How I Grade

(The Triage Theory of Grading)

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Note: NEW or UPDATED material is highlighted

"When the American painter, sculptor and installation artist Paul Thek (1933–88) taught art classes at Cooper Union in the late 1970s,
he wrote and then gave to his students a long, provocative and now famous list of questions and marching orders he titled 'Teaching Notes.'
…'Teaching Notes' closed with this statement, which professors (and critics) everywhere should etch onto the bottom rims of their reading glasses,
facing outward:

'Remember, I'm going to mark you, it's my great pleasure to reward real effort, it's my great pleasure to punish stupidity, laziness and insincerity.'"

—Garner, Dwight (2012), "How to Teach Art in 89 Simple Lessons", *New York Times* (30 March): C23, C28; quote on p.C23.

Here are my theories about grading. Please feel free to email me comments. I owe the basic idea here to my former teacher, Paul Vincent Spade, but he is in no way responsible for my elaboration of it.

An essay elaborating on the theory presented on this website is:

Rapaport, William J. (2011), "A Triage Theory of Grading: The Good, the Bad, and the Middling", *Teaching Philosophy* 34(4) (December): 347–372.

Abstract: This essay presents and defends a triage theory of grading: An item to be graded should get full credit if and only if it is clearly or substantially correct, minimal credit if and only if it is clearly or substantially incorrect, and partial credit if and only if it is neither of the above; no other (intermediate) grades should be given. Details on how to implement this are provided, and further issues in the philosophy of grading (reasons for and against grading, grading on a curve, and the subjectivity of grading) are discussed.

NEW

"Grading homework is teachers' never-ending homework. Compared to that, Sysyphus lucked out."

—Menand, Louis (2012), "Today's Assignment", *The New Yorker* (17 December): 25–26; quote on p. 25.

NEW

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1. **Fundamental Assumption:** Any item to be graded can best be graded on a 4-point scale:

   0 = assignment not done
   1 = assignment done, but clearly incorrect
   2 = assignment done, but only partially correct
   3 = assignment done, and clearly correct

   Presumably, 0s, 1s, and 3s are clearly identifiable; anything not clearly identifiable is a 2.

   For multiple-part items, each *part* can be graded on this scale, so, e.g., a programming project that requires a problem definition, a top-down design, documented code, and annotated output might be graded as follows:

problem definition	0 1 2 3
top-down design	0 1 2 3
documented code:	
code:	0 1 2 3
documentation:	0 1 2 3
annotated output:	
output:	0 1 2 3
annotations:	0 1 2 3

Total possible points	18

Or, e.g., a HW assignment with 10 problems could have each problem graded on the 0 1 2 3 scale, for a total of 30 points.

Or, e.g., a HW assignment one of whose problems has 2 parts: Each part could be graded on the 0 1 2 3 scale.

If the instructor wants to weight some part more than another, multiply by some factor; e.g., in the programming project example above, if the instructor feels that documented code is far more important than anything else, the instructor might use this:

problem definition	0 1 2 3
top-down design	0 1 2 3
documented code:	
code:	0 5 10 15
documentation:	0 5 10 15
annotated output:	
output:	0 1 2 3
annotations:	0 1 2 3
Total possible points	42

And so on. The main principle is to grade in quantum units.

The main advantage, besides ease of grading, is that the instructor doesn't have to argue with students over an extra point for a missed semicolon. (In general, a handwritten program whose only fault is a missed semicolon probably deserves full credit, unless the instructor is a real stickler for detail.)

It also tells the student more than some arbitrary number of points does: A 3 says "you got it right (for all practical purposes)", a 2 says "almost, but not quite", a 1 says "nope", a 0 says "you didn't even try"; various weightings indicate relative importance.

Other variations: The instructor can always add a "fudge factor" to express an overall impression of a student's work. And so on.

2. **Letter Grades:**
So much for points. How do I convert this to letter grades? Here's my principle, which is independent of the above point-grading scheme. Since

0 = assignment not done
1 = assignment done, but clearly incorrect
2 = assignment done, but only partially correct
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I take:

0 = F

1 = D
2 = C
3 = A

since C is supposed to be "average".

