Refining assessments of student learning in an introductory EOS lab course (EOSC 111)

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ASSESSMENT DEVELOPMENT: We began developing a pre-post lab assessment in Fall 2007. Since then, questions have been modified, scrapped, and added. Modifications have been based on student validation interviews, open-ended student responses to the assessment questions and expert opinions.

IMPLEMENTATION:

Students write a 23 question test on the first day of lab (pre-). During the term, after each subsequent lab, they complete a survey about the lab, including the assessment questions relevant to that lab (post-).
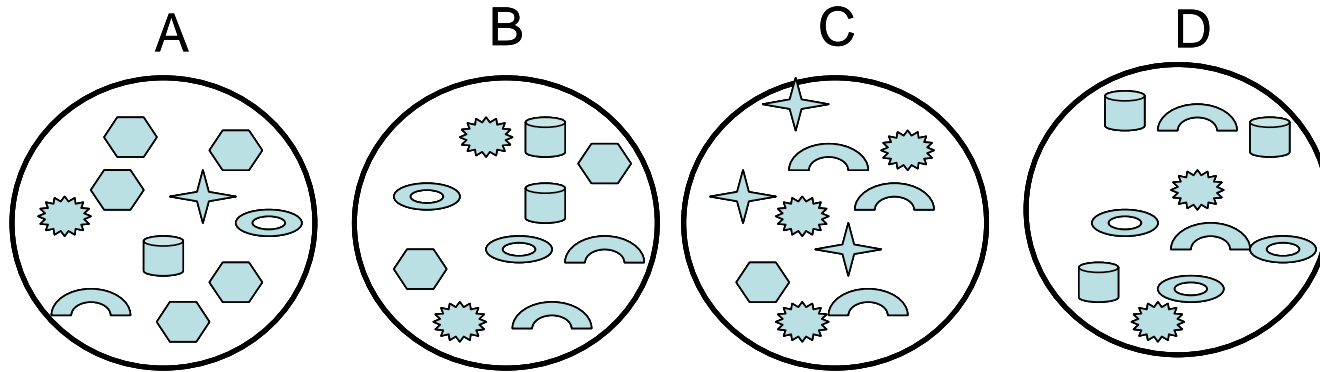
EXAMPLE: Biodiversity

Learning goal: Devise your own method to quantify biodiversity.

