

令和5年度  
ノールダム清心学園 清心女子高等学校  
回SSH科学英語研究会

公開授業② 11:15-12:05

実践英語

実施日：令和5年12月18日(月)

場所：ノールダム清心学園 清心女子高等学校  
体育館・学グラウンド

**1. 日時：**令和5年12月18日(月) 11:15-12:05

**2. 場所：**体育館、学校グラウンド

**3. 対象生徒：**生命科学コース1年D組 (20名)

**4. 科目：**「実践英語」(週に1回)

**5. 指導者：**Brian Timms

**6: 内容:**

During second term, students have been:

- identifying trees species
- describing the fundamental characteristics of trees in English
- practicing different methods for making important tree measurements
- considering how and why deciduous tree leaves change color, and what the functions of various pigments are

Trees are a highly suitable content area for our 設定科目:実践英語 for the following reasons:

- our campus has a diverse range of trees, both domestic and foreign
- trees are easily accessible and stable
- surveying is best trees is best done as a group activity
- students can utilize basic trigonometry
- doing basic survey work for trees does not (necessarily) demand significant monetary investment

This lesson is the final summative lesson of the second term. Students will work as a team to describe the trees in an unmapped area of our campus. The last survey of trees at the school (now 20 years old and now dated) did not cover the area south of the school's 体育館. This area is heavily covered with bamboo, but has some a few of the most majestic trees at the school including a ニッケイ (*Cinnamomum sieboldii*.)

**7. 本時の指導計画:**

### (7.1) 本時のねらい:

- Students can work as a teamwork to survey their area in the given amount of time
- Students can be assess the accuracy of their measurements by making approximations before taking measurements
- Students can use appropriate methods to measure tree height (hypsoneter)

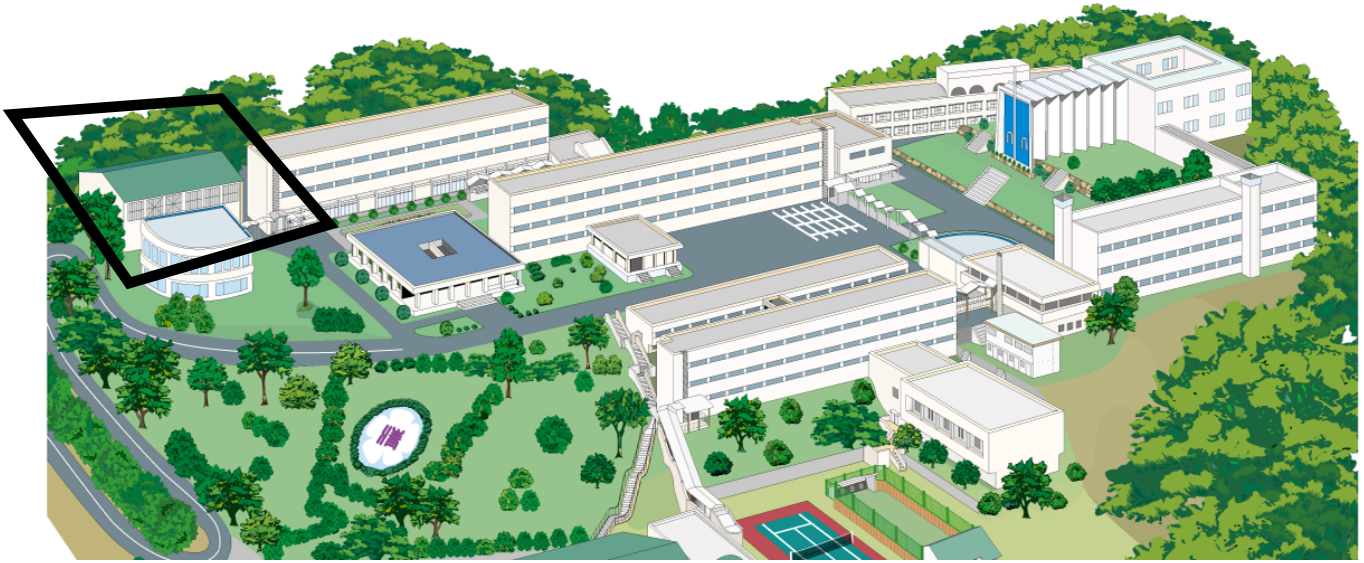
### (7.2) 本時の展開:

Title	Time	Students	Teacher
Pre-class	Break time	Change into their PE strip. Students meet in the 体育館 by the chime.	(Ahead of time) Prepares materials for the class.
Start of class	0:00	Students stand and remain silent during the chime.	
Greeting	0:30-1:00		Greets students. Explains about the open class and asks visiting teachers to give a brief word (ice-breaker).
Introduction Phase	1:00-8:00	Listen to instruction: <ul style="list-style-type: none"><li>- make groups</li><li>- get materials (hypsoneter, calculator, data paper, map paper, measure; lpad, bag)</li><li>- confirm plot</li></ul>	Explain survey <ul style="list-style-type: none"><li>- Define groups</li><li>- Pass out materials</li><li>- Indicate plots</li><li>- Confirm data which needs to be taken: map of area (one print out), DBH, basal area, volume, crown cover, height</li><li>- Explain what to do when uncertain</li></ul> * Emphasize the need to be efficient and utilize teamwork
Survey Phase	8:00-46:00	Go to plots and being surveying	Go to survey areas and observe students; inform students of time; tell students when to return
Ending Phase	46:00-50:00	Return to 体育, return materials	Take in materials and finish lesson

**(7.3) 授業観察の視点:**

- Observe students while they are surveying. Is everyone working?
- After taking in materials consider the number of trees surveyed. Students should be able to survey at least five trees.

# Survey Area



## Tree Data

Tree	Location	Height (m)	dbH (Circumference / $\pi$ ) at 1.3 m	Basal area $dbH^2 \times 0.00007584$ ( $m^2$ )	Volume ( $m^3$ ) [Basal Area x Tree Height] / 3	Crown spread (m) $((A-B) + (C-D)) / 2$

Names					
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