Pictou County Forest School - Grade 8 Lesson Plans
Climate Change

Activity: Passive Solar Shelters (suggested time 120 minutes)
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:
- Found natural materials
- Hay bales(if available/deemed necessary)[1]

Intro/Activation:
Do a quick lesson on the concepts of North/South/East/West and how to establish these compass points when outside. Talk about how access to the sun affects: eco-systems, microclimates (north/south side of a tree), moisture etc.

Hike to several locations where students will get to feel first-hand the effects of solar gain. For example:
- north/south side of a hedgerow; cool dark hemlock forest vs sunny pasture
- Heat sinks: warm rocks baked in the sun
- Cool hollows or blow-down tree roots

Activity:

Using found natural materials students will be making survival shelters with a focus on capturing solar energy to keep warm.

[1] It could be interesting to divide the group in half where one group builds a survival shelter using natural materials and the other group uses hay bales to mimic the building of a passive solar straw-bale house. What are the pros/cons of each?

Reflection/further wonderings:

How would our strategies change depending on the seasons?

How do other factors impact our choosing of a location to build a shelter (e.g., a pasture might be sunny but is also exposed to wind) thus illustrating the trade-offs inherent in choosing a site to build a shelter, house etc.

How would adding heat sources impact our design builds? E.g., heating up large rocks to add to our shelters