Introduction to Solar Heat Energy

Re-Energy
Activity
Grade Level 3-12

Main Objective

Learners will learn about solar heat energy and how it can be harnesed in various technologies.

Learning Outcomes

By the end of this activity, learners will:

- Understand how solar heat can be harnessed for energy
- Identify applications of solar heat energy in daily life

Length of Activity: 30-40 minutes

Step 1+2: Intro to solar heat and discussion
Step 3: Passive house heating video

Materials Required

- Internet-enabled device
- Introduction to Solar Heat Backgrounder

Activity

Step 1: Background Reading

Distribute and review the Solar Heat Backgrounder.

Step 2: Answer and Discuss the Backgrounder

In groups or individually, discuss the following questions:

1. What are some of the advantages of using sunlight as a source of energy compared to other sources, such as coal or nuclear energy?
2. What two forms of energy are most commonly produced using sunlight?
3. How does a solar home work?
4. List all the ways you and your family use solar energy. Include any solar-powered appliances you may have in your home.

Step 3: Watch a Video

Continue to watch the video on building a passive house and complete the activity below:

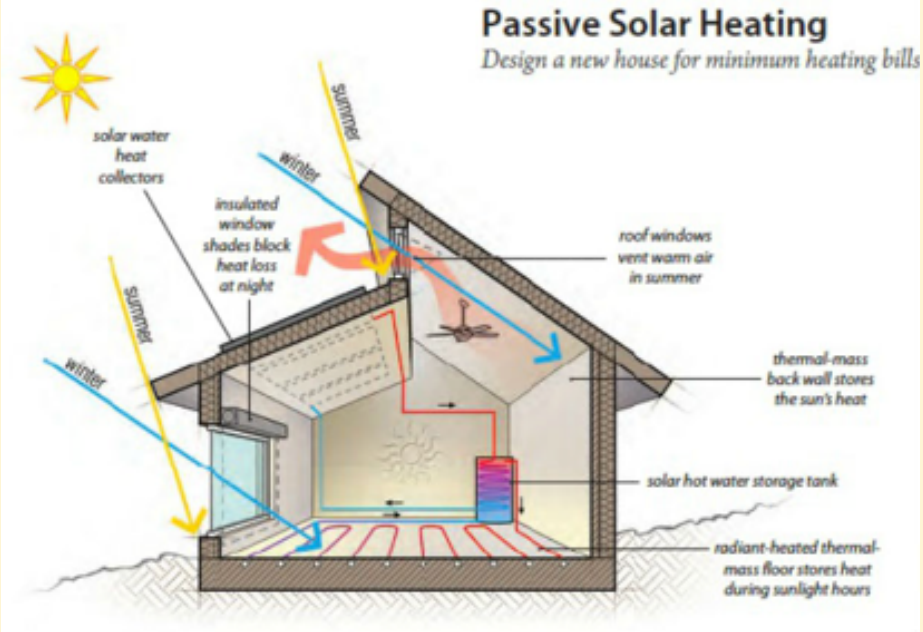
https://www.youtube.com/watch?v=Hz6qomFM_dw

After watching the video, answer the following questions:

1. What are the 5 green building techniques covered in the video?
2. What are the potential energy savings achieved by designing a passive house compared to a traditional home?
3. Can you research any buildings in your vicinity that are built green? What are some of their features that are covered in this video?

Extension Activity

- Have learners review the “Home Heating” section in the Solar Heat Backgrounder to build a model of a solar home.
- Using the points covered in step 3, write down all possible design components that can be utilized to build a passive home that efficiently captures sun’s energy. List the ideas on a whiteboard/smartboard or on chart paper.
- Give learners some time to research more information on passive solar heating. Using the list, add or revise the original ideas based on their research findings.
- In small groups, have learners build a model of a solar home and test its efficiency by placing it near a window. By comparing the design features of their models, learners can learn how passive solar heating works. Send us a photo of the model by emailing programs@greenlearning.ca using the subject ‘Re-Energy Program”!



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