Student Field Worksheet: Caliper vs. Optical Tree Measurement

Printable 1-Page Field Sheet · Grades 7–12 · rootedcarbon.com/calculator

Structured outdoor data collection sheet guiding student teams to compare physical circumference tape readings against Rooted Carbon optical measurements.

Before You Scan (Team Checklist)

- Use the native 1× camera lens in vertical portrait orientation, held steady and level.
- Step back 10–15 metres so both the root collar at ground level and the top of the crown fit cleanly in one frame.
- Choose an angle with a clear, unobstructed view of the lower trunk and canopy silhouette.

Tree Recording Prompts (Record 3 Trees per Team)

- Tree ID & Location Note (e.g., North Courtyard Maple / Érable cour nord).
- Manual Measure: Trunk circumference (cm) ÷ 3.1416 = Manual DBH (cm).
- Optical Output: Species, Height (m), Optical DBH (cm), Dry Biomass (kg), Stored CO_2e (kg), and ±% Confidence Band.
- Percent Difference: |Optical DBH – Manual DBH| ÷ Manual DBH × 100.

Reflection Questions

- 1. Which lighting or background conditions produced the closest agreement between your tape measure and the optical scan?
- 2. How did two trees of similar trunk diameter differ in stored CO_2e when their species wood densities differed?
- 3. Why does reporting an explicit ±% confidence band matter for real-world environmental science?

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