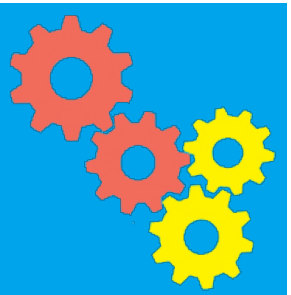
Assessment: More Than a Final Exam

Bonita Bray, Andrea Han, Marie Krbavac

Think – Pair - Share



Why do we assess students?

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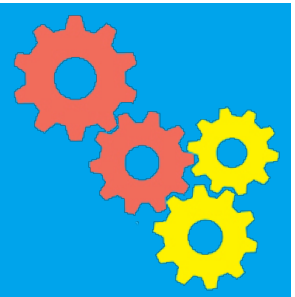
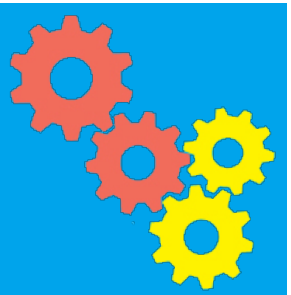
Why do we assess?



- Determine whether (and what) students are learning
- Rate or grade students
- Rate instructor or course
- Assist students in structuring their studying
- Motivate students to keep up with work
- Promote and reinforce learning

Reflect - Share



Why do YOU assess your students?

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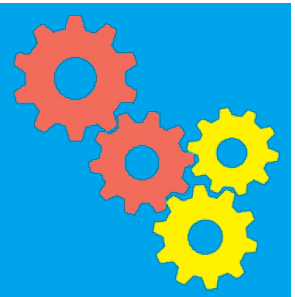
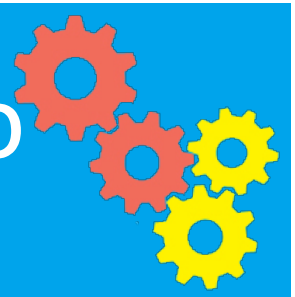
Reflection

