Summative #2
For
Wanted Dead or Alive

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**Assessment Description**

**Type of Assessment:** Matching and short answer Summative Assessment

**Assessment Activity Title:** Summative #2

**Duration:** 20 minutes

**Standard(s) Assessed:** MAB.1.2.1  MAB.1.4.1  MAB.3.4.1  MAB.4.3.1  MAB.4.4.1  MAB.4.4.2

**Description of Assessment Activity:**
Students take a matching and written test in order to determine the amount of knowledge they have learned concerning how to measure diameter, height, volume of a tree in order to predict its merchantability. Although the test doesn’t actually have students using the instruments needed to accurately estimate trees, they have to know what the instruments are and what their functions are. This test measures that. The real world application is evident since paper companies hold vast amounts of land in northwest Florida. The knowledge students gain through doing this unit has real world applications for the economy.

**Teacher Directions:**
1. Duplicate the attached test for students.
2. Tell them that the essay question answers will not be graded for punctuation, spelling and capitalization unless they impede the meaning of the answer.

**Student Directions:**
Match the following ten terms from the Unit, “Wanted Dead or Alive” with their definitions. Answer the discussion questions to the best of your ability.

**Scoring Method & Criteria:**
An answer key is included for scoring purposes.
For students who have special needs, a proctor may read the definitions and questions aloud as the student marks the correct term. Students should be able to score at least 70% correct on the matching items. Sample discussion question answers are included in the key.
Match the following ten terms with their definitions.

_____ 1. DBH.  a. wood suitable for chipping and processing into pulp for paper products.
_____ 2. Saw Timber  b. generally accepted measure for true diameter of a tree.
_____ 3. Pace  c. Ruler like instrument used to measure the number of sixteen foot logs a tree will yield.
_____ 4. Merchantable Tree Height  d. a device used in cruising and measuring trees to estimate timber.
_____ 5. Pulpwood  e. measurement of tree from ground level to the end of the tallest branch.
_____ 6. Biltmore Stick  f. amount of space an object takes up products.
_____ 7. Volume  g. upper limit of harvestable wood on a tree stem.
_____ 8. Hypsometer  h. measure of wood cut for fuel as arrange in a pile 8 ft. long, 4 ft. high and 4 ft. wide.
_____ 10. Height of a Tree  j. the measurable distance between two normal relaxed steps.

--The forests of northern Florida have pine trees in them that are very valuable and play an important part in the economy. These trees are grown for specific purposes and are harvested by lumber companies and paper companies. How can these pine trees be measured accurately in order to determine their size and worth? Be specific in your answer. Include any knowledge learned from the unit, Wanted Dead or Alive.

--What is the formula used to determine area? perimeter? volume?

--How does a hypsometer work?

--Why is accurate estimating when measuring important? Give an example.
Answer Key for **Summative #2**

1. H (generally accepted measure for true diameter of a tree)

2. F (wood suitable for lumber products)

3. D (the measurable distance between two normal relaxed steps)

4. G (upper limit of harvestable wood on a tree stem)

5. C (wood suitable for chipping and processing into pulp for paper products)

6. J (a device used in cruising and measuring trees to estimate timber)

7. I (amount of space an object takes up)

8. A (ruler like instrument used to measure the number of sixteen foot logs a tree will yield)

9. B (measure of wood cut for fuel as arrange in a pile 8ft. long, 4ft. high and 4 ft. wide)

10. E (measurement of tree from ground level to the end of the tallest branch)

Sample discussion question answers might include:
--The only way a tree can be measured is through estimation using specialized instruments such as the hypsometer and the Biltmore stick. Those who measure the amount of trees in a specific amount of land use Gunther chains in the field to determine estimated length. The merchantability can be determined by these estimates. Some parts of the tree become saw timber and some become pulpwood. In order to determine the worth of the trees, you have to know the estimated measure, approximately how many trees there are on an acre, and what type of trees they are. Using tree volume tables and estimated lengths, diameters, volumes, and quantity, the worth can be determined. Much math is used in determining these things and it is important to be as accurate as possible. Inaccurate estimates or figures could cost the owner money.

--Area (L X W) Perimeter (2L + 2W) Volume of a cylinder (πr² X height) (diameter of the tree is determined at breast height)

--Hypsometers set up a proportion with lengths of segments and angles. This can then be used to determine the height of a tree.

--Inaccurate measuring could cost money, time or effort, as well as create problems with equipment, supplies or manpower.