

2018 Youth Energy Conference

Junior Challenge Teacher Instructions: Getting To Zero

Objectives

- Students will define and describe what it means for a building to be “NetZero”.
- Students will be able to analyze the energy consumption, occupancy, environment, and costs of a current school, given a school portfolio of resources.
- Students will be able to develop a plan to take an existing property to NetZero (or close) based on their research and analysis.
- Students will present and publicize their plan to “community stakeholders.”

Materials

- Folders to assemble School Dossiers
- Computer access
- School Information sheet (completed in advance, or completed by students)
- Student Worksheet
- Additional Information for Dossiers:
 - Electricity and Natural Gas Consumption Data (for one year)
 - Meter readings and graphics, if both available
 - Aerial and outdoor photos
 - Fire drill map
 - Solar and wind resource maps for the state

✓ Part 1 - Setting the Stage

Introduce students to the challenge using the student worksheet, and discuss the concept of “NetZero.” Help set the stage by sharing video clips on NetZero Schools, and showing students articles and resources to better help them understand how to define NetZero. Break students into small groups and ask them to each read, skim, or watch a clip. As a class come up with an operational definition on NetZero as it applies to schools. NEED shared the following clips and sites:

- <https://www.energy.gov/eere/buildings/zero-energy-buildings>
- https://www9.nationalgridus.com/non_html/shared_energyeff_schools.pdf
- <http://plus.usgbc.org/growing-up-net-zero/>
- <https://newbuildings.org/hubs/zero-net-energy/>
- Building Brighter Futures Through Zero Energy: Discovery Elementary - <https://youtu.be/2kTS4UODWwc>
- Turkeyfoot Middle School, KCSD - <https://youtu.be/tBAWQes1Oxg>

✓ Part 2 – Groups, Assemble!

Place students into groups. If you like, you can pre-determine groupings to promote productivity and creativity. Conversely, you may use a fun activity to group your students randomly. Download Energy Games and Icebreakers from www.need.org, and play Energy Pantomime, or place numbers inside inflated balloons and have students pop them to find their teammates with the same numbers.

Assign each group a school and information packet (if you have them pre-assembled), or ask the students to select a school in your district to begin. They should complete the school information sheet if not yet completed for them.

✓ Part 3 - Evaluate and Plan

Ask students to complete their student handout and continue researching their property. As they complete their student handout, the questions answered and the information they find will help them piece together the parts of their NetZero Plan.

✓ Part 4 – Publicize Those Plans

Ask students to finalize their plan and develop a marketing strategy, slogan, and collateral to help promote the campaign at their school. Students should be able to create a map or series of maps outlining the changes to their building, a slogan and logo for the campaign, and a communications strategy for sharing their work. Students will need to gather this evidence and place it into a presentation software, video, or presentation board to aid in presenting their plans to the class and “community stakeholders.” Assemble a group of administrators, students, staff, and parents to hear the student plans and select the best option.