




Judy Berryman

ACTION RESEARCH 2008-2009



Problem

- **When tested students demonstrated the lack of basic science knowledge in earth, physical, and life sciences**
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Research


- Gardner states that we esteem the highly articulate or logical and logical-mathematical intelligence; we should also place equal attention on individuals who show gifts in other intelligences. Unfortunately, many children who have these different gifts don't receive much reinforcement. Many are labeled "learning disabled or underachievers when simply their unique ways of thinking are not addressed.
- Bruce Campbell states: the five non-traditional intelligences, *spatial, musical, kinesthetic, interpersonal* and *intrapersonal*, have generally been overlooked in education. However, if we can develop ways to teach and learn by engaging all seven intelligences, we will increase the possibilities for student success and create the opportunity to, in Margaret Mead's words, "weave a social fabric in which each diverse human gift will find a fitting place."

Research continued

- **Harvey Silver states: Any curriculum provides multiple opportunities in incorporate style into student learning. By brainstorming options and ideas for your curricular themes, you can make sure your curriculum is robust and will engage all your students.**



Hypothesis

- **If students are given learning activities that address their learning styles then their basic knowledge of earth, physical and life sciences will improve.**
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Experimental Design

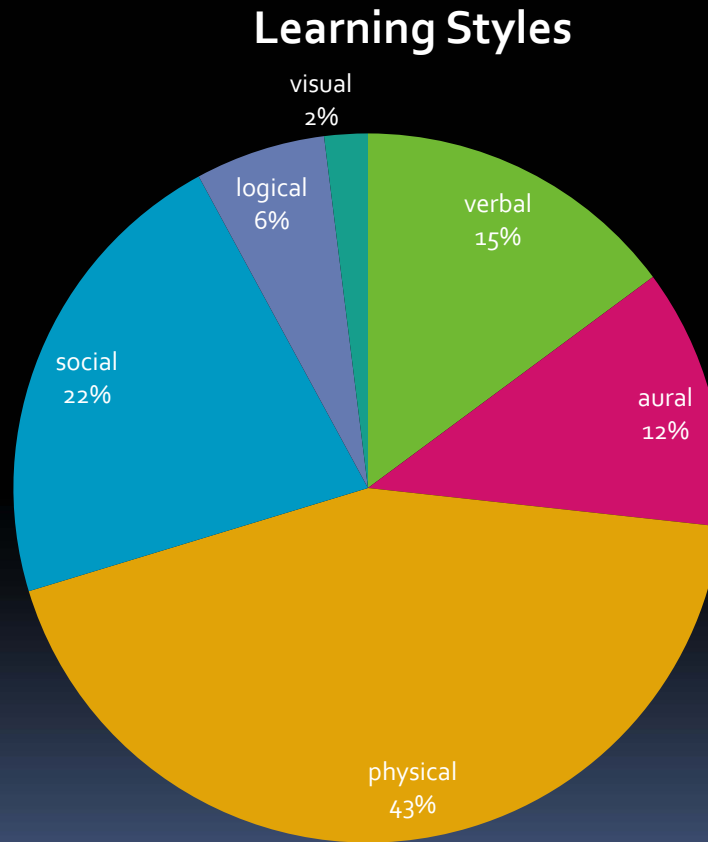
- The use of best practices in multiple Intelligence and differentiated instruction as they apply to learning.
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- Tired Lessons
- Four Square
- Mind mapping
- Raft
- Grouping according to learning styles & readiness
- Multiple choices on how to demonstrate understanding