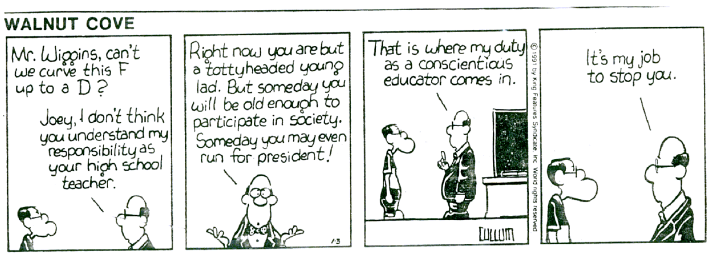
What about B, you ask? Well, if enough assignments during a semester are given using this letter-grade scheme, Bs will appear when things get averaged. They will also appear, as will + and - grades, if the total number of points for a given assignment is large enough, using the following mapping:

General principle:

3 pts	correct	A
2 pts	partial credit	C (average)
1 pt	incorrect	D
0 pts	work not done	F

Then:

Each assignment is worth a multiple of 3 points, and this is mapped into letter grades as follows, where n = the multiple of 3 and T = the total number of points (so: $n = T/3$). Note that $3n$ maps to A, $2n$ maps to C, n maps to D, 0 maps to F; others are interpolated in an evenly-spaced fashion (see tables below).



Undergraduate Grading Scheme:

factor	grade	range	T = 100%	width
$3n$	A	$(17T/18 + 1) - T$	95 - 100	$T/18$
$17n/6$	A-	$(8T/9 + 1) - 17T/18$	90 - 94	$T/18$
$8n/3$	B+	$(5T/6 + 1) - 8T/9$	84 - 89	$T/18$
$5n/2$	B	$(7T/9 + 1) - 5T/6$	79 - 83	$T/18$
$7n/3$	B-	$(13T/18 + 1) - 7T/9$	73 - 78	$T/18$
$13n/6$	C+	$(2T/3 + 1) - 13T/18$	68 - 72	$T/18$
$2n$	C	$(5T/9 + 1) - 2T/3$	57 - 67	$T/9$

$5n/3$	C-	$(4T/9 + 1) - 5T/9$	45 - 56	$T/9$
$4n/3$	D+	$(T/3 + 1) - 4T/9$	34 - 44	$T/9$
n	D	$(T/6 + 1) - T/3$	18 - 33	$T/6$
0	F	$0 - T/6$	0 - 17	$(T/6 + 1)$

For example, to take the 42-point programming project above, I would use the following letter-grade equivalents ($T = 42$):

A	41 - 42
A-	38 - 40
B+	36 - 37
B	34 - 35
B-	31 - 33
C+	29 - 30
C	24 - 28
C-	20 - 23
D+	15 - 19
D	8 - 14
F	0 - 7

Graduate Grading Scheme:

Where $n = T/3$:

