

# STUDENT LEARNING GOALS/OBJECTIVES DEVELOPMENT GUIDE

Grade: 11/12

Content Area: Science and Expository Writing

Component	Guiding Questions	Descriptors																														
<b>Baseline/Trend Data</b>	<i>What data were reviewed to assist in establishing the student learning goal/objective?</i>	<ul style="list-style-type: none"> <li>Student interviews were utilized to gauge students' familiarity with writing a "Discussion of Findings" section of a lab report. None of my students had been expected previously to include a discussion section in lab reports in prior science courses. All were familiar with writing a conclusion to summarize outcomes, but none had previous experience with writing explanations of results by applying physics concepts.</li> <li>The district lab report scoring rubric was used to evaluate the discussion section of the course's first lab report. Of a possible 20 points for "Discussion", only 2.6% of my students received full credit as shown below:</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>0-12</th> <th>13-15</th> <th>16-17</th> <th>18-20</th> </tr> </thead> <tbody> <tr> <td>Period 2 (16)</td> <td>6</td> <td>4</td> <td>5</td> <td>1</td> </tr> <tr> <td>Period 4 (20)</td> <td>4</td> <td>11</td> <td>5</td> <td>0</td> </tr> <tr> <td>Period 5 (21)</td> <td>5</td> <td>12</td> <td>4</td> <td>0</td> </tr> <tr> <td>Period 7 (21)</td> <td>12</td> <td>6</td> <td>2</td> <td>1</td> </tr> <tr> <td>% (78 Students)</td> <td>34.6</td> <td>42.3</td> <td>20.5</td> <td>2.6</td> </tr> </tbody> </table> <p>The data supports the need to provide students with on-going instruction and assessment in writing laboratory discussions; specifically in utilizing scientific concepts and data to explain experimental results.</p>		0-12	13-15	16-17	18-20	Period 2 (16)	6	4	5	1	Period 4 (20)	4	11	5	0	Period 5 (21)	5	12	4	0	Period 7 (21)	12	6	2	1	% (78 Students)	34.6	42.3	20.5	2.6
	0-12	13-15	16-17	18-20																												
Period 2 (16)	6	4	5	1																												
Period 4 (20)	4	11	5	0																												
Period 5 (21)	5	12	4	0																												
Period 7 (21)	12	6	2	1																												
% (78 Students)	34.6	42.3	20.5	2.6																												
<b>Student Population</b>	<i>Who is included in this student learning goal/objective? Why is this target group/class selected?</i>	All of my physics students were selected to achieve this goal because the ability to construct well-reasoned, evidence-based explanations of scientific phenomena is essential for deep understanding of physics concepts and for success in both college and careers. Many of my physics students will take college-level physics courses.																														
<b>Standards And Learning Content</b>	<i>Which standards are connected to the learning content?</i>	<p>SCIENCE:  <i>Connecticut Inquiry Standard DINQ.10</i> – Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic.  <i>Next Generation Science Standards Practice 8</i> – Obtaining, evaluating and communicating information.</p> <p>COMMON CORE LITERACY IN SCIENCE:                      WHST.11-12.2: Write informative/explanatory texts, including the narration of ...scientific procedures/experiments...                      WHST.11-12.7: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem...synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</p>																														

<b>Student Learning Goal/Objective Statement</b>	<i>What is the expectation for student growth and development?</i>	<p>By the end of the spring semester, all physics students will demonstrate growth in their ability to write laboratory discussions in which students utilize scientific concepts and data to explain and support laboratory results.</p>
<b>Indicators Of Academic Growth And Development (IAGDs)</b>  <b>Growth Targets</b>	<p>A. <i>How will you measure progress toward your student learning goal/objective?</i></p> <p>B. <i>What targets will you establish to demonstrate attainment of your student learning goal/objective?</i></p> <p><b>NOTE: If teacher sets only one goal/objective then there MUST be at least two IAGDs</b></p>	<p><b><u>IAGDs:</u></b></p> <p><b>A. <u>ASSESSMENTS/MEASURES OF PROGRESS</u> -</b></p> <ol style="list-style-type: none"> <li>The district-developed laboratory discussion scoring rubric will be used to measure student performance on bi-weekly lab report assignments based on students' investigations.</li> <li>Teacher-generated written lab simulations will be provided and students will be asked to write laboratory discussions explaining the lab results by applying physics concepts.</li> </ol> <p>(Both assessment methods will carry equal weight in determining student growth).</p> <p><b><u>B. GROWTH TARGETS</u></b></p> <p>By May 16, 2014, students will demonstrate the following growth targets by writing fully developed laboratory discussions following the prescribed format using the laboratory discussion rubric:</p> <p>Students who scored from <u>0-12 (Beginning)</u> in baseline trend data will earn and maintain rubric scores of at least <u>13-15 points on three</u> laboratory discussions after February 10, 2014.</p> <p>Students who scored from <u>13-15 (Developing)</u> in baseline trend data will earn and maintain rubric scores of at least <u>16-17 points on four</u> laboratory discussions after February 10, 2014.</p> <p>Students who scored from <u>16-17 (Proficient)</u> in baseline trend data will earn and maintain rubric scores of at least <u>18/20 points on three</u> laboratory discussions after February 10, 2014.</p> <p>Students who scored from <u>18-20 (Exemplary)</u> in baseline trend data will earn and maintain rubric scores of at least <u>18/20 points on four</u> laboratory discussions after February 10, 2014.</p>
<b>Instructional Strategies/Supports</b>	<i>What methods will you use to accomplish this student learning goal/objective? How will progress be monitored? What professional learning/supports do you need to achieve this student learning goal/objective?</i>	<ol style="list-style-type: none"> <li>On-going <b>whole class instruction in the attributes of effective laboratory discussions</b> as described in the district scoring rubric.</li> <li>Teacher <b>modeling</b> of written laboratory discussions following an assigned lab experience</li> <li><b>Teacher feedback</b> provided through the laboratory report and laboratory discussion rubric for each student on each laboratory report discussion.</li> <li><b>Peer scoring</b> - Students will use the lab discussion rubric to evaluate the work of another student and conference with that student to explain strengths and areas for improvement.</li> <li><b>Conferencing</b> - Individual and small group conferences addressing specific student needs as determined by the laboratory discussion rubric analysis.</li> <li>Teacher is available for support, guidance, and extra-help on writing the laboratory discussions prior to the due date of the assignment.</li> <li>After-school guidance and writing support sessions as deemed by student feedback and/or results from laboratory discussion rubric analysis.</li> </ol> <p>The professional learning/supports needed to achieve this SLO include:</p>

- Access to computers and printers for students.
- Potential support from students English teachers to aid in writing skills, proper grammar, and vocabulary; support may occur through teacher-teacher collaboration, student conferences or whole class instruction with English teachers.
- Motivation techniques for those students who choose not to complete work.