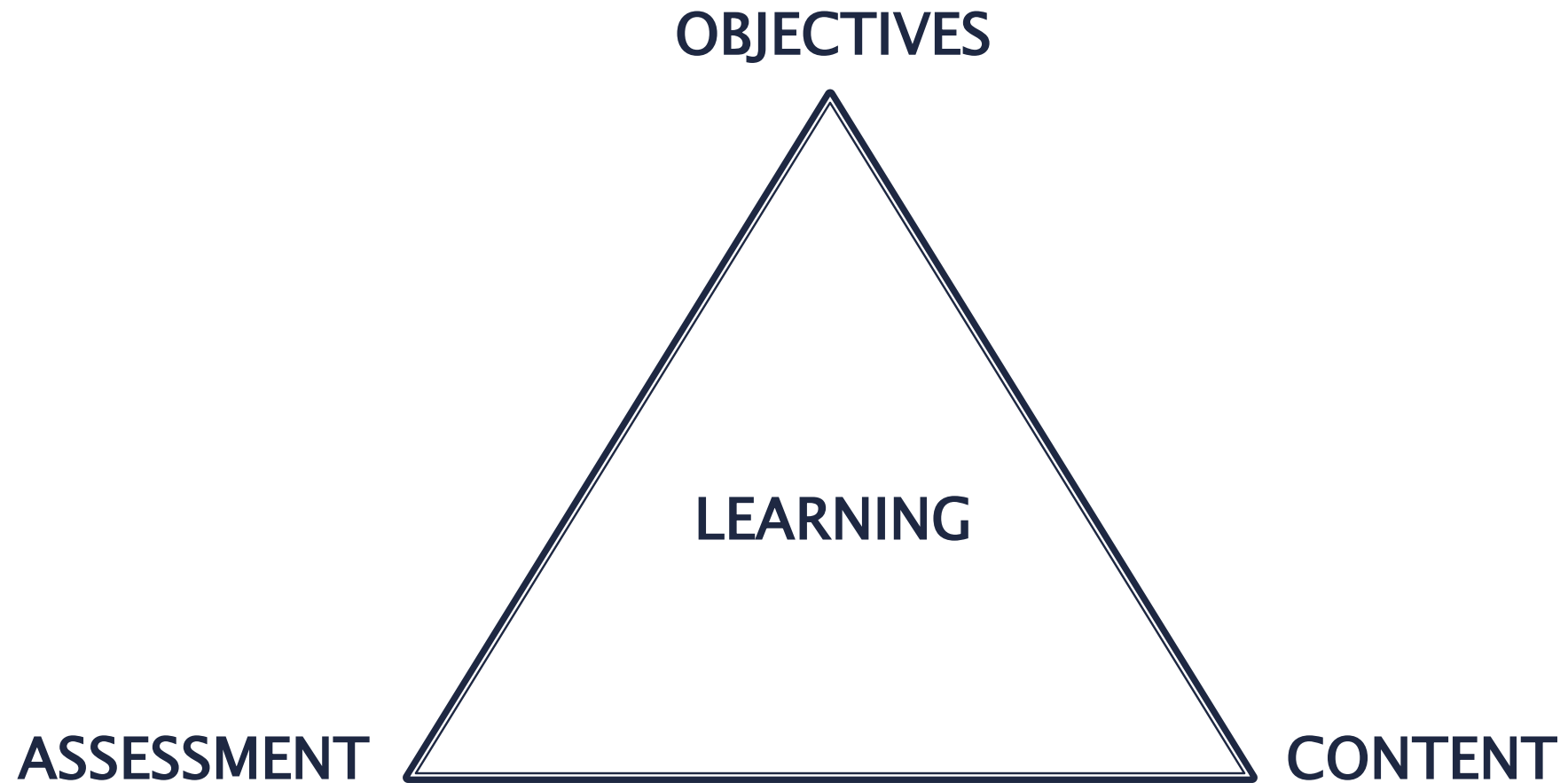


WRITING S.M.A.R.T LEARNING OBJECTIVES

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Triangle of Effective Learning (figure based on Biggs, 2003)

Which is of the following is either a **learning objective** or a **goal**?

1. The Integrated Problems course is designed to help first year students develop effective skills in literature research and in verbal and written communication.
2. Given a set of clinical data, the first year student in Integrated Problems will be able to state a hypothesis and compose research questions.

