

First Draft SLO

Teacher Name:	Sandra Casper	
School District/School Name:	Model School District / Exemplary Middle School	
Principal/Evaluator:	Andrew MacManus (Science Department Lead)	
Content Area for SLO:	Science	Type/Approach of SLO: <input checked="" type="checkbox"/> Individual ___ Course ___ Targeted ___ Team ___ Class ___ Tiered
Grade Level:	7	SLO Team Members (if applicable): n/a
School Year:	2014-15	
SLO Objective Statement:	All students will demonstrate growth in their ability to collect and analyze scientific data.	
Assessment Window Dates:	Pre-Assessment Date: 9/10/14	Post-Assessment Date: 5/6/15
SLO Interval of Instruction:	Beginning Instruction Date: 8/19/14	Ending Instruction Date: 6/4/15

I. Rationale

Provide a basis for the work to be accomplished. Why was this focus for an SLO selected? What background work been done in this area? How does this target align with the school or district goals? What is the expected outcome? Is the objective broad enough to capture the major content, but focused enough to be measureable?

Our superintendent asked all science teachers to focus on science standards connected to mathematical concepts or skills because that is a major priority for growth in our district.

II. Baseline and Trend Data:

Describe the data used to identify assessment and growth targets. Explain how this data helped you identify the growth targets for your students.

Baseline data: Information about students' level of performance prior to the start of the interval of instruction. How was the assessment done? When? Baseline data are used to establish SLO growth targets.

- 33% of students earned a score of 1 on the baseline assignment.
- 54% of students earned a score of 2 on the baseline assignment.
- 5% of students earned a score of 3 on the baseline assignment.
- 8% of students earned a score of 4 on the baseline assignment.

III: Growth Targets:

The growth targets set for this SLO must be rigorous for all students; yet attainable. Connect the baseline data that you collected at the beginning of the learning interval to your target data. Be sure to tier your growth targets so that you are able to demonstrate growth for students that perform at various levels. Considering all available data with baseline and trending data, what targets are you expecting your students to reach based upon their starting points? Explain how were these targets determined?

Students who earned a 1 or 2 will earn at least a 3 on the final. Students who earned 3 or 4 for baseline will earn a 3 or 4 on the final.

IV. Student Population:

Provide an in-depth description of the student population included in the SLO. At least 6 students are to be involved in an SLO. Why were these students selected for the focus of an SLO? Describe any exceptionalities and special needs of this student group.

All 7th grade science students (122)

V. Standards/Content and Interval of Instruction:

Describe the content and content standards that are addressed by the SLO. Refer to the state content area standards to complete this section. Provide a data-driven explanation for the focus of the SLO. Also, describe the instructional period for this SLO.

This SLO is yearlong. This Student Learning Objective focuses specifically on how students collect and analyze scientific data.

Scientific Inquiry:

7.1.2: Generate questions that can be answered through scientific investigation.

7.1.3: Explain the reasons for testing one independent variable at a time in a controlled scientific investigation.

7.1.4: Explain the importance that repeated trials and a well-chosen sample size have with regard to the validity of a controlled scientific investigation.

7.1.5: Explain the relationships between independent and dependent variables in a controlled scientific investigation through the use of appropriate graphs, tables, and charts.

For more information, see [SC Science Standards document](#).

VI. Assessment (Pre and Post):
Describe the assessments (pre and post) that will be used to determine student growth. How do they measure the identified content/skills of the SLO? How will they be administered, and by whom? Include information on how the assessment(s) will be scored. Assessments reviewed and discussed by a school team will verify the appropriateness of the instrument. It is suggested that two or three measures be used to determine outcomes when possible. Consider state, district, school and individual teacher-made assessments. Will these assessment be tied to grades, and if so, how?

Pre- and Post-assessments are the A and B versions of the final exam, in which students will answer multiple choice questions and write responses based on content knowledge. Students will also be expected to complete data collection and analysis in labs satisfactorily.

VII. Strategies:
Describe the best instructional practices and/or grouping strategies that you will use to teach this content to students. How will instruction be differentiated based on data? Have teachers in appropriate grades/subjects linked their SLOs? What interventions will be used if more assistance is needed during the learning process?

I will group high and low performing students together so that lower-performing students can learn from higher-performing students in labs. I will also model data collection and analysis for each lab to emphasize its importance.

VIII. Progress Monitoring:
How frequently will you progress monitor students mastery of standards taught? How and with what instruments will you assess students to measure their progress over time towards the learning goal? What will you do if students do not show adequate progress towards the learning goal? Who will be sharing and discussing the results of this data collection during the instructional period?

I will monitor student learning by examining student progress on labs throughout the year. If students do not make adequate progress, I will require that they complete their independent inquiry project with my guidance and check-ins throughout the process to address challenges.

