

## High School Science Student Learning Growth Goal

<p><b>Content Standard(s) /Learning Target</b></p>	<p>During the first semester of the course, chemistry students will show learning growth in the following course Power Standards.</p> <p>PS 3--Atomic Structure--I can describe the structure of the atom.</p> <p>PS 4--Electrons in Atoms--I can explain how electrons are arranged in atoms and how they produce light.</p> <p>These course power standards were obtained by "unpacking" the Oregon State Science content standards listed below.</p> <p>H.1 Structure and Function: A system's characteristics, form, and function are attributed to the quantity, type, and nature of its components.</p> <p>H.1P.1 Explain how atomic structure is related to the properties of elements and their position in the periodic table. Explain how the composition of the nucleus is related to isotopes and radioactivity.</p>
<p><b>Context</b></p>	<p>Total number of students 32            Number of students on an IEP 0            Number of students identified 0 as ELL:            Number of students identified 0 as TAG:            Number of students on a 504 1</p>
<p><b>Assessment</b></p>	<p>Category II Assessment</p> <p>Student learning and growth will be measured by assessing student performance on two locally developed, common, chemistry exams. These assessments are aligned to course power standards 3 and 4 derived from the state standards listed under course standards above.</p>
<p><b>Baseline Data</b></p>	<p>See attached spreadsheet.</p>

<p><b>Student Learning and Growth Goal Statement</b></p>	<p>100% of students will show learning growth on course Power Standards 3 and 4 linked to State Standards H1 and H.1P.1. Students were separated into 3 tiers based on analysis of the pre-assessment data. Learning growth goals were set based on these tiers as described below.</p> <p>Tier 1: 14 Students scored "low" on the pre-assessment with scores ranging from 0% - 11%, currently "Not Yet Met". These students will improve to at least "Approaching Proficient" or a performance level of at least 70%, an improvement of 2 performance levels, and as much as 70%, on the Bethel Proficiency Rubric.</p> <p>Tier 2: 14 students scored "mid-range" on the pre-assessment with scores ranging from 15%-26%, currently "Not Yet Met". These students will improve to at least "Proficient" or a performance level of 80% or above, an improvement of 3 performance levels, up to 65%, on the Bethel Proficiency Rubric.</p> <p>Tier 3: 4 students scored in the "top" tier from 30%-48% on the pre-assessment, currently "Not Yet Met". These students will improve to "Mastery", or at least 90% by the end of the course, an improvement of 4 performance levels, up to 60% improvement, on the Bethel Proficiency Rubric.</p>
<p><b>Rationale</b></p>	<p>Understanding atomic structure and electron arrangement is the key to understanding chemical processes, explaining chemical reactions, and predicting the outcomes of chemical combinations. The state content standard H.1P.1 is one of the largest and most specific state content standards for the chemistry course. It also provides pedagogical challenges due to the abstract nature of the quantum mechanical model of the atom.</p> <p>On the atomic structure and electrons pre-assessment 32 out of 32 students scored under 50%, or "not yet met". Thus a learning goal which measures student progress on these course power standards, that are aligned to state content standards, is integral to measuring student success in the course. Also, this chemistry class will be the only course that most of these students ever take which address the state standards listed above.</p> <p>The growth goals were selected based on analysis of data from the pre-assessment. All students currently scored "not yet met" as they have had little opportunity to learn rigorous course standards yet. After analysis of this data, as well as data on current class</p>

	<p>performance (attached), I decided that all students should be able to reach at least a "C" level of performance or "approaching proficiency", with some reaching "proficient", and others "mastery". These targets are appropriate based on current class performance, and rigorous since they require an improvement of up to 70% for the lowest performing students. All students will show growth of 3 or 4 performance levels.</p>
<b>Strategies</b>	<p>At the start of each class period, the unit "power standard" and specific lesson "learning targets" will be communicated to students, both verbally, and in writing. Instructional strategies will include the following: teacher directed instruction, student reading, application, and practice assignments, in-class discussion with questioning techniques employing Bloom's taxonomy, frequent short quizzes with feedback given the next class period, laboratory activities, video clips, and animations. Basic knowledge will be used as a platform for critical thinking and application questions and problems. Informal formative assessments, using "clickers", individual student whiteboards, and "exit tickets" will be incorporated into each class period.</p>
<b>Aligned Professional Learning</b>	<p>As a member of the Science Department, I will be working closely with my team members to identify what strategies I use that are effective at teaching the assigned content and skills in Chemistry. This will be completed as we analyze our assessment results and make improvements to both the Chemistry assessment and instructional strategies I use in the class.</p>