BLM 2 – *Circle Dwelling Project Instructions*

This project involves two related tasks:

1. designing a circle dwelling that will allow a person who is 1.82 m tall to stand comfortably, 2 m from the central point; the design work is to consist of two diagrams that
   - follow the specifications provided below
   - demonstrate the use of circle geometry concepts
   - use a scale of 1 m: 2.5 cm
2. building a scale model of the circle dwelling you have designed, using a scale of **1 m: 4 cm** (or another scale that you have agreed upon with your teacher)

Diagram 1 – Top View:

Draw a top view of your circle dwelling. Include

- an entrance 4.5 m from the centre, that is consistent with a common outside point
- a fire circle, a smoke hole that is 2/3 the diameter of your fire circle, and surrounding central support beams (use either 12 or 16 support beams for the ceiling; keep in mind that the more beams used, the more curve your roof will have; the first pair of beams should be placed exactly opposite the entrance beams A and B. the second and third pairs of beams should be at a right angle to these beams; the remaining beams are placed halfway between these pairs)
- positions of all outer posts on the circle
- seating/sleeping benches that encompass the rest of the circumference (i.e., other than the entrance)

Also include measurements/calculations for the radius of the dwelling's "footprint"

- the length of the entrance
- the width of the entrance
- the depth of the sitting/sleeping benches
- the radius of the fire circle
- the central angle using the entrance beams
- the inscribed angle using the entrance, centre, and 2 outer posts

Diagram 2 – Side View:

Draw a side view of your circle dwelling. Include

- the radius
- an entrance
- seating/sleeping benches that encompass the rest of the circumference
- a fire circle with dimensions and surrounding central support beams
- a smoke hole with dimensions for height and width

Also include measurements/calculations for

- the height of the ceiling outside the fire circle and calculations for the central support beams
- the height of the ceiling 2 m from the centre
- the height of the entrance

Model

Build a model of the circle dwelling you have designed, using willow twigs (they are flexible enough), pipe cleaners, wikisticks/bendaroos, wire, or other suitable material, affixing it to a base of cardboard or sandpaper. You can use a glue gun, sticky tack, or modelling clay to affix the material in place. Include other features of the inside of a circle dwelling in your model and cover half your model in moss, willow leaves, popsicle sticks, clay, or paper mâché. Be sure to work as close to scale as possible.