<http://www.bumc.bu.edu/facdev-medicine/files/2012/03/WritingLearningObjectivesWebFD.pdf>

Backwards Design

(e.g. Preparing Lectures like Designing an Experiment)

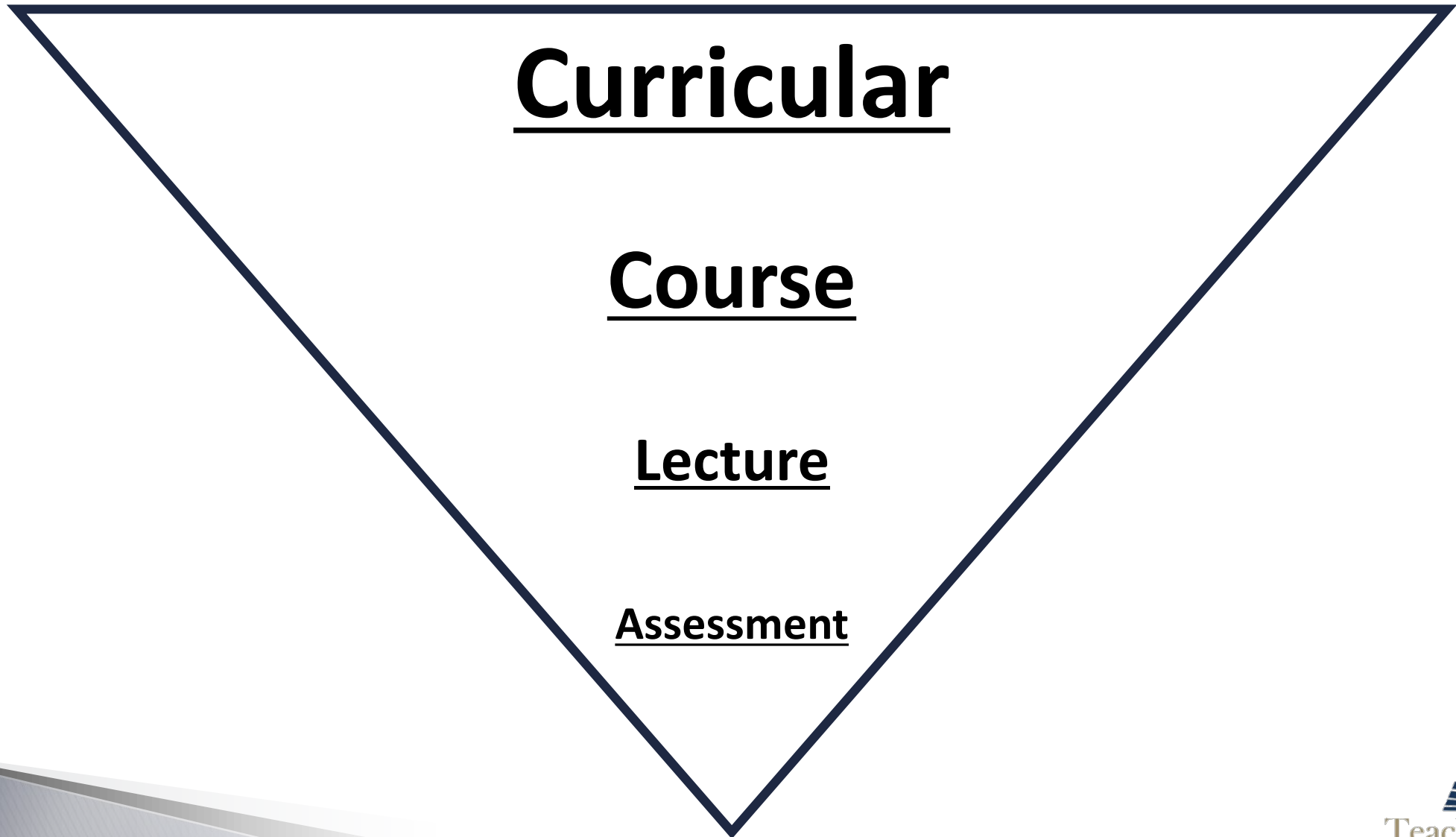
Designing your experiment:

- State a hypothesis.
(your objective)
- What evidence will support or reject the hypothesis?
(potential outcomes)
- What is the experimental design?
(activities that produce outcomes)

Preparing your curriculum:

- Identify the desired results
(learning goals/objectives)
- Determine the evidence for learning
(outcomes and assessment)
- Plan learning experiences and instruction
(activities to meet goals)

Forms of Objectives: Range from Broad to Highly Specific



How do we provide our learners the tools to either reach course or curricular objectives?