IX. Teacher Professional Learning:

Describe the learning that the teacher will complete in order to successfully complete the plan. How will this learning occur? Will this be compiled as action research to add to the profession? What reading and reflection will be done during the SLO process? What teaching skills and techniques will be improved through the project?

I will be reading “Teaching Science in Elementary and Middle School: A Project-based Approach” and utilizing ideas from the book.

Draft SLO with Reviewer Comments

Teacher Name:	Sandra Casper	
School District/School Name:	Model School District / Exemplary Middle School	
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I. Rationale

Provide a basis for the work to be accomplished. Why was this focus for an SLO selected? What background work been done in this area? How does this target align with the school or district goals? What is the expected outcome? Is the objective broad enough to capture the major content, but focused enough to be measureable?

Our superintendent asked all science teachers to focus on science standards connected to mathematical concepts or skills because that is a major priority for growth in our district.

Comment [CJ1]: Can you say more about why you chose this focus instead of other math-based concepts? What is the expected outcome for your students – how will progress on these skills further their learning? How do you know the objective isn't too broad or narrow?

II. Baseline and Trend Data:

Describe the data used to identify assessment and growth targets. Explain how this data helped you identify the growth targets for your students.

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- 33% of students earned a score of 1 on the baseline assignment.
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- 5% of students earned a score of 3 on the baseline assignment.
- 8% of students earned a score of 4 on the baseline assignment.

Comment [CJ2]: It's not clear here or in the assessment section what these scores mean. Can you elaborate on what these scores mean and how they were calculated?

Is there any trend data you can cite? How have students performed on this exam in your past classes? How have these students performed on similar exams in previous science classes? Is there any other data that can describe how these students performed in the past or how similar students have performed in this course in the past?

III: Growth Targets:

The growth targets set for this SLO must be rigorous for all students; yet attainable. Connect the baseline data that you collected at the beginning of the learning interval to your target data. Be sure to tier your growth targets so that you are able to demonstrate growth for students that perform at various levels. Considering all available data with baseline and trending data, what targets are you expecting your students to reach based upon their starting points? Explain how were these targets determined?

Students who earned a 1 or 2 will earn at least a 3 on the final. Students who earned 3 or 4 for baseline will earn a 3 or 4 on the final.

Comment [CJ3]: This doesn't seem to show growth for the higher performing students. All students are expected to show growth. Please revise.

IV. Student Population:

Provide an in-depth description of the student population included in the SLO. At least 6 students are to be involved in an SLO. Why were these students selected for the focus of an SLO? Describe any exceptionalities and special needs of this student group.

All 7th grade science students (122)

Comment [CJ4]: It's great that the SLO includes all your students. Please provide some additional information as its relevant: do you have any students with learning or behavior disabilities or challenges that have been documented? Are there any students facing significant challenges at home or in the community? Are there any students who have been identified as gifted and talented or that show a special aptitude or interest in science?

V. Standards/Content and Interval of Instruction:

Describe the content and content standards that are addressed by the SLO. Refer to the state content area standards to complete this section. Provide a data-driven explanation for the focus of the SLO. Also, describe the instructional period for this SLO.

This SLO is yearlong. This Student Learning Objective focuses specifically on how students collect and analyze scientific data.

Scientific Inquiry:

7.1.2: Generate questions that can be answered through scientific investigation.

7.1.3: Explain the reasons for testing one independent variable at a time in a controlled scientific investigation.

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7.1.5: Explain the relationships between independent and dependent variables in a controlled scientific investigation through the use of appropriate graphs, tables, and charts.

For more information, see [SC Science Standards document](#)

Comment [CJ5]: These standards make a great "set" and clearly align to the focus of the SLO. Are there aligned math standards that would be relevant to include?

VI. Assessment (Pre and Post):

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Pre- and Post-assessments are the A and B versions of the final exam, in which students will answer multiple choice questions and write responses based on content knowledge. Students will also be expected to complete data collection and analysis in labs satisfactorily.

Comment [CJ6]: It is great that you are including a written assessment and a performance-based assessment based on student work in the class. Does the exam focus only on data collection and analysis, or will you be focusing only on student performance on specific questions? How will student growth be measured on labs (not just proficiency) and what are the growth targets? How will these two assessments be used to set a single target?

IV. Strategies:

Describe the best instructional practices and/or grouping strategies that you will use to teach this content to students. How will instruction be differentiated based on data? Have teachers in appropriate grades/subjects linked their SLOs? What interventions will be used if more assistance is needed during the learning process?

I will group high and low performing students together so that lower-performing students can learn from higher-performing students in labs. I will also model data collection and analysis for each lab to emphasize its importance.