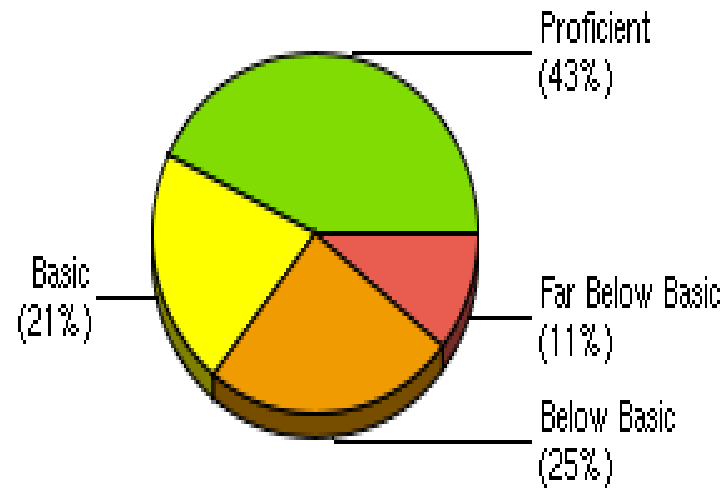
Data Collection

- **Pre& post Unit Test**
 - **Quarterly basic science skill knowledge test**
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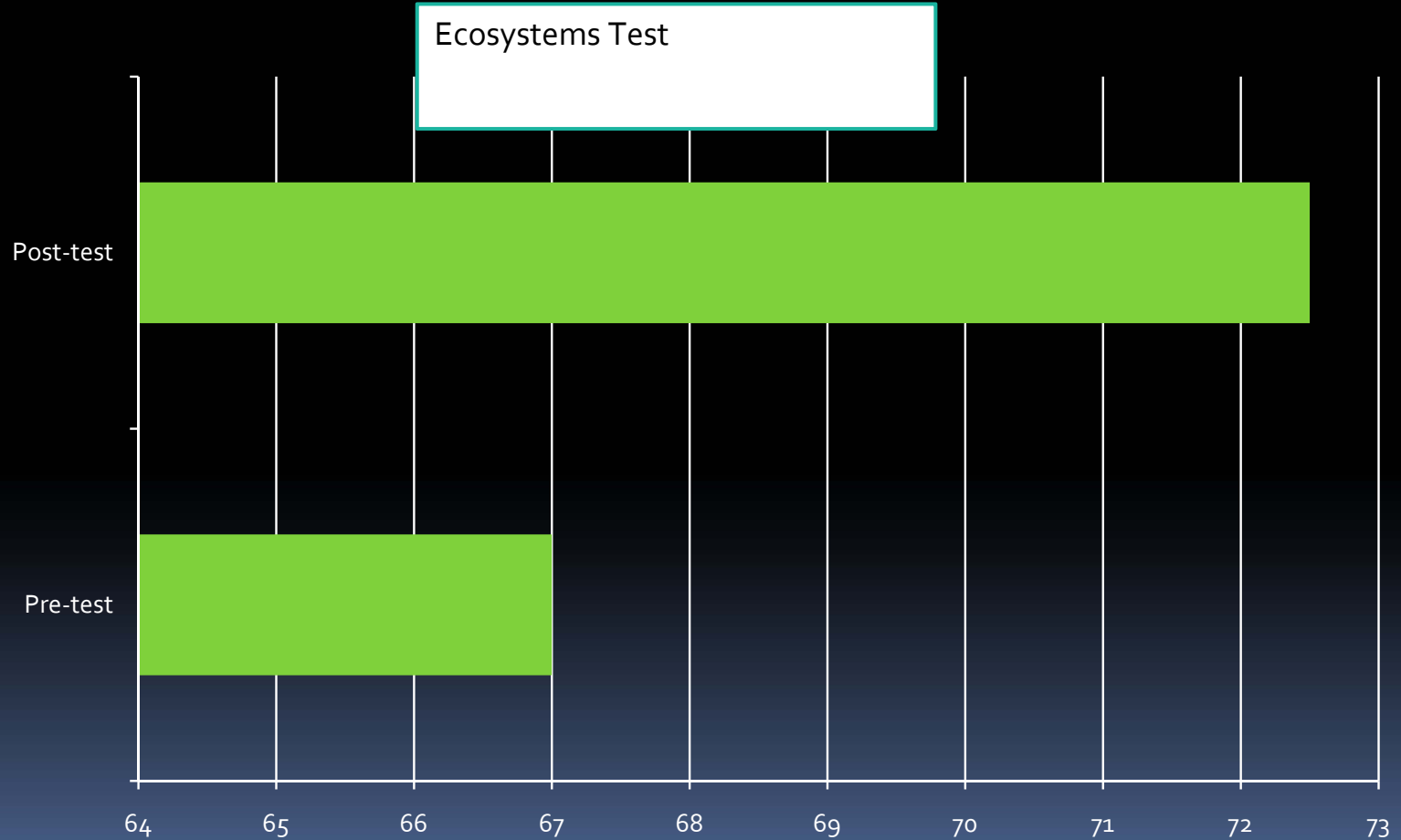
Learning Styles



