ACTIVE LEARNING ACTIVITIES IN CO-REQUISITE COLLEGE ALGEBRA AND STATISTICS

Walk around the room reading the posters.

Why Active Learning?

Brainstorm answers to the question based upon the quote provided on the poster.

Stick your answer on the poster.

In Your Group

- Decide on 2 reasons that *Active Learning Strategies* are an important tool to use in your classroom.
- Pick a spokesperson from your group to share your choices.

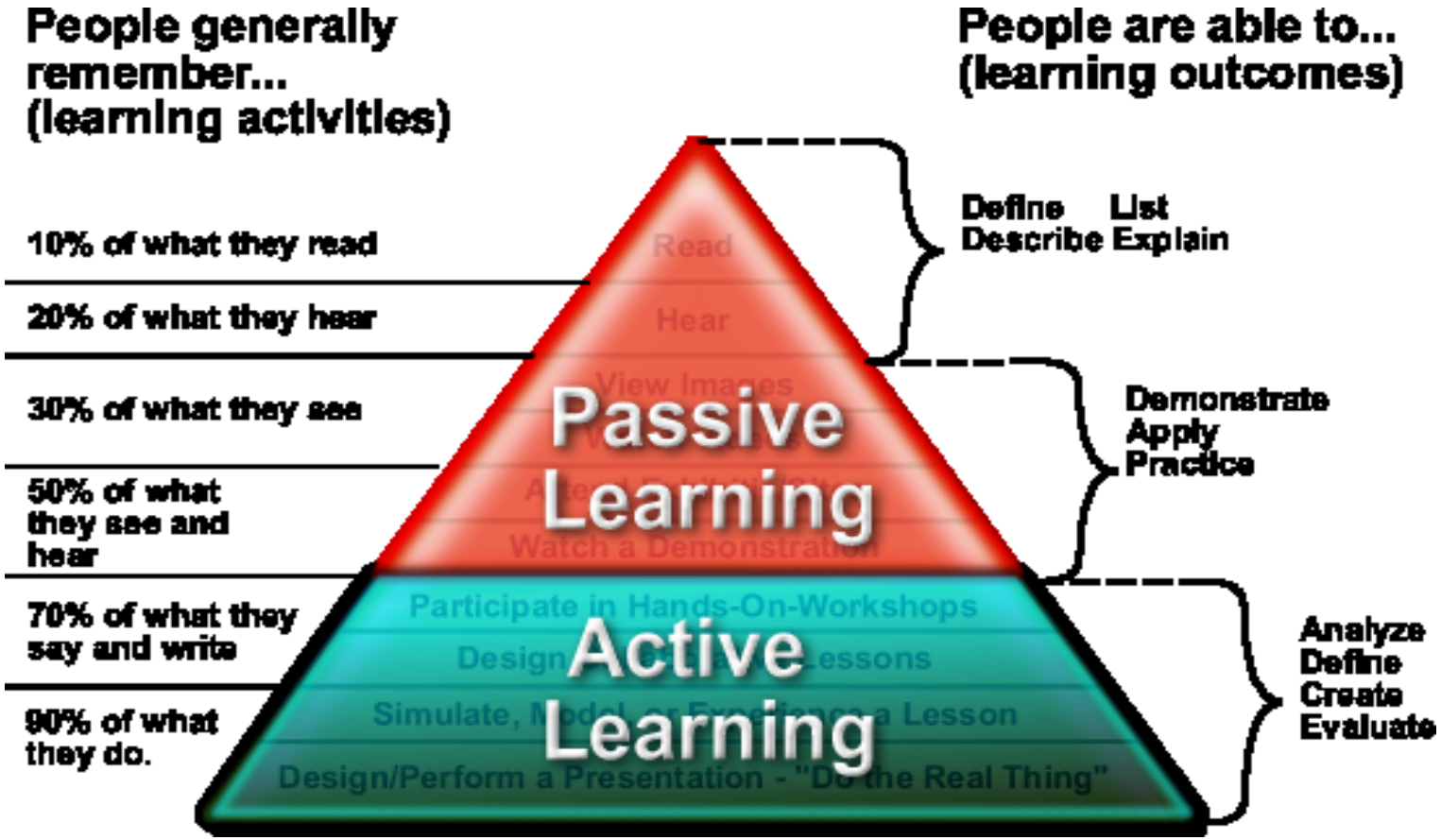
Carousel Brainstorming (Rotating Review)

https://nau.edu/uploadedFiles/Academic/CAL/History/History-Social_Studies_Education/Carousel%20BrainstormSTEM.pdf

