

# QUEENS COLLEGE

## SECONDARY SCIENCE EDUCATION

### Student Teacher Observations

There are five parts to every lesson that will be observed.

- Thinking about the content, pedagogical content knowledge, and assessment pedagogies
- Planning the lesson
- Teaching the lesson
- Talking about the lesson with your cooperating teacher and/or the visiting college professor
- Thinking about and writing one's reflections on the lesson.

These five components will be part of every lesson you teach. For the lessons observed by the college professor, there is yet one more step: the Evaluation.

For your observations by the college professor there are submissions that you must make in relation to the lesson tied to the steps above. The submissions are all graded and all have time deadlines.

- I. **Pre-lesson Thoughts.** These must be written and submitted to the observer no later than 10:00 p.m. two days before your observation. The Form I provided in this packet must be used to detail your pre-lesson thoughts. (15 points)
- II. **The Lesson Plan.** This must be written and submitted to the observer at the same time as the pre-lesson thoughts. A sample of the format required for these lesson plans is in this packet (see II.) (15 points)
- III. **Teaching the Lesson** (20 points)
- IV. **Overall Reflection on the Lesson.** This is to be written after the discussion with the college professor and is to be submitted within 7 days after the lesson is taught. The Post-Lesson Thoughts, Form III, provided in this packet, must be used for this submission. (40 points)
- V. **Self-Assessment.** This two-page assessment, Forms IV A and IV B, must be completed and submitted at the same time as the reflection. (10 points)
- VI. **Evaluation.** When the college professor who observed you has received all of your submissions for a particular lesson the Evaluation for the lesson will be completed and you will receive a copy of the completed Evaluation Form (see Form V in the packet.)



b)What vocabulary and/or symbols will you introduce in this lesson?

(c)Will you employ syntactical considerations or discourse to promote your chosen language function for this lesson? Describe how you will promote the language function/

- 6) Describe the pedagogical strategies you are thinking of using for this lesson and why they are appropriate for this lesson and this class.
  
  
  
  
  
  
  
  
  
  
- 7) Describe the methods you will employ to assess and monitor student learning? Further, identify whether the strategy would be formative or summative in nature.
  
  
  
  
  
  
  
  
  
  
- 8) Cite and describe the sources you are using to get ideas for this lesson.

## II. The Lesson Plan

(To be submitted with the pre-lesson thoughts)

Key: Blue words you will have in your prepared plan; pink words are examples of how you would write those sections for the Pressure in Gases lesson; Green letters guide you as to what is to go in that section.

### Lesson Plan Observation #

Date: \_\_\_\_\_ Grade Level: \_\_\_\_\_ School: \_\_\_\_\_

Topic: Pressure in Gases

Aim: To teach students the concept of atmospheric pressure and units of pressure.

Objectives: By the end of the lesson students will be able to

- (a) Describe how a barometer works
- (b) Work with the units mm of mercury, atmospheres and PSI and be able to convert from one to the other

NYS Standards: List them with the appropriate # and statement

Do Now: (2-4 minutes) This should either focus on a review of past work, or a reminder of skills needed for this lesson. It is to be a quiet time where students work alone.

Motivation: (2 minutes max) This should be thought of as “How am I going to introduce the lesson to capture the interest of the students at the outset?” It may be a series of questions, a cartoon, a short film, a link to an article on the web, a newspaper clipping, a quick demo or virtually anything else. For the lesson on pressure in gases, a couple of ideas:

- (a) Show a picture of a barometer and ask who can tell you what it is and what it does.
- (b) “On Sunday Nov 4<sup>th</sup>, weather forecasters were saying that the storm approaching New York was going to be very serious because the pressure of the weather system was 740.” What bearing does the number 740 have on the prediction of a severe storm?