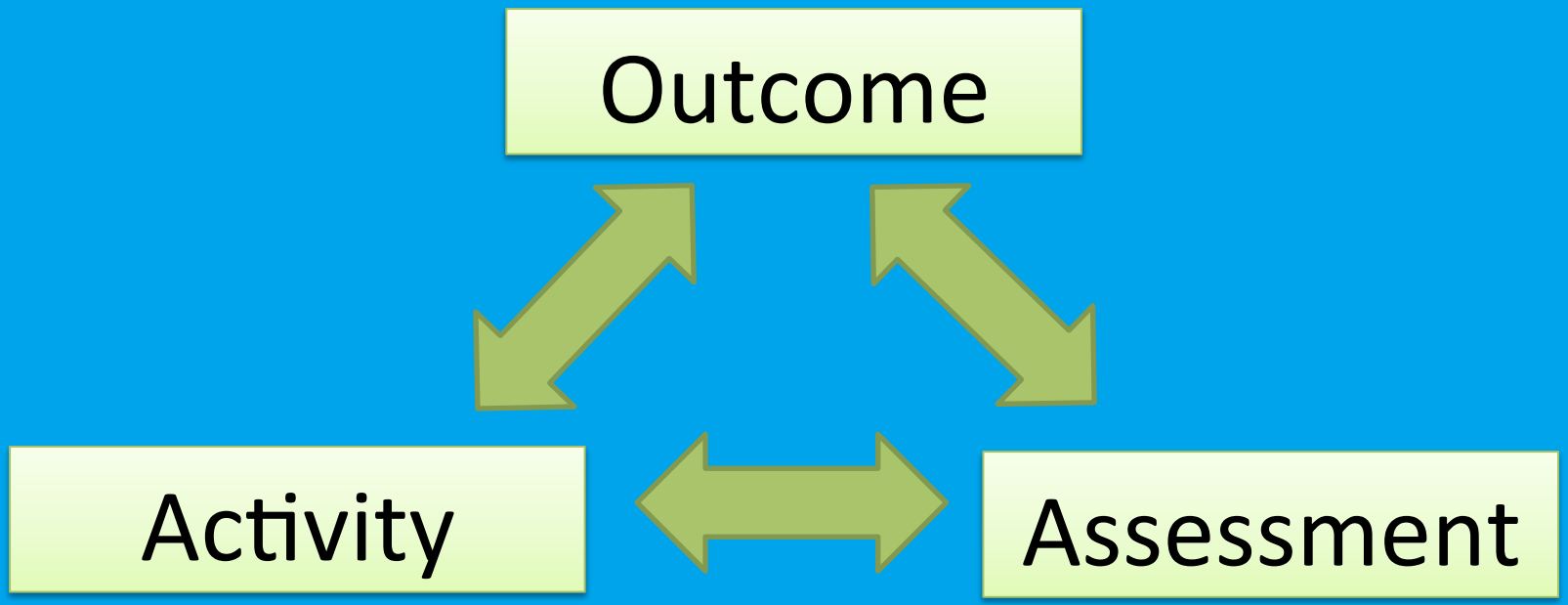


How do you currently assess your students?

How effective do you think your current assessments are? Why?

Using Course Outcomes/Goals to Guide Assessment Choices





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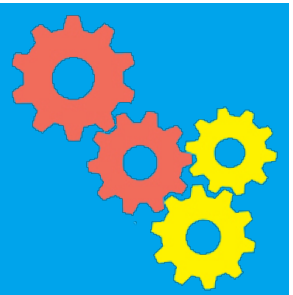
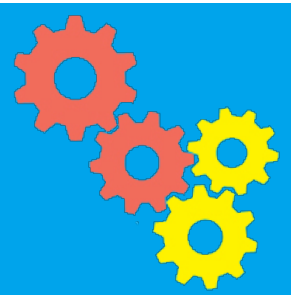
Outcomes should be:



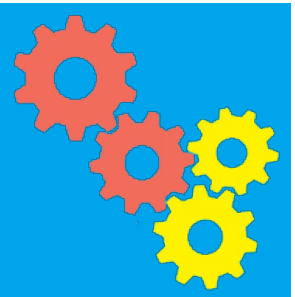
- S
- M
- A
- R
- T

Outcomes should be:



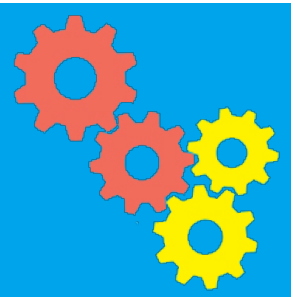
- Specific
- Measurable
- Achievable
- Realistic
- Timely

Is this a good outcome?



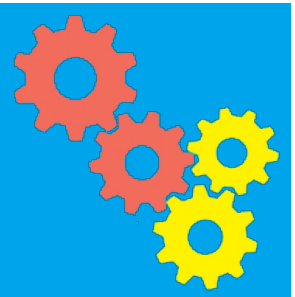
1. Know how to drive a car
2. Understand the basic principles of mathematics
3. Summarize the advantages and disadvantages of modes of transportation

Activity



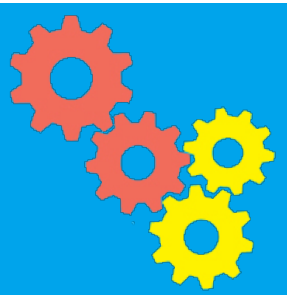
1. Write down one outcome from your course
2. Write down the assessment(s) for that outcome
3. In your tables, discuss your outcomes and assessments
4. On the flip chart paper, write down one of the outcomes and the assessment(s)

Feedback

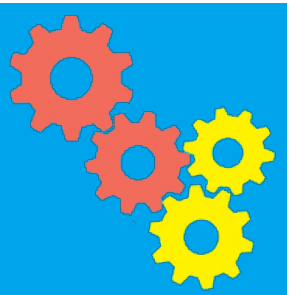


In your groups, walk around the room and give feedback/suggestions on the outcomes and assessments

Work on your course



Write down your course outcomes and assessments



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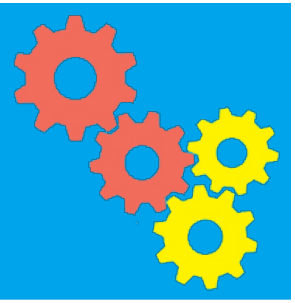
Promising Practices

