Grading Practices for Integrated Science (Standards-Based Grading) updated as of 3/28/2022

(Also, this will be on my website at https://www.pickphysics.com under the 'Integrated Science' page)

After a discussion with my Integrated Science classes and consultation with our Teaching and Learning department, we're moving back to Standards Based Grading (SBG). I used this for the last three years in some of my physics classes, and it was well received by students. I think this will work really well (again) for Integrated Science. The only reason I stopped using this is our technology department had restricted student access to the SBGBook website, which has now been retored. These will be a mix of both process standards (such as Lab Skills or Habits of Mind) and content standards (such as those relating to Forces or Energy).

Each standard will count for 10 points. You will have multiple attempts to attain each standard, and you will be allowed to retake a content standard at any point during the year (up to one standard a week) if you fill out a form requesting this and complete certain reasonable requirements prior to the retake date. You may earn points for content standards from labs, activities, or tests/quizzes, but the final score will often be from a test or quiz.

Your grade at any point in time for a certain standard will depend on two methods of scoring. For Content standards and Habits of Mind standards, your grade for each standard will be determined as an average between your **highest score** and your **most recent (latest)** score for that standard, with at least two different assignments making up your average. In other words, the two averaged scores must be unique. For example, if your most recent score was also the highest score, then I would not count that twice. However, if you have a most recent score and an earlier score on another assignment which are both the highest score, I would average those. For Habits of Mind, we will have you fill out a performance rubric toward the end of the quarter which allows you to reflect on how you've done in each area, and a place where I can give you individualized feedback. Things in the Habits of Mind area include aspects of homework, effort, participation in class discussions and activities, keeping electronic devices away in class, timeliness of getting work done, willingness to improve your work, etc.

Lab Skills and Scientific Reasoning standards reflect the lab work we do all year, and for these standards your grade will be determined by **averaging your best score and the average of all your scores for each standard**. This is called a decaying average, by the way. You can also ask to reassess the lab standards, although most likely this will be a lab activity. Also, since we do labs all year, simply improving on your next lab (which will then be the most recent) is the easiest way to improve your score in those standards.

The grade for the 4th quarter will reflect the performance on those standards for the 4th quarter only**.** My intention is to allow students to retake up to one standard every week if they want, as long as I have enough notice for you to do so. We'll discuss the details of this in class. My goal is to be as fair as possible, and help you really learn as much as possible without wasting your time. It also involves trust. I trust my students to give a good faith effort in class, and I hope you trust me to have a grading system that's fair and clear. I'll get feedback from you all year long, and if we don't think things are going well, we can adjust how this goes. If you retake a standard and still don't show a solid understanding, but you still want to improve, we will come up with an additional opportunity to allow you to try and do so.

A NOTE TO PARENTS AND STUDENTS: Don't fret! Often times the first attempt at a standard isn't going to be the best. That's expected and normal. What it means is you need to NOT PANIC and understand that there will be multiple attempts at every content standard, and that normally this means your score in a standard will go up over time. Sometimes it may take a while, but you will have these extra attempts. If for some reason we won't have multiple attempts at a standard, I won't end up having that count toward your grade.

My intention is to provide you with a list of the standards to be assessed, although early in the year this is subject to change. Obviously if we don't get to cover a certain topic in class, I wouldn't assess you on standards related to that content. I'll update grades once a week in something called SBGBook online (https://www.sbgbook.xyz/gbook/login/) and we will have a classroom tutorial on March 29. The grading average is what will be reported to Infinite Campus, not any other details.

Information for access to grade book for parents and students

To access your child's detailed grade book for Standards Based Grading:

1) Google: SBGBook or click https://www.sbgbook.xyz/gbook/login/

2) To log in as your student type in their username as their email (all lower case).

3) Type in their password. This was initially set to **MR FORREST**, but I recommended that students change it to something like their lunch code. If you can't log in, please let me know and I can reset the password.

4) Grades will be updated about once a week in SBGBook, but only the current average will be reflected in Infinite Campus. To look at details of the grades you will need to log into SBGBook.

