

National Standards Alignment for 79614 Solar House Design Challenge

Next Generation Science Standards

4-PS3 Energy

4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric current.

4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

3-5-ETS1 Engineering Design

3-5-ETS1-1 Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Science and Engineering Practices

Practice 2: Developing and Using Models

Practice 3: Planning and Carrying Out Investigations

Practice 4: Analyzing and Interpreting Data

Practice 5: Using Mathematics and Computational Thinking

Practice 6: Constructing Explanations and Designing Solutions

Practice 7: Engaging in Argument from Evidence

CCSS Mathematics

4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

CCSS Mathematical Practices

MP1 Make sense of problems and persevere in solving them.

MP4 Model with mathematics.

MP6 Attend to precision.

CCSS English Language Arts

SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.

SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

W.4.1 Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

W.4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.