

Pictou County Forest School - Grade 8 Post-visit Lesson Plans
Climate Change: Design an Eco-House

Activity: Insulated Boxes

Overall Curriculum Outcome:

Learners will evaluate the impact of human activity on climate change.

Learners will formulate a plan to mitigate or adapt to the effects of climate change.

Specific Curriculum connections:

Sources of energy

- How do we get energy?
- How can the environmental impacts of various forms of energy production be determined?

Enhanced Greenhouse Effect

- How do humans impact the greenhouse effect? ▪ How is energy production related to climate change?

Climate change solutions

- How will humans need to change the way they live in response to a changing climate?

Green Technology

- How can technology help us adapt to a changing climate?
- How can climate change solutions pose other problems?

Materials:

- Shoe boxes
- Household items: cotton balls, aluminum foil, hay, socks etc
- Tape
- Thermometers

Context:

Insulation is what keeps the heat or thermal comfort in our homes. “A well-insulated house is a bit like dressing for the weather. A wool sweater will keep you warm if the wind is not blowing and it is not raining. On a windy, rainy day, wearing a nylon shell over your wool sweater helps keep you reasonably dry and warm. A house is similar. On the outside, underneath the brick or siding, there is an air barrier that does the same thing as the nylon—it keeps the wind from blowing through. Then there is the insulation (like your sweater) and a vapour barrier, which helps keep moisture away from the house structure where it can do damage”

<<https://buildersontario.com/insulating-house>>.

Activity:

Think of your cereal box as your house – and you and your family (who live inside) want to keep toasty warm during the cold winter months. You need to insulate your box to keep the interior at a comfortable temperature. Think back to our discussions about *insulation and energy transfer*. How does this relate to building an insulated house? We will use everyday materials to insulate our boxes against the frigid outside temperatures.

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After we construct our boxes, we will seal a room temperature thermometer inside each box and then place them outside for a length of time (one or two hours?). After waiting for a set length of time we will then open up the boxes to see which boxes kept their thermometers closest to room temperature. Teachers can record the results.