

Brain Training

- Mondays at 3:00pm, SW103
- Thursdays at 6:00pm, Zoom
- February 10 & 13; April 14 & 17: Tools of the Brain
- February 17 & 20; April 21 & 24: Effective Studying
- February 24 & 27; April 28 & May 1: Beat Procrastination
- March 3 & 6; May 5 & 8: Conquer Exams

Conquer Exams

Walk Out the Door with More Points

Conquer Exams

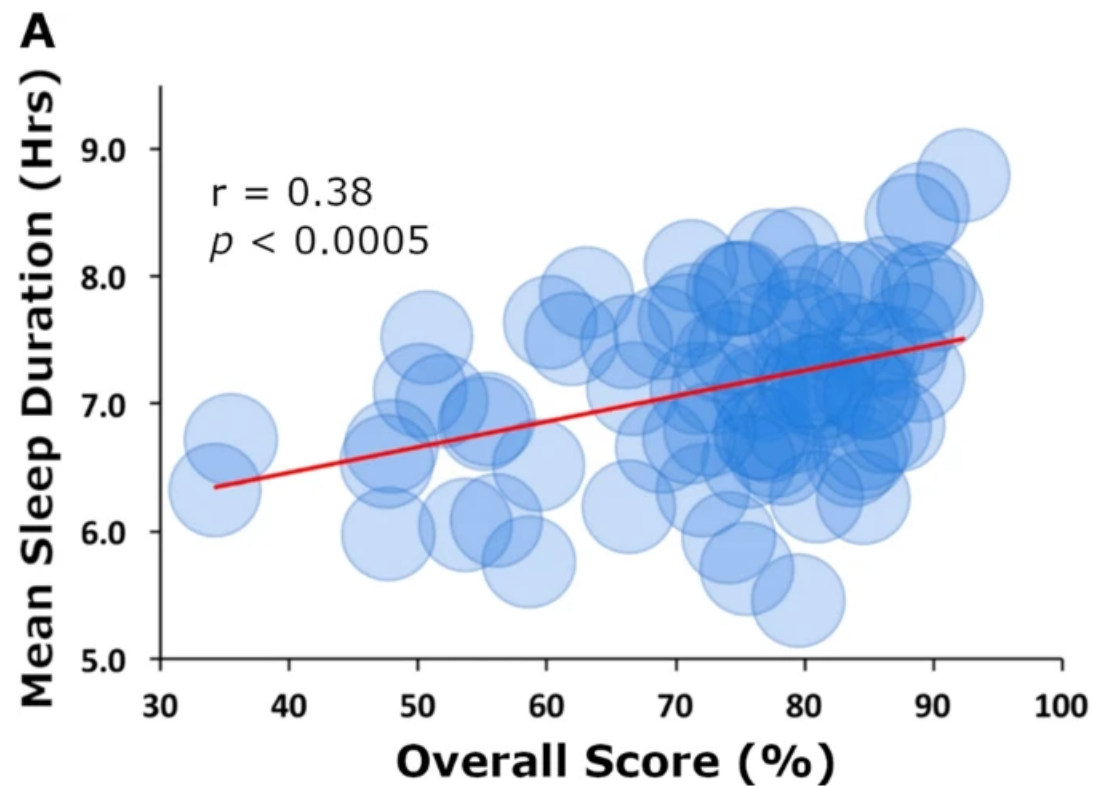
Your goal is not to finish the exam.

Your goal is not to answer every single question correctly.

Your goal is to earn as many points as possible.

Sleep your Way to Success

Fig. 1



Kana Okano, Jakub R. Kaczmarzyk, Neha Dave, John D. E. Gabrieli & Jeffrey C. Grossman "Sleep quality, duration, and consistency are associated with better academic performance in college students." *Nature*, 4: 16 (2019)