Comment [CJ7]: These are a good start for strategies. You may want to consider including some other strategies based on differentiated instruction, such as: having students with similar challenges work in a group with your assistance on a few specific tasks, providing leveled tasks that build in difficulty, etc. It might also be helpful to include a strategy like peer-review in the independent inquiry project so that students can help "check" each other's data collection and analysis.

IV. Progress Monitoring:

How frequently will you progress monitor students mastery of standards taught? How and with what instruments will you assess students to measure their progress over time towards the learning goal? What will you do if students do not show adequate progress towards the learning goal? Who will be sharing and discussing the results of this data collection during the instructional period?

I will monitor student learning by examining student progress on labs throughout the year. If students do not make adequate progress, I will require that they complete their independent inquiry project with my guidance and check-ins throughout the process to address challenges.

Comment [CJ8]: It would be great if you had a method for tracking student progress, strengths, and weaknesses throughout the year based on these standards.

IV. Teacher Professional Learning:

Describe the learning that the teacher will complete in order to successfully complete the plan. How will this learning occur? Will this be compiled as action research to add to the profession? What reading and reflection will be done during the SLO process? What teaching skills and techniques will be improved through the project?

I will be reading “Teaching Science in Elementary and Middle School: A Project-based Approach” and utilizing ideas from the book.

Comment [CJ9]: What concepts from the book will you be focusing on and how will you be implementing them in your classroom? Are there any district-provided PD sessions you can attend? Are there any ways that you can learn from another teacher who is doing this well in their classroom?

Final SLO

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I. Rationale

Provide a basis for the work to be accomplished. Why was this focus for an SLO selected? What background work been done in this area? How does this target align with the school or district goals? What is the expected outcome? Is the objective broad enough to capture the major content, but focused enough to be measureable?

Our superintendent asked all science teachers to focus on science standards connected to mathematical concepts or skills because that is a major priority for growth in our district. Because data analysis and inquiry helps develop higher-order thinking skills and teachers students to think logically when problem-solving, this focus will help my students learn better in the future. The focus captures several related standards without being too broad.

II. Baseline and Trend Data:

Describe the data used to identify assessment and growth targets. Explain how this data helped you identify the growth targets for your students.

Baseline data: Information about students' level of performance prior to the start of the interval of instruction. How was the assessment done? When? Baseline data are used to establish SLO growth targets.

For the baseline assessment, students answered 20 questions on data collection and analysis processes, in which they had to identify logical steps and orders, guiding questions, and meaning based on data. A score of 1 indicates fewer than 5 questions correct, a score of 2 indicates 5-9 questions correct, a score of 3 indicates 10-14 questions correct, and a score of 4 indicates 15 or more questions correct.

- 33% of students earned a score of 1 on the final exam.
- 54% of students earned a score of 2 on the final exam
- 5% of students earned a score of 3 on the final exam.
- 8% of students earned a score of 4 on the final exam.

We have not given the assessment as a pre-test in the past, but last year:

- 4% of students earned a score of 1 on the final exam.
- 16% of students earned a score of 2 on the final exam.
- 64% of students earned a score of 3 on the final exam.
- 16% of students earned a score of 4 on the final exam.

III: Growth Targets:

The growth targets set for this SLO must be rigorous for all students; yet attainable. Connect the baseline data that you collected at the beginning of the learning interval to your target data. Be sure to tier your growth targets so that you are able to demonstrate growth for students that perform at various levels. Considering all available data with baseline and trending data, what targets are you expecting your students to reach based upon their starting points? Explain how were these targets determined?

Students who earned a 1 on the baseline: will earn a 2 or better on the final exam

Students who earned a 2 on the baseline: will earn a 3 or better on the final exam

Students who earned a 3 on the baseline: will earn a 3 on the final exam and average 90 percent or higher on data-related sections of labs throughout the year OR earn a 4 on the final exam

Students who earned a 4 on the baseline: will earn a 4 on the final exam and average 95 percent or higher on data-related sections of labs throughout the year

IV. Student Population:

Provide an in-depth description of the student population included in the SLO. At least 6 students are to be involved in an SLO. Why were these students selected for the focus of an SLO? Describe any exceptionalities and special needs of this student group.

All 7th grade science students (122). There are five students diagnosed with ADHD and one student with dyslexia. These students receive accommodations and should be able to meet through targets.

V. Standards/Content and Interval of Instruction:

Describe the content and content standards that are addressed by the SLO. Refer to the state content area standards to complete this section. Provide a data-driven explanation for the focus of the SLO. Also, describe the instructional period for this SLO.

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7.1.5: Explain the relationships between independent and dependent variables in a controlled scientific investigation through the use of appropriate graphs, tables, and charts.

For more information, see [SC Science Standards document](#).

Math Process:

7.1.2: Evaluate conjectures and pose follow-up questions to prove or disprove conjectures.

