

*TPAC Assessment*

*Secondary  
Science*

*January 2011*

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## Overview of the TPAC Assessment [Return](#)

### **Conceptual overview**

In this assessment, you will describe, analyze, and evaluate the teaching of a 3-5 lesson unit of science instruction that will be referred to as a “learning segment”. The assessment is built around the proposition that successful teaching is based on knowledge of subject matter and subject-specific pedagogy, developing knowledge of one’s students, reflecting and acting on evidence of the effects of instruction on student learning, and considering research/theory about how students learn.

The TPAC assessment is clearly focused on student learning. To complete the assessment, you will describe your plans and what you actually did to achieve student learning (the “what”), provide a rationale for your plans and an analysis of the effects of your teaching on your students’ learning (the “so what”), and analyze and reflect on the resulting student learning to plan next steps in instruction or improvements in your teaching practice (the “now what”).

### **Submit teaching artifacts and commentaries**

You will submit artifacts and commentaries. Artifacts are evidence of your teaching practice. They include lesson plans, copies of instructional and assessment materials, one or two video clips of your teaching, and student work samples. You will also write commentaries describing your plans and practice, explaining the rationale behind them, and analyzing and reflecting on what you learned about your teaching practice and your students’ learning. In a commentary, you respond to questions that prompt you to provide evidence of what you know and understand about your teaching practice. The commentaries will guide the assessors in interpreting the artifacts you submit. They also are evidence of your ability to communicate about and reflect on your teaching practice. Note that your writing ability will not be scored directly, but it is important that the writing is clear and focused on key elements of your descriptions, explanations, or reflections.

The instructions in the following pages will guide you in putting together the artifacts and commentaries required in this assessment. A Glossary of terms used in the assessment appears on pages 28-30.

### **Evaluation Criteria and Scoring**

Your assessment evidence will be judged on five dimensions of teaching: planning, instruction, assessment, reflection, and academic language. The evidence for the planning, instruction, and assessment dimensions will come from the corresponding tasks. Evidence for the reflection dimension comes primarily from the daily reflections but may come from the Instruction and Assessment tasks. Evidence for the academic language dimension will come from across the tasks. To identify the teaching competencies that will be assessed, read the rubrics that appear at the end of each task.

## Overview of Secondary Science TPAC Assessment

TPAC Task	What to Do	What to submit
<p><b>1. Planning Instruction &amp; Assessment</b></p>	<ul style="list-style-type: none"> <li>✓ Provide relevant information about your instructional context by completing the Context for Learning Information.</li> <li>✓ Select a learning segment of 3-5 lessons (or, if teaching science within a large time block, about 3-5 hours of connected instruction) that is centered around key scientific concepts and scientific inquiry skills that underlie specific student academic content standards. The learning segment should also develop abilities to use scientific concepts to make sense of one or more real world phenomena by using key scientific inquiry skills.</li> <li>✓ Determine what content and related academic language you will emphasize.</li> <li>✓ Consider your students' strengths and needs, create an instruction and assessment plan for the learning segment, and write lesson plans.</li> <li>✓ Respond to commentary prompts to describe your students and teaching context, and explain your thinking in developing the plans and how they reflect what you know about your students as well as research/theory.</li> <li>✓ As you are teaching, complete daily reflections by answering the prompts.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Context for Learning Information</i></li> <li><input type="checkbox"/> <i>Lesson Plans for Learning Segment</i></li> <li><input type="checkbox"/> <i>Instructional Materials</i></li> <li><input type="checkbox"/> <i>Assessment tools and criteria</i></li> <li><input type="checkbox"/> <i>Planning Commentary</i></li> <li><input type="checkbox"/> <i>Daily reflections</i></li> </ul>
<p><b>2. Instructing &amp; Engaging Students in Learning</b></p>	<ul style="list-style-type: none"> <li>✓ Identify lessons where you are engaging your students in collecting and analyzing scientific data and select at least one lesson for filming.</li> <li>✓ Collect permission forms from parents and prepare for filming.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Video Clips</i></li> <li><input type="checkbox"/> <i>Video Label Form</i></li> <li><input type="checkbox"/> <i>Instruction Commentary</i></li> </ul>

TPAC Task	What to Do	What to submit
<b>2. Instructing &amp; Engaging Students in Learning</b>	<ul style="list-style-type: none"> <li>✓ Video the lesson.</li> <li>✓ Review the video to identify two video clips that meet requirements. The total running time of each should not exceed 10 minutes.</li> <li>✓ Respond to commentary prompts to analyze your teaching and your students' learning in the video clips.</li> </ul>	
<b>3. Assessing Student Learning</b>	<ul style="list-style-type: none"> <li>✓ Analyze student performance across the class from one assessment completed during the learning segment.</li> <li>✓ Identify three student work samples that illustrate class trends in student understanding.</li> <li>✓ Select two focus students from the class whose learning you will analyze in more depth, and for whom you will document feedback on their work.</li> <li>✓ Respond to commentary prompts to analyze the extent to which the whole class met the standards/objectives, analyze the individual learning of two focus students and describe your feedback to them, and identify next steps in instruction based on your analysis.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Evaluation Criteria</i></li> <li><input type="checkbox"/> <i>Student Work Samples</i></li> <li><input type="checkbox"/> <i>Evidence of Feedback</i></li> <li><input type="checkbox"/> <i>Assessment Commentary</i></li> </ul>
<b>4. Final Retrospective Reflection</b>	<ul style="list-style-type: none"> <li>✓ Reflect back on your teaching throughout the learning segment and consider what you have learned about your teaching and students' learning.</li> <li>✓ Respond to the commentary prompt about what you would do differently if you could teach this learning segment again.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Retrospective Reflection Commentary</i></li> </ul>

## Task 1. *Planning Instruction & Assessment* [Return](#)

### Purpose

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The Planning Instruction & Assessment task asks you to describe your plans for the learning segment and explain how they are appropriate for the students and the content you are teaching. You will demonstrate your ability to organize curriculum, instruction, and assessment to help diverse students meet the standards for the curriculum content and to develop academic language related to that content. You will provide evidence of your ability to select, adapt, or design learning tasks and materials that offer your students equitable access to science curriculum content.

### What Do I Need to Do?

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- ✓ If you teach more than one class, select one focus class for this assessment and complete the **Context for Learning Information**.
- ✓ Review the curriculum with your cooperating teacher and select a learning segment of 3-5 lessons (or, if teaching science within a large time block, about 3-5 hours of connected instruction) to describe, analyze, and reflect upon. The learning segment should provide opportunities for students to develop their abilities to use scientific concepts to make sense of one or more real world phenomena by using key scientific inquiry skills.
- ✓ Identify the big idea or essential question along with the content standards you will address in the learning segment. Consider how students might demonstrate their learning with respect to the standards and identify or adapt learning tasks to help your students develop related knowledge and skills.
- ✓ Consider the oral and written academic language<sup>2</sup> that students will need to understand or produce in your learning segment and the genres that these texts represent. **For more information on academic language, including subject-specific examples of genres, see Appendix A.**
- ✓ Consider what your students need to learn and identify learning objectives for both content and related academic language. Write a lesson plan for each lesson in the learning segment.