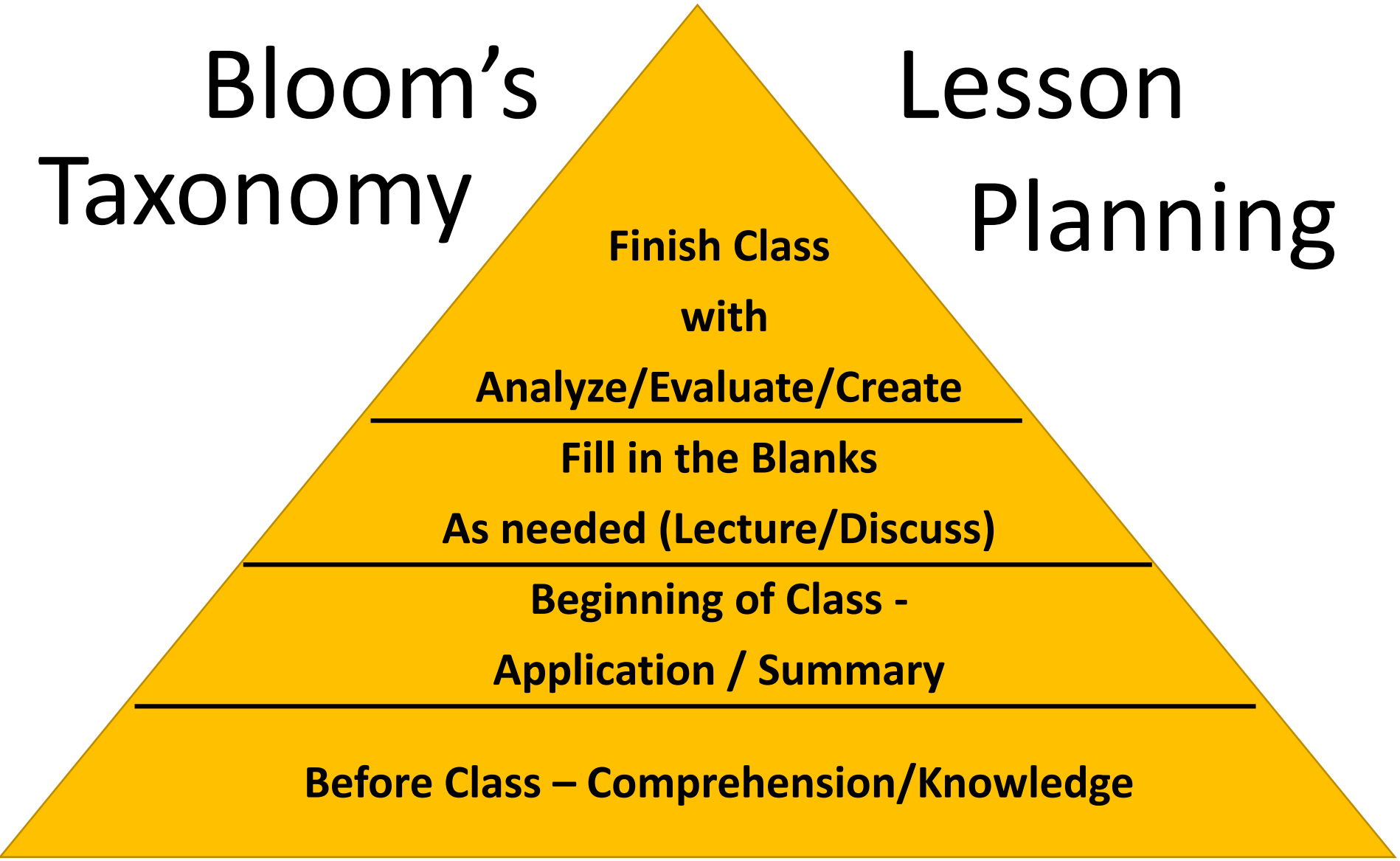
- Choose major topics/concept that are new or to be reviewed.
- Write a topic/question on the top of a piece of chart paper taped to wall.
- Divide into groups – 1 group to each paper
- Discuss 1-2 minutes (Write comments on page)
- Rotate, repeat
- Discuss as a class

Why Active Learning?