7.1.6: Use correct and clearly written/spoken words, variables, and notation to communicate about significant mathematical tasks.

For more information, see [SC Math Standards document](#).

VI. Assessment (Pre and Post):

Describe the assessments (pre and post) that will be used to determine student growth. How do they measure the identified content/skills of the SLO? How will they be administered, and by whom? Include information on how the assessment(s) will be scored. Assessments reviewed and discussed by a school team will verify the appropriateness of the instrument. It is suggested that two or three measures be used to determine outcomes when possible. Consider state, district, school and individual teacher-made assessments. Will these assessment be tied to grades, and if so, how?

Pre- and Post-assessments are the A and B versions of the final exam, in which students will answer multiple choice questions and write responses based on content knowledge. Half the students will take exam A to assess beginning content knowledge and skills and the other half will take exam B. The groups will take the opposite version of the exam as their post-assessment. The exam has 60 questions, but the growth targets are based only on the 20 questions that address data collection and analysis directly.

Higher-performing students will also be expected to complete data collection and analysis in labs satisfactorily throughout the year if they maintain their score on the post-assessment.

<p>V. Strategies:</p> <p>Describe the best instructional practices and/or grouping strategies that you will use to teach this content to students. How will instruction be differentiated based on data? Have teachers in appropriate grades/subjects linked their SLOs? What interventions will be used if more assistance is needed during the learning process?</p>	<p>I will group high and low performing students together so that lower-performing students can learn from higher-performing students in labs. I will also model data collection and analysis for each lab to emphasize its importance.</p>
<p>V. Progress Monitoring:</p> <p>How frequently will you progress monitor students mastery of standards taught? How and with what instruments will you assess students to measure their progress over time towards the learning goal? What will you do if students do not show adequate progress towards the learning goal? Who will be sharing and discussing the results of this data collection during the instructional period?</p>	<p>I will monitor student learning by examining student progress on labs throughout the year. If students do not make adequate progress, I will require that they complete their independent inquiry project with my guidance and check-ins throughout the process to address challenges.</p>
<p>V. Teacher Professional Learning:</p> <p>Describe the learning that the teacher will complete in order to successfully complete the plan. How will this learning occur? Will this be compiled as action research to add to the profession? What reading and reflection will be done during the SLO process? What teaching skills and techniques will be improved through the project?</p>	<p>I will be reading “Teaching Science in Elementary and Middle School: A Project-based Approach” and utilizing ideas from the book.</p>

<p>II. Rationale</p> <p>Provide a basis for the work to be accomplished. Why was this focus for an SLO selected? What background work been done in this area? How does this target align with the school or district goals? What is the expected outcome? Is the objective broad enough to capture the major content, but focused enough to be measureable?</p>	<p>Our superintendent asked all science teachers to focus on science standards connected to mathematical concepts or skills because that is a major priority for growth in our district.</p>
<p>II. Baseline and Trend Data:</p> <p>Describe the data used to identify assessment and growth targets. Explain how this data helped you identify the growth targets for your students.</p> <p>Baseline data: Information about students' level of performance prior to the start of the interval of instruction. How was the assessment done? When? Baseline data are used to establish SLO growth targets.</p>	<ul style="list-style-type: none"> • 33% of students earned a score of 1 on the baseline assignment. • 54% of students earned a score of 2 on the baseline assignment. • 5% of students earned a score of 3 on the baseline assignment. • 8% of students earned a score of 4 on the baseline assignment.
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I will group high and low performing students together so that lower-performing students can learn from higher-performing students in labs, and will hold small-group learning sessions throughout the year to focus on building and refining specific skills with various levels of students. I will also model data collection and analysis for each lab to emphasize its importance.

VI. Progress Monitoring:

How frequently will you progress monitor students mastery of standards taught? How and with what instruments will you assess students to measure their progress over time towards the learning goal? What will you do if students do not show adequate progress towards the learning goal? Who will be sharing and discussing the results of this data collection during the instructional period?

I will monitor student learning by examining student progress on labs throughout the year. All students will share their progress on their independent inquiry project with a “team” of other students and give each other suggestions, as well as present interim findings so I can address challenges as they arise. I will document student success and challenges on specific skills and standards throughout the year using excel.

VI. Teacher Professional Learning:

Describe the learning that the teacher will complete in order to successfully complete the plan. How will this learning occur? Will this be compiled as action research to add to the profession? What reading and reflection will be done during the SLO process? What teaching skills and techniques will be improved through the project?

I will be reading “Teaching Science in Elementary and Middle School: A Project-based Approach” and utilizing ideas from the book. I will select specific approaches to try teaching and will document their impact through reflection and student data. I will also ask an exemplary 8th grade science teacher from another school observe one of my classes if possible to give feedback on my instruction.