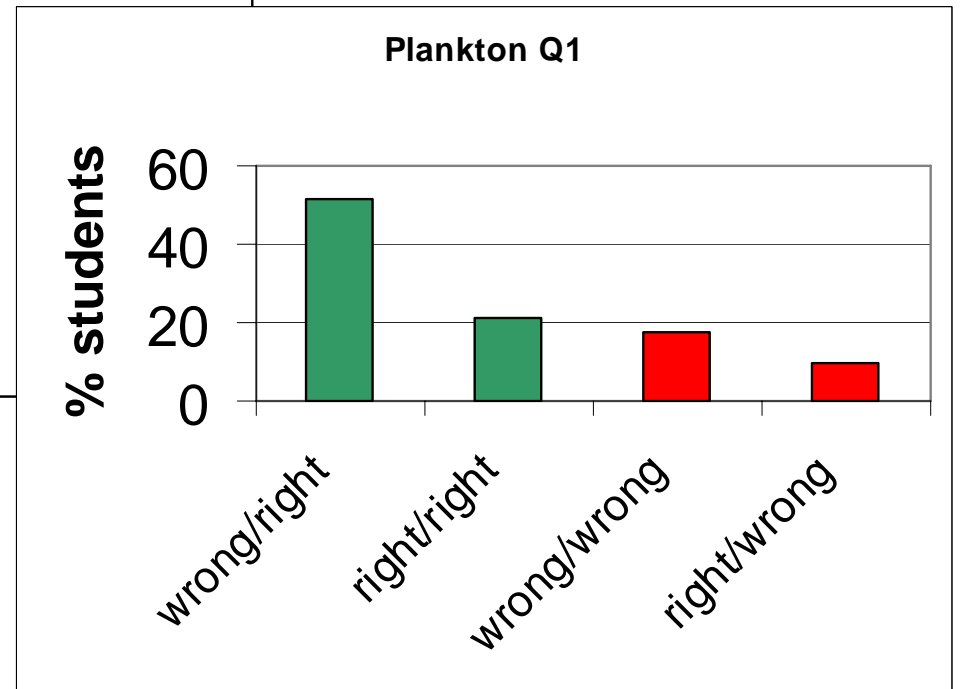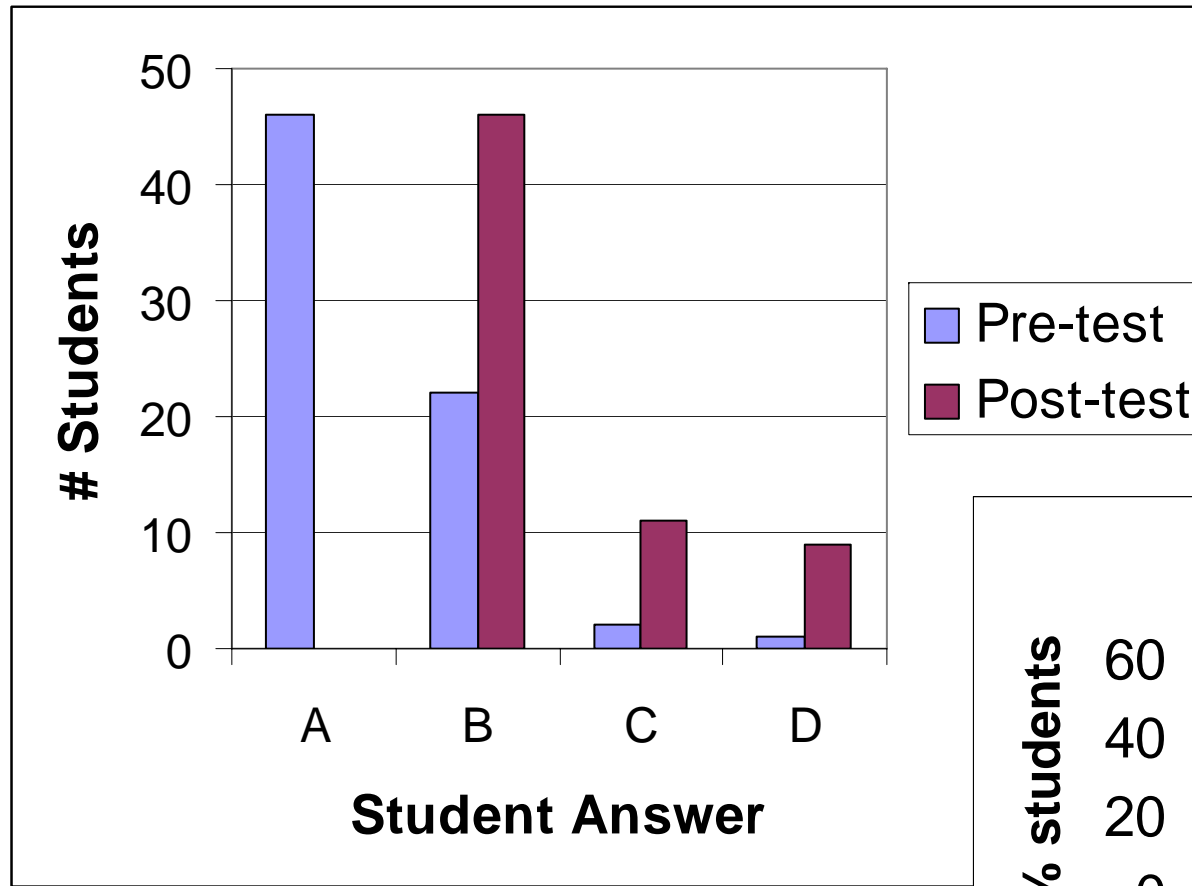**Learning Activity:** Put 4 "samples" in order from least to most diverse. Create an index to quantify biodiversity (that works for your samples). Apply your index to a new sample.