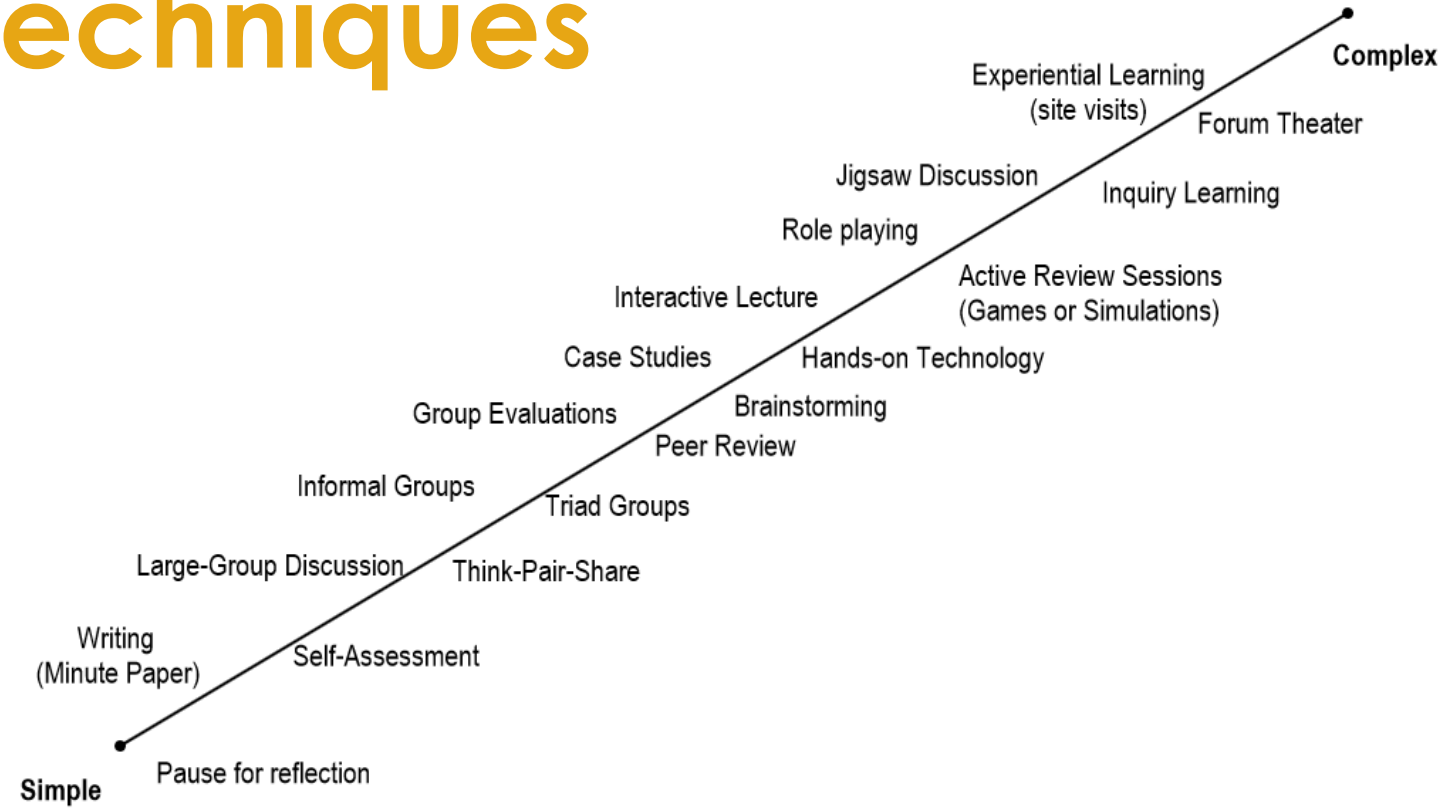
https://lo.unisa.edu.au/mod/book/view.php?id=610988&chapterid=101290



Bloom's Taxonomy Lesson Planning



Active Learning Techniques



This spectrum arranges active learning techniques by complexity and classroom time commitment.

