

# SC Envirothon – Coaches Training

## Forestry Station

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### Station Purpose

The Forestry Station evaluates a team's ability to:

- Identify common South Carolina tree species
- Take basic forest measurements
- Correctly use the provided tools and table
- Apply sound reasoning to forestry-related questions

The station emphasizes **applied skills** rather than advanced forestry mathematics or memorization.

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### Test Format

The Forestry Station may include:

- Short answer
- Fill-in-the-blank
- Multiple choice
- Practicum

One question will require students to **use a dichotomous key** to identify a tree.

- This question evaluates the student's **ability to use the key**, not prior knowledge.
  - Students must **show their work** to receive credit.
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### Scoring Overview

The **bulk of the points** will come from **six practicum questions**, primarily in the areas below.

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## Tree Identification (4 Questions)

Students will identify trees by:

- Genus
- Species
- Common name

### Scoring notes

- Partial credit is awarded for each correct component.
- All species in the *SCFC Common Trees of South Carolina* book are eligible.
- Two to Three trees will be selected from those present on-site.
- One or two will be a sample of a tree from off site

**Coach emphasis:** common species, leaves, bark, needles, and overall form.

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## Basal Area Measurement

Students will determine the **basal area at a point** using an **angle gauge**.

- Test points will be selected to avoid borderline trees when possible.
- If a borderline tree is encountered, it should be **counted as ½ tree**.

Correct technique and consistent decision-making are emphasized over speed.

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## Tree Measurement and Value

Students will be required to:

- Measure an individual tree
- Calculate tree volume
- Determine the **value of the tree in dollars**

### Provided materials

- Volume tables
- Market value information
- Measurement tools (may include):
  - Biltmore sticks
  - Clinometers
  - Diameter tapes (D-tapes)

## Key notes

- Tree height measurements are **total height**, not merchantable height.
  - Students should understand **what a chain is and how to pace a chain**.
  - Volume is expressed in **tons**.
  - Students must correctly use the **tables provided**; formulas are not required.
  - **Basic multiplication skills are required**. Calculators will not be provided.
  - Partial credit is awarded based on accuracy.
  - Students are expected to be familiar with standard forestry tools and demonstrate proper handling and use during measurements.
  - Answers should include correct units where applicable; missing or incorrect units may result in lost points.
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## FAQs (Common Student Questions)

### “Tons is weight, not volume?”

Correct. Tons represent weight. Students are not expected to understand or calculate density or specific gravity, only to correctly use the provided tables.

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### “Does spelling count?”

No. Spelling does not need to be perfect, especially for scientific names, but must be clearly recognizable.

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### “If a measurement falls between increments, do we round?”

Yes. **Always round down.**

You cannot make up wood that is not there.

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### “When measuring tree height, where do I measure to at the top of the tree?”

Measure to the **highest live point of the tree** (top of the live crown).

Do **not** measure to:

- Broken tops
- Dead leaders
- Hanging branches above the live crown

Be careful not to measure branches leaning toward the observer, as this can overestimate height. Much of the remaining ambiguity is resolved through **proper rounding**.

If the top is unclear, students should use their **best judgment** and apply the method consistently. Correct technique and reasonable decision-making will be considered when awarding partial credit.

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## Key Takeaway for Coaches and Students

Focus preparation on:

- Common tree identification
- Proper measurement techniques
- Accurate use of provided tools and tables
- Clear, logical reasoning

Advanced forestry mathematics and professional silviculture knowledge are not required to score well, but this is a competition.

The Forestry Station is challenging; however, every effort will be made to ensure that questions are not unnecessarily complicated.