 - Test: Send mockup to Central Hudson for feedback

Formative Assessment:

1. Need to Know Questions
2. Design thinking elements

Turning Point 4:

1. Revisit the storyline/phenomena.
2. Revisit "Need to Know Questions"
3. Investigate various energy sources
4. Use sketchnoting to obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

Formative Assessment:

1. Need to Know Questions
2. Investigation artifacts
3. Sketchnotes

Turning Point 5:

1. Revisit the storyline/phenomena.
2. Revisit "Need to Know Questions"
3. Launch Design Thinking Process
 - Sandbox: Canva or Adobe
 - Empathy: Central Hudson Google Meet
 - Define: Solidify needs and wants for Central Hudson
 - Ideate: Fab 4 iterations
 - Prototype: Drawings and mock up
 - Test: Send mock up to CenHud for feedback

Formative Assessment:

1. Design thinking elements

Turning Point 6:

Celebration at Gayhead Elementary, visitors will include leadership from both Wappingers Central Schools and Central Hudson.

Formative Assessment:

Final VR and Energy Responsibility public products.