The ABC’s for Math Success
Counseling Center

- Accessibility & Disability Service
- Counseling Service
- Research Unit
- Testing Unit

www.counseling.umd.edu
301.314.7651
Workshop Objectives

• To examine the affective, behavioral, and cognitive aspects of math learning.

• To offer strategies you can apply to improve your math learning.
How do you feel about math? (Affective)

Four Key Math Learning Messages

- Everyone can learn math
- Believe in yourself (growth mindset)
- Struggle and mistakes are important for learning
- Speed is not important in math learning
I HATE math/ I’m not good at it

I LOVE math/ I feel like I really understand it
Quick Tip: Eliminate Negative Self Talk

Instead of:

• I hate math!
• I can’t do this problem!
• I’m going to fail this exam!

Tell yourself:

• Math is a challenging subject, but I will try my best. I can improve my math skills with practice.
• I’m stuck. What can I do to figure this out? Do I have a similar example in my notes? Can I find one online? Can I get help somewhere on campus?
• I have practiced and I’m going to do my best.
What do you do to learn math? (Behavioral)

• Go to class!
• Complete assignments on time (following instructions from syllabus)
• Work smart, not hard:
  ✓ make a study schedule
  ✓ use effective study strategies
• Practice for your exams
  [Link](http://www-math.umd.edu/testbank.html)
• Analyze your exams
• Know & use your resources
Quick Tip: Don’t Get Behind

• Math learning is sequential!
• Look at upcoming lessons before class.
• Copy a friend’s notes if you miss class.
• A strong grade on your first, “easiest,” test can save your semester average.
What do you know about math? (Cognitive)

- Rote
- Understanding
- Analysis

*Dr. Benjamin Bloom*
Quick Tip: Make a Cheat Sheet

Include:
- Formulas
- Types of problems that will be on exam
- Example problems worked out
- Definitions
- Steps used to solve a problem
- Important rules to remember

Probability
Events: any collection of possible outcomes. Set of all possible events: sample space
- Event that can never occur: null event
Intersection: $A \cap B$ "both A and B"
Union: $A \cup B$ "either A or B, or both A & B"
Complement: $A^C$ "not A" $P(A^C) = 1 - P(A)$
Basic of probability formula: $P(E) = \frac{m}{n}$

- **Commutative Law:**
  - $A \cup B = B \cup A$
  - $A \cap B = B \cap A$
- **Associative Law:**
  - $(A \cup B) \cup C = A \cup (B \cup C)$
  - $(A \cap B) \cap C = A \cap (B \cap C)$
- **Distributive Law:**
  - $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
  - $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$

**Question 1:** A die is rolled, find the probability that an even number is obtained.

**Solution to Question 1:**
- First write the sample space (possible outcomes) $S$ of the experiment. $S = \{1, 2, 3, 4, 5, 6\}$
- Let $E$ be the event (outcome) "an even number is obtained" and write it down. $E = \{2, 4, 6\}$
- We now use the formula of the classical probability. $P(E) = \frac{m(E)}{n(S)} = \frac{3}{6} = \frac{1}{2}$
Help Me Understand!

• Go to Professor’s/TA’s office hours or email them
• Math Department Tutoring (Math Building 0301)  
  http://www-math.umd.edu/math-tutoring-schedule.html
• AAP Tutorial Services (Various Locations)  
  www.umdtutoring.mywconline.com
• Math Success Program (Oakland Hall)  
  www.resnet.umd.edu/programs/math_success
• OMSE tutoring (Hornbake Library, South Wing)  
  http://www.omse.umd.edu/tutoring.html
What did you discover about Math Success?

TIME TO DO

SOME MATH!

Do you have any other questions?