1st Quarter Basic Skills Test

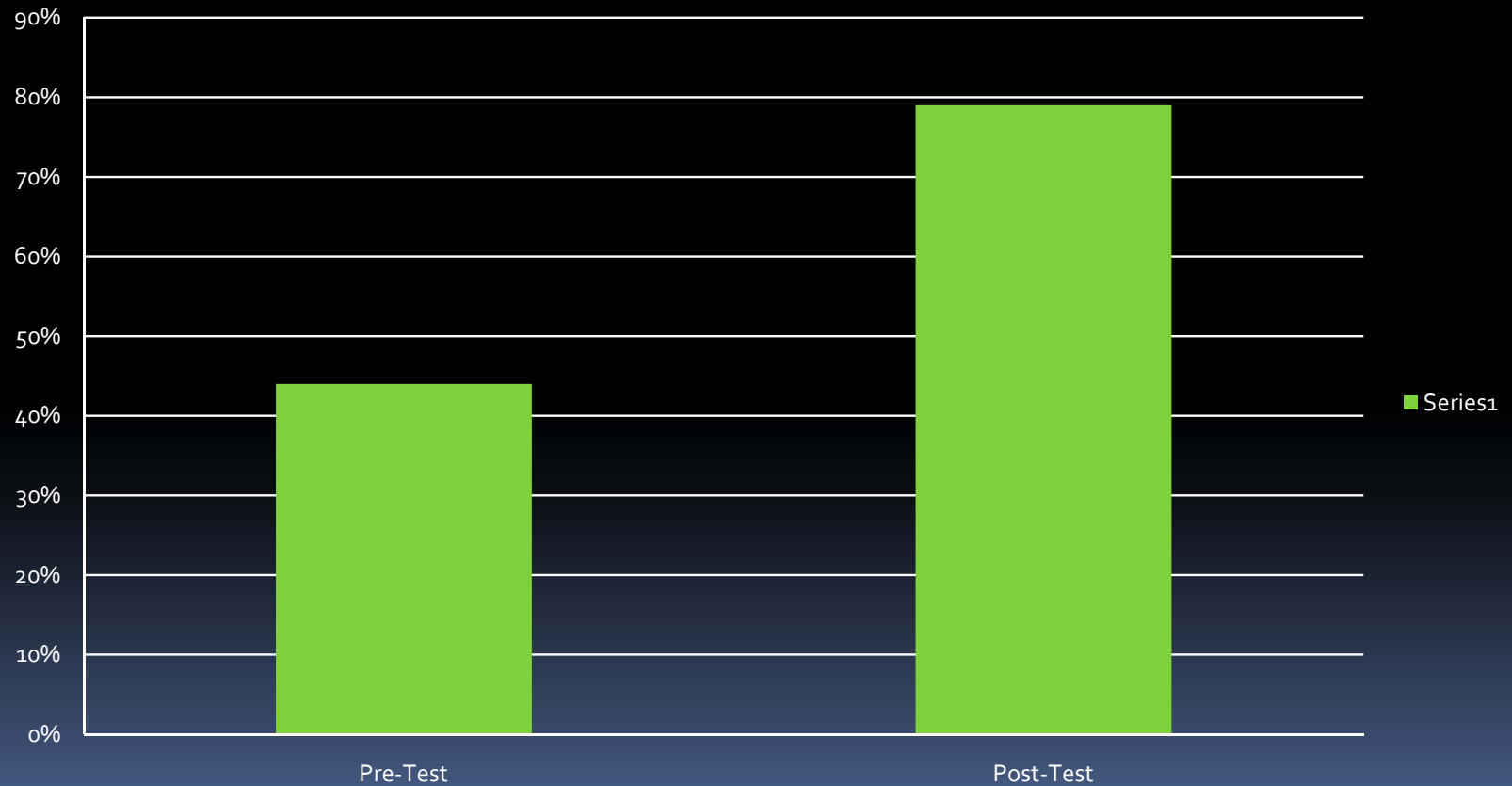


Ecosystems

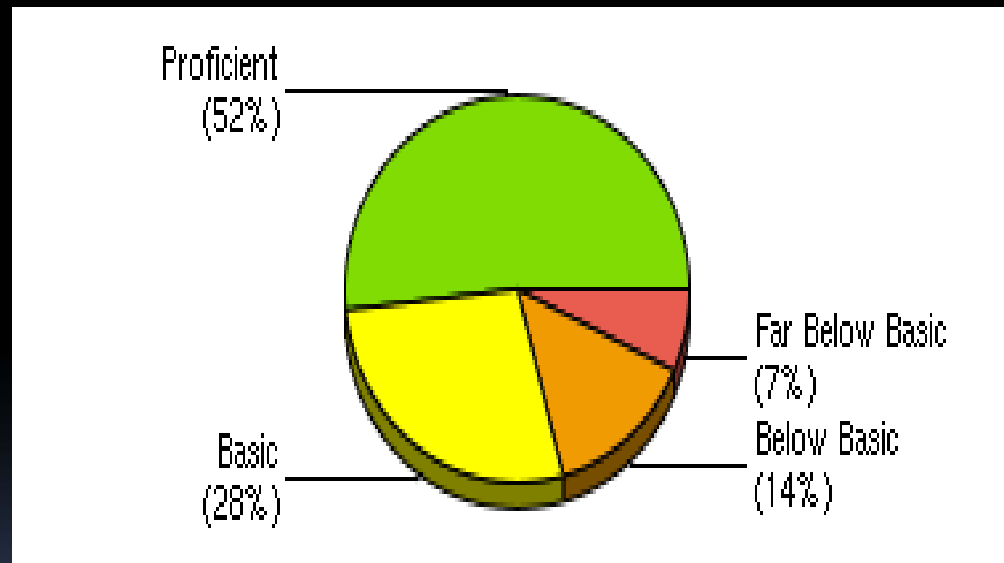


Geosystems

Geosphere Test

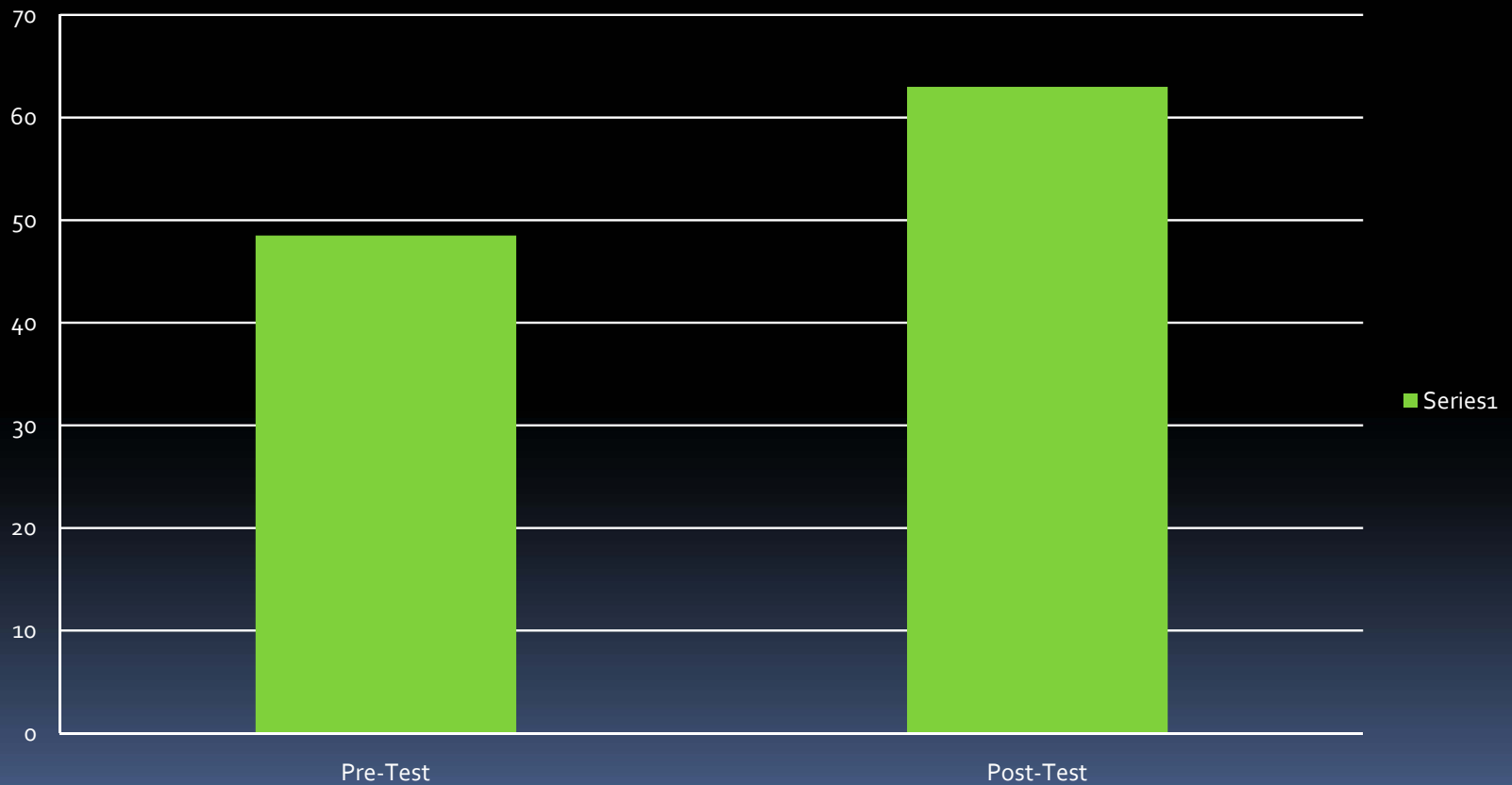


2nd Quarter Basic skills