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<sup>2</sup> *The purposes of Academic Language are to clearly and explicitly define, classify, analyze, explain, argue, interpret and evaluate ideas for an audience that may not be present or known to the writer/speaker.*

- *Lesson plans should minimally include the following topics:*
  - *state-adopted student academic content standards that are the target of student learning.*
  - *learning objectives for both content and academic language*
  - *informal and formal assessment tools to monitor student learning (type of assessment and what is assessed)*
  - *instructional strategies and learning tasks to support student learning (what you and the students will be doing)*
  - *resources and materials*
- *To identify student academic content standards, please list the number and text of the standard. If only a portion of a standard is being addressed, then only list the relevant part(s).*
- *Your credential program may require you to use a specific lesson-plan format or template for this assessment.*

- ✓ Submit copies of **key** instructional materials and **all** assessment tools used during the learning segment. The instructional materials might include class handouts, overheads, PowerPoint or SmartBoard slides. Select materials that, together with the plans, are needed to understand what you and the students will be doing. If any materials are included from a textbook, please provide a copy of the appropriate pages. If any of these individual items are longer than **four** pages, provide a summary of relevant features in lieu of a copy. To assist scorers in matching materials to lessons, label each document or group of documents with corresponding lesson number(s).<sup>3</sup>
- ✓ Respond to each of the prompts in the Planning Commentary. **To protect confidentiality, please remove your name and use pseudonyms or general references (e.g., “the district”) for your school, district, or cooperating teacher. You may use either pseudonyms or first names only for students. Do this in all commentaries, and mask or remove proper names from all materials submitted, including lesson plans.**
- ✓ During the learning segment, record and submit daily reflections on teaching and learning. Daily reflections may be in the form of bulleted notes rather than paragraphs. While these need to be clear to the assessor, they need not be polished prose.

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<sup>3</sup> Provide citations for all sources of materials that you did not create (e.g., published texts, websites, other educators). Citations can be listed on a written document or submitted as an additional page.

### Task 1. Context for Learning Information

Provide the requested context information for the class selected for this assessment.

This format is designed to be completed electronically. Use as much space as needed to respond.

#### About the school where you are teaching

1. Where are you teaching?

Elementary school  Middle school

Other (please describe) \_\_\_\_\_

2. List any specialized features of your school or classroom setting (e.g., themed magnet, classroom aide, bilingual, team taught with a special education teacher) that will affect your teaching in this learning segment.
3. Describe any district, school, or cooperating teacher requirements or expectations that might impact your planning or delivery of instruction, such as required curricula, pacing plan, use of specific instructional strategies, or standardized tests.

#### About the subject area/course you are teaching

4. What is the name of the course you are documenting? \_\_\_\_\_

5. What is the length of the course?  one semester  one year  other (describe) \_\_\_\_\_

6. What is the class schedule (e.g., 50 minutes every day, 90 minutes every other day)?

7. *Is there any ability grouping or tracking in science? If so, please describe how it affects your class.*

8. Identify any textbook or instructional program you primarily use for science instruction. If a textbook, please provide the name, publisher, and date of publication.

9. List other resources (e.g., SmartBoard, scientific calculators, on-line resources) you use for science instruction in this class.

#### About the students in the class featured in this assessment

10. Grade level composition \_\_\_\_\_

## 11. Number of:

- a. students in the class \_\_\_\_\_
- b. males \_\_\_\_\_ females \_\_\_\_\_
- c. English language learners \_\_\_\_\_
- d. students identified as gifted and talented \_\_\_\_\_
- e. students with Individualized Education Plans (IEPs) or 504 plans \_\_\_\_\_

12. Complete the chart below to summarize the required accommodations or modifications for special education students or gifted and talented **students that will affect your science instruction in this learning segment**. As needed, consult with your cooperating teacher to complete the chart. The first row has been completed in italics as an example. Use as many rows as you need.

Special Education Category	Number of Students	Accommodations/Pertinent IEP Objectives
<i>Example: Learning Disability</i>	<i>Example: 4</i>	<i>Example: Close monitoring, follow up, and Resource Room</i>

## ***Planning Commentary***

Write a commentary of **7-9 single-spaced pages** (including prompts) that addresses the following prompts. **If you are prompted for any explanations that can be found in your lesson plans, simply refer the assessor to the appropriate page(s) of your lesson plans.**

1. Summarize the content focus of this learning segment. This summary might take the form of a “big idea” or “essential question.”
2. Describe what you know about your students with respect to this content focus, what they **can do** as well as what they are learning to do. Consider the variety of learners in your class, including individuals and subgroups requiring different strategies. Include **how this knowledge influences your choices of instructional strategies to promote student learning of this content**. Address the following areas:
  - a. Academic development (e.g., prior knowledge, key skills, ways of thinking in the subject areas, developmental levels, and other special educational needs)
  - b. Academic Language Development (students’ abilities to understand and produce the oral or written texts in English that are part of the learning segment)
  - c. Social and emotional development (e.g., relationships with each other, expressing themselves in constructive ways, engaging in collaborative learning, contributions to a productive learning environment)
  - d. Family/community/cultural assets (e.g., cultural norms, student interests, relevant experiences and resources)
3. How do your plans support your students’ learning of science and academic language related to the big idea/essential question of the learning segment?
  - a. Explain how key learning tasks are sequenced in the learning segment to build connections from prior knowledge to new knowledge. Include how you will help students make connections between and among prior and new knowledge of a scientific phenomenon, science concept(s), and investigation/ experimentation skills to deepen student learning of science throughout the learning segment. As needed, reference the instructional materials you have included.
  - b. Consult with experienced science educators to identify common sense understandings or misconceptions that contrast with accepted scientific understandings that are often associated with the learning segment content. How will you detect and attempt to change these common sense understandings or misconceptions?

- c. Identify the language demands embedded in the learning segment. Be sure to address relevant genres<sup>4</sup>, key vocabulary or phrases for the concepts being taught and linguistic features<sup>5</sup> that enable students to understand or produce the oral and/or written texts in the learning segment.
  - d. Explain how the learning tasks help students at different academic and language proficiency levels develop this academic language.
  - e. Describe any strategies planned to support students with specific learning needs.<sup>6</sup>
4. How will you monitor student learning during the learning segment?
- a. Explain how you will use the evidence from the planned informal and formal assessments to provide feedback to students and to monitor their progress toward meeting learning objectives.
  - b. Describe any modifications in the assessment tools or accommodations planned to allow students with specific needs to demonstrate their learning.
5. **Reflection:**
- a. Indicate how specific research/theory guided your selection of specific strategies and materials to help your students develop the conceptual understanding, investigation/experimentation skills, and scientific explanations needed to meet the learning objectives.
  - b. Record a daily reflection after teaching each lesson by responding to the following prompts:
    - i. What is working? What is not? For whom? Why? (Consider teaching and student learning with respect to both content and academic language development.)
    - ii. How does this reflection inform what you plan to do in the next lesson?
    - iii. **Submit these daily reflections in a document separate from the commentary.** Daily reflections are not included when calculating the page range indicated above for the commentary.