Eat your Way to Success, too

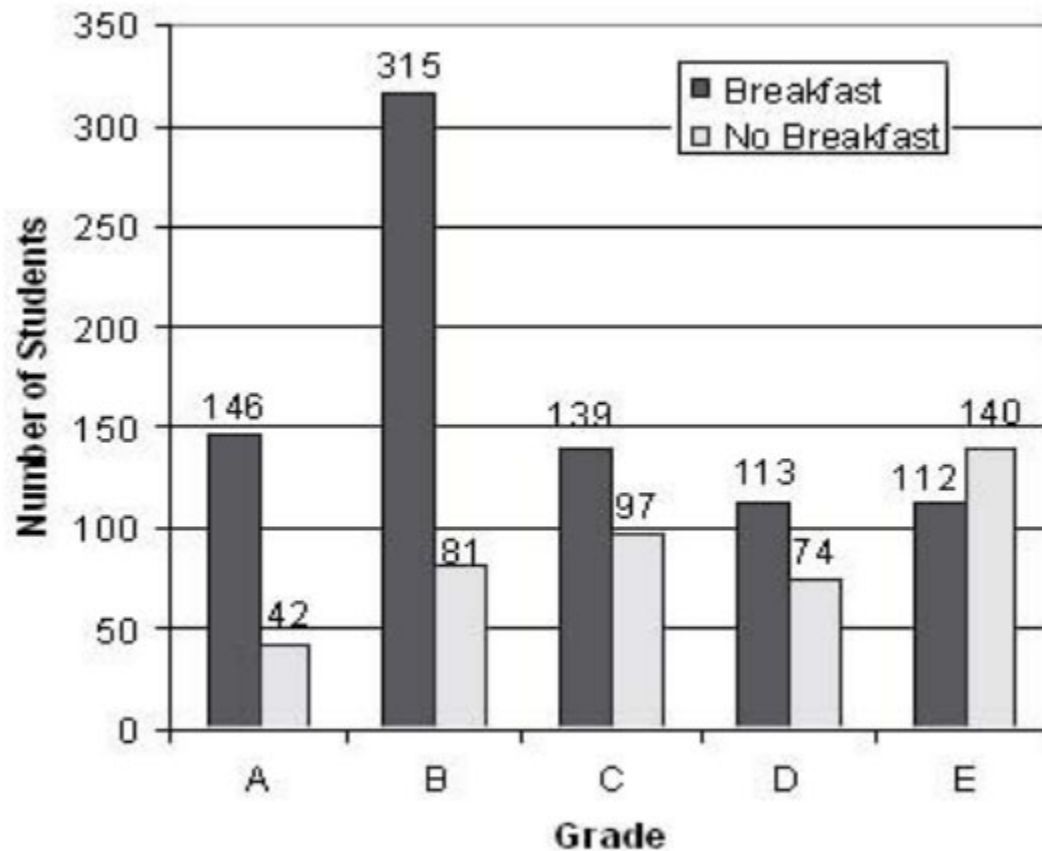
