Measuring our Resources (MOR)

For school yard and online activities. Class of 30 using teams of 3 in each TASK.

Measuring our Resources – The teacher may begin the schoolyard inventory using flagged or tagged trees to be inventoried by teams and later include other tasks. See www.acer-acre.ca

Objective: Scanning and exploring the inventory of current trees in the schoolyard or nearby green spaces such as boulevard, churchyard or park .

Materials: pencil, paper, clipboard, string 2.0 metres, 3 coloured washable markers, 1 permanent marker, 1 metre stick

If using an Introductory exercise first, use 3 temporary tags per team,
OR tablet with selected photos on 3 different species of identified trees. See ACER Treepedia.
e.g. ACER's number numbered yellow plasticore cards (QR Coded) on a rope OR camera

Method: Teams of students are assigned 3 trees each. Make a mark on team string in black permanent marker at 1.3 m (130cm) See DIY using Yogurt cup to take DBH.

CLASS TEAMS can be subdivided to carry out the following
TASKS
1. Mapping TASK
In the schoolyard:
Make a **sketch map** of the location of the 3 numbered trees assigned to your team numbering the trees on the map and landmarks. Add a North arrow.
In the schoolyard/on-line:
After measuring the distance between trees by pacing protocol and /or by tape measure, the Mapping team now can prepare proper with legend and a scale. Google map of site has GPS.

2. Measuring TASK

A In the schoolyard/ on line:

a) Make your own diameter tape see DIY on www.acer-acer.ca ,measure and record the length of the string (circumference C) for each tree.
b) Use the circumference to find the diameter of the tree (the formula d=C/pi)
c) What number represents pi?
d) Find a diagram of tree "cookie" to show your team "diameter vs. circumference".
e) Add the diameter to each tree numbered to the mapping team master map.

B In the schoolyard For each tree you have been assigned:

a) Use the string to find the height of 1.3m , hold that point on the string and **then** turn other end of the string to **wrap** the string around the tree at that height of 1.3 metres.(m)
b) Check to make sure the string is level as it goes around the tree.
c) Use a coloured marker to mark the string where the end meets the rest of string at 1.3m You have now measured the **circumference** of the tree. Calculate diameter C=d/pi(3.14)
d) Repeat for each of the trees assigned using a different coloured marker for each tree.
e) Record the tree number and colour on your data sheet with columns Tree#, Colour, Common Name, Circumference(cm)/ Diameter(cm)/ C stored in kg and t)

3. **Mapping** TASK

In the schoolyard:

a) Make a sketch map with buildings and boundaries of the schoolyard and label them.
b) Now pace or measure distances between trees and add these numbers on the sketch map.
c) Draw your map to scale indicating North. Add a legend of tree species. Use Grid paper.

4. Identifying TASK

In the schoolyard:

Look for clues to identify your tree-

a) On the ground- leaves, nuts, fruit
b) Close up of bark – photo or sketch or bark rubbing
c) Drawing of needle or leaf
d) Drawing of twigs and arrangement on stem
e) Drawing of close up of bud to show shape, scales, scar etc.
f) Repeat for each of the trees in your number set but use different coloured marker for each tree and record tree number and colour for later reference at the computer.

4. In the classroom/On line TASK

a) Use www.acer-acre.ca "Treepedia "to identify your tree
b) Find a tree identification book with photos to confirm your ID.
c) Which clues were the most helpful? Choose the top 3 per tree.
d) What other information can you find to add to Treepedia for your tree?

5. Carbon Calculator On line TASK Use your tree ID and diameter:

Find www.acer-acre.ca / Resources / Carbon Calculator

a) Use the Carbon Calculator to calculate the amount of carbon stored above ground.
b) Compare this amount to something that is the same weight in kilograms(kg)
c) Check out how this formula works. https://www.acer-acre.ca/treebiomasscal

Further Research TASK

Research to answer these questions:

a) How are these species used today and historically by native populations, by pioneers?
b) Where do these species grow today in Ontario, Canada?
c) Where did these species grow in Ontario before settlers arrived?
d) When did the last glacier disappear in Southern Ontario?
e) What other information would you add to this research

ACER revised Aug 2020