Lesson Study at Howard High School

HOW TO SUCCEED
HOWARD HIGH SCHOOL OF TECHNOLOGY

Delaware GK-12

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Lesson Study

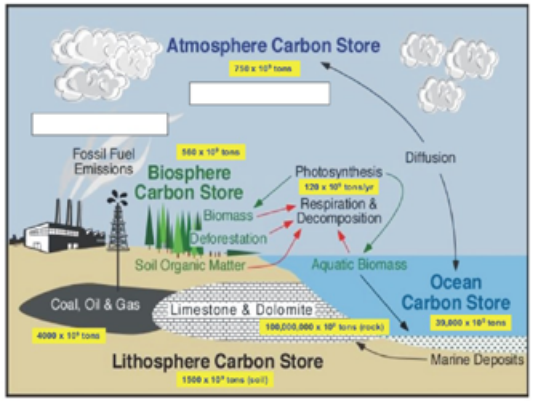
Lesson study is an approach to instructional improvement. It is a cycle in which teachers work together:

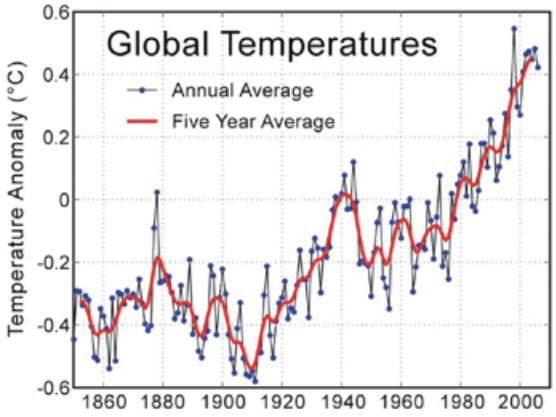
1. To consider their long-term goals for students.
2. Bring those goals to life in research lessons.
3. Conduct the lesson (with one team member teaching and others gathering evidence on student learning and development).
4. Collaboratively observe, discuss, and refine the lessons.
5. Teach the revised lesson in another classroom to study and improve it again.

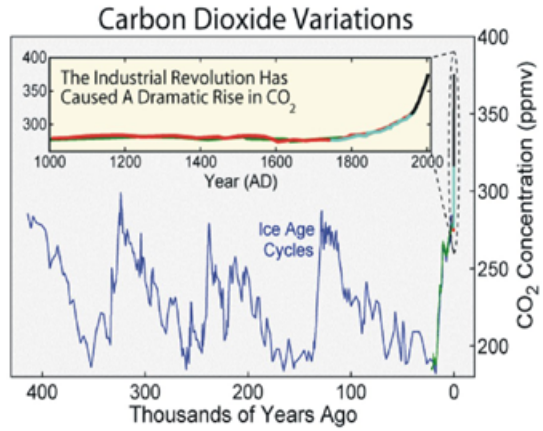
Lesson Study Steps

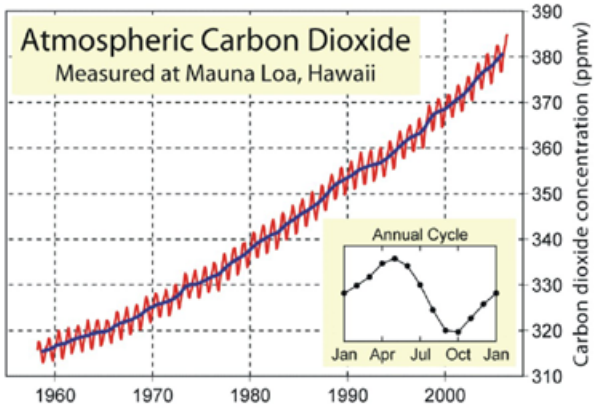
1. Form a lesson study group
   - Members, schedule, ground rules
2. Focus the lesson study
   - Theme, subject area, unit
3. Plan the research lesson
   - Long-term goals, data collection plan
4. Teach and observe the lesson
5. Discuss and analyze the lesson
   - Focused discussion on data, revisions
6. Reflect and plan
   - Re-teach the lesson

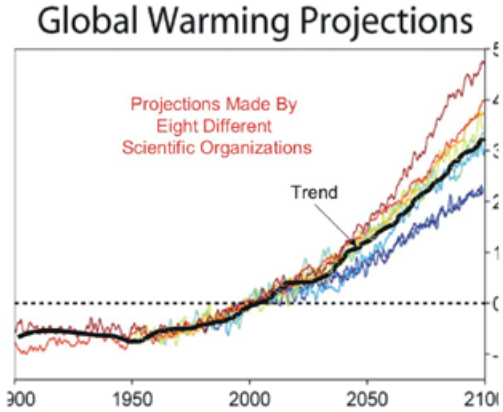
Global Climate Change Lesson

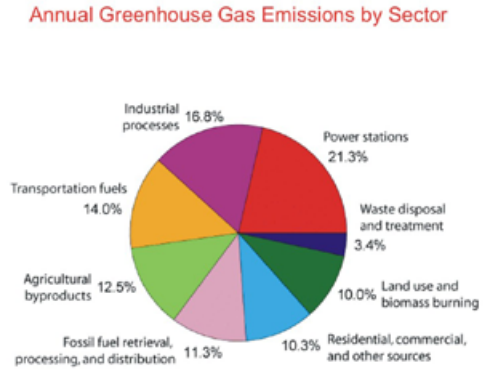












Where Do All The Greenhouse Gases Come From?

And What Can We Do About It?

GROUP PROJECT—ALTERNATIVE ENERGY SOURCES

Choose an alternative energy source

1. Nuclear
2. Hydroelectric
3. Wind
