

Effective Grading Practices in Biology

August 26, 2014

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Seminar BINGO!

To play, simply print out this bingo sheet and attend a departmental seminar.

Mark over each square that occurs throughout the course of the lecture.

The first one to form a straight line (or all four corners) must yell out



SEMINAR BINGO

Speaker bashes previous work	Repeated use of "um..."	Speaker sucks up to host professor	Host Professor falls asleep	Speaker wastes 5 minutes explaining outline
Laptop malfunction	Work ties in to Cancer/HIV or War on Terror	"...et al."	You're the only one in your lab that bothered to show up	Blatant typo
Entire slide filled with equations	"The data <i>clearly</i> shows..."	FREE Speaker runs out of time	Use of Powerpoint template with blue background	References Advisor (past or present)
There's a Grad Student wearing same clothes as yesterday	Bitter Post-doc asks question	"That's an interesting question"	"Beyond the scope of this work"	Master's student bobs head fighting sleep
Speaker forgets to thank collaborators	Cell phone goes off	You've no idea what's going on	"Future work will..."	Results conveniently show improvement

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WWW.PHDCOMICS.COM

Piled Higher and Deeper
by Jorge Cham

www.phdcomics.com

title: "Seminar Bingo" - originally published 4/9/2007

The Plan:

- The basics (why, types of grading)
 - Planned tangent #1: How grades are assigned.
- Prep and planning (what to do before the assignment)
- Logistics (as you take in the assignment)
- “Be...” (things to keep in mind as you mark)
- Mechanics (consistency and efficiency)
 - Planned tangent #2: What to do if...
- The aftermath (more than escape routes and ninja moves)

Importance of grading

roflposters.com



WHY???

- To evaluate student work and quantitatively communicate current performance:
 - to the student
 - to others (med/vet/dent/pharm school, scholarships and maybe future employers)
- Acts as positive or negative reinforcement of current efforts (could motivate student).
- Feedback to student and instructor.
- Acts to delineate a change in topic.

Types of grading

- Pass/fail
- Holistic- group papers by quality
- Absolute- compare papers to marking guide
- Things to consider:
 - Standardization
 - Consistency

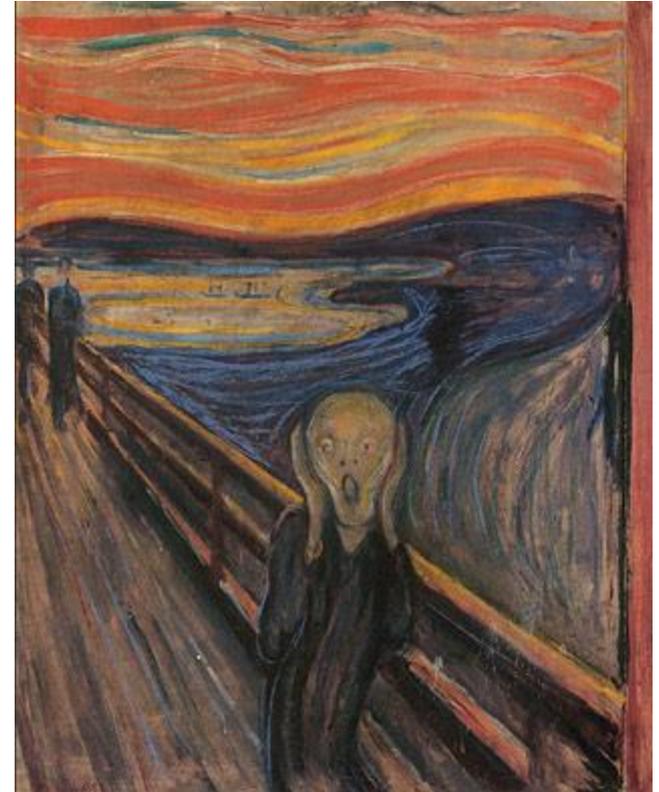


“Tron guy”
Jay Maynard

Planned Tangent #1:

How grades are assigned

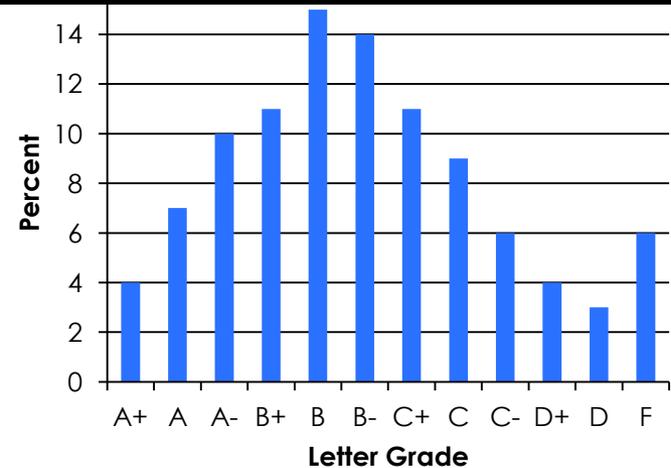
- Student anxieties and misconceptions colour their view of your marking abilities.
- Smart labmate / mean TA syndrome.



The Scream
Edvard Munch ,1893

Grade assignment: (Some) Large Classes

- Final score /100
- Registrar's suggested grade distribution
- Natural breaks



Distribution of Grades in Undergraduate Courses (shown in percentages)

Letter Grade	1st Year Courses	2nd Year Courses	3rd Year Courses	4th Year Courses
A+	4	5	6	8
A	7	7	9	12
A-	10	12	14	17
B+	11	15	16	16
B	15	16	18	16
B-	14	14	14	12
C+	11	11	9	7
C	9	8	6	5
C-	6	5	4	3
D+	4	3	2	2
D	3	2	1	1
F	6	2	1	1
Mean	2.62	2.83	3.00	3.11
Median	B-	B	B	B+

91.25	A+	4.0
91.06	A+	4.0
90.53	A+	4.0
90.45	A+	4.0
89.99	A+	4.0
89.89	A+	4.0
89.76	A+	4.0
89.37	A+	4.0
89.29	A+	4.0
<u>88.89</u>	<u>A+</u>	<u>4.0</u>
87.69	A	4.0
87.20	A	4.0
87.10	A	4.0
86.94	A	4.0
86.83	A	4.0

Grade assignment

- Absolute score
 - Grade ranges set beforehand
-

A+	87-100%
A	83-86.9%
A-	80-82.9%
B+	75-79.9%
B	70-74.9%
B-	67-69.9%
C+	65-66.9%
C	60-64.9%
C-	57-59.9%
D+	53-56.9%
D	50-52.9%
F	0-49.9%



Disclaimer: Check with the prof before explaining grade assigning to students!

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- The aftermath (more than escape routes and ninja moves)

Before the assignment is given:

- ◎ Understand the assignment
 - > Guidelines, late policies, due date etc.
 - > Read and understand the guidelines!
This is the time to voice your opinion if you disagree with anything.
- ◎ Explain the assignment to students
 - > Expectations
- ◎ Stick to your explanation
 - ◎ Consistency

Logistics: As you take in the assignment

1. Sign in sheets. Online submission?
2. Secure holding location
3. Game plan for late submissions.



5/26/2010
PhD comics

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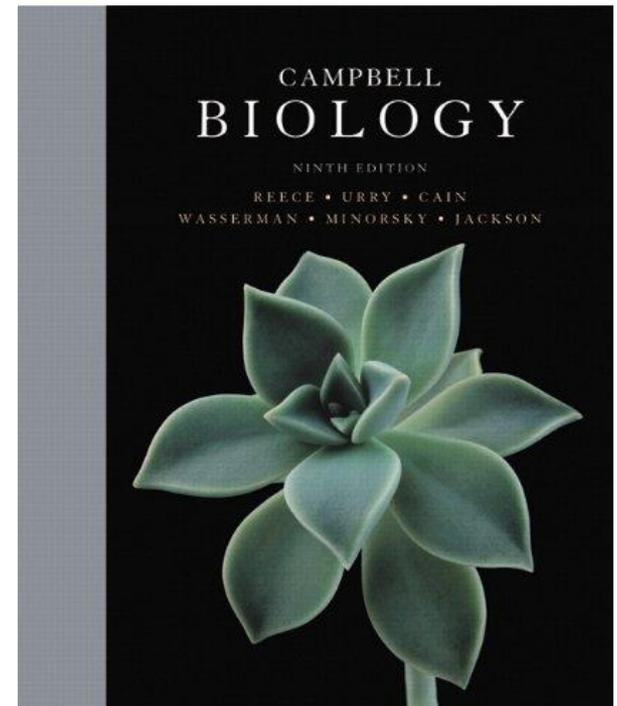
When you go to mark, you need to:

Be knowledgeable

- Understand the topic beyond the level of your students
- Read source material
- Acceptable format



Wikipedia



When you go to mark, you need to:

Be objective

When you go to mark, you need to:

Be fair

- Ask: “Am I being fair to all students?”
- Grade reflects performance NOT ability
- Realistic expectations
- Be flexible
- Be reasonable
- Be consistent
- Don't deviate from guidelines

When you go to mark, you need to:

Be respectful and professional

– To students:

- Provide constructive comments

– To fellow instructors:

- Don't undermine

– To the course:

- Don't criticize



Willy Wonka and the
Chocolate factory
(1971)

When you go to mark, you need to:

Be consistent

- Between students
- Between sections
- Maintain same expectations throughout
- Keep detailed notes
- Follow a scheme

Question: Describe what happens to a freshwater algae cell when it is placed in ocean water. A complete answer will define the terms used. /6

Student answer: The seawater is hypertonic. Hypertonic means that the environment has a salt concentration that is higher than the salt concentration within the cell. In osmosis the water moves from a high concentration of water to the low concentration of water.

Question: Describe what happens to a freshwater algae cell when it is placed in ocean water. A complete answer will define the terms used. /6

Marking Guide: Define osmosis (2) and hypertonic (2)
A complete answer will include where the water moves (1) and what happens to the cell after it moves (it will become plasmolyzed or shrunken) (1).

Student answer:

The seawater is hypertonic. Hypertonic means that the environment has a salt concentration that is higher than the salt concentration within the cell. In osmosis the water moves from a high concentration of water to the low concentration of water.

Record extra details on your marking guide

- ◎ Answers that get part marks, other acceptable answers etc.

Why?

- ◎ It makes it easier to explain to students
- ◎ Courtesy to others (exam marking especially)
- ◎ Solid record
- ◎ Saves time

Question: Describe what happens to a freshwater algae cell when it is placed in ocean water. A complete answer will define the terms used. /6

Marking Guide: Define osmosis (2) Define hypertonic (2)

What will happen to the cell? A complete answer will include where the water moves (1) and what happens to the cell after it moves (it will become plasmolyzed or shrunken) (1).

Student answer: **Osmosis** is the movement of solvent molecules through a selectively permeable membrane into a region of higher solute concentration, aiming to equalize the solute concentrations on the two sides. [1][2][3] A hypertonic solution is a solution having a greater effective osmole concentration than the cytosol. The alga cells will have plasmolysis happen to them because their water will leave the cells and go into the seawater so the cells will shrink inside but their cell walls will not.

Planned Tangent #2:

Recognizing and dealing with plagiarism

- ◎ Font changes
- ◎ Hyperlinks
- ◎ Unusual footnoting
- ◎ Dramatic changes in eloquence
- ◎ Follows 'old' instructions
- ◎ Inconsistent results

Osmosis is the movement of [solvent](#) molecules through a selectively [permeable](#) membrane into a region of higher [solute](#) concentration, aiming to equalize the solute concentrations on the two sides. [\[1\]\[2\]\[3\]](#) A hypertonic solution is a solution having a greater effective osmole concentration than the [cytosol](#). The alga cells will have plasmolysis happen to them because there water will leave the cells and go into the seawater so the sells will shrink inside but there cell walls will not.

Dealing with Plagiarism

- ◎ Find their source
- ◎ Report it—consult the prof or course coordinator

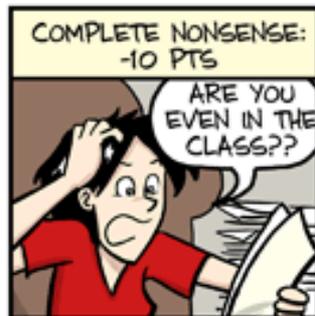
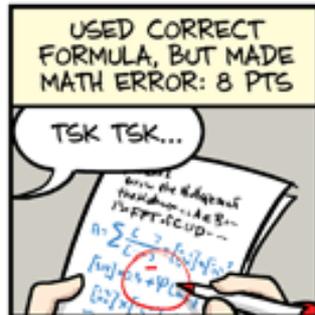
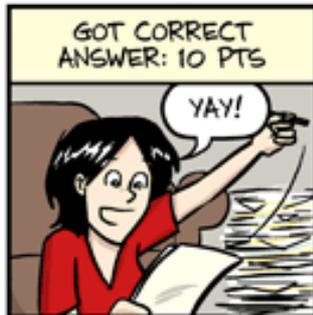
The process:

- ◎ Documentation
- ◎ Meet with student
- ◎ (If it will go on) File is given to Dean's office
- ◎ Student carries on as normal



GRADING RUBRIC

PROBLEM 1 (TOTAL POINTS: 10)



JORGE CHAM © 2010



Assigning style points

Assign style marks for this paragraph (/10)

The **little** brown bat is found throughout much of North America. The little brown bat lives in three different roosting sites: day roosts, night roost and hibernation roosts. Little brown bats are insectivores. The little brown bat is not territorial but does return to the same feeding sites.

Assigning style points

Style and Format (10)

- readability, clarity, concise, complete sentences, grammar, spelling, proper use of scientific terminology

clarity (4)

Excellent-4	Good-3	Adequate-2	Limited-1	Poor-0
Writing is excellent, clear, well-organized, well-composed, follows a logical sequence; obvious that care has been taken to produce a well-flowing paper. Communicates the information convincingly through the entire paper. No mistakes.	Writing is very good; has a few clarity issues but basically is well-organized and flows well. Most of the paper addresses the specifics. No major problems, communicates effectively.	Writing is ok, not always clear and there are some organizational or flow issues, whole paper is pretty general. Doesn't use paragraphs. Occasionally unclear.	Writing is weak and organization is inconsistent, information presented is very general and limited. Frequently unclear.	Terrible writing and most of the paper has no flow or clarity. Organization is haphazard and ineffective.

- uses language conventions, *i.e.*, complete sentences, grammar, punctuation, spelling (4)

Excellent-4	Very good-3	Adequate to good-2	Limited-1	Poor-0
Spelling, grammar, capitalization and punctuation are accurate and enhances the impact of the content, no errors.	Spelling, grammar, capitalization and punctuation has a couple of errors but it doesn't interfere with the writer's intended meaning.	Spelling, grammar, capitalization and punctuation are occasionally inconsistent and interfere with the writer's intended meaning.	Spelling, grammar, capitalization and punctuation errors are numerous and interfere with the writer's intended meaning.	Spelling, grammar, punctuation, capitalization errors are very numerous and interfere repeatedly with the writer's intended meaning. Difficult to understand.

2 points discretionary marks.

Assigning style points

Assign style marks for this paragraph (/10)

The little brown bat is found throughout much of North America. The little brown bat lives in three different roosting sites: day roosts, night roost and hibernation roosts. Little brown bats are insectivores. The little brown bat is not territorial but does return to the same feeding sites.

Assigning style points

Assign style marks for this paragraph (/10)

The little brown bat is found throughout much of North America (Wikipedia 2014). The little brown bat lives in three different roosting sites: day roosts, night roost and hibernation roosts. Little brown bats are insectivores. The little brown bat is not territorial but does return to the same feeding sites.

Strategies to be **consistent** and **efficient**

- Mark one question/section at a time
- Read three, mark three (in pencil) and put them at the bottom of the stack (to be remarked)
- Bottom of stack
- Group marking (sample marking in groups)
- Make notes on rubric!
- Plan a discussion

Strategies to be **consistent** and **efficient**

- Write comments.
- Take breaks.
- **Give yourself enough time.**
- Be honest with yourself.



Constructive feedback:

- Don't edit
- Don't edit
- Don't edit
- Be positive sometimes
- Answer the questions:
 - Where did they go wrong?
 - How can they improve?
- Comment on where they lost marks

When you go to mark, you need to:

Be constructive when writing comments

- Don't comment on everything
- Give group summaries (time permitting)
- Comment on 'the paper' not 'the student'



Why you should write comments

- Writing comments benefits YOU
 - Students see where they lost marks
 - You see where they lost marks
 - It is easier for someone else to see what you were thinking

Be diligent in your administration

- Check your math
- Keep records and back-ups
- Return assignments in timely manner
- Return assignments individually and confidentially
- No grades on front page
- Show distribution or give ranges

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Thanks!