factor	**grade**	**range**	***T*=100%**	**width**
$3n$	A	$(17T/18 + 1) - T$	95 - 100	$T/18$
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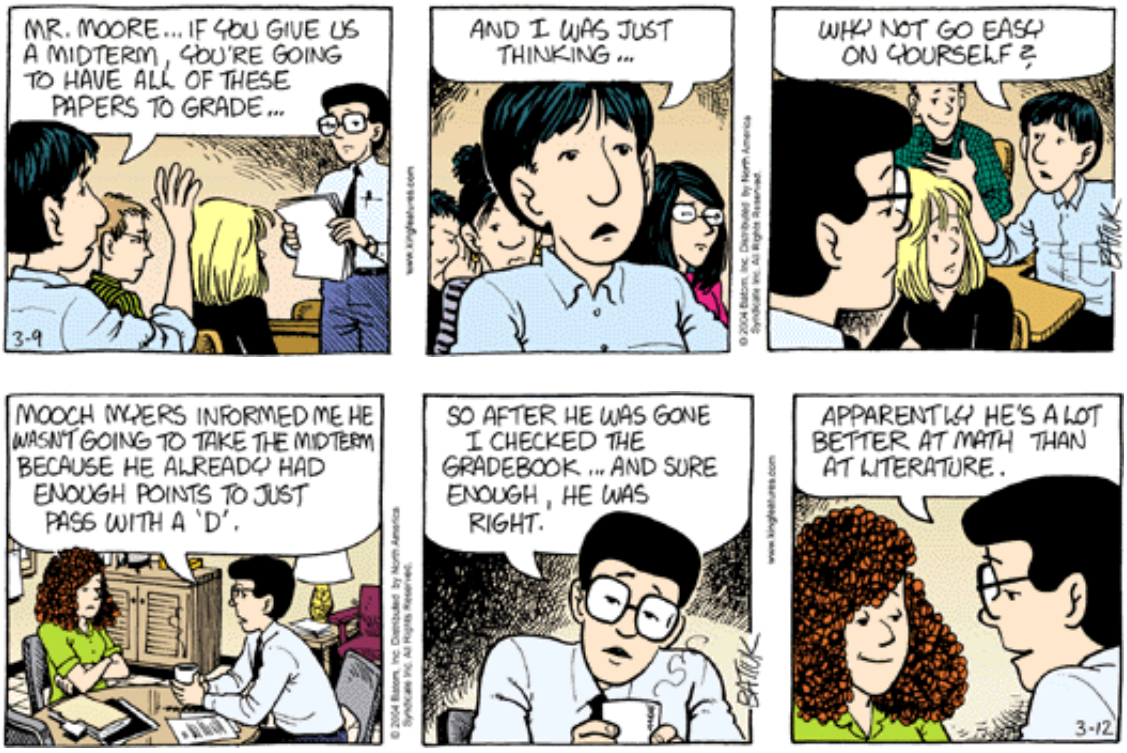
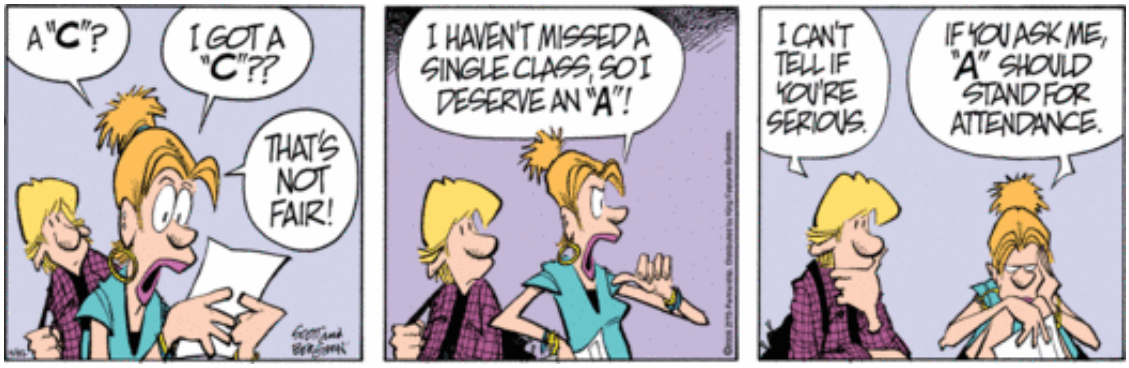


Miscellaneous:

For a humorous essay on the "joys" of grading, see Clio 2003, 2004.



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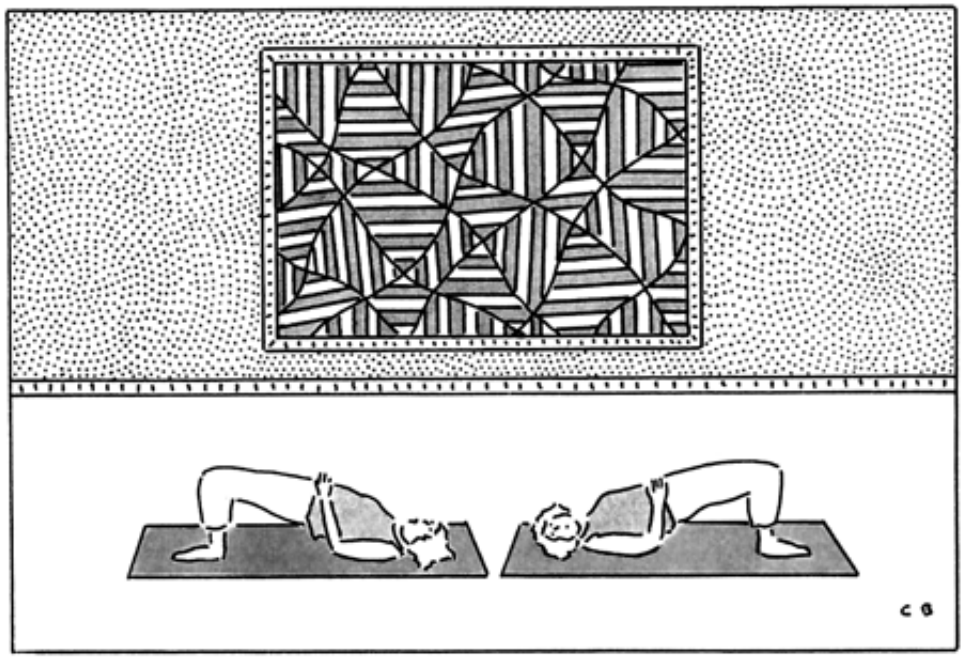