Assessment Question:

Which of the following samples (A, B, C, or D) is the **most diverse**?
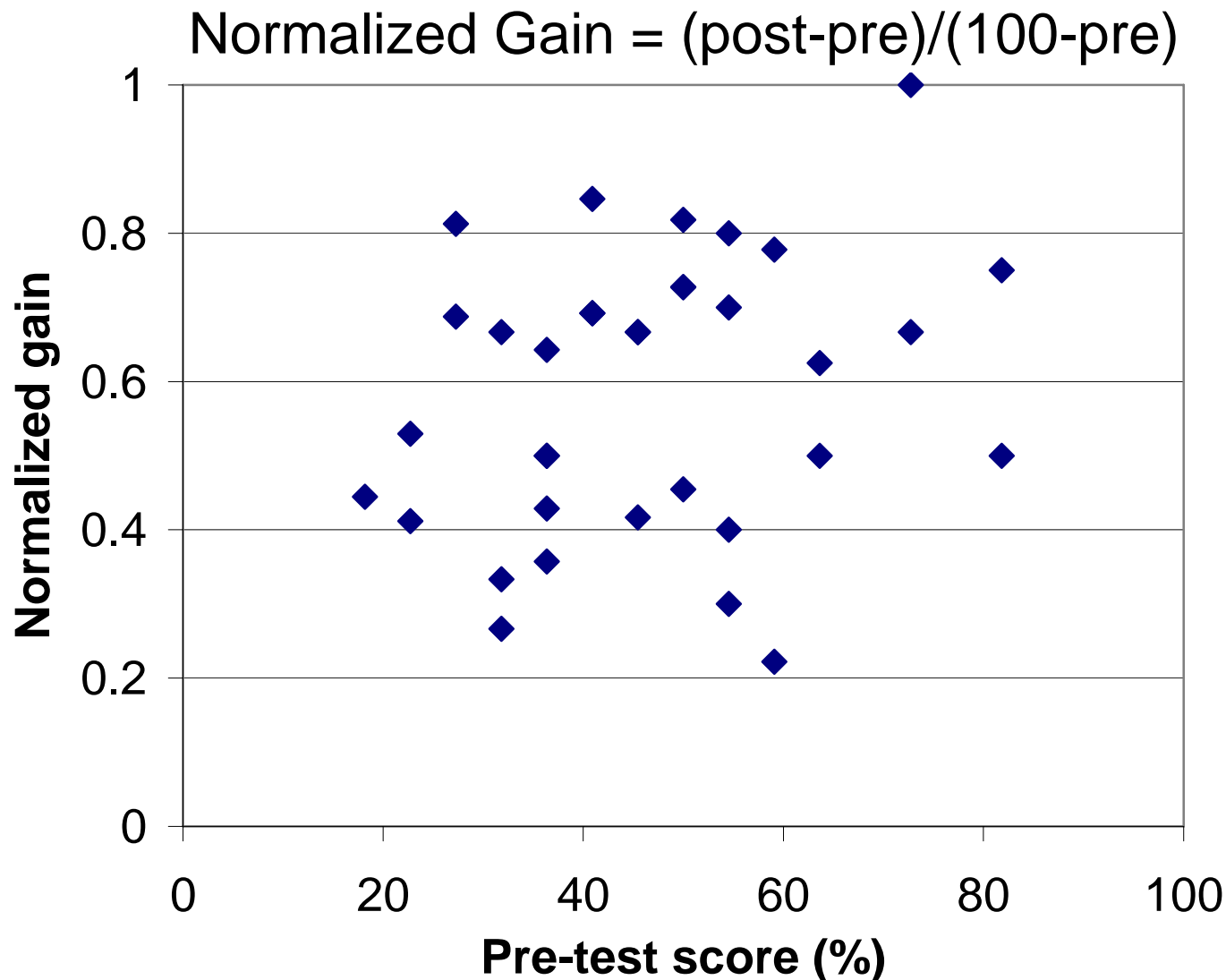

A   B   C   D

Pre-Post results from assessment question:

NORMALIZED LEARNING GAIN:

The average normalized learning gain for Spring Term 2009 was 0.59, for students who completed all 23 questions for both pre- and post- (n=35).

Normalized Gain = (post-pre)/(100-pre)

PROBLEMS and FUTURE PLANS:

- Post-assessment is currently not in a "controlled" situation (on-line). Consider completing the whole post-test during the last lab period.
- Revisit alignment of learning goals, lab activities and assessment questions, guided partially by student responses.