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<sup>4</sup> Genres are generic designs applicable across multiple topics to guide the process of interpreting or constructing texts. The designs are structured to achieve specific purposes related to a particular cultural and situational context. See Appendix A.

<sup>5</sup> E.g., vocabulary patterns, connector words, grammatical structures common to cause-and-effect explanations, or text organization strategies.

<sup>6</sup> This will vary by class, but commonly includes students with IEPs, English learners, or gifted students needing a greater challenge.

## Planning Rubrics [Return](#)

### PLANNING: PLANNING FOCUSED, SEQUENCED INSTRUCTION

**S1: How do the plans support students' learning of scientific concepts, explanations, and investigation/experimentation skills?**

<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
<ul style="list-style-type: none"> <li>Standards/objectives, learning tasks, and assessments are <b>loosely aligned</b> to a big idea or essential question.</li> <li>Candidate plans a <b>focus solely on</b> a scientific phenomenon, science concept, or investigation/ experimentation skills, with no connections among them.</li> </ul> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>There are <b>significant content inaccuracies</b> that will lead to student misunderstandings.</li> </ul>	<ul style="list-style-type: none"> <li>Standards/objectives, learning tasks, and assessments are <b>clearly aligned</b> to a big idea or essential question.</li> <li>Planned <b>connections</b> among a scientific phenomenon, science concept, and investigation/experimentation skills are <b>vague</b>.</li> <li><b>Learning tasks build on each other</b> to promote an understanding of the designated scientific phenomenon and science concept(s). Learning tasks (or their adaptations) are <b>justified by explaining their appropriateness</b> for the students.</li> </ul>	<ul style="list-style-type: none"> <li>Standards/objectives, learning tasks, and assessments are clearly aligned to a big idea or essential question. The <b>learning tasks and assessments represent differing depths of understanding</b>.</li> <li><b>Candidate plans how to make clear connections</b> among a scientific phenomenon, science concept, and investigation/ experimentation skills.</li> <li>Learning tasks build on each other to promote an understanding of the designated scientific phenomenon and science concept(s), <b>and investigation/experimentation skills</b>. Learning tasks (or their adaptation) are <b>justified by</b> explaining their appropriateness for students with <b>references to relevant research and/or theory</b>.</li> </ul>	<ul style="list-style-type: none"> <li>Standards/objectives, learning tasks, and materials, and assessments are clearly aligned to a big idea or essential question <b>and with each other</b>. The learning tasks and the assessments represent <b>similar levels of some depth of understanding</b>.</li> <li><b>Candidate plans how to lead students to make clear connections</b> among a scientific phenomenon, science concept, and investigation/ experimentation skills.</li> <li>Learning tasks build on each other to promote an understanding of the designated scientific phenomenon and science concept(s), and investigation/experimentation skills. Learning tasks (or their adaptations) are <b>justified by</b> explaining their appropriateness for students with <b>references to anticipated effects on student learning based on relevant research and/or theory</b>.</li> </ul>

NOTE: Text representing key differences between adjacent score levels is **bolded**.

**PLANNING: USING KNOWLEDGE OF STUDENTS TO INFORM TEACHING**

**S2: How does the candidate use knowledge of his/her students to target support for students' learning of scientific concepts, explanations, and investigation/experimentation skills?**

<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
<ul style="list-style-type: none"> <li>• Learning tasks and materials reflect characteristics of student academic development, experiential backgrounds, prior learning, and/or interests that <b>are not closely related to learning objectives</b> OR that <b>reflect only deficits and ignore strengths of struggling students</b>.</li> <li>• <b>Little support for students who might struggle or opportunities for students needing greater challenge<sup>7</sup> are planned.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Learning tasks and materials <b>draw upon students' academic development AND social/emotional development or experiences, or interests to help students reach the learning objectives</b>.</li> <li>• Planned support consists of <b>general strategies and modifications</b>, which are <b>not closely tied to learning objectives</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Learning tasks and materials draw upon students' academic and social/emotional development, <b>including strengths, as well as experiences and interests</b> to help students reach the learning objectives.</li> <li>• Planned support consists of <b>strategically selected or modified tasks/materials and/or scaffolding of instruction</b> that are closely tied to specific learning objectives. It is <b>appropriate for specific individuals or subgroups</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Learning tasks and materials draw upon students' academic and social/emotional development, including strengths, as well as experiences and interests to help students reach the learning objectives.</li> <li>• Planned support consists of <b>multiple ways of engaging with content<sup>8</sup></b> that are <b>integrated</b> to support students to meet or exceed the standards/objectives. These are appropriately <b>designed to address a variety of student learning needs tied to specific learning objectives</b>.</li> </ul>

<sup>7</sup> These will vary with the class, but typically include English learners, gifted students, students with IEPs or 504 plans, and students who generally struggle or who are not challenged.

<sup>8</sup> This might include different groupings, different tasks, or using different modes to represent content and making connections between them to help students understand.

**PLANNING: PLANNING ASSESSMENTS TO MONITOR AND SUPPORT STUDENT LEARNING**

**S3: How do the informal and formal assessments provide information to understand student progress toward the standards/objectives?**

<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
<ul style="list-style-type: none"> <li>The set of assessments will <b>provide little evidence to allow the candidate to monitor student learning</b> relative to the standards/objectives for each lesson.</li> </ul>	<ul style="list-style-type: none"> <li>The set of assessments will <b>provide evidence of student learning relative to the standards/objectives for each lesson.</b></li> <li>Assessments are <b>focused on what students do and do not understand</b> relative to <b>each lesson's</b> objectives.</li> </ul>	<ul style="list-style-type: none"> <li>The set of assessments will provide evidence of student learning relative to the standards/objectives for each lesson. <b>At least one lesson's assessments provide evidence of student learning that goes beyond memorization of science facts and explanations.</b></li> <li>Assessments are aligned to <b>clearly defined benchmarks or criteria</b> for student performance.</li> <li>Assessments are modified or adapted to be appropriate <b>for students having difficulty demonstrating their learning.</b></li> </ul>	<ul style="list-style-type: none"> <li>The set of assessments will provide evidence of student learning relative to the standards/objectives for each lesson. <b>Each lesson's assessments</b> provide evidence of student learning that goes beyond memorization of science facts and explanation.</li> <li>Assessments are aligned to clearly defined benchmarks or criteria for student performance.</li> <li>Assessments are <b>modified, adapted, and/or designed in light of the standards/objectives</b> to allow students with special needs opportunities to demonstrate their full progress toward meeting or exceeding the standards/objectives.</li> </ul>

## Task 2. *Instructing & Engaging Students in Learning* [Return](#)

### Purpose

The Instructing & Engaging Students in Learning task asks you to demonstrate how you facilitate students' developing understanding of scientific inquiry skills and strategies as well as knowledge of science concepts. You will provide evidence of your ability to engage students in meaningful science tasks, monitor their understanding, and use your responses to students to guide their learning.