Development of the lesson. (Mini-Lesson) (15 minutes) This should be written as a numbered sequence of exactly what you are going to do. It should include pivotal questions you plan to ask, examples you are going to use, specific vocabulary you are going to introduce, equivalence relations you will cover, demonstrations you are planning and how you will incorporate good scientific practice into the lesson. The development section should be detailed enough so that one of your peers could physically pick up the lesson plan and deliver the lesson as you have envisaged it.

Student Activity. After the mini lesson there will be some form of activity to reinforce what has been taught. You must detail how you are going to assess the students throughout the activity for purposes of further guiding the instruction. If you plan on a hands-on activity you should list the materials and technology you are going to use, and give details on how you are going to execute the activity; for example, how you are going to divide the students into groups.

Summary and Assessment. This may be in the form of a group summary given by individual students, a series of oral questions by the teacher, simply a statement of what has been covered, a short quiz, a short statement written by each student, etc. Many times the summary and assessment will be one and the same. If there is no assessment built into the summary then you must detail how otherwise you are going to assess how well you have achieved your objectives, how you guided students’ conceptual understanding and how you encouraged students to use evidence-based arguments in their oral and/or written responses. Include copies of all assessment documents you plan to use.

### III. Post-Lesson Thoughts

*To be emailed to the college observer no later than 7 days after the lesson was taught.*

Name:

Observation #:

1. Goals:

Consider your original goals for the lesson. Did you accomplish these goals? How do you know? Were there differences in qualitative and quantitative learning patterns for individual students?

2. The lesson's objectives, standards, and content all align to enhance student learning and engagement.

3. Language understanding and use.

Were students able to use the language and symbols you introduced and used during the lesson? Explain your answer.

4. Teacher feedback during the lesson

How did your feedback help students in the learning process? Were students able to generalize beyond a specific instance?

5. Monitoring/Regulatory/Assessing

What were some of the thoughts you had during the lesson that caused you to make the decisions you made?

6. Summary/Assessment

What did the summary/assessment part of your lesson tell you about the students' learning?

7. Supervisor's suggestions:

What points were brought to your attention at the Post-lesson conference?

8. The lesson plan

What changes would you make to your lesson plan if you were to teach this lesson again?

9. Other reflection points.

## IV A. Self-Assessment Summary

*To be emailed with the Post-Lesson Thoughts and Assessment*

Name:

School:

Observation #:

Co-op Teacher:

Grade:

Class/Ability Group:

Lesson Topic:

Date:

**Strong Points of the lesson—Discuss the following three components:**

1. Planning for instruction
2. Instructing and engaging students
3. Assessing student learning

**Areas for Improvement:**

- 1.
- 2.
- 3.

**Assessment Tools: Check that description which best describes each tool for promoting student learning during this lesson.**

- 1 *Questioning* needs improvement, adequate, helpful to me the teacher
- 2 *Feedback:* needs improvement, adequate, helpful to me the teacher
- 3 *End of lesson summary or formal assessment:*  
needs improvement, adequate, helpful to me the teacher

Student Electronic Signature:

**IV B. Self-Assessment Rating of Instructional Practice**

INDICATORS	EVALUATION				Justification
	N/O	Emerging	Proficient	Advanced	
<b>1) Planning</b>					
a.) Lesson has a central focus					
b.) Standards and learning objectives address science concepts					
c.) Lesson plans are sequenced appropriately					
d.) Identifies students' prerequisite knowledge					
e.) Develops activities to support students' science learning					
f.) Supports science development through the use of academic language					
g.) Employs appropriate methods to monitor student learning					
h.) Planning strategies are supported by principles from research and/or theory					
<b>2.) Instruction</b>					
a.) Fosters a positive learning environment					
b.) Employs appropriate methods to engage students in learning					
c.) Uses appropriate methods to advance student learning					
d.) Uses appropriate strategies for whole-class instruction					
e.) Accommodates students who need greater instructional support					
f.) Instructional strategies are supported by principles from research and/or theory					
<b>3.) Assessment</b>					
a.) Aligns standards, objectives, content, and assessment measures					
b.) Provides appropriate evaluation criteria to analyze student learning					
c.) Guides student learning through the use of varied feedback					
d.) Gathers evidence of students' use and understanding of academic language					
e.) Assessment strategies are supported by principles from research and/or theory					

