Physics (Algebra-based), Grade 9

This SGO is for ninth-grade physics in a traditional public high school. The teacher utilizes curriculum and assessments developed by the New Jersey Center for Teaching and Learning (NJCTL). Rather than being based on one final assessment at the end of the SGO period, the target of this SGO is based on an average score that students should attain on a series of unit assessments. The teacher utilizes several baseline data points and then tiers his SGO in order to set realistic targets for all of his students.

Name	School	Grade	Course/Subject	Number of Students	Interval of Instruction
		9	Algebra-based Physics	20	October – April

The interval of instruction from October – April includes the majority of the school year but allows the teacher time at the beginning of the year to set appropriate targets for his students by gathering baseline data from two tests he administers in the first few weeks of school. The author should consider using more precise dates for the period of instruction.

Standards, Rationale, and Assessment Method

Name the content standards covered, state the rationale for how these standards are critical for the next level of the subject, other academic disciplines, and/or life/college/career. Name and briefly describe the format of the assessment method.

Standards

My assessments are aligned with the curriculum I typically teach between October and April and include the following standards:

- NJCCCS physical science 5.2.12 A-E, although the focus will be on 5.2.12.D - Energy Transfer and Conservation and 5.2.12.E - Forces and Motion
- NJCCCS science practices 5.1.12 A-D

Assessment

Series of 10 summative unit assessments with retakes available (typically 10 multiple choice with 3-5 free response – available online at NJCTL.org) normally administered between October and April. These cover the topics of Linear Momentum, Work and Energy, Electric Charge and Electric Field, Electric Potential, Electric Currents, DC Circuits, Magnetism, Electromagnetic Induction, and Simple Harmonic Motion.

The teacher clearly states the physical science standards that are included in this SGO. However, he should consider also including those CCSS math standards that form an integral part of this algebra-based physics instruction. He should consider providing a stronger rationale for how the standards he has chosen are cricitcal for the future success of students.The teacher notes that these are the units of instruction are those he normally teaches during this time; this is a very appropriate method to determine which standards to use for an SGO. He provides a link to the assessments he will use but should include some examples for his supervisor showing their coverage, alignment, and rigor.

Starting Points and Preparedness Groupings

State the type of information being used to determine starting points and summarize scores for each type by group. Add or subtract columns and rows as needed to match number of preparedness groups and types of Information used.

My physics students' level of achievement and placement within preparedness group was based on data collected during the first eight weeks of instruction (see attached table). Data used to place students in a preparedness group includes performance on the first two summative assessments and participation in class work, homework, and retakes. Students who perform poorly on assessments due to a lack of effort in class participation, homework, and test retakes may be placed in the low group. I will work with these students during the school year to encourage them to participate in class and complete homework and test retakes. I placed some students in a higher preparedness group if the students demonstrated high potential through prior scores and markers of future success even though their baseline score didn't warrant that placement.

Preparedness Group	Information #1	Information #2	Information #3
	NJ ASK 8 Math	Current Year Test Score Average	Number of Future Success Markers
Low	<200	<70	0 – 1
Medium	200 – 249	70 – 85	1 – 2
High	200 – 300	85 – 100	2 – 3

During the first few weeks of school, the teacher collected a range of information including test results, class participation, homework completion, and test retakes. This builds a clear picture of current performance and future potential. The teacher places some students in preparedness groups based on his judgment of their potential using "markers of future success" (see table below) as well as their actual test scores. He explains how he will place students in cases where their appropriate grouping is not clear-cut.

Student Growth Objective

State simply what percentage of students in each preparedness group will meet what target in the space below, e.g. "75% of students in each group will meet the target score." Describe how the targets reflect ambitious and achievable scores for these students. Use the table to provide more detail for each group. Add or delete group rows as needed.

At least 70% of physics students, based on their initial level of proficiency, will reach or exceed the stated average score on 10 instructional unit assessments.

Preparedness Group (e.g. Low, Medium, High)	Number of Students in Each Group	Target Score on SGO Assessment
Low	4	70%
Medium	7	80%
High	9	90%

Scoring Plan

State the projected scores for each group and what percentage of students will meet this target at each attainment level.