### What Do I Need to Do?

#### Video your classroom teaching

- ✓ Examine your plans for the learning segment and identify learning tasks in which you are supporting students as they are actively engaged in collecting and analyzing scientific data. The data may be collected directly by the students or selected from data collected by others.
- ✓ View the video(s) to check the quality, analyze your teaching, and select the most appropriate video clips to submit.
- ✓ Provide **two video clips of no more than ten minutes each**. The first clip should illustrate how you facilitated your students' engagement in meaningful scientific thinking while they are collecting data or selecting data collected by others during a scientific inquiry. The second clip should illustrate how you actively engaged students in developing an understanding of how to analyze, interpret, and synthesize the results of an inquiry. The clips should include interactions between and among you and your students and your responses to student comments, questions, and needs.

#### Video Guidelines

- *A video clip should be continuous and unedited, with no interruption in the events.*
- *The clips can feature either the whole class or a targeted group of students.*
- *Both you and your students should be visible and clearly heard on the video submitted.*
- *Tips for recording your class are available from your program.*
- *Before you video, ensure that you have the appropriate permission from the parents/guardians of your students and from adults that appear on the video.*

- ✓ Provide a copy of any relevant writing on the board, overhead, or walls if it is not clearly visible on the video. Attach this document to the Instruction Commentary.
- ✓ Complete the Video Label Form and either attach it to a videotape or put it in a folder or CD/DVD with the video file(s) in an electronic format. The form is located after the instructions for this task.
- ✓ Respond to each of the prompts in the Instruction Commentary.

### ***Instruction Commentary***

Write a commentary of **2-4 single-spaced pages** (including prompts) that addresses the following prompts.

1. In the instruction seen in the clips, describe strategies you used to engage students intellectually while collecting, analyzing, and interpreting data from a scientific inquiry.
  - a. Cite examples of strategies aimed at engaging all your students and examples aimed at engaging specific individuals or subgroups. If you described any of these fully in the lesson plans or the planning commentary, just reference the relevant description.
  - b. How did these strategies reflect students' academic or language development, social/emotional development, or cultural and lived experiences?
2. Cite examples of language supports seen in the clips to help your students understand the content and/or participate in scientific discourse central to the lesson.
  - a. How did these strategies reflect students' varying language proficiencies and promote their language development?
3. Describe your strategies for eliciting student thinking and how your ongoing responses further their learning. Cite examples from the clip(s).
4. **Reflection:**
  - a. Reflect on students' learning of concepts and academic language as featured in the video clip(s). Identify both successes and missed opportunities for monitoring all students' learning and for building their own understanding of how to collect, analyze, and interpret data from a scientific inquiry.
  - b. If you could do it over, what might you have done to take advantage of missed opportunities or to improve the learning of students with diverse learning needs and characteristics?

**Task 2. Video Label Form**

Candidate ID # \_\_\_\_\_

**Secondary Science Clips****Clip # 1**

Lesson from which clip came: Lesson # \_\_\_\_\_

**Clip # 2**

Lesson from which clip came: Lesson # \_\_\_\_\_

**If Electronic, Video Format of Clip(s): (check one)**

- DVD format (no other media player involved)
- Flash
- QuickTime
- Windows Media Player
- Other (please specify) \_\_\_\_\_

## Instruction Rubrics [Return](#)

### INSTRUCTION: ENGAGING STUDENTS IN LEARNING

**S4: How does the candidate actively engage students in their own understanding of collecting, analyzing, and interpreting scientific data?**

<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
<ul style="list-style-type: none"> <li>• Strategies for intellectual engagement seen in the clips <b>limit opportunities for students to collect, analyze, and interpret scientific data.</b></li> <li>• Candidate accurately <b>identifies successful and unsuccessful teaching practices.</b></li> </ul> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>• <b>Student behavior or candidate’s disrespect for one or more students severely limits students’ engagement in learning.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Strategies for intellectual engagement seen in the clips offer <b>opportunities for students to collect, analyze, and interpret scientific data.</b> These strategies reflect <b>attention to students’ academic or language development, social/emotional development, and/or cultural and lived experiences.</b></li> <li>• Candidate accurately identifies successful and unsuccessful teaching practices and proposes <b>reasonable improvements.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Strategies for intellectual engagement seen in the clips offer <b>structured opportunities</b> for students to collect, analyze, and interpret scientific data. These strategies reflect attention to students’ academic or language development, social/emotional development, and/or cultural and lived experiences.</li> <li>• Candidate identifies successful and unsuccessful teaching practices. The proposed improvements are reasonable and address the learning <b>of a subgroup or individual students.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Strategies for intellectual engagement seen in the clips offer structured opportunities for students to collect, analyze, and interpret scientific data. These strategies are <b>explicit, and clearly reflect attention</b> to students with <b>diverse</b> academic or language development, social/emotional development, and/or cultural and lived experiences.</li> <li>• Candidate identifies successful and unsuccessful teaching practices. The proposed improvements are reasonable and <b>address the learning of diverse students.</b></li> </ul>

**INSTRUCTION: DEEPENING STUDENT LEARNING DURING INSTRUCTION**

**S5: How does the candidate elicit and monitor students' responses to deepen their abilities to collect, analyze, and interpret scientific data?**

<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
<ul style="list-style-type: none"> <li>• Candidate primarily asks <b>surface-level questions</b> and evaluates student responses as <b>correct or incorrect</b>.</li> <li>• <b>Few connections</b> are observed being made between and among <b>science concepts, analyses and interpretations of science data</b>.</li> </ul> <p align="center">OR</p> <ul style="list-style-type: none"> <li>• Materials or candidate responses include <b>significant content inaccuracies</b> that will lead to student misunderstandings.</li> </ul>	<ul style="list-style-type: none"> <li>• The candidate <b>elicits student responses that require thinking about science concepts, explanations, and the quality of data</b>.</li> <li>• <b>Candidate makes connections</b> between and among science concepts, analyses and interpretations of science data.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Candidates and/or other students build on what students are saying and/or doing to improve understanding of science concepts, explanations, and the quality of data</b>.</li> <li>• Candidate and/or other students <b>prompt students to make connections</b> between and among science concepts, analyses and interpretations of science data.</li> </ul>	<ul style="list-style-type: none"> <li>• Candidate's and/or other students' interactions <b>help develop or reinforce students' abilities to evaluate their own ideas</b> about concepts, explanations, and the quality of data.</li> <li>• Candidate and/or other students prompt students to make connections between and among science concepts, analyses and interpretations of science data.</li> </ul>

### Task 3. *Assessing Student Learning* [Return](#)

#### ***Purpose***

The Assessment of Student Learning task asks you to assess student achievement, diagnose student learning strengths and needs, and inform instruction. You will provide evidence of your ability to 1) develop evaluation criteria that are aligned with your big idea or essential question, standards, and learning objectives; 2) analyze student performance on an assessment in relation to student needs and the identified learning objectives; 3) provide feedback to students; and 4) use the analysis to identify next steps in instruction for the whole class and individual students.