- Assess prior knowledge
  - Concept Inventories
  - Concept Maps
  - Reading Quizzes
- Seek feedback
  - Classroom Assessment Techniques:
    - Muddiest Point
    - One Minute Paper
    - Critical Incident Questionnaire
    - Student Generated Questions
- Provide feedback
  - Peer Review
  - Rubrics
  - Connect Quizzes
  - Two-stage exams

Concept Inventories

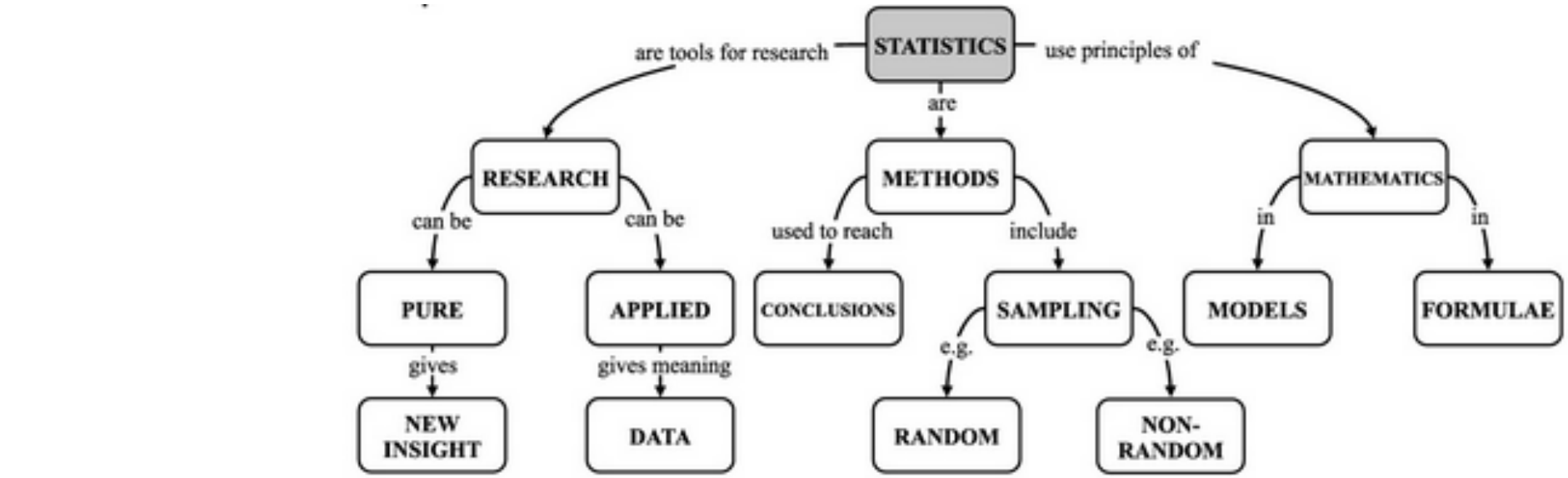


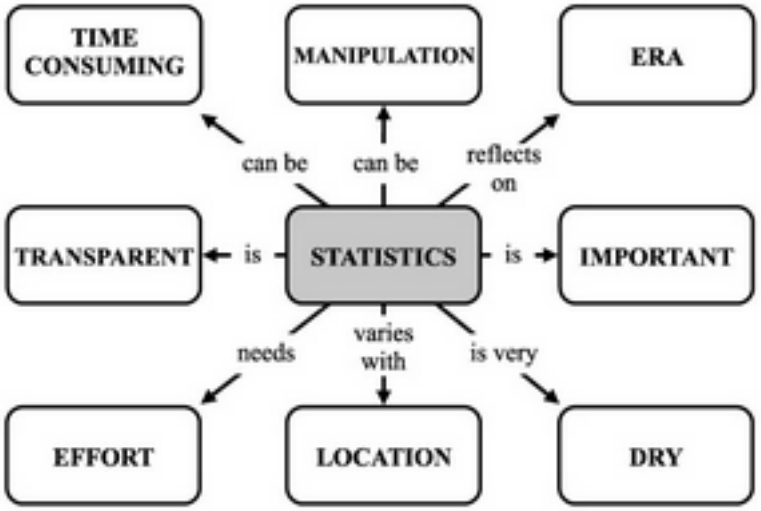
1. Two ice cubes are floating in water. After the ice melts, will the water level be:
   a. Higher?
   b. Lower?
   c. The same?