COURSE OBJECTIVE

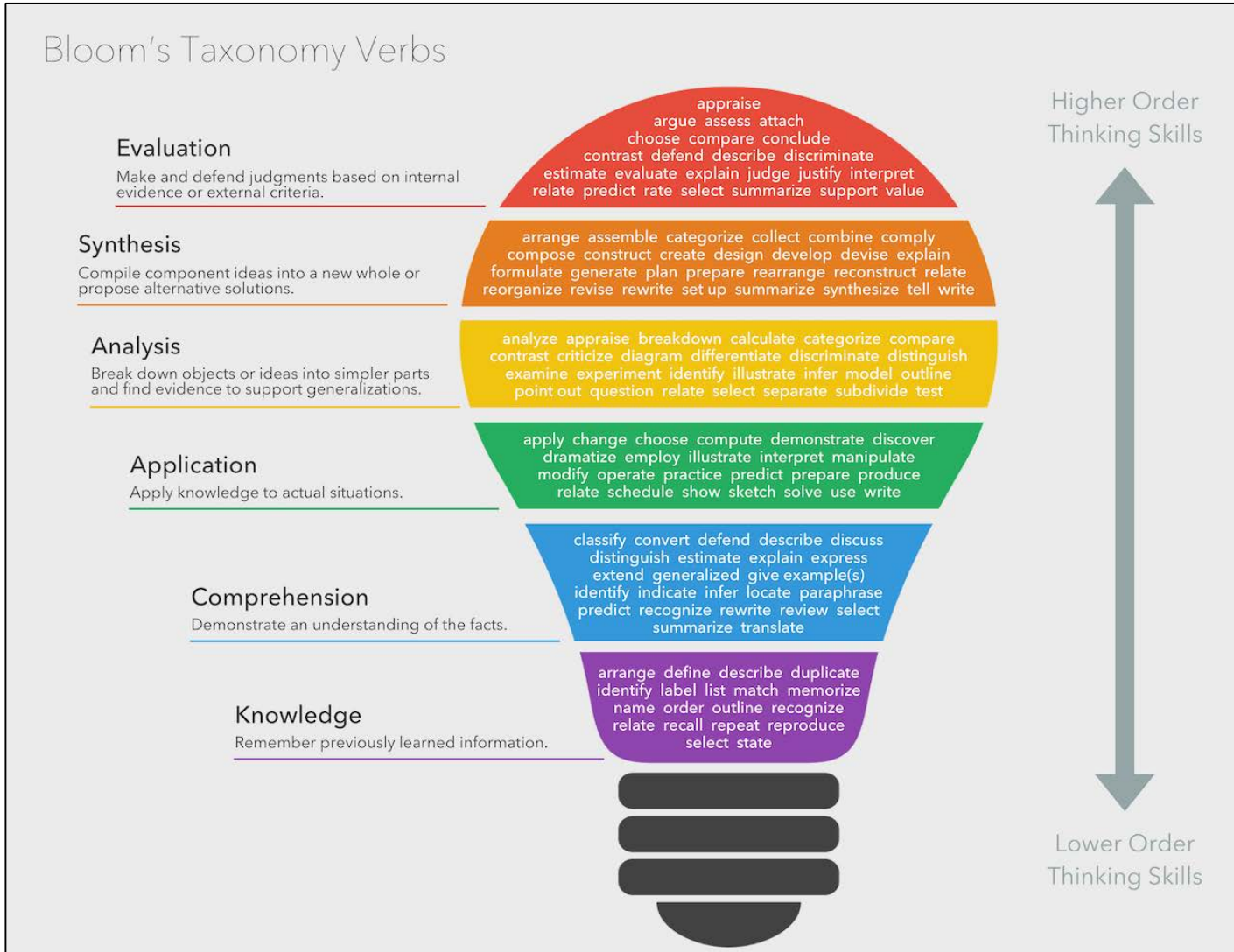
Recognize, describe, and discuss the normal gross structure of the organ systems of domestic animal and relate this to function.

LECTURE OBJECTIVES

- 1 Visualize the position of the thoracic cavity structures on a live animal.
- 2 Describe the general differences between the pulmonic and systemic circulations.