#### ***What Do I Need to Do?***

- ✓ Select an assessment **from the learning segment** that you will use to evaluate your students' developing knowledge and skills. The assessment should be the work of individuals, not groups. The assessment should give both you and the students a sense of how well they are progressing toward learning key knowledge, skills, and abilities targeted in the learning segment.
- ✓ Provide a copy of the directions/prompt for the assessment, if these are not apparent from the student work samples.
- ✓ Provide the **evaluation criteria** that you used to assess the student work from the learning segment. Evaluation criteria are performance indicators that you use to assess student learning. Examples of categories of evaluation criteria include applying a particular science concept to interpret data, describing the relationship between two concepts, or the fit between evidence and conclusions. They can be represented in various ways, e.g., a rubric, a system of a possible number of points for different categories, or rules for awarding full vs. partial credit.
- ✓ Analyze the student work from the assessment to identify patterns in understanding across the class. You will need to collect student work from your entire class.
- ✓ To illustrate your analysis, submit three student work samples which together represent what students in the class generally understood and what a number of students were still struggling to understand. **Remove names of students, yourself, and the school with correcting fluid, tape, or marker prior to copying/scanning the work samples.** Label them as "Work Sample 1", "Work Sample 2", and "Work Sample 3".
- ✓ Select two students as focus students whose learning you will discuss in more depth.
  - You may choose one or both of the students whose work samples were already submitted or choose two different students. **However, at least one of the students must be a student with identified learning needs, e.g., an English Language Learner, a student with an IEP, or a**

**student identified as gifted**<sup>9</sup>. If either of these students is not included among the three for whom you already submitted samples, provide the work sample and label it Work Sample 4 or (if needed) Work Sample 5.

- Document feedback you provided to the two focus students, either as individuals or as part of a larger group. You may provide a copy of written feedback or video/audio evidence of oral feedback. If the feedback is written directly on the work sample, be sure that reviewers can distinguish the feedback from the students' own work. If the feedback occurred in a video clip submitted as part of the Instruction task, identify the timestamp range on the video where the feedback can be found (e.g., Clip 1, 01:35 – 3:05). You may also submit an additional video clip showing oral feedback; label this video "Feedback clip". Remember to obtain parental permission for all students appearing on the feedback video; one permission form can cover both the video in the Instruction task and the feedback video.
- ✓ Respond to each of the prompts in the Assessment Commentary.

### **Assessment Commentary**

Write a commentary of **5-7 single-spaced pages** (including prompts) that addresses the following prompts.

1. Refer to your lesson plans and cite the specific standards/objectives from the learning segment plans that are measured by the assessment chosen for analysis.
2. Create a summary of student learning for the whole class at this point in the learning segment relative to your evaluation criteria.
  - a. Summarize student performance in narrative and/or graphic form (e.g., table or chart such as the optional chart provided in Appendix B).
  - b. Attach your evaluation criteria, and note any changes from what was planned for assessment as described in the lesson plans or in the Planning commentary, prompt 4.
3. Discuss what most students appear to understand well, and, if relevant, any misunderstandings, confusions, or needs (including a need for greater challenge) that were apparent for some or most students. Cite evidence to support your analysis from the three student work samples you selected.

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<sup>9</sup> *If you do not have any students with identified needs, select a student who is challenged by academic English, who usually struggles with the content **OR** who usually needs a greater challenge.*

4. For the two focus students (see What Do I Need to Do? for how to select these students):
  - a. Describe each student's individual learning strengths and challenges (e.g., prior knowledge of the content, academic development, language proficiency, special needs) relative to what was measured by the assessment.
  - b. What did you conclude from the work sample? Consider your knowledge of each student's learning relative to the learning objectives. Use the work samples to cite specific evidence to support your conclusions.
  - c. Explain how your feedback addressed individual student needs and learning objectives. To support your explanation, cite specific examples of written feedback (e.g., comments on work sample; e-mail; thread of conversation) or of oral feedback on an audio/video clip.
  - d. What opportunities did students have to apply the feedback to improve the work or their understanding, either within the learning segment or at a later time?
5. **Reflection:**
  - a. Based on the student performance on this assessment, describe the next steps for instruction for your students. These next steps may include a specific instructional activity or other strategies to support or extend continued learning of objectives, standards, central focus, and/or relevant academic language for the learning segment.
  - b. If different, describe any individualized next steps for the two students whose individual learning you analyzed.
  - c. In your description, be sure to explain how these next steps follow from your analysis of the student performances.

## Assessment Rubrics [Return](#)

<b>ASSESSMENT: ANALYZING STUDENT WORK</b>			
<b>S6: How does the candidate demonstrate an understanding of student performance with respect to standards/objectives?</b>			
<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
<ul style="list-style-type: none"> <li>• Criteria are <b>not aligned with</b> the identified <b>standards/objectives</b>.</li> </ul> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>• The conclusions in the analysis are <b>not supported</b> by either student <b>work samples or the summary of learning</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Criteria are <b>well-defined</b> and <b>aligned with the indicated standards/objectives</b> from the learning segment.</li> <li>• The analysis <b>focuses only on listing what students did right or wrong</b> in relationship to identified standards/objectives.</li> <li>• The analysis is <b>supported by</b> work samples and the summary of learning. The analysis of whole class performance describes <b>some differences in levels</b> of student learning for the content assessed.</li> </ul>	<ul style="list-style-type: none"> <li>• Criteria are well-defined and <b>reflect the depth of understanding</b> stated in the indicated standards/objectives from the learning segment.</li> <li>• The analysis <b>focuses on patterns of student errors, skills, and understandings</b> in relation to standards and learning objectives. The analysis <b>uses these patterns to understand student thinking</b>.</li> <li>• The analysis is supported by work samples and the summary of learning. Specific patterns are identified for <b>individuals or subgroup(s)</b> in addition to the whole class.</li> </ul>	<p>All components of Level 3 plus:</p> <ul style="list-style-type: none"> <li>• The candidate is able to <b>see areas of strength in a predominantly weak sample and/or areas for improvement in a predominantly strong sample</b>.</li> </ul>

**ASSESSMENT: USING ASSESSMENT TO INFORM INSTRUCTION**

**S7: How does the candidate use conclusions about what students know and are able to do to plan next steps in instruction?**

