Using Technology for Active Learning in General Education Geology Labs

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What is active learning?

- Students are engaged in activities that promote analysis, synthesis, and evaluation of class content (Blooms Taxonomy)
- Examples: the “one minute paper,” wait time, active listening, think-pair-share, concept maps, etc.

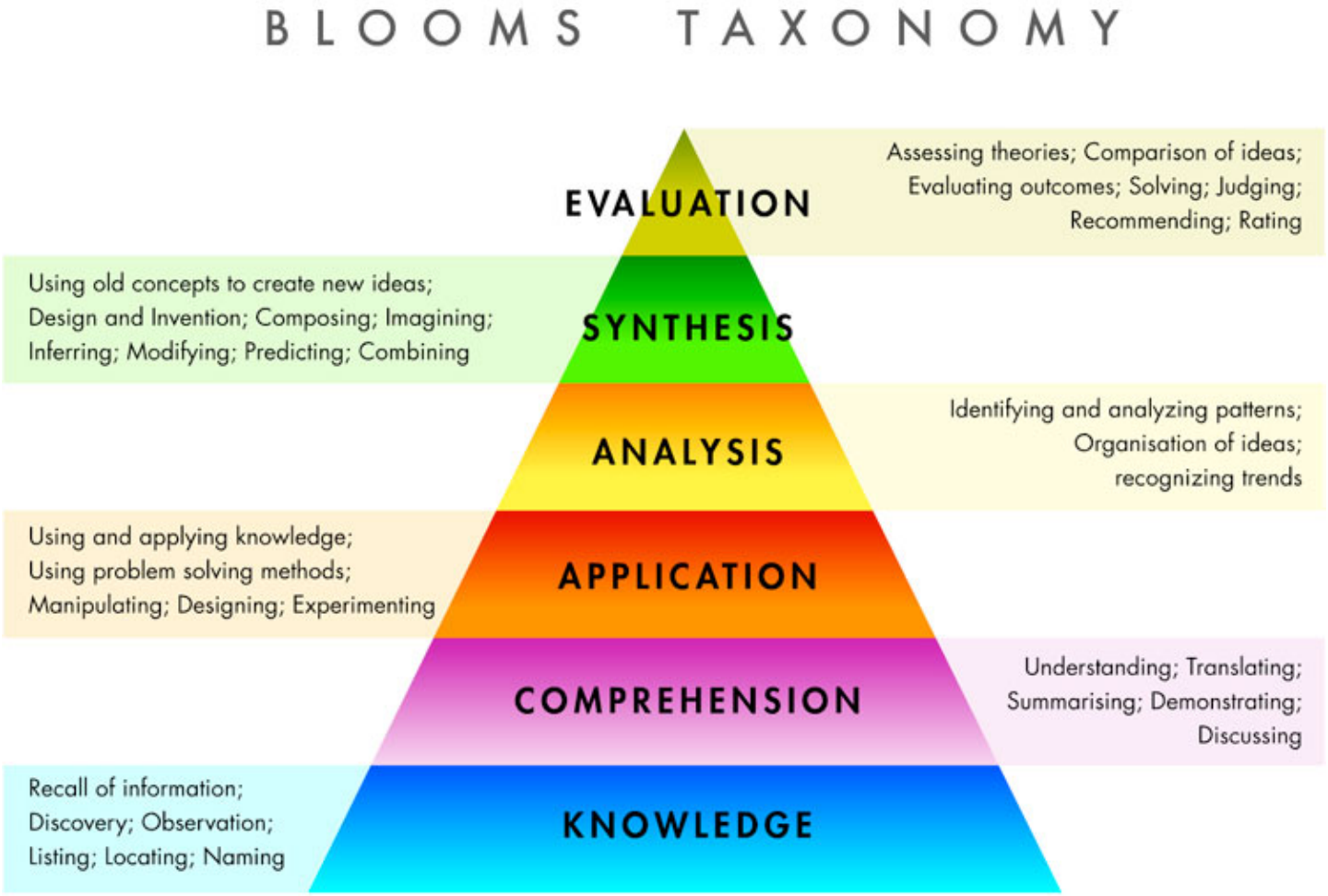

EXIT

How can we use technology to promote active learning?

- What is the Scope-On-A-Rope (SOAR)?
  - Hand-held video microscope
  - Magnify any object from 1-200 times by simply touching it
  - Easy to use, durable, portable, promotes cooperative learning
- LSU's Scope-On-A-Rope Program
  - Two decades of pioneering the use of video microscopes in education

LSU

Climbing to the Top of Blooms



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Climbing to the Top of Blooms

- Can use the SOAR during instruction to build the base of the pyramid
  - Students become comfortable they're all receiving the same level of instruction
- This encourages higher-order thinking (e.g., practical application) during laboratory time

Lab Activity #1

- Sediment Texture: Size
  - Use SOAR during instructional overview of sediment grain size
    - Coarse = gravel
    - Medium = sand
    - Fine = silt/clay

Learning Objective: *Students will learn the size classes of clastic sediments.*

Bloom's Taxonomy: *Knowledge*

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Lab Activity #1

- Sediment Texture: Size
  - Use SOAR to illustrate similar grain size in lithified sediment (i.e., clastic sedimentary rocks)
    - Coarse = conglomerate
    - Medium = sandstone

Learning Objective:
Students will learn how the size classes of clastic sediments translates to the size class of sedimentary rocks.

Bloom's Taxonomy:
Knowledge

Lab Activity #1

- Sediment Texture: Size
  - Students will then demonstrate understanding of grain size in sediments and sedimentary rock

Learning Objective:
Students will learn how the size classes of clastic sediments translates to the size class of sedimentary rocks.

Bloom's Taxonomy:
Comprehension

Lab Activity #2

- Sediment Texture: Shape
  - Use SOAR to show volcaniclastic sediment samples
    - Angular *sand-sized* clasts
    - Rounded *sand-sized* clasts

Learning Objective:
Students will learn roundness and angularity.

Bloom's Taxonomy:
Knowledge

LSU

Lab Activity #2

- Sediment Texture: Shape
  - Students will relate the shape to other clast sizes
    - Angular *gravel-sized* clasts (breccia)
    - Rounded *gravel-sized* clasts (conglomerate)

Learning Objective:
Students will learn roundness and angularity.

Bloom's Taxonomy:
Application

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