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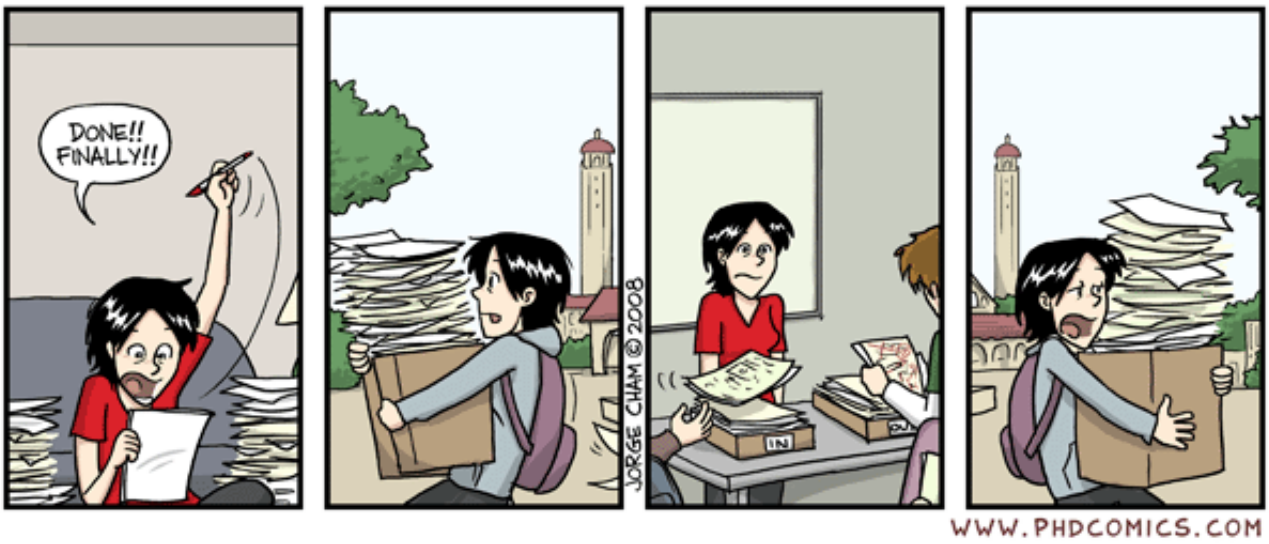

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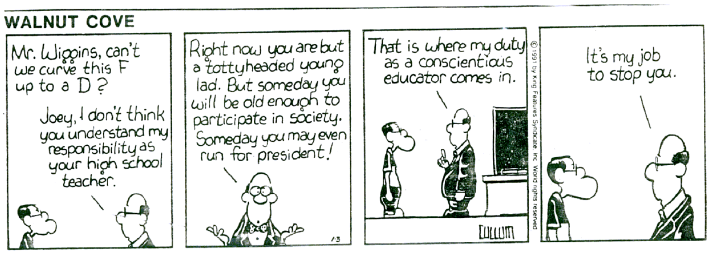

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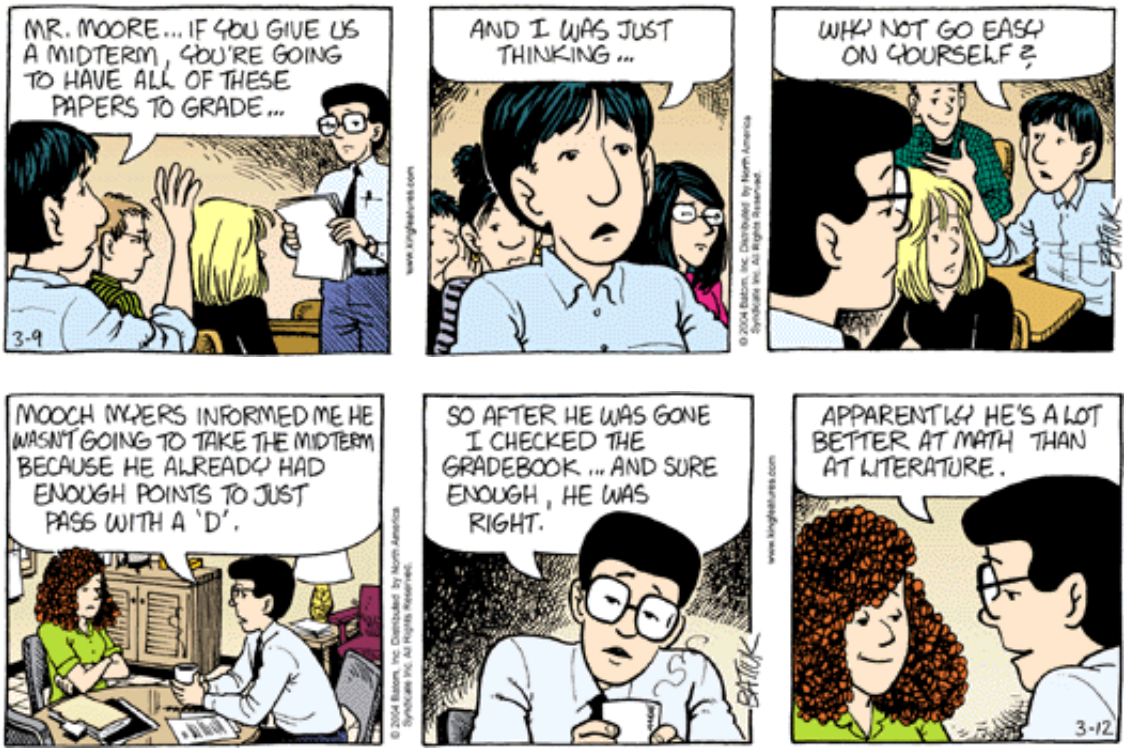