Prepared by Chris O'Neal and Tershia Pinder-Grover, Center for Research on Learning and Teaching, University of Michigan

JigSaw Activity

https://www.newcastle.edu.au/__data/assets/pdf_file/0016/109600/Jigsaw-learning-activity.pdf

- A general topic is divided into smaller, interrelated pieces (JigSaw Pieces)
- Divide class into groups to study a topic (piece of the JigSaw) and become an "expert"
- Experts form groups with 1 member from each topic group to teach other members – Puzzle is assembled

Objective: Students will Master a Procedure that has Steps

JigSaw Activity

Students are sorted into groups when they arrive in the classroom.

- You will need at least as many students in the original groups that you will have groups in part 2.
- If you have too many students, you can have 2 groups working on the same material.

Objective: Students will Master a Procedure that has Steps

JigSaw Activity

- Your group has been assigned to be experts on either Mean, Median, or Mode.

- Make sure you completely understand the problem on your worksheet and can explain it to someone else.

Objective: Students will Master a Procedure that has Steps

JigSaw Activity

- Pick up two blank worksheets from your table.
- Choose one of the playing cards.

Objective: Students will Master a Procedure that has Steps

JigSaw Activity

- You should find 2 other persons in the room that have the same card as you, but a different suit.

- Move to the designated table for your group.

STOP!

Be sure you----

- **Have a Quiet Signal.**
- **Give directions of what the new group is to do – before the students move to the NEW group.**
- **Post directions on the slide – have them typed on the worksheets.**

Objective: Students will Master a Procedure that has Steps

JigSaw Activity

- Work together with your group to complete the three worksheets.
- There should be one expert on each of the measures of center at each table.

Objective: Students will Master a Procedure that has Steps

JigSaw Activity

- Apply What You Have Learned:
  - While you were working, I handed out an additional application worksheet. Work with your group to complete Part 1.

Interactive Lecture

https://serc.carleton.edu/introgeo/interactive/index.html

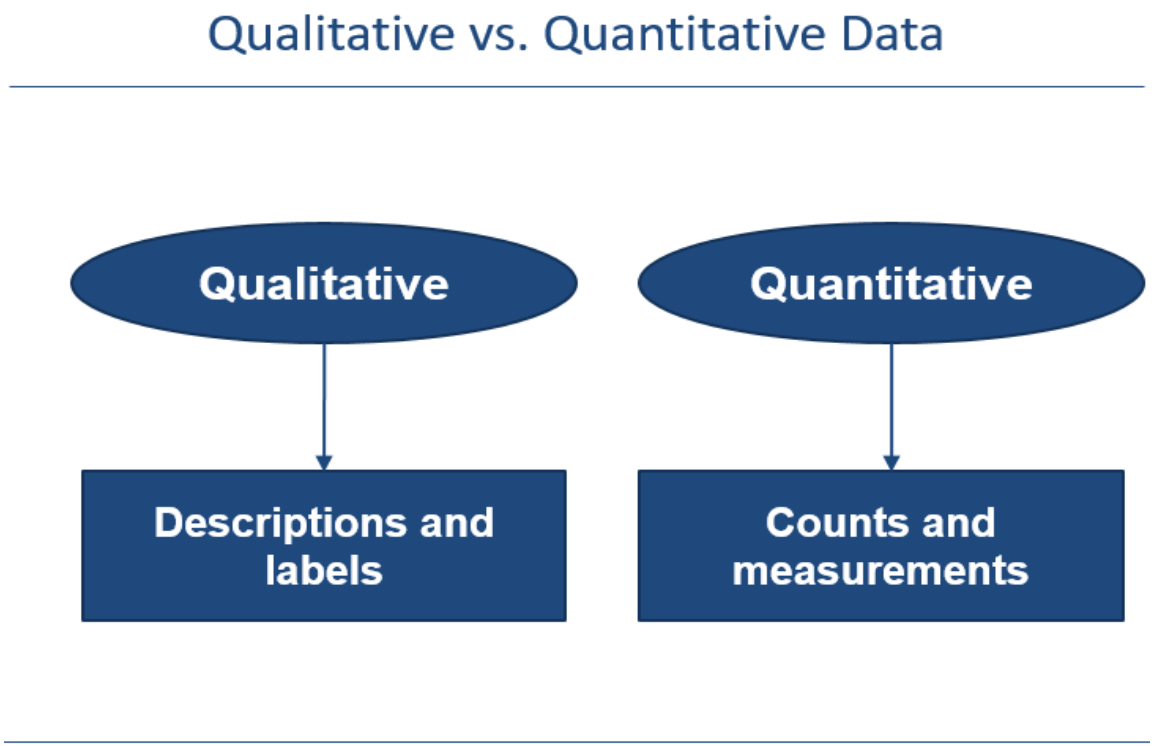
Instructor breaks up the lecture at least once per class for an activity that lets all students work directly with the material.