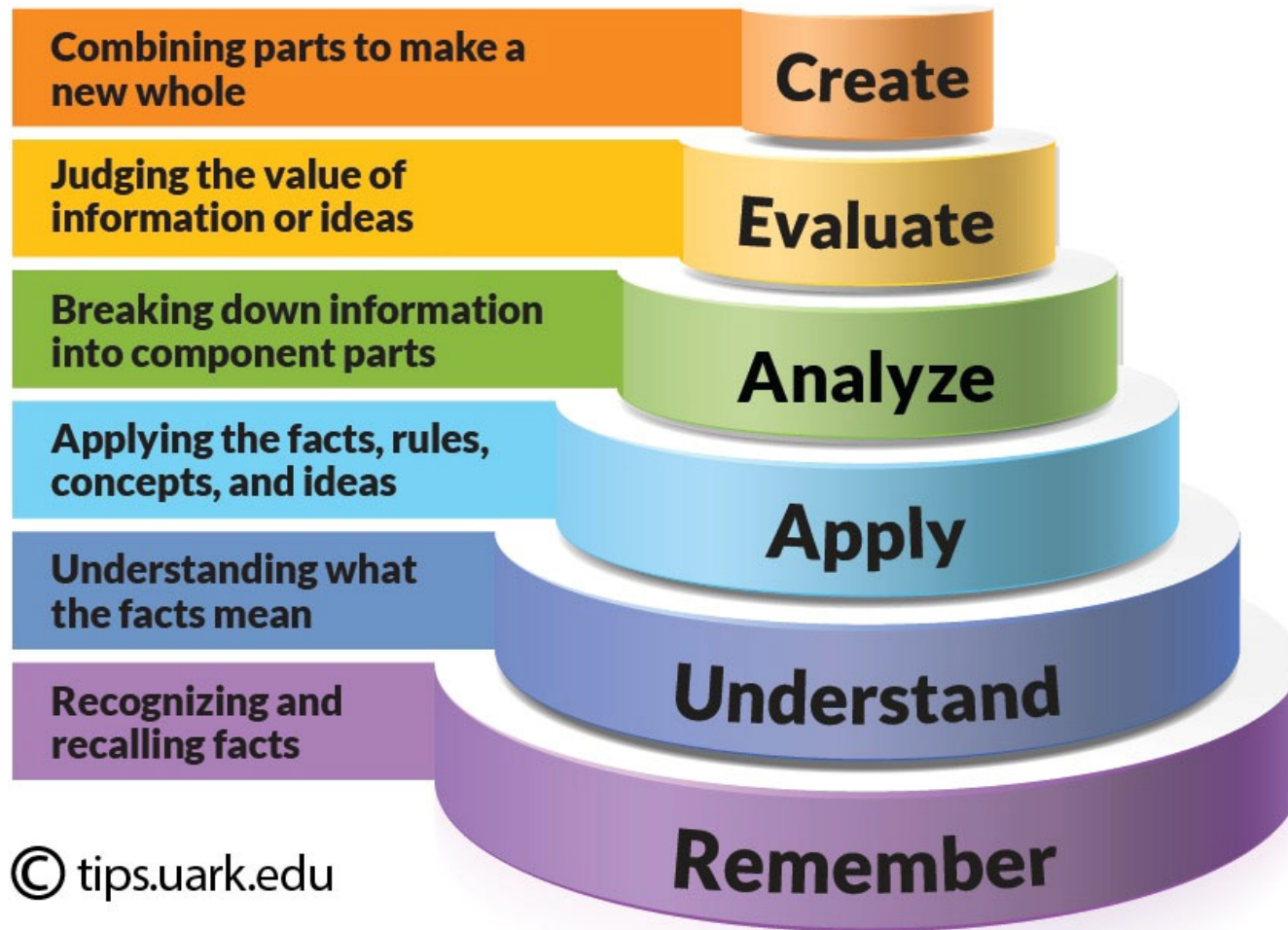