Evaluation Scale

3- Advanced Performance

2- Proficient Performance

1- Emerging Performance

N/O- Not Observed or Not Applicable

Student's Electronic Signature:

Supervisor's Electronic Signature:

## V. Evaluation of Teacher Cognitions in Teaching

Name:

Observation #:

INDICATORS	EVALUATION				Justification
	N/O	Emerging	Proficient	Advanced	
<b>1) Pre-Lesson Planning</b>					
a.) Lesson has a central focus					
b.) Standards and learning objectives address science concepts					
c.) Lesson plans are sequenced appropriately					
d.) Identifies students' prerequisite knowledge					
e.) Develops activities to support students' science learning					
f.) Supports science development through the use of academic language					
g.) Employs appropriate methods to monitor student learning					
h.) Planning strategies are supported by principles from research and/or theory					
<b>2.) Instruction</b>					
a.) Fosters a positive learning environment					
b.) Employs appropriate methods to engage students in learning					
c.) Uses appropriate methods to advance student learning					
d.) Uses appropriate strategies for whole-class instruction					
e.) Accommodates students who need greater instructional support					
f.) Instructional strategies are supported by principles from research and/or theory					
<b>3.) Assessment</b>					
a.) Aligns standards, objectives, content, and assessment measures					
b.) Provides appropriate evaluation criteria to analyze student learning					
c.) Guides student learning through the use of varied feedback					
d.) Gathers evidence of students' use and understanding of academic language					
e.) Assessment strategies are supported by principles from research and/or theory					
<b>4) Conference Analysis</b>					
Ability to Recognize Strengths & Weaknesses					
<b>5) Post-lesson</b>					
a.) Written Evaluation					
b.) Self-assessment Summary					
c.) Self-assessment Rating					

Components	Target Responses
Pre-lesson Thoughts (15 points)	The candidate addressed the three tasks of planning, instruction, and assessment in the design of the lesson. All questions are answered clearly, insightfully, and thoroughly. Each successive observation is updated showing evidence of new information about the students and the setting.
Lesson Plan (15 points)	The Aim and Objectives of the lesson are clearly and appropriately stated using an appropriate format. Appropriate standards for the lesson are identified and support the lesson's objectives. The Do Now is appropriate. The Motivation creates a need to learn that permeates the lesson. The Development is coherent so that the scientific ideas are developed in a logical and sequential manner. The objectives for student learning have been accomplished.
Teaching Performance (20 points)	The implementation of the lesson plan (1) reflected an environment that promoted student-centered instruction, (2) incorporated worthwhile scientific tasks and technology that motivated students and challenged their thinking, (3) demonstrated inquiry-based teaching strategies, and (4) highlighted discourse that involved students in explaining, questioning, and responding to important scientific ideas, all of which reflected goals that addressed and contributed to students' scientific, social, psychological, and emotional needs and development.
Reflection (40 points)	All nine items of the Post-lesson Thoughts and Assessment are described clearly, insightfully, and thoroughly. All of the elements of the lesson that were critiqued at the post-lesson conference are addressed accurately, and in detail. Evidence of knowledge about, and interest in continual improvement, is presented.
Self-Assessment (10 points)	The main strong points and areas for improvement are clearly and accurately summarized in keeping with the ideas discussed at the post-lesson conference. The student has a realistic self-assessment of the lesson.

Points are deducted for each item that is either not clearly explained, inaccurate, too general, or missing completely.

Pre-lesson (15)	Lesson Plan (15)	Observation: The Lesson (20)	Post- lesson (40)	Self-Assessment (10)	Total (100)

SUPERVISOR'S OVERALL SUMMARY: