

Linear Grading – Why You Should Consider It

These descriptions represent my own thoughts and are not official ASD policy. I entered teaching with significant statistical training and have helped many teachers with their grades while teaching math and computer classes for over twenty years. Pete Tryon, SAHS Tech Coordinator

Most teachers use the traditional percentage based grading system: 90% - A, 80% - B, ... 60% - D, below 60% is an F. If students miss work, they get a 0% for the assignment. The ramifications of this are not always what the teacher expects or wants.

Example: Student A is a bright, not-very-motivated student who gets A's (95%) on his homework when he does it, but only turns in half of it. What grade should he get?

Example: Student B 'bombed' your first test, not understanding what was wanted at all, getting a 26%. She then started studying and got a 71% on the next one and a 77% on the third. What grade should she get?

Using the traditional scale, 95 averaged with 0 is 47.5% - student A would receive a 'solid' F. The average of 26, 71, and 77 is 58, resulting in: "Congratulations, I really like the way that you got to work on the last two tests – oh by the way, your grade is an F!" I have talked with teachers about these scenarios and some have told me that "well, in cases like those, I'd make an exception and round up..." Some teachers have a number of students in classes with grades between 25 and 40% where, strictly on a mathematical basis, they have no chance of passing although it is still many weeks from the end of the semester. It can be hard to motivate these students.

Some teachers wish to use a letter scale, assigning the letters A - F to all assignments. This allows an A and an F to average to a C. Others switch to a 4, 3, 2, 1, 0 scale to quantify this. The 4 (or 5) point scale works mathematically, but is hard to apply to large tests, quizzes, and projects. In some situations, there really is a difference between an 89 paper and an 81 paper and it is inappropriate to give them the same grade. Many students and parents are not used to the 4/5 point scale and it may take significant effort to explain it.

It is possible to use the same linear grading while still assigning percentage grades. This has the advantage that the grade that everyone sees is on the traditional percentage

scale and that it is also easily incorporated into Zangle. I used this method for many years, teaching geometry and algebra. Use the traditional percentages for grading assignments and simply set a bottom limit for all F's. I then set another value for 'missing'.

A – 95%
 B – 85%
 C – 75%
 D – 65%
 F – 55%
 Missing – 45%

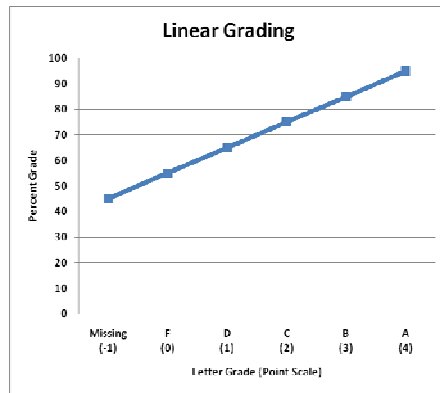


Figure 1

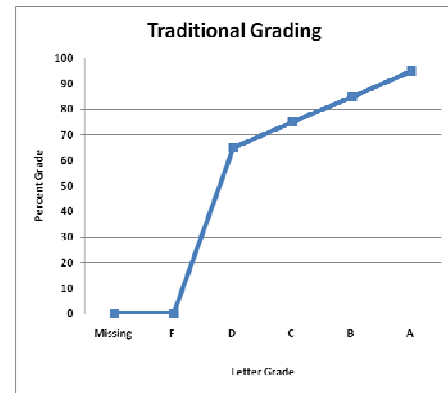


Figure 2

If you graph these out (Figure 1), they illustrate that it is linear grading, with missing work a one step penalty below Fs. An A and an F average to a middle C. An A and Missing average to 70%, a C-. Compare this with counting missing as 0%, graphed in Figure 2.

Back to the examples: Student A (missing homework) would receive a 70% homework grade (average of 45 and 95). Student B (one bad test) would receive a 67.7% for exams.

I used the Linear Scale (Missing – 45%, F – 55%) for many years in my math classes. I also ran multiple comparisons, calculating grades using both this scale and the traditional 0% scale. I found that I generally failed the same students, but with the Linear Scale the students failed with higher scores. This meant that three weeks from the end of the semester, my failing students had grades in the 50s, not in the 20s and 30s. That put me in the position of explaining to students and parents that if they wanted to turn their lives around, turn in homework, retake quizzes, study, etc., they stood a chance to raise their grade to a D. Some of them would actually do it! Note that this scale has very little effect on the grades of 'good' students.

I do not recommend this for all situations – but if you have students with very low grades, who give up early, if you find yourself wishing to 'make adjustments' or to 'round up', the linear scale may be appropriate. I would suggest that if you are interested in this scale, try it with some test calculations. If you switch mid-term, no one is going to complain! Instructions for one way to implement this in Zangle are posted. Feel free to e-mail me with comments or questions. (tryon_peter@asdk12.org)