Figure 1. Raw Data Showing Student Performance and Breakfast Consumption

Gregory W. Phillips "Does Eating Breakfast Affect the Performance of College Students on Biology Exams?" *Bioscene*, 30:4 (December 2005)

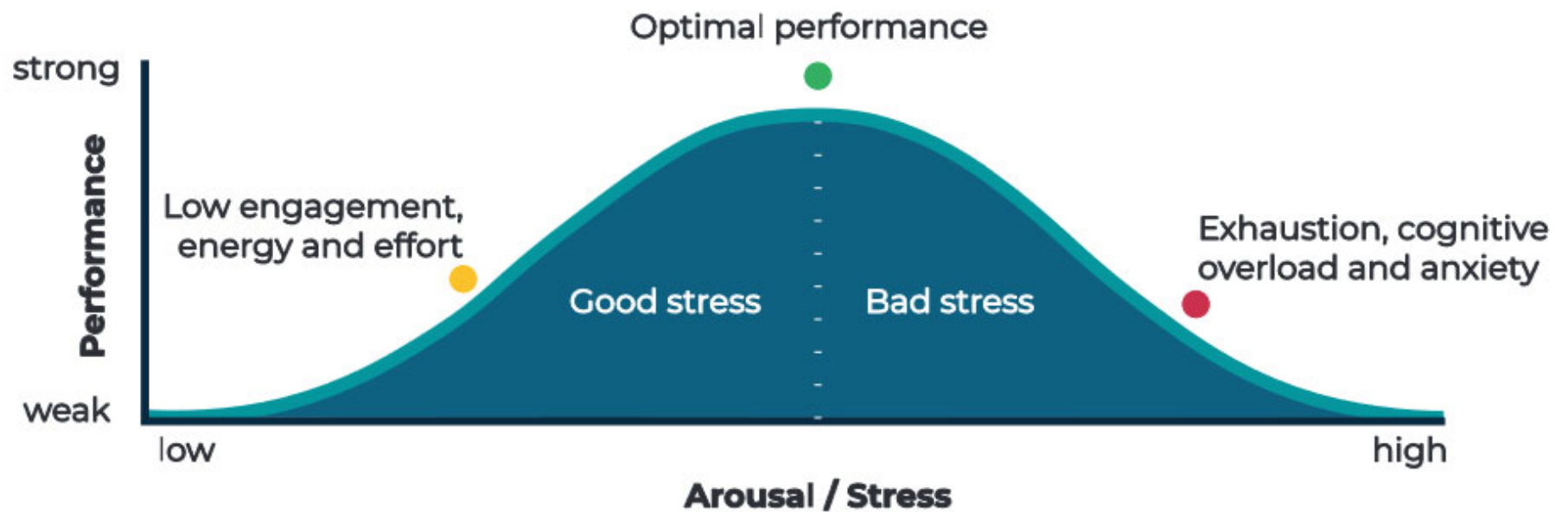
The Taxonomy of Understanding



Effective studying

- Study by topic, not delivery method
 - For example, study “acids and bases” not “lectures” and “notes” and “textbook”
- Practice retrieval
 - Test yourself!
- Know your weak points
 - Construct a personal study guide
- Review old exams

Stress Management



Stress Management

- Stick to your routines
 - ~~Performance enhancing drugs~~ coffee
- Rituals can help – sense of control
- Techniques to control anxiety spikes
 - Vigorous exercise
 - Grounding
- Meditation/Controlled breathing
 - In for 5, hold for 2, out for 7

Stress Management

- Do whatever you can ahead of time
 - Make sure everything you need is in your backpack the night before
- Give yourself plenty of time to arrive
- Get support from friends
 - Encouraging texts from friends and family
 - Hugs (consenting!) or high-fives with classmates
- Psych yourself up
 - Treat the test like a sports game



Stress Management

- Telling yourself “Don’t panic!” is hard
 - Instead, tell yourself to panic *later*
- Don’t rush
 - Take a moment to flip through the exam
 - Better off answering fewer questions correctly than answering many in a rush and getting them wrong
- Write down any key formulas/information you think you might need



General test strategies

- Start with the easy questions
 - Never leave a question blank if you are able to answer it!
- Don't let yourself get stuck
 - Don't waste time – move on, and circle back
 - Focused vs diffuse thinking
 - Clues elsewhere in the exam
- Answer EVERYTHING
 - Multiple choice: you might get lucky
 - Essay/short answer: if you can show some knowledge, your professor might give you a couple of points

Multiple choice

- Eliminate answers you know are wrong

17. The mean age of the 5 people in a room is 30 years. One of the 5 people, whose age is 50 years, leaves the room. What is the mean age of the 4 people remaining in the room?

- ~~A. 14~~
- B. 20
- C. 25
- ~~D. 30~~
- ~~E. 35~~

Multiple choice

- Try to answer questions yourself

The flux control coefficient for an enzyme in a multistep pathway depends on:



Multiple choice

- Zoom out
 - If you can't answer a question *specifically*, try to think about what you know about the topic *generally*
 - Look at the forest – forget the trees!
- Beware of overly-strong answers
 - Words like “always,” “never,” “every,” or “none”
- Make a guess for everything
 - Leave about 60 seconds to answer everything you skipped
 - It doesn't matter what you pick, so don't waste time worrying about it

Math-based problems

- Write down what you are told (include units!)
- Write down what you are looking to find
- Write down any formulas you think you might need
- Do the easy stuff
 - Unit conversions
 - Draw a picture
- Solve the problem

Math-based problems

Calculate the volume occupied by 0.845 moles of nitrogen gas, at 1.37 atm of pressure and 42°C.

$$n = 0.845 \text{ moles}$$

$$P = 1.37 \text{ atm}$$

$$T = 42^{\circ}\text{C} \rightarrow 42^{\circ}\text{C} + 273 = 315\text{K}$$

$$V = \text{????}$$

$$R = 0.08206 \text{ (L}\cdot\text{atm)} / (\text{mol}\cdot\text{K})$$

$$PV = nRT$$

$$V = nRT/P$$

$$V = (0.845)(0.08206)(315)/(1.37)$$

$$V = 15.9 \text{ L}$$

Short Answer

- Try to write a complete thought
- If you can show knowledge – even if you can't answer the question – you will probably get some points
- Your professor cannot read your mind – they will only grade what is on the page!
- BUT – be mindful of how long you're taking on answering the questions

After the Exam

- Talk to the professor
 - Remember – they want you to succeed
- Review the exam on your own first
 - It's always better to say "Here's what I did wrong" than "What did I do wrong?"
- Ask about extra credit/retakes
 - Might or might not happen, but you won't know if you don't ask
 - "How can I raise my grade?" is a better question than "Will you raise my grade?"
- Demonstrate understanding on the final exam