Pictou County Forest School - Grade 6 Lesson Plans
Physical Science: Electricity

Activity: Passive Solar Shelters (suggested time 90+ minutes)
Overall Curriculum Outcome: Learners will evaluate renewable and non-renewable sources of energy.
Specific Curriculum connections:
Impact of energy consumption

- How does energy consumption impact the environment?
- How can energy consumption be reduced?

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) 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.

Reflection/further wonderings:

How would our strategies alter depending on seasonality?

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.

[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?