<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
<ul style="list-style-type: none"> <li>Next steps are <b>not relevant to the standards/learning objectives</b> assessed.</li> </ul> <p align="center">OR</p> <ul style="list-style-type: none"> <li>Next steps are <b>vaguely related to improving student performance</b> related to the identified standards/learning objectives or <b>use the same, unmodified strategies</b>.</li> </ul> <p align="center">OR</p> <ul style="list-style-type: none"> <li>Next steps are <b>not described in sufficient detail</b> to understand them.</li> </ul>	<ul style="list-style-type: none"> <li>Next steps <b>follow from the analysis</b> and are <b>related to the standards/learning objectives</b>.</li> <li>Next steps focus on improving student performance through <b>new or slightly modified strategies for general support that addresses some identified student needs</b>.</li> <li>Next steps <b>described in sufficient detail</b> to understand them.</li> </ul>	<ul style="list-style-type: none"> <li>Next steps follow from an <b>accurate analysis</b> of student learning and <b>aim at improving student understanding of important features</b> of the standards/learning objectives.</li> <li>Next steps focus on improving student performance through <b>targeted support</b> to individuals and groups to address specific <b>identified needs</b>.</li> <li>Next steps are <b>based on whole class patterns</b> of performance and <b>some patterns for individuals and/or subgroups</b> and are described in sufficient detail to understand them.</li> </ul>	<p>All components of Level 3 plus:</p> <ul style="list-style-type: none"> <li>Next steps demonstrate a <b>strong understanding</b> of both the identified <b>content and language standards/objectives</b> and of <b>individual students and/or subgroups</b>.</li> </ul>

**ASSESSMENT: USING FEEDBACK TO GUIDE FURTHER LEARNING**

**S8: How does the candidate provide students feedback to guide their further learning?**

<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
<ul style="list-style-type: none"> <li>• Feedback <b>focuses solely on errors</b> with no elaboration or is <b>vague</b>.</li> <li>• <b>Opportunities for applying</b> feedback are <b>not described</b>.</li> </ul> <p align="center">OR</p> <ul style="list-style-type: none"> <li>• The feedback <b>contains significant inaccuracies</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Feedback accurately <b>identifies what students did well and areas for improvement</b> related to specific learning objectives.</li> <li>• Candidate describes how students will use feedback <b>to correct their errors</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Specific and accurate feedback helps the student understand what s/he did well</b>, and provides guidance for improvement.</li> <li>• Candidate describes how students will <b>use feedback to improve their work or their understanding</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Specific and accurate feedback on <b>content and academic language</b> helps the student understand what s/he did well, and provides guidance for improvement.</li> <li>• Candidate describes how students will use feedback to improve their work or their understanding and <b>to evaluate their own work</b>.</li> </ul>

## Task 4. Final Retrospective Reflection [Return](#)

### Purpose

The Final Retrospective Reflection task asks you to reflect on your experiences teaching the learning segment and to consider what you have learned about your teaching and the learning of your students. You will provide evidence of your ability to examine your teaching and propose changes that support the learning of your diverse students.

### What Do I Need to Do?

- ✓ Reflect on your experiences teaching the entire learning segment and what you have written in your previous commentaries.
- ✓ Respond to the commentary prompt by explaining what you would do differently, given the opportunity to teach these lessons again.

### *Retrospective Reflection Commentary*

Consider what you have learned about your teaching, your students, and their learning throughout the learning segment. Write a commentary **of no more than one single spaced page (including prompts)** in response to the following prompt.

1. If you could teach these lessons to the same group of students again, what would you change? Why?

## Reflection Rubric [Return](#)

<b>REFLECTION: MONITORING STUDENT PROGRESS AND ADJUSTING INSTRUCTION</b>			
<b>S9: How does the candidate monitor student learning and make appropriate adjustments in instruction during the learning segment?</b>			
<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
<ul style="list-style-type: none"> <li>• Daily reflections indicate <b>inconsistent monitoring</b> of student performance.</li> <li>• There is <b>limited evidence of adjusting</b> instruction in response to observed problems, e.g., student confusion, a lack of challenge, time management.</li> </ul>	<ul style="list-style-type: none"> <li>• Daily reflections <b>identify what students could or could not do within each lesson.</b></li> <li>• Adjustments to instruction are focused on <b>improving directions for learning tasks, time management, or reteaching.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Daily reflections identify what students could or could not do within each lesson and <b>consider the implications for meeting the standards/objectives at the end</b> of the learning segment.</li> <li>• Adjustments to instruction are <b>appropriate</b> and focused on <b>addressing some individual and collective learning needs.</b></li> </ul>	<p>All components of Level 3 plus:</p> <ul style="list-style-type: none"> <li>• Adjustments to instruction are <b>focused on deepening key skills and understandings related to using science concepts and inquiry skills to explain a scientific phenomenon.</b></li> </ul>

## Academic Language Rubrics [Return](#)

### ACADEMIC LANGUAGE: UNDERSTANDING LANGUAGE DEMANDS<sup>10</sup> AND RESOURCES

**S10: How does the candidate identify the language demands of learning tasks and assessments relative to the students' current levels of academic language proficiency?**

Level 1	Level 2	Level 3	Level 4
<ul style="list-style-type: none"> <li>• Candidate's <b>description of students' academic language proficiency at lower levels is limited to what they CANNOT do.</b></li> <li>• <b>Language genre(s)</b><sup>11</sup> discussed are <b>only tangentially related to the academic purposes</b> of the learning segment.</li> <li>• Candidate <b>identifies unfamiliar vocabulary</b> without considering other linguistic features.</li> </ul> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>• Candidate did <b>not identify any language demands</b> within the learning and assessment tasks.</li> </ul>	<ul style="list-style-type: none"> <li>• Candidate describes academic language strengths and needs of students <b>at different levels of academic language proficiency.</b></li> <li>• The language genre(s) discussed are <b>clearly related</b> to the academic purposes of the learning segment and <b>language demands are identified.</b></li> <li>• Candidate <b>identifies vocabulary that may be problematic for students.</b></li> </ul>	<ul style="list-style-type: none"> <li>• Candidate describes academic language strengths and needs of students at different levels of academic language proficiency.</li> <li>• The language genre(s) discussed are clearly related to the academic purpose of the learning segment and language demands are identified. <b>One or more linguistic features and/or textual resources of the genre are explicitly identified.</b></li> <li>• Candidate identifies <b>essential vocabulary</b> for students to actively engage in specific language tasks.</li> </ul>	<ul style="list-style-type: none"> <li>• Candidate describes academic language strengths and needs of students <b>at the full range of academic language proficiency.</b></li> <li>• The language genre(s) discussed are clearly related to the academic purpose of the learning segment and language demands are identified. <b>One or more genre-related linguistic features or textual resources of the specific tasks/materials</b> are explicitly identified and <b>related to students' varied levels of academic language proficiency.</b></li> <li>• Candidate identifies for instruction <b>related clusters of vocabulary.</b></li> </ul>

<sup>10</sup> Language demands might include: translating words or sentences into symbolic formulas or formulas in to words and sentences; quickly decoding symbols into their abstract meanings; using everyday language (e.g., balance, base; function); using technical language to explain intuitive understandings; using complex sentences to express hypotheses; using precise language for reasoning; combining language and numbers to persuade an audience to accept an hypothesis.

<sup>11</sup> Key genres in science might include: interpreting or representing mathematical meanings represented symbolically, graphically or linguistically; recounting procedures for an experiment; scientific arguments; explaining science concepts; defining technical terms; engaging in collaborative and oral scientific inquiry.