2. What is the reason for your answer?
   a. The weight of water displaced is equal to the weight of the ice.
   b. Water is denser in its solid form (ice).
   c. Water molecules displace more volume than ice molecules.
   d. The water from the ice melting changes the water level.
   e. When ice melts, its molecules expand.

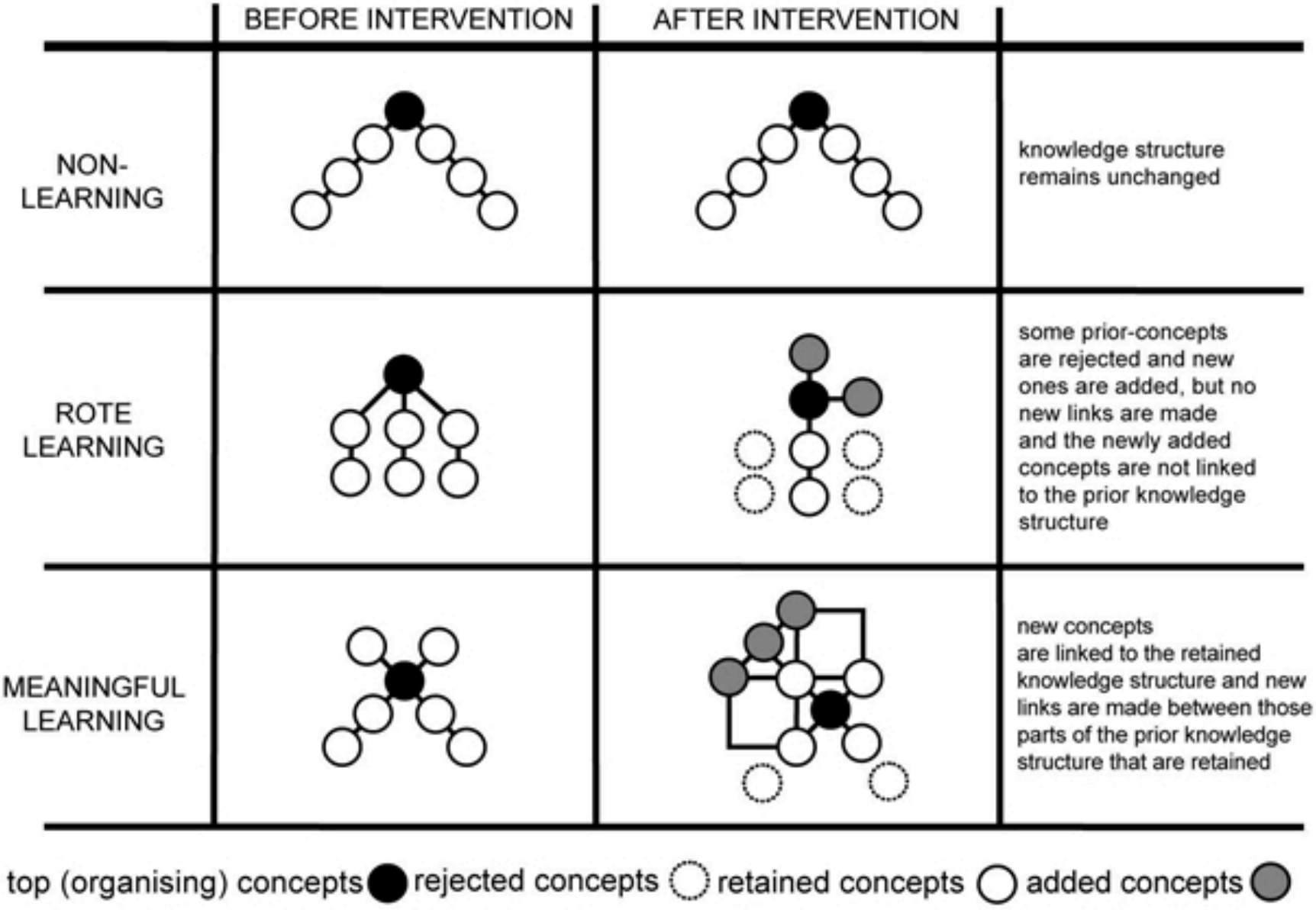
Chemistry Concept Inventory, (Mulford, 1996)

Concept Maps





David Hay, Ian Kinchin, (2008) "Using concept mapping to measure learning quality", Education + Training, Vol. 50 Iss: 2, pp.167 - 182



Hay, D., Kinchin, I., & Lygo-Baker, S. (2008). Making learning visible: the role of concept mapping in higher education. Studies In Higher Education, 33(3), 295-311. doi:10.1080/03075070802049251

Reading Quizzes

Quiz questions were designed to be easy for students who did the reading, but difficult for students that did not.