Bloom's Taxonomy

Provides descriptive verbs for cognitive skills



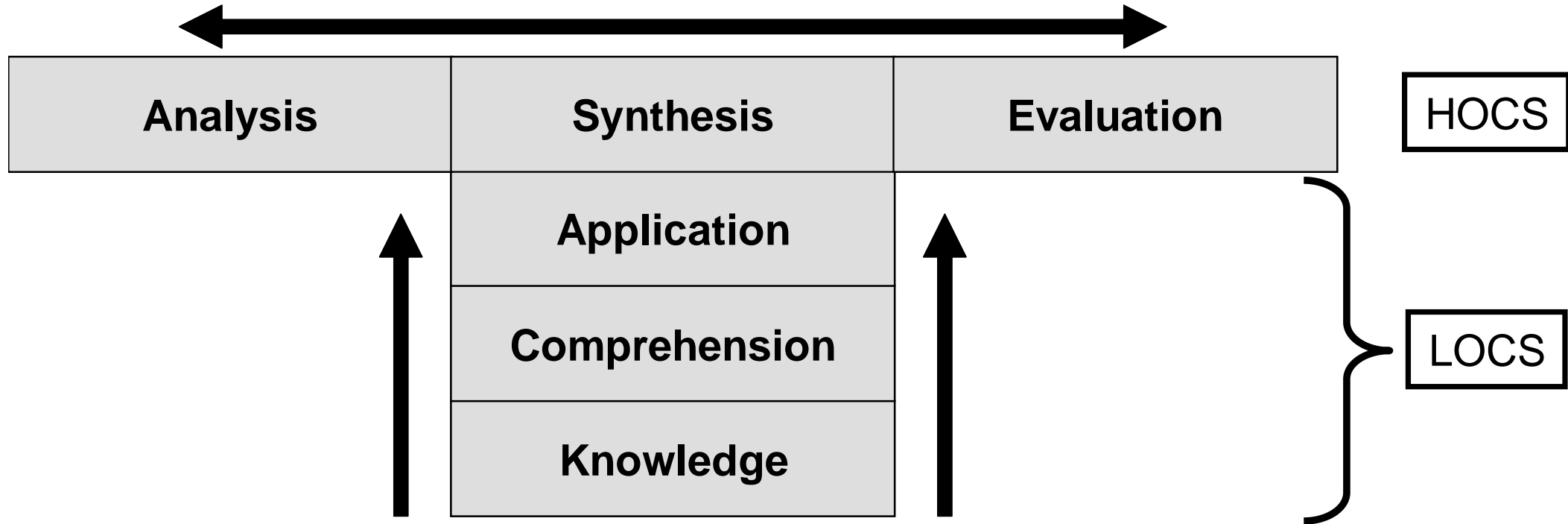
Scan this QR Code for a link to the image.



