



Teaching Notes

Generate and develop ideas

This stage of the design cycle enables students to have a clear vision of what they need to redesign. Students can be organized into groups to undertake the process or they can work individually.

Tasks

1. Develop your design brief

Team design folio

- The Team Design Folio should be copied and shared between team members allow collaboration and co-development of design ideas, research and results of testing and final design solution development.

2. Work scientifically

Roof materials

- Students examine the photos of the experiment being conducted at another school. Open and read through/print the worksheet before starting the experiment.

Exterior colours

- Open and read through/ print the worksheet before starting the experiment.

Shading

- Students examine the photos of shade designs on models. Open and read through/ print the worksheet before starting the experiment.

Landscaping

- Open and read through/ print the worksheet before starting the experiment. Discuss the concept of deciduous trees and how they would let in the winter sun.

3. Create redesign solutions

Sketch ideas

- Teacher initiates a classroom discussion on what the students have learned about energy efficient design. Student teams / individuals create a mind map to explore their redesign ideas. A digital example of mind mapping can be seen on this video using bubbl.us: http://youtu.be/AlIXU_3nktU
- Students sketch their ideas. Trace over a photo, sketch on a lightened photo printout or use graphics software to produce a digital version of their design ideas.

Share designs

- Students present their ideas. Teachers download, save and print the PMI forms and photocopy enough copies to distribute to the audience who can provide feedback.

Curriculum links

Curriculum focus: Science and Technology Years K-6 Syllabus

Focus Outcomes:

Built Environments – A student:

- ST3-14BE - describes systems in built environments and how social and environmental factors influence their design
- ST3-5WT - plans and implements a design process, selecting a range of tools, equipment, materials and techniques to produce solutions that address the design criteria and identified constraints

Material World – A student:

- ST3-13MW - describes how the properties of materials determine their use for specific purposes
- ST3-4WS - investigates by posing questions, including testable questions, making predictions, and gathering data to draw evidence-based conclusions and to develop explanations

Physical World – A student:

- ST3-6PW - describes how scientific understanding about sources, transfer and transformation of electricity is related to making decisions about its use.