**ACADEMIC LANGUAGE: DEVELOPING STUDENTS' ACADEMIC LANGUAGE REPERTOIRE**

**S11: How do the candidate's planning, instruction, and assessment support academic language development?**

<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
<ul style="list-style-type: none"> <li>The candidate gives <b>little or sporadic support to students</b> to meet the language demands of the learning tasks.</li> </ul> <p align="center">OR</p> <ul style="list-style-type: none"> <li><b>Language and/or content is oversimplified</b> to the point of limiting student access to the core content<sup>12</sup> of the curriculum.</li> </ul>	<ul style="list-style-type: none"> <li>The candidate uses scaffolding or other support<sup>13</sup> to <b>address identified gaps</b> between students' current language abilities and the language demands of the learning tasks and assessments, <b>including selected genres and key linguistic features</b>.</li> <li><b>Candidate articulates why instructional strategies chosen are likely to support aspects of students' language development.</b></li> </ul>	<ul style="list-style-type: none"> <li>The candidate's use of scaffolding or other support provides access to core content while also providing <b>explicit models, opportunities for practice, and feedback for students to develop further language proficiency</b> for selected genres and key linguistic features.</li> <li>Candidate articulates why the instructional strategies chosen are likely to support <b>specific</b> aspects of students' language development for <b>different levels</b> of language proficiency.</li> </ul>	<ul style="list-style-type: none"> <li>The candidate's use of scaffolding or other support provides access to core content while also providing explicit models, opportunities for practice, and feedback for students to develop further language proficiency for selected genres and key linguistic features.</li> <li>Candidate articulates why the instructional strategies chosen are likely to support specific aspects of students' language development for the <b>full range</b> of language proficiency and <b>projects ways in which the scaffolds can be removed</b> as proficiency increases.</li> </ul>

<sup>12</sup> Core content is the set of facts, concepts, skills, and abilities that are absolutely necessary to participate at least minimally in the learning/assessment tasks in the learning segment.

<sup>13</sup> Such support might include one or more of the following: modeling strategies for comprehending or constructing texts such as lab reports; explicit communication of the expected features of oral or written texts (e.g., using rubrics, models, and frames); use of strategies that provide visual representations of content while promoting literacy development (e.g., graphic organizers); vocabulary development techniques (context cues, categorization, analysis of word parts, etc.); opportunities to work together with students with different language and literacy skills.

## **Glossary** [Return](#)

**Academic Language:** Academic language is the oral and written language needed by students to understand and communicate in the academic disciplines for specific purposes and audiences. Academic language often requires the inclusion of context information to make the meaning clear for a distant audience. It has long been accompanied by visuals such as illustrations and charts, and is beginning to incorporate multi-media as well as oral and written forms. Academic language genres include the specialized vocabulary, linguistic features, and textual resources associated with genres within a field (e.g., literary criticism, explanations of historical phenomena, lab reports). It also includes instructional language needed to participate in learning and assessment tasks, including discussing ideas and asking questions, summarizing instructional and disciplinary texts, following and giving instructions, listening to a mini-lesson, explaining thinking aloud, giving reasons for a point of view, and answering multiple-choice questions or writing essays to display knowledge on tests.

**Assessment:** Evidence teachers collect of student prior knowledge, thinking, or learning in order to evaluate what students understand and how they are thinking. Informal assessments include such things as student questions and responses during instruction and teacher observations of students as they work. Formal assessments may include such things as quizzes, homework assignments, lab reports, papers, journals, and projects.

**Curriculum content:** Descriptions of what students are to know and be able to do, including various areas of knowledge, e.g., facts, concepts, procedures, methods of inquiry and making judgments.

**Discourse:** The oral or written language used by the teacher and students to communicate about the content being learned. Discourse in classrooms makes thinking and meaning accessible to others. Teachers have different goals for classroom discourse, such as: 1) to help students learn how to express their thinking and meaning relative to the content; 2) to co-construct scientific understandings as a class; or 3) to teach students the language that is conventionally used in the discipline for specific purposes. Teachers choose when to use everyday language and when to use the language of the discipline to meet these sometimes conflicting goals.

**Engaging students in learning:** Teacher strategies that promote students to actively increase their knowledge, skills, and abilities related to the learning objectives for the lesson.

**Engagement** contrasts with **participation** in learning tasks where students complete the activities, but little learning takes place because the tasks are not well-designed and/or implemented.

**Genres:** Generic designs applicable across multiple topics to guide the process of interpreting or constructing texts. The designs are structured to achieve specific purposes related to a particular cultural (e.g., science community, ethnic community) and situational context (e.g., classroom discussion, test, school newspaper, or *The Concord Review*, a national history journal for secondary students). Examples of subject-specific genres appear in Appendix A.

**Guiding Question:** Questions used to identify the focus of each rubric, i.e., what it measures about the candidate's teaching practice as documented in the Teaching Event. Each rubric level descriptor provides an answer to the related guiding question at a different level of performance. (See Rubric level descriptor)

**Language Demands:** In the context of learning in classrooms, language demands are descriptions of the language students need to effectively participate in classroom tasks. This includes demands related to listening, speaking, reading, writing, and shifting between those modalities. These demands can be vocabulary, linguistic features of genres, and other language demands related to participating in learning tasks (e.g., sharing ideas with a partner, listening to instructions). Particular language demands vary with the purpose and audience, although academic language is often aimed at communicating with distant audiences when assumptions and needed context need to be made explicit. The degree of language demand also varies with the cognitive complexity of the content, a student's current language development, a student's relevant knowledge and experience, and the context in which the language demand occurs (e.g., participating in a discussion with or without notes). Teachers can draw upon students' language strengths (including language abilities in another language or context) and supply scaffolds to enable students to understand or produce language beyond their current level of mastery.

**Learning Objectives:** Student learning outcomes to be achieved by the end of the lesson.

**Learning Segment:** A set of lessons that build one upon another toward a central purpose, with a clearly defined beginning and end.

**Learning Tasks:** Purposefully designed activities in which students engage (not just participate – see *Engaging Students in Learning*) to meet the learning objectives for the lesson.

***Linguistic Features of Texts:*** Regular language patterns characteristic of specific genres in a specific context. They include such things as vocabulary patterns, connector words, grammatical structures, or text organization strategies. Conventional linguistic features help authors of oral and written texts achieve their purpose, enabling others to understand the communication.

***Scaffolding:*** A special type of instructional support to allow students to do a task that they cannot yet do independently. Like scaffolding for buildings under construction, the support is designed to be temporary and to be removed or gradually reduced as students learn to do the task by themselves.

***Student academic content standards:*** A set of knowledge, skills, and abilities that students are to learn by the end of a particular grade, grade level, or course. Student academic content standards are usually published by the state department of education to guide curriculum and instruction in public schools.

***Text:*** A text is a coherent configuration of language (and other symbolic resources such as graphs, charts, illustrations) of any length with the intention to communicate meaning and achieve social purposes in particular contexts. Every clause simultaneously represents a version of reality (who did what to whom), negotiates social relationships (between author and audience) and organizes the message. Meaning is realized through language choices that simultaneously interweave language choices (grammar, technical words, linking words, text forms, organizational moves and other linguistic devices) into a coherent and cohesive whole to achieve particular cultural and situational purposes for specific audiences.