Score	ADVANCED/MASTERY - Indicators representing the score for the standard include:
10 =	I nailed it!
	I can thoroughly explain/teach the standard/skills to another student.
	I have high confidence on how to demonstrate the standard/skills.
	I can have a conversation about the standard/skills showing complete understanding.
	I can independently demonstrate extensions of my knowledge.
	I can create analogies and/or find connections between different areas within the sciences or between science and other areas of study.
	My responses demonstrate in-depth understanding of main ideas and of related details.
	I could be a peer teacher.
	I understand the content/skills completely and can explain them in detail.
	I have shown all of the relevant aspects of the standard/skill successfully.
	The errors I had (if any) are merely cosmetic. Principles applied perfectly with attention to details with solutions that are mathematically accurate, including correct units on all numbers, and reporting answers to appropriate precision.

Score	PROFICIENT - Indicators representing the score for the standard include:
8 =	The basic concept is good.
	I understand the important things about the content/skills.
	I have confidence on how to do the standard/skills on my own most of the time, but I need to continue practicing some parts that still give me problems.
	I need my handouts, notes, or other references once in a while.
	I am proficient at describing terms and independently connecting them with correct concepts.
	I understand not just the "what," but can correctly explain the "how" and "why" of scientific processes.
	My responses demonstrate in-depth understanding of main ideas.
	I am developing understanding of the content/skills.
	I have shown several of the sub-skills/standard, but not all aspects of it.
	I have some errors and/or omissions in the execution of the work, but overall correct understanding is clearly demonstrated.
	I can demonstrate the standard well now, but my understanding may not be deep enough to demonstrate it in a few weeks' time
	I feel confident explaining the main concept to others, but would not be able to explain all the details

Score	DEVELOPING - Indicators representing the score for the standard include:

6 =	I have a general understanding of the content/skills, but I'm also confused about some important parts.
	I need some help from my teacher or peers (one-on-one or small group) to do the skills correctly.
	I do not feel confident enough to do the standard/skills on my own much of the time.
	I need my handouts, notebook, or other references most of the time.
	I can correctly identify concepts and/or define vocabulary; however, I cannot not make connections among ideas and/or independently extend my own learning.
	My responses demonstrate basic understanding of some main ideas, but significant information is missing.
	I have a beginning understanding of the concept / skill.
	I am able to show some of the sub-skills.
	My understanding of the concept/skill is still developing as there are significant conceptual errors.
	I would not feel confident if asked to correctly explain the standard/skill to others in class.
	Attempts at problems show an understanding of the basic concept, but little correct follow through toward a correct solution.

Score	BEGINNING - Indicators representing the score for the standard include:
5 =	I need lots of help from my teacher, classmates, or peers (one-on-one).
	I have low confidence on how to do the skills and need more instruction.
	I need my handouts, science notebook, or other references at all times.
	I do not understand the concepts/skills at the core of the standard.
	I cannot correctly identify concepts and/or define vocabulary related to the standard.
	I cannot make connections among ideas or extend the information provided.
	My responses lack detail necessary to demonstrate fundamental understanding.
	Attempts at problems are limited; little to no progress is shown toward a correct solution beyond the given information.

Score	NO BASIS/ NO DATA - Indicators representing the score for the standard include:
-/0 =	I did not provide any responses for which a judgment can be made about my understanding.
	I did not attempt or work shows no understanding of this standard/skill.
	I did not provide data.
	I misunderstood a question that the content/skill I'm trying to show is not observable in my response.
	I have a completely correct solution without showing a work/particular content/skill that I was asked to demonstrate.
	I have not asked the teacher for help to understand the standard/skill

