Brightwater Site

Strawbale hike: Focus on Structure, Design and Materials and Methods for Building by Animals and Humans

The hike should be as hands-on and active as possible. Perhaps pass around some props that might be used during the hike for interpretation. Photos and images are also really important so this ought to be added at some point. Lectures should be less of the way of teaching than telling stories, playing some games and doing hands-on experiments. Share your passion and the students will learn a lot.

- To start the hike, grab the parachute (sample shelter) from Brightwater Storage Shed.
- Explain to the kids how to lift the parachute over their heads and sit on the corners.
- When this is completed, and the group is under the parachute, ask them how this is different than the outside (usually it is warmer.)
- Again ask: to what degree would this SIMPLE shelter protect them from the elements (i.e.: rain, sleet, snows, hail, high winds.)
- After, address the issue of the material that the parachute is made of.
- In this case it is made of Rip-stop Nylon, which is a petroleum product (oil.)
- After this, take the parachute back to office, then explain that you are going to be hiking on the main trail.
- Stop right after the playground, and challenge the group to find different types of construction (natural, as in animal construction.)

Animal construction in the area by the Campfire includes:

- There is a magpie nest – bunches and piles of sticks all over the place in the tree with an entrance in the middle – the nest has a roof on it, (one is about 30 ft. up) and woodpecker holes in the large Balsam Poplar trees on the east side of the campfire, on some occasions the kids will point out the ant mounds. [show a photo of a magpie]
- Talk about the types of materials in the larger nests; tell them to keep that in mind for the next stop. Maybe show a photo of an eagle nest.

- Walk until you come upon a small robin's nest located in the High Bush Cranberry located on the creek (east) side of the trail just down from the first stairs.
- Again talk about the materials used to create the nest in this instance the materials are smaller like litter, twigs, mud and grass.
- Horsetail is one of the main materials used, some background on the plant: ancient ancestors were approximately 70 ft. tall, you can point to the trees directly behind them. They are cool because of how they grow and the fact they contain silica which is like sand. So the plant can be used like sand paper. Just some neat info….

- Move along to the "u" in the trail and gather the kids around the rosehip bush on your right.
- A gall is an infestation (in this case of a rosehip) it is when an insect lays their eggs inside and when the eggs hatch they eat their way out. A gall is a shelter for a larvae created by the plant in reaction to the infestation by the egg. That is exactly what the female fly intended – food and shelter for the young. This is a natural shelter created by the plant and the insect. The gall does not seem to harm the plant.
- Add by saying that we know it is a gall by the distinctive look; in this case the gall looks odd because it has undergone a genetic mutation, in a defense to the insect's eggs. So the construction is by the plant itself as a result of an infestation. [pass around a sample of the galls]

- Moving along to the Beaver dam by the bridge near the spring, again ask what kind of materials, and why the beaver dam builds beaver dams (to keep the water level high so in the winter the water doesn't freeze to the bottom causing all the vegetation to die, leaving the beaver to die himself.) [PLEASE NOTE: The dam was blown out by a flood last spring so we just see what is left. There is another dam down from the Basketball court that you can take a look at with an active beaver lodge. Great to talk about these amazing engineers and might be the best way to start the hike then head back along creek trail.]

- Now would be a good time to ask how many "homes" that the group has encountered. If the kids name the beaver dam as a home (which some do) explain that it isn't a home, and that the beaver LODGE is the actual home of the beaver. The dam just stops water.
- Now because time is valuable on this hike most likely you will have 2 options.

1) being visiting the home that was torn down and the fireplace or 2) visiting the bridge.

- Option 1) the house, you can talk about the heating of the furnace, the concrete foundations and the heat (would it be hot in here in the winter?) Maybe show a visual of a furnace for kids who live in apartments.
- If you choose to visit the bridge, begin by talking about the apparent which is the sign which states the maximum capacity is 20 500kg.
- This is about 45000lbs which is about 22 tones and about 9 cars.
- Move on by asking them that types of materials used to build the bridge (concrete, wood, and steel.) Directly ahead on the left side of the bridge, there is a bank, with sparrow holes, also a type of home.
- Moving to the strawbale house if you are familiar with the project talk about it, if not ask someone, and thirdly here are some helpful tips. Refer to the notes in other document about solar studies or refer to the photos and info on the walls.
- There are 3 toilets, 2 composting toilets and 1 urinal. 1 solar composting toilet that bakes your poop, and an electric composting toilet, which uses solar generated energy.
- The whole operation is "off-grid" asking the kids what this means is a good idea.
- What "off-grid" means is that the whole building runs off of solar power.
- Move on to the house when necessary, and begin by talking about the displays.
- Also mention the insulating value of the strawbale compares to pink foam, or even wood chips, which the house your in has, and mention that over time wood chips settle out leaving quite a large gap without insulation.
- If it is a cold day and there is a fire going ask them what they think a strawbale house with a fireplace would feel like.
- Explain to the children if time is permitting that you will now walk back to Sommer's hall to construct their own buildings of sorts.
- This will require the blue box of Lego, or if preferred the Ginja blocks.
- This is the end of the hike, tell the kids to be creative, but not silly, they will only have a short period of time to build, and they need to work in-groups to build a shelter that has 4 walls a door and roof.
- Another option is to give the kids the chance to construct using rolled newspaper. They can make a structure (such as a building) and attaché with masking tape. This can be done in Moose Jaw Hall. Newspaper in same hall.

Add any interpretive comments, visuals, images to this document so that others, like you, will benefit. Thanks for your contribution to our Brightwater program.

This is a load-bearing 11x14 building. The washroom is designed for four season use. The solar composting toilet has a window facing south to aid in the composting process. It also has a solar vent system to remove odours. This photo shows the process, the use of recycled wood and the beginning of the truss system. The build was started by youth with Youth Services Canada lead by Carol Vandale and Craig Shearer.

With the roof on and the solar panels in place the building is taking shape. The work bee to apply the cement on the exterior involved many days of volunteer labour. Cement was chosen over earth plaster for the exterior due to the harsh climate and the need for a 'self maintaining' building.

Stones were brought in by Meewasin for the exterior foundation.

The toilet is ready to use.