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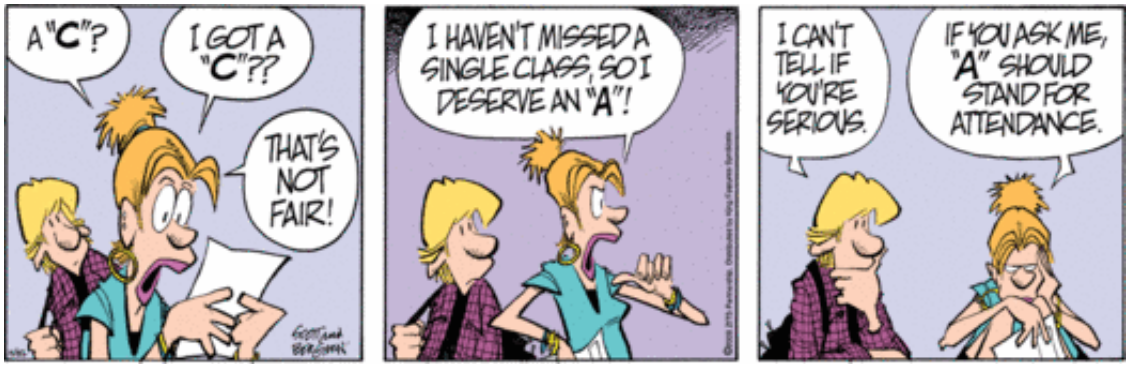

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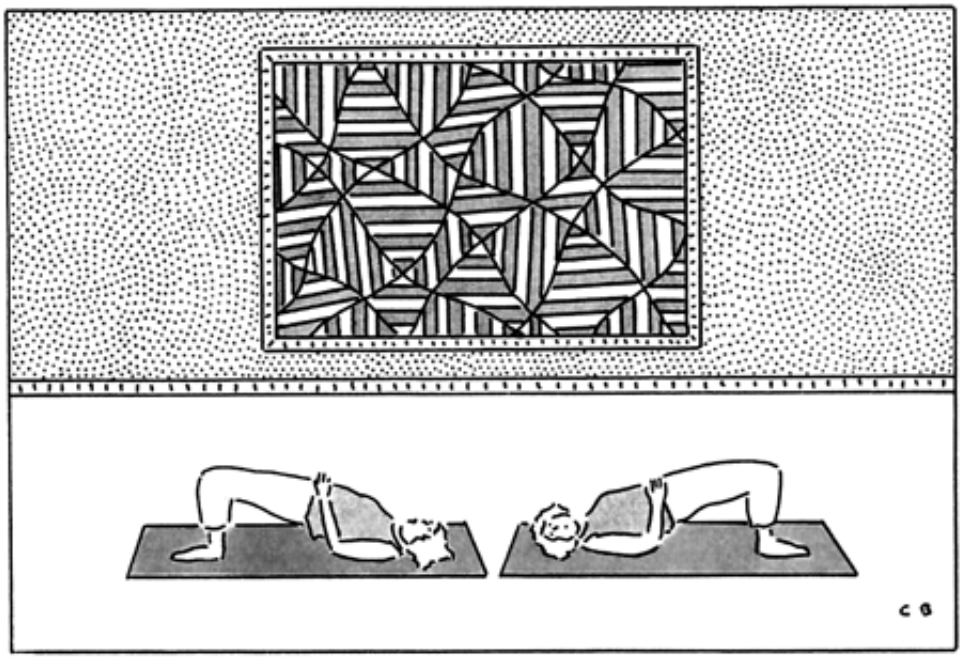

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