***Textual resources:*** Textual resources help readers make sense of texts. They include formatting conventions, graphics, and organizational titles and headings.

## ***Checklist of Required Evidence***

### **Required Forms** (this is in Appendix C)

- Teaching Event Authenticity Sign-Off Form

### **Task 1. Planning for Instruction & Assessment**

- Context for Learning Information
- Lesson plans for learning segment
- Key instructional materials, e.g., class handouts, overheads, labeled by the lesson number(s) (e.g., Lesson 1, Lessons 2-3) for which each document will be used
- All assessment tools and evaluation criteria labeled by the lesson number(s) (e.g., Lesson 1, Lessons 2-3) for which each tool will be used
- Commentary explaining how the planned instruction and assessments draw upon what you know about your students as well as research and theory to support and monitor student learning
- Daily reflections

### **Task 2. Instructing & Engaging Students in Learning**

- Video clip(s)
- Video Label Form
- Commentary explaining and analyzing the teaching and learning portrayed in the video

### **Task 3. Assessing Student Learning**

- Evaluation criteria used to assess student performance on the assessment
- Work samples from three students to illustrate what students generally understood and what a number of students were still struggling to understand plus work samples from the two focus students, if different. (Be sure to mask or remove student names.)
- Evidence of oral and/or written feedback given to two focus students
- Commentary analyzing student learning based on performance on the assessment, describing feedback given to two students, and identifying next steps in instruction

### **Task 4. Final Retrospective Reflection**

- Final Retrospective Reflection Commentary

## *Appendix A*

### *Academic Language for Secondary Science* [Return](#)

Academic language differs from everyday language. The differences include:

- a defined system of genres with explicit expectations about how texts are organized to achieve academic purposes;
- precisely-defined vocabulary to express abstract concepts and complex ideas;
- more complex grammar in order to pack more information into each sentence;
- a greater variety of conjunctions and connective words and phrases to create coherence among multiple ideas;
- textual resources (formatting conventions, graphics and organizational titles and headings) to guide understanding of texts

Academic language also includes instructional language needed to participate in learning and assessment tasks, such as:

- discussing ideas and asking questions,
- summarizing instructional and disciplinary texts,
- following and giving instructions,
- listening to a mini-lesson,
- explaining thinking aloud,
- giving reasons for a point of view,
- writing lab reports to display knowledge of science concepts and inquiry processes.

Academic language takes the form of many genres. Genres are generic designs applicable across multiple topics to guide the process of interpreting or constructing texts. The designs are structured to achieve specific purposes related to a particular cultural (e.g., science community, parent community) and situational context (e.g., classroom discussion, test, school newspaper, or science fair.)

Examples of genres in secondary science:

- representing word problems mathematically
- explaining or justifying scientific reasoning
- describing observations of an experiment
- recounting procedures for an experiment
- defining and relating science concepts
- evaluating or constructing scientific arguments
- interpreting and explaining hypotheses

Examples of linguistic features of genres:

- related clusters of vocabulary to express the content such as acid and base or fault and earthquakes
- connector words that join sentences, clauses, phrases and words in logical relationships of time, cause and effect, comparison, or addition<sup>14</sup>
- cohesive devices that link information in writing and help the text flow and hold together<sup>15</sup>
- grammatical structures such as "The rate of resistance varies directly with the current"; passive voice; nominalizations where verbs are turned into nouns like "produce" into "production" to help condense text and make connections between sentences as in "Plants produce oxygen as a byproduct of photosynthesis. This oxygen production..."
- text organization strategies

Examples of connector words for different purposes:

- Temporal: first, next, then
- Causal: because, since, however, therefore
- Comparative: rather, instead, also, on the other hand
- Additive: and, or, furthermore, similarly, while
- Coordinating: and, nor, but, so

Example of text organization strategies for increasingly complex arguments<sup>16</sup>:

- Simple argument: point/proposition, elaboration. An example is: Leaves have chlorophyll because plants need it to make food from sunlight.
- Argument with evidence: Proposition, argument, conclusion
- Discussion: statement of issue, arguments for, arguments against, recommendation
- Elaborated discussion: statement of issue, preview of pro/con positions, several iterations of point/elaboration representing arguments against, several iterations of point/elaboration representing arguments for, summary, conclusion

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<sup>14</sup> Knapp, P. and Watkins, M. (2005). *Genre, text, grammar: Technologies for teaching and assessing writing*. Sydney: University of New South Wales Press, Ltd. p. 49

<sup>15</sup> Knapp & Watkins, *op. cit.*, p. 47

<sup>16</sup> Adapted from Knapp & Watkins, *op. cit.*, pp. 190-195.

## *Appendix B*

### *Summary of Student Learning Chart*

#### *(Optional)*

List the categories of evaluation criteria as well as the corresponding characteristics of student work at each level of performance. This chart is designed to be completed electronically, so the blank space does not represent the space needed. Use as much space and as many rows and columns as you need.

<b>Evaluation Criteria Category</b>	<b>Characteristics of Student Work</b>		
	<b>Performance Level 1</b>	<b>Performance Level 2</b>	<b>Performance Level 3, etc. (Insert more columns if needed)</b>
<b>(name of category)</b>	<b>(provide description of performance of class at this level)</b>	<b>(provide description of performance of class at this level)</b>	<b>(provide description of performance of class at this level)</b>
<b>(name of category)</b>	<b>(provide description of performance of class at this level)</b>	<b>(provide description of performance of class at this level)</b>	<b>(provide description of performance of class at this level)</b>
<b>(name of category)</b>	<b>(provide description of performance of class at this level)</b>	<b>(provide description of performance of class at this level)</b>	<b>(provide description of performance of class at this level)</b>

## Appendix C

# TPAC Authenticity Sign-Off Form [Return](#)

**Submit this form with your completed TPAC assessment.**

This TPAC assessment has been submitted as part of a pilot of the assessment instrument. This attestation is acknowledgement that the ultimate responsibility for compiling the documentation (including writing the commentaries) lies with the credential candidate. However, credential candidates are encouraged to seek assistance, input and feedback from their university supervisors, cooperating/master teachers, university instructors, or other credential candidates during the completion of the assessment.

### ***Attestation by Credential Candidate***

- I have primary responsibility for teaching the students/class during the learning segment profiled in this assessment;
- The video clip(s) submitted show me teaching the students/class profiled in the evidence submitted;
- The student work included in the documentation is that of my students who are profiled in the learning segment documented in this assessment;
- I am sole author of the teacher commentaries and other written responses to prompts and other requests for information in this assessment;
- Appropriate citations have been made for all materials in the assessment whose sources are from published text, the Internet, or other educators.

\_\_\_\_\_  
Teacher Candidate's Signature

\_\_\_\_\_  
Teacher Candidate's Name (*printed*)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Teacher Candidate ID #

### ***Attestation by University Supervisor***

To the best of my knowledge, the statements above are accurate.

\_\_\_\_\_  
University Supervisor's Signature

\_\_\_\_\_  
University Supervisor's Name (printed)

\_\_\_\_\_  
Date