- Students are asked to show their responses to the class and discuss any differences.

Objective: Students will Sort Items into Categories Using Definitions

Interactive Lecture

- Divide the stack of cards into these two categories.



Objective: Students will Sort Items into Categories Using Definitions

Interactive Lecture

Take the pile of cards that you put in the Qualitative Pile and sort them Nominal or Ordinal

Levels of Measurement - Qualitative

Data at the **nominal level** of measurement are qualitative data consisting of labels or names.

Data at the **ordinal level** of measurement are qualitative data that can be arranged in a meaningful order, but calculations such as addition or division do not make sense.

Objective: Students will Sort Items into Categories Using Definitions

Take the pile of cards that you put in the Quantitative Pile and sort them into interval or ratio.

Interactive Lecture

Levels of Measurement - Quantitative

Data at the **interval level** of measurement are quantitative data that can be arranged in a meaningful order, and differences between data entries are meaningful.

Data at the **ratio level** of measurement are quantitative data that can be ordered, differences between data entries are meaningful, and the zero point indicates the absence of something.

Objective: Students will Sort Items into Categories Using Definitions

Interactive Lecture

Take a picture of your sorted cards with your phone to use as an example as you do your homework.

Search and Rescue Quiz

https://www.k-state.edu/assessment/toolkit/measurement/Special-Report-designing-better-quizzes.pdf

- Create a set of quiz questions. On the bottom of the page write 1 question – on the top write an answer to one of the other questions in the quiz
- Students rotate around room answering a question on their answer sheet, then finding that answer on another sheet to go to the next question.
- Create a Rescue station – where students can go for help if needed (teacher – book – formula sheet)

Objective: Formative Assessment

Search & Rescue Quiz

8 Volunteers – go stand by one poster.

Answer your question.

Find another poster with the answer to your current question. Move to that poster.

Repeat – until you are back where you began.

Objective: Formative Assessment

Tips for Search and Rescue:

- For a larger class, use multiple copies of each quiz question or create “dominoes"
- The first time you do one of these, make it short and walk the students through the first question or two.
- Have enough questions (or multiple copies) so that each person (or group) has one to go to initially.
- Set ground rules

Objective: Formative Assessment
Help student's identify type of problem

Think – Pair - Share

One of these things is Not like the others….

Think – Pair - Share

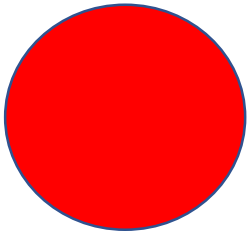
https://serc.carleton.edu/introgeo/interactive/tpshare.html

Provide a topic or question to students.

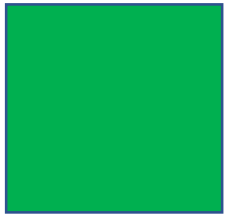
1. Students think.
2. Students pair up and talk about their results. (Provide an amount of time for each person to talk)
3. Share – Pick a few groups to share with the class.

Think – Pair - Share

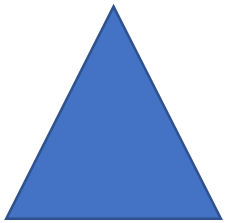
https://serc.carleton.edu/introgeo/interactive/tpshare.html



What is still going around in your head?



What's squared away?



What 3 things could you use?

THANK YOU

HTTPS://DRIVE.GOOGLE.COM/OPEN?ID=1ORR2GAYKAXMAFPURJTDHOQIICARDDZEJ

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