Definition questions prepare students to use terms in class discussion.

Antagonistic muscle groups:

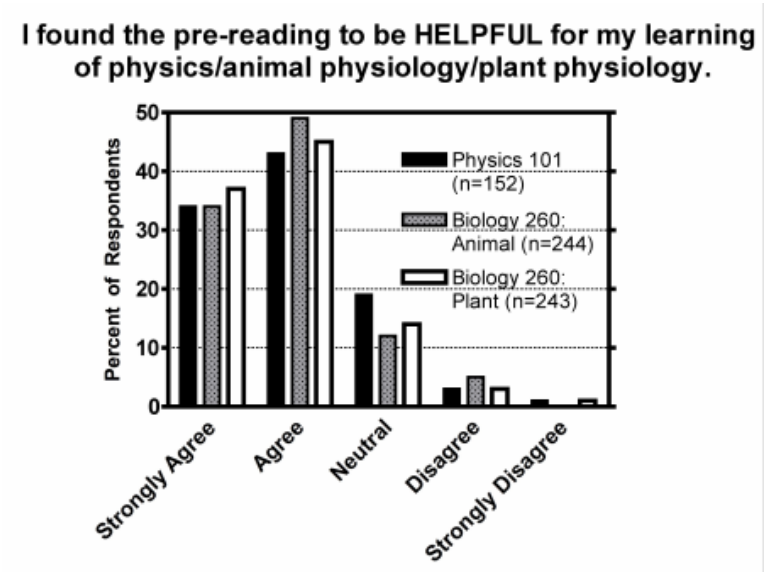
a. are pairs of muscles that work together to move a bone back and forth.
b. is made up of a flexor and an extensor
c. have coordinated movement due to motor neurons
d. all of the above

Referencing specific figures encourages students to actually open the book.

Look at figure 46.20. When a muscle fiber shortens (contracts) the:

a. thick filaments shorten.
b. Z lines shorten.
c. thin filaments shorten.
d. interaction of actin and myosin propels the thick and thin filaments past each other.

"I know that if I complete the pre-reading I will better understand what is going on in the lecture as well as I can figure out where I need to pay the most attention and potentially ask questions."



http://www.cwsei.ubc.ca/Files/EOY/EOY2013/Posters/Banet-Heiner_Pre-Reading_CWSEI-EOY2013.

Classroom Assessment Techniques

What was the 'muddiest point' for you today?

One-Minute Paper

1. **What is the most important thing you learned today?**
2. **What question remains uppermost in your mind?**

Critical Incident Questionnaire

1. **At what moment this week were you most engaged as a learner?**
2. **At what moment this week were you most distanced as a learner?**
3. **What action or contribution taken this week by anyone in the course did you find most affirming or helpful?**
4. **What action or contribution taken this week by anyone in the course did you find most puzzling or confusing?**
5. **What surprised you most about the course this week?**

http://www.crlt.umich.edu/sites/default/files/resource_files/ClassroomAssessmentTechniquesHopkins.pdf