Standard Name	Short name	Standard description	Scoring method
Habits of Mind 1 Q4	HM1Q4	I actively participate in labs, small group discussions, and whole class discussions during in class to increase my own understanding as well as that of my peers. I also am active in discussion boards if they are used for online assignments.	Avg. Highest, Latest (unique)
Habits of Mind 2 Q4	HM2Q4	I focus on science during class and use technology to help my understanding of physics rather than distract me - in other words, my cell phone/ChromeBook is not out or being used unless it's been directed to be used for class. My attitude, involvement and actions help learning in synchronous in class and I am willing to offer and ask for help from my teacher and peers.	Avg. Highest, Latest (unique)
Habits of Mind 3 Q4	HM3Q4	I perform deliberate practice to improve my understanding of science, as shown by: class involvement, contacting the teacher for extra help, and completing formative homework, labs/simulations, practice problems and classwork to the best of my ability. I review and reflect on my work, as shown by comments to feedback on graded assignments. I can implement a plan for improvement based on feedback from my teacher and peers. Compared to my best effort, I'm performing well.	Avg. Highest, Latest (unique)
Habits of Mind 4 Q4	HM4Q4	Classroom atmosphere, respect, and netiquette. In class and during collaborative work (online or in person) I help foster an atmosphere conducive to learning by being respectful and treating others professionally. I treat my classmates and instructor with respect, dignity, and honesty.	Avg. Highest, Latest (unique)
Habits of Mind 5 Q4	HM5Q4	Overall persistence. I make a full attempt to complete assignments to the best of my ability ON TIME. If my understanding of a topic or performance on a project isn't at a high level, I make the effort to improve by attempting to get extra help in person or with a 1-on-1 Google Meet, complete extra work to show mastery, retake an assessment/standard if necessary, and revise and improve upon a project that performs poorly.	Avg. Highest, Latest (unique)
Habits of Mind 6 Q4	HM6Q4	I am well prepared and put full and honest effort into formative assignments such as homework and reading quizzes. I show evidence of self-directed preparation to allow me to be successful on formative and summative assessments.	Avg. Highest, Latest (unique)
Habits of Mind 7 Q4	HM7Q4	I am actively involved in any building, design, or other collaborative projects - including work needed outside of class. I show effort, thought, creativity and a willingness to complete the project at a high level.	Avg. Highest, Latest (unique)
Lab Skills and Scientific Reasoning 1 Q4	LSSR1Q4	I am responsible for being aware of safety requirements in class and during labs and follow all safety guidelines. This includes wearing goggles when needed, paying attention during lab, and not distracting classmates in a way that could lead to an unsafe situation. If I'm uncertain about safety requirements I'll ask the teacher.	Avg. of Latest and Avg.
Lab Skills and Scientific Reasoning 2 Q4	LSSR2Q4	I can design and carry out experiments or online simulations based on the task at hand using a working hypothesis and selecting appropriate lab equipment or online tools and technology along with using those tools correctly. I'll maximize the amount and range of data collected within the time allowed and available materials. I can also communicate and represent the details of an experimental procedure clearly and completely using words, graphs, equations, and/or diagrams.	Avg. of Latest and Avg.
Lab Skills and Scientific Reasoning 3 Q4	LSSR3Q4	I can analyze data, and lab or online simulation results appropriately and analyze the information clearly and completely and use this to revise a hypothesis if necessary. I can make a claim about the data or results and support the claim with data, evidence, and reasoning support the correct physical model in the situation. I can compare and analyze how an online simulation might be different than a similar hands-on lab activity and discuss what benefits and drawbacks there could be with each format.	Avg. of Latest and Avg.
Lab Skills and Scientific Reasoning 4 Q4	LSSR4Q4	I can identify patterns in data and correctly represent the data mathematically and graphically. When making a graph, I can place variables correctly, label axes, and follow other graphing norms to show a possible relationship between two variables. I can explain the physical significance of a graph's slope and y-intercept when needed.	Avg. of Latest and Avg.
Lab Skills and Scientific Reasoning 5 Q4	LSSR5Q4	I can identify possible sources of uncertainty and/or error, evaluate how they affect my results, and suggest ways to minimize them. When asked, I can explain the difference between accuracy & precision. I can identify experimental variables as independent, dependent or controlled and analyze these within a given experiment or online simulation. I can correctly perform metric conversions as needed and show an understanding of metric units and sizes..	Avg. of Latest and Avg.
Lab Skills and Scientific Reasoning 6 Q4	LSSR6Q4	Student performance and participation in online feedback for assignments, such as the Interactive Online Assignment about creativity in science and possible 3-level guides	Avg. of Latest and Avg.
Project Performance 1 Q4	P1Q4	The overall quality of your design/project/lab/simulation when compared to others in class or the course as demonstrated by the standards described in the project handout (for example, a video relating a certain topic of the course to a sport of your choosing).	Avg. Highest, Latest (unique)
Project Performance 2 Q4	P2Q4	For collaborative or summative projects, the student demonstrates progress toward a finished project at checkpoints along the way as specified in the teacher instructions.	Avg. Highest, Latest (unique)
Project Performance 3 Q4	P3Q4	Collaborative or design projects will show a full understanding of the course content learned up to that point in the year, as demonstrated by the performance of the project and/or analysis of the performance verbally or in writing.	Avg. Highest, Latest (unique)
Forces 1 Q4	F1Q4	I can relate the weight (gravitational force) with the mass of an object to explain the concept of 'g', gravitational acceleration. I can identify various types of forces on objects (gravitational, tension, friction and drag, normal, applied).	Avg. Highest, Latest (unique)
Forces 2 Q4	F2Q4	I can correctly draw, label, and interpret Free Body Diagrams (FBD's) based on a situation, use FBD's to help describe the motion of an object, and identify different types of forces (applied, friction, drag, normal).	Avg. Highest, Latest (unique)
Forces 3 Q4	F3Q4	I can relate and apply Newton's Laws (1st [Law of Inertia], 2nd [Law of Acceleration] and 3rd [Law of Interaction]) to 1-D motion using mathematics, graphs, diagrams, and verbal or written descriptions in various situations.	Avg. Highest, Latest (unique)