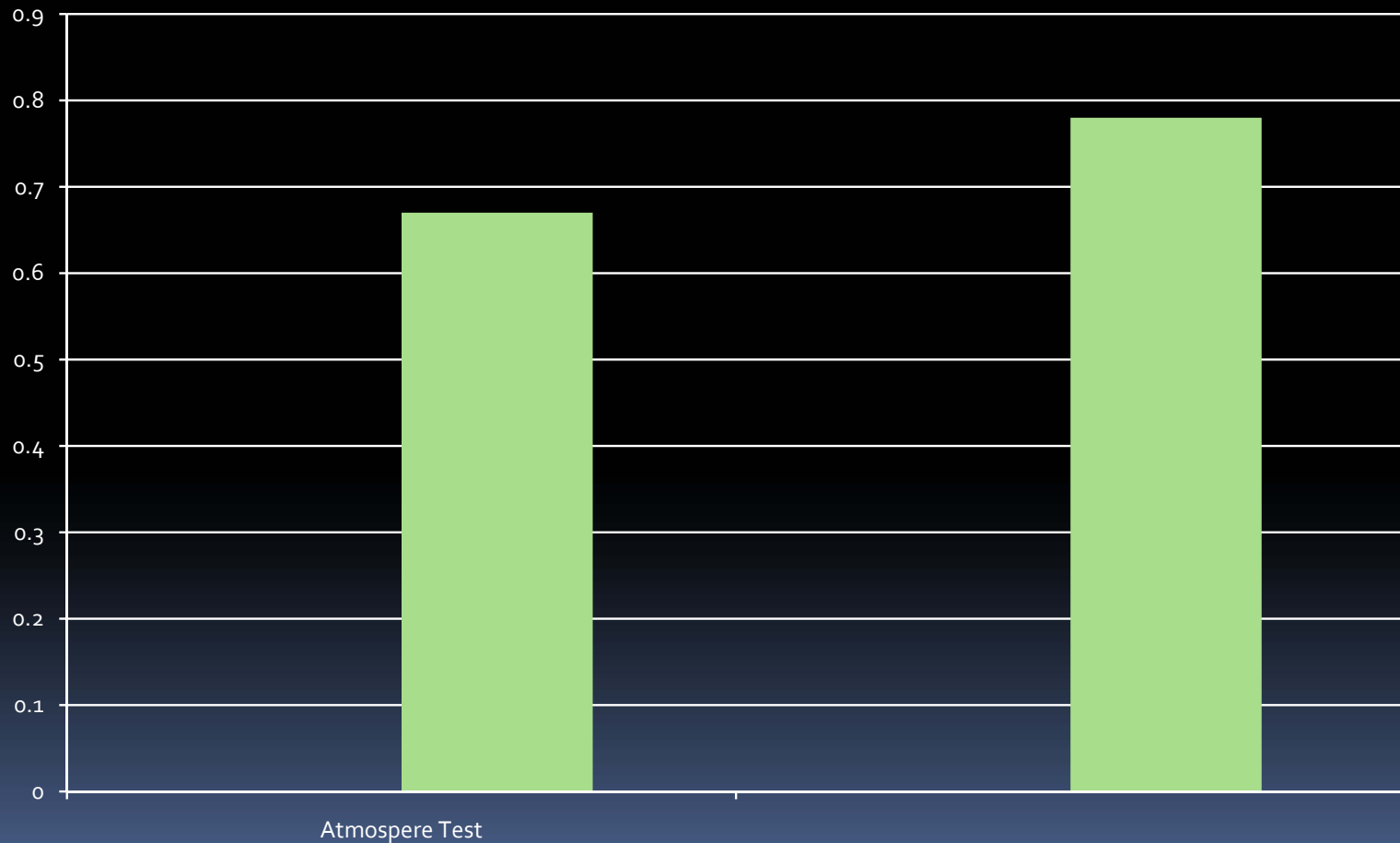


Elements and Compounds and Mixtures

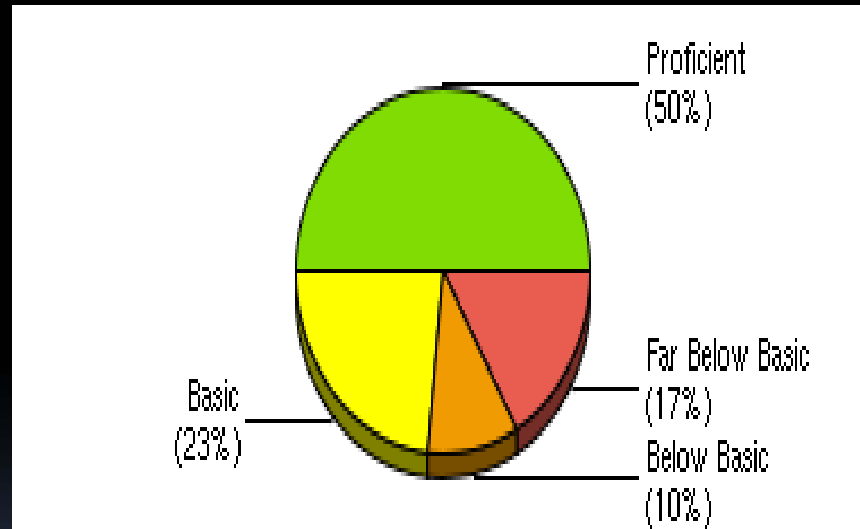
Elements, Compounds, Mixtures



Atmosphere and Weather Test

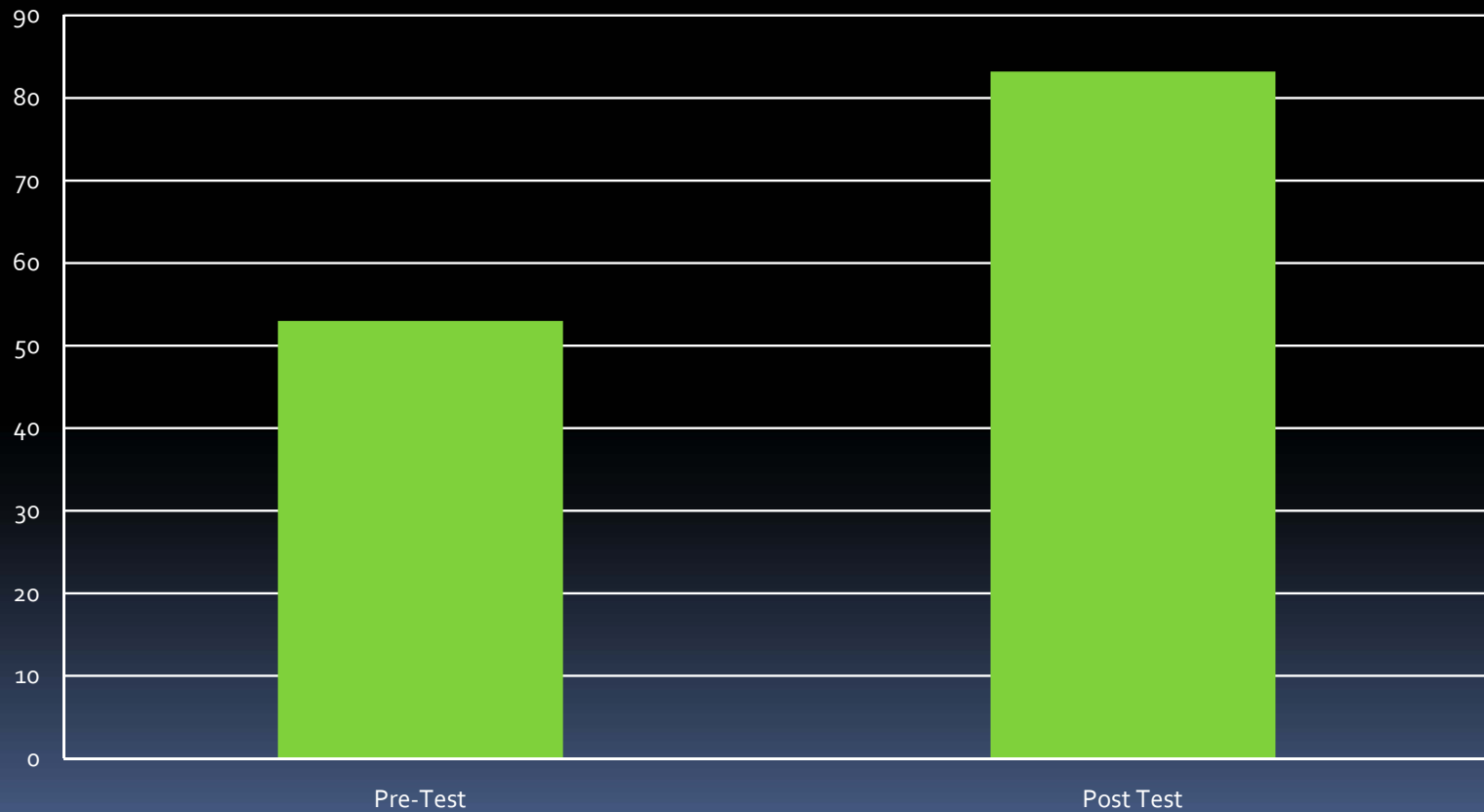