Preparedness Group	Student Target Score	Teacher SGO Score Based on Number of Students Achieving Target Score			
		Exceptional (4)	Full (3)	Partial (2)	Insufficient (1)
Low (4 students)	≥70%	4 students	2-3 students	1 student	0 students
Medium (7 students)	≥80%	6 or 7 students	4-5 students	2-3 students	0-1 students
High (9 students)	≥90%	8 or 9 students	6-7 students	3-5 students	0-2 students

Using a clear SGO statement and table, the teacher clearly states how many students will do what by when, although being more specific with the length of the instructional period would be an improvement. His scorring plan is aligned with other parts of the form and is logical. The teacher expects a certain average level of performance over a wide variety of instructional units. This approach is similar to a portfolio approach and encourages consistent performance throughout the year. The teacher has grouped students by starting points so that more students have ambitious and achievable goals. In doing so, he provides students with an appropriate amount of "stretch" in the goals he sets for them. However, there are several high performing students whose target is set lower than the scores they have already attained on the first two tests (see attached table). The teacher should consider adding a fourth tier for these students and assessing them with an additional measure such as a capstone project.

Approval of Student Growth Objective

Administrator approves scoring plan and assessment used to measure student learning.

Teacher _____ Signature_____ Date Submitted _____

Evaluator _____ Signature _____ Date Approved _____

Results of Student Growth Objective

Summarize results using weighted average as appropriate. Delete and add columns and rows as needed.

Preparedness Group	% Students at Target Score	Teacher SGO Score	Weight (based on students per group)	Weighted Score	**Total Teacher SGO Score**
Low			0.20		
Medium			0.35		
High			0.45		

This section reflects a weighted average for the SGO data based on the number of students meeting or exceeding the SGO level of attainment. This more fairly represents the performance of the class than a straight average.

Notes

Describe any changes made to SGO after initial approval, e.g. because of changes in student population, other unforeseen circumstances, etc.

Review SGO at Annual Conference

Describe successes and challenges, lessons learned from SGO about teaching and student learning, and steps to improve SGOs for next year.

Teacher _____ Signature _____ Date _____

Evaluator _____ Signature _____ Date _____

Measurements Used for Determining Students' Starting Points

Student ID	Prior Test Scores	Current Year Test Scores			Markers of Future Success				Prepared-ness Level
	NJ ASK 8 Math	Unit 1	Unit 2	Average Score	Class participation	Takes retakes	Completes homework	Total Points	
1	230	100	97	98.5	Yes	Yes	No	2	High
2	202	90	95	92.5	Yes	Yes	Yes	3	High
3	211	95	95	95	Yes	Yes	Yes	3	High
4	241	85	86	85.5	Yes	No	No	1	High
5	263	90	92	91	Yes	No	Yes	2	High
6	284	90	85	87.5	Yes	No	Yes	2	High
7	199	91	88	89.5	Yes	Yes	Yes	3	High
8	201	57	75	66	No	Yes	No	1	Low
9	144	50	58	54	No	No	No	0	Low
10	182	58	58	58	No	No	No	0	Low
11	143	62	83	72.5	Yes	Yes	No	2	Medium
12	171	78	83	80.5	No	Yes	No	1	Medium
13	220	75	80	77.5	Yes	No	No	1	Medium
14	257	89	76	82.5	Yes	Yes	Yes	3	High
15	252	80	88	84	Yes	Yes	Yes	3	High
16	184	75	77	76	Yes	Yes	Yes	3	Medium
17	215	90	70	80	Yes	No	No	1	Medium
18	154	69	75	72	Yes	No	No	1	Medium
19	192	72	70	71	No	No	No	0	Low
20	205	82	76	79	No	No	Yes	1	Medium

Key:

Preparedness Level	NJ ASK Math Score	Current Year Test Score Average	Number of Future Success Markers
Low	<200	<70	0 – 1
Medium	200 – 249	70 – 85	1 – 2
High	250 – 300	85 – 100	2 – 3

Note:
Where the placement of a student is debatable, the student is placed in the higher group, e.g. student #7 was placed in the high preparedness group even though his NJ ASK score was below 200. Baseline data was collected during first 8 weeks of instruction