Standard Name	Short name	Standard description	Scoring method
Energy 1 Q4	E1Q4	I can give examples of different types of energy and differentiate between forms of potential energy and kinetic energy. I can demonstrate a deep understanding of the Law of Conservation of Energy by showing an understanding of a system, including that energy can't be created or destroyed, only transferred in or out of a system (in the form of work) or transformed to a different form of energy (such as kinetic energy being converted into thermal [heat] energy). I can use diagrams such as Work-Energy bar charts to demonstrate an understanding of energy conservation, and as a way to demonstrate energy flow (in the form or work) in or out of a system.	Avg. Highest, Latest (unique)
Energy 2 Q4	E2Q4	I can perform calculations for objects involving one or more types of energy, including gravitational potential energy and kinetic energy and I can calculate the work done by a system or on a system. These calculations should demonstrate my understanding the Law of Conservation of Energy	Avg. Highest, Latest (unique)
Energy 3 Q4	E3Q4	I can compare and contrast nuclear reactions with chemical reactions and tell the difference between the main types of nuclear reactions. I can predicts the products of nuclear reactions based on the type of nuclear decay. I can relate nuclear energy to the Law of Conservation of Energy and evaluate pros and cons of how humans make use of nuclear reactions.	Avg. Highest, Latest (unique)
Waves 1 Q4	W1Q4	I can identify the different types of mechanical waves and the parts that make up each of those waves. I can use the general wave equation to relate the wavelength, frequency and speed of a mechanical wave.	Avg. Highest, Latest (unique)
Waves 2 Q4	W2Q4	I can give examples and explain wave properties such as reflection, refraction, absorption, diffraction, the Doppler effect, standing waves, and superposition. I can relate wave properties to real world situations (music and acoustics, art, engineering and design, etc.)	Avg. Highest, Latest (unique)
Waves 3 Q4	W3Q4	I can compare and contrast mechanical waves and electromagnetic (EM) waves and identify the different types of electromagnetic waves in the EM spectrum. I can give examples of how humans interact with and use various types of EM waves.	Avg. Highest, Latest (unique)
Circuits and Electricity 1 Q4	CE1Q4	I can describe what materials allow electricity to flow and compare and contrast current electricity with static electricity. I can can identify materials as conductors or insulators and relate this back to materials' atomic structure.	Avg. Highest, Latest (unique)
Circuits and Electricity 2 Q4	CE2Q4	I can identify the conditions needed to form a complete circuit, and what factors will affect the brightness of a bulb (which represents the power) of a circuit. I can predict how the brightness of a bulb will change if another element in the circuit is added or removed.	Avg. Highest, Latest (unique)
Circuits and Electricity 3 Q4	CE3Q4	I can determine and explain the relationships of current, voltage, resistance and power in simple series, parallel, and combined circuits using Ohm's Law and power calculations. I can apply rules for voltage and current to demonstrate conservation of energy and conservation of matter.	Avg. Highest, Latest (unique)