3rd Quarter Basic Skills Test

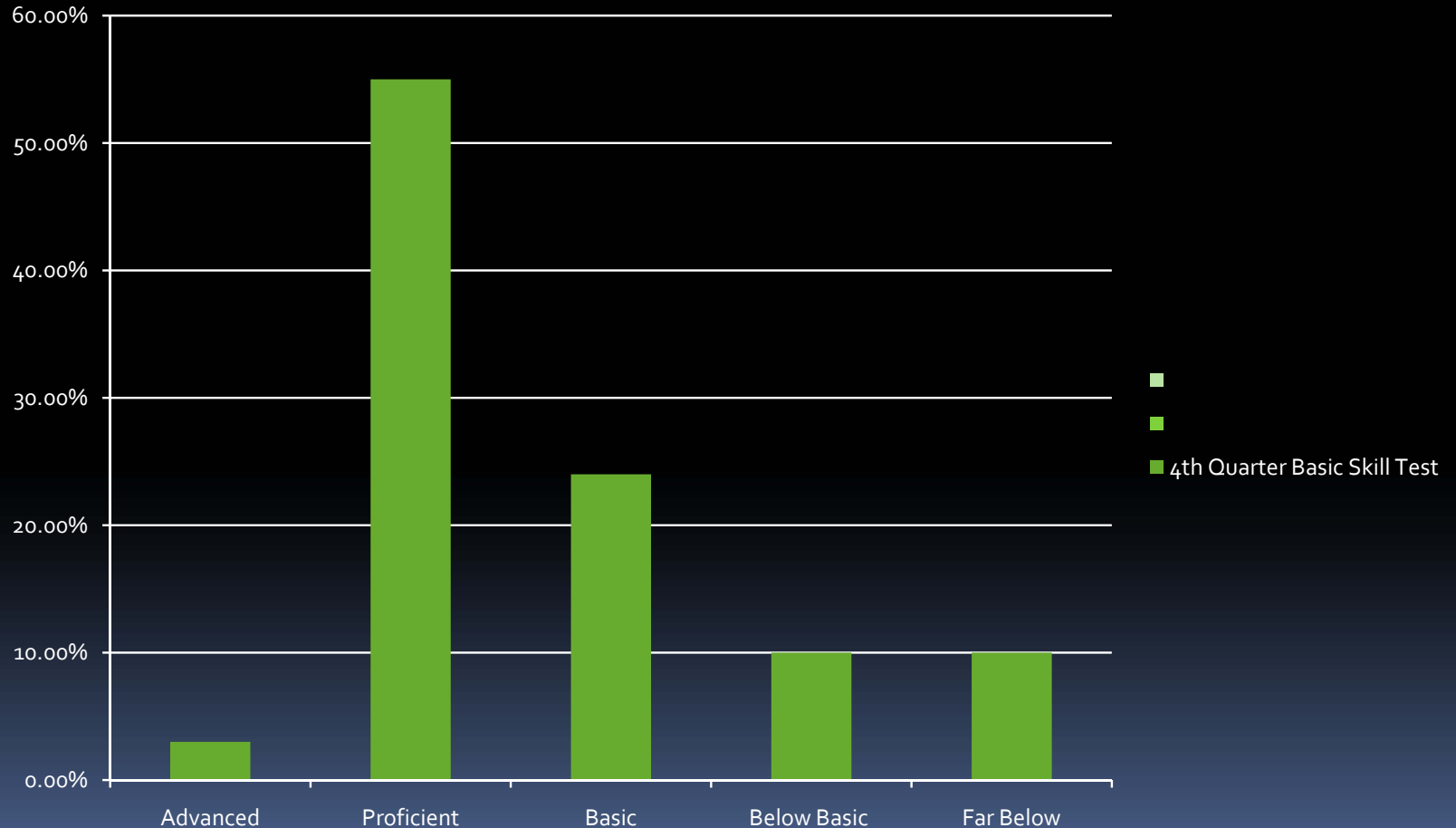


A Sound Test

Sound



4th Quarter Basic Skills Test



Conclusion

- Pre and Post test showed significant increase in the understanding of basic science skills. For most of the test at least an increase of 10-20 points.
- The 4th Quarter Basic skills test demonstrated a small movement from the proficient to advanced by 3%
- The percentage of far below decreased by 1%
- I believe we could have made greater strides in one unit Space by more modeling for the visual students. We did not use a pre test on this unit which made the evaluation difficult. The average score was 68%.
- The students demonstrated an increase in their understanding of basic science knowledge by having the opportunity to engage in a classroom where they were given choices to select how they learned and demonstrated their knowledge of a science concept.