<https://www.fractuslearning.com/2016/01/25/blooms-taxonomy-verbs-free-chart/>

Adapted BLOOM'S TAXONOMY

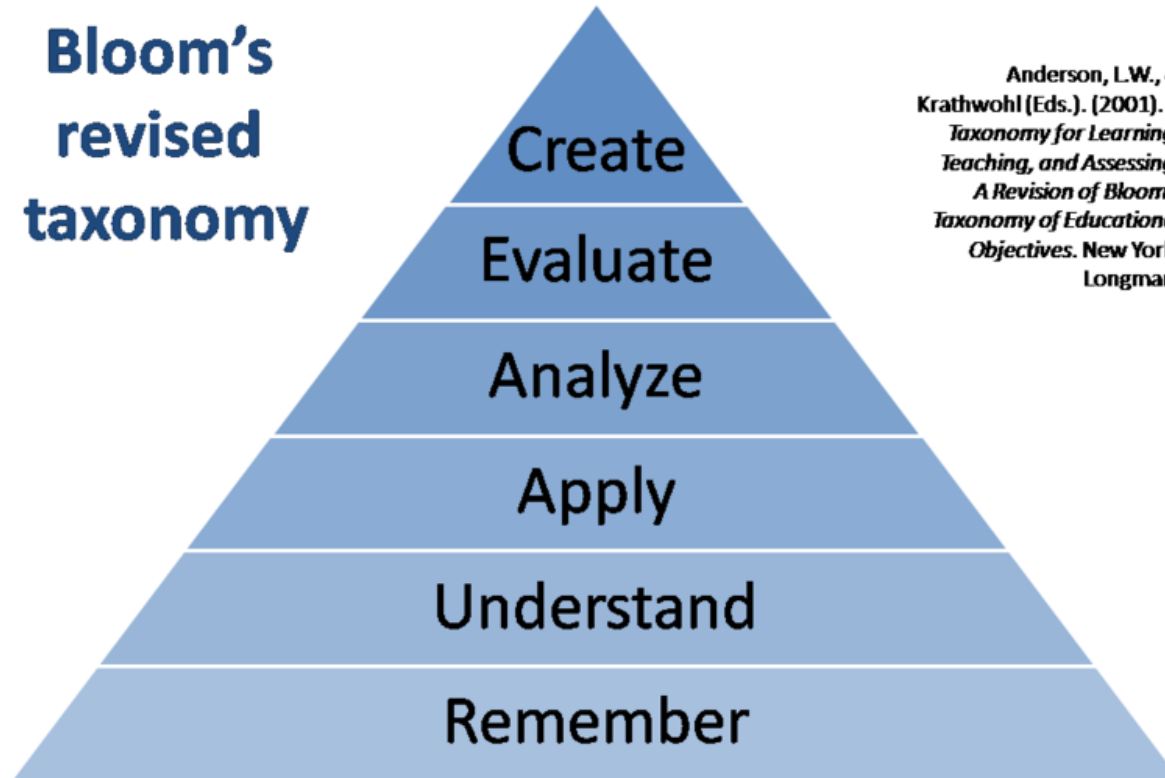
Higher order cognitive skills (HOCS)



Lower order cognitive skills (LOCS)

Blooms Taxonomy: Descriptive Verbs of Cognitive Skills

**Bloom's
revised
taxonomy**



Anderson, L.W., &
Krathwohl (Eds.). (2001). *A
Taxonomy for Learning,
Teaching, and Assessing:
A Revision of Bloom's
Taxonomy of Educational
Objectives*. New York:
Longman.

Three Step Learning Objectives:

1. Cognitive level of performance by using use of an active verb (e.g. Bloom's Taxonomy)
2. Focus
3. Context

Remember, in order to design effective learning objectives think about (LOCS vs. HOCS).

Refine These Objectives

1. Understand the differences in the nerve supply to the distal hind limb in the horse and the cow.
2. (Students) will be able to describe blood supply to the udder.

Three Step Learning Objectives:

1. Cognitive level of performance by using use of an active verb (e.g. Bloom's Taxonomy)
2. Focus
3. Context

Remember, in order to design effective learning objectives think about (LOCS vs. HOCS).

Level of Performance	Focus	Context
Describe	carpal joint anatomy	in the equine
Explain	forelimb lameness	as it relates to fractures of the carpal bones.

Your turn to practice.....

- ▶ Pair up and take 5 minutes to discuss and analyze the sample objectives in the worksheet

Learning Objectives should have these characteristics:

Specific

Measurable/Observable

Attainable for target audience within scheduled time and specified conditions

Relevant and results-oriented (**Context of the Content**)

Targeted to the learner and to the desired level of learning

Are these easy to assess?

- A. Students will be able to predict changes in amino acid sequences caused by mutations
- B. Develop scientific process skills
- C. Students will be able to explain how adaptations seen in nature occurred.

Your turn to practice.....

- ▶ Now it's time to work on your OWN objectives using the worksheet.

What were the objectives of this session?

References

- ▶ Bloom, B.S. Ed. (1956) *Taxonomy of Education Objectives: The Classification of Educational Goals*. David McKay Co. Inc.
- ▶ Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives* (Complete edition). New York: Longman.
- ▶ <http://www.celt.iastate.edu/teaching/preparing-to-teach/tips-on-writing-course-goalslearning-outcomes-and-measureable-learning-objectives/>
- ▶ <https://www.aamc.org/download/469188/data/learning-objectives.pdf>
- ▶ <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>
- ▶ http://www.schreyerinstitute.psu.edu/pdf/Goals_and_Objectives06.pdf
- ▶ http://www.umass.edu/oapa/oapa/publications/online_handbooks/course_based.pdf
- ▶ <http://www.bumc.bu.edu/facdev-medicine/files/2012/03/WritingLearningObjectivesWebFD.pdf>