Student Generated Questions

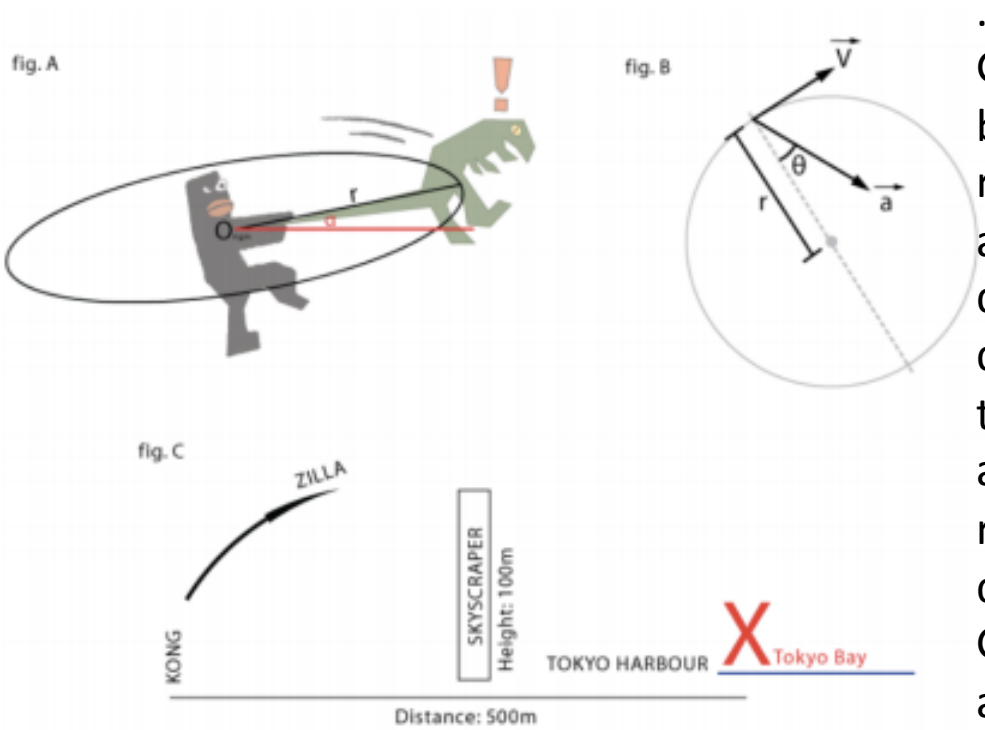


FIG. 2. Diagram accompanying Godzilla question.

… At this instant, Kong releases his grip on Godzilla's tail, attempting to hurl him into the bay, 500m away, denoted on figure 3 by a big red X. However, exactly halfway between Kong and the bay is the last remaining sky- scraper in downtown Tokyo (the monster brawl having destroyed the rest). The skyscraper is 100m tall.

a = 60 m/s2

r = 70 m

α = 45 degrees θ = 20 degrees

Given the above values of a, r, α and θ, and assuming that the height of Kong is negligible when Godzilla is launched (i.e. assume Godzilla is launched from ground level) what happens to Godzilla?

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Bates, S. P., Galloway, R. K., Riise, J. and Homer, D. (2014). Assessing the quality of a student-generated question repository. Phys. Rev. ST Phys. Educ. Res 10(2), 020105. DOI: 10.1103/PhysRevSTPER.10.020105

Peer Review

Best part of peer feedback:

"Reviewing other students' work and observing what they did well, and trying to incorporate that structure into my own work. i.e. seeing a strong, concise thesis statement and rewriting my own to be stronger and more concise in its own way."

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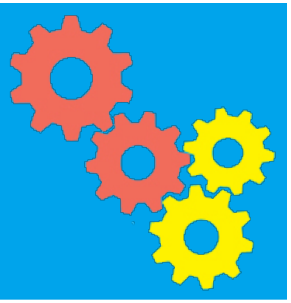
Nelson, L. (2003). Improving student peer feedback. College Teaching. 51 (1). http://www.jstor.org/stable/27559125?seq=4

Rubrics

http://www.aacu.org/value/rubrics/



CATEGORY	4	3	2	1
Introduction (Organization)	The introduction is inviting, states the main topic and previews the structure of th	The introduction clearly states the main topic and previ	The introduction states the	Th
	ation, so the paper is exceptionally easy to read.	capitalization or punctuation, but the paper is still easy to read.	makes a few errors in capitalization and/or punctuation that catch the reader's attention and interrupt the flow.	...mbling. Writer make several erro in capitalizati and/or punctuatic that catch reader's attention greatly interrupt flow.
Grammar & Spelling (Conventions)	Writer makes no errors in grammar or spelling that	Writer makes 1-2 errors in grammar or spelling that	Writer makes 3-4 errors in grammar or spelling that	Writer r more tl errors in grammar or

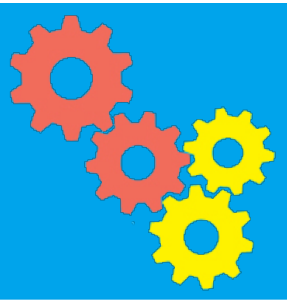
WRITING STRUCTURE - Thesis statement - States the main idea or claim o

- ❑ A = Clear thesis statement (2 pts.)
- ❑ B = Thesis statement lacks clarity (1 pt.)
- ❑ C = Thesis statement is missing (0 pts.)

In the explanation box below, please answer the following:
What is the thesis? In your own words, summarize the thesis statement h

Thesis statement *States the main idea or claim of the argument* Mark: _____/10	10 9 8 7 6 5 Clear thesis statement Thesis statement lack clarity	
Development statement *Presents main reasons that will be developed to support the argument* Mark: _____/10	10 9 8 7 6 5 4 Clear development statement Development statement lacks clarity	
Organization of ideas *Same order as stated in thesis & development* Mark: _____/10	10 9 8 7 6 5 4 Ideas are presented in the same order as stated in thesis & development Ideas are generally presented in the same order as stated in the thesis & development	
Paragraphs *Consist of one main idea with supporting evidence and examples* Mark: _____/10	10 9 8 7 6 5 4 The writing is organized into paragraphs 50% of the writing is organized into paragraphs	
Sentences Mark: _____/10	10 9 8 7 6 5 4 3 The sentences are clear and are grammatically correct. The sen	

Connect Quizzes



Create Question

- Calculated Formula
- Calculated Numeric
- Either/Or
- Essay
- File Response
- Fill in Multiple Blanks
- Fill in the Blank
- Hot Spot
- Jumbled Sentence
- Matching
- Multiple Answer
- Multiple Choice
- Opinion Scale/Likert
- Ordering
- Quiz Bowl
- Short Answer
- True/False

4. Feedback

Enter feedback that will display in response to a correct answer and an incorrect answer. If partial credit is allowed, answers that are partially correct will receive the feedback for an incorrect answer.

Correct Response Feedback

Paragraph | Arial | 3 (12pt) | Mashups | HTML | CSS

Path: p Words:0

Incorrect Response Feedback

Paragraph | Arial | 3 (12pt) | Mashups | HTML | CSS

Path: p Words:0

[redacted]

Question 1

10 out of 10 points

Dark matter is unknown matter that may constitute up to 75 percent of the matter of the universe.

Selected Answer: False

Response Feedback: Correct. While this won't be covered in class, you need to know the actual number cited in your text for worksheets and exams. Be sure to review section 3.2 (starting on page 170) for the exact information.

Question 2

12.5 out of 25 points

Match the correct satellite with the correct planet.

Question	Selected Match
Mars	a. Mimas
Saturn	b. Phobos
Earth	c. Luna
Jupiter	d. Ganymede

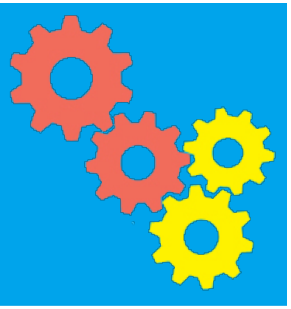
Response Feedback: This information is covered in Figure 7 (p. 192) of chapter 3. Please review and memorize all planets and their satellites.

[redacted]

Two Stage Exams

"I feel finding out the answers immediately after the quiz helps clarify where I went wrong instead of letting me think my answer was right over the weekend. It also works the same for right answers."

Reflection



Which of these practices might be useful in your course?

- Assess prior knowledge
  - Concept Inventories
  - Concept Maps
  - Reading Quizzes
- Seek feedback
  - Classroom Assessment Techniques:
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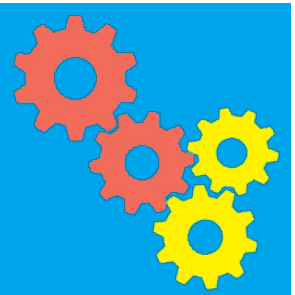
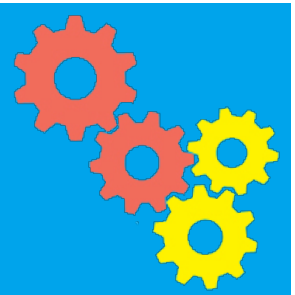


Reflection

Look at your original list and, specifically, areas you thought might not be effective.

How could you apply concepts from this workshop to improve these areas?

Resources



- CTLT – offers consultation on course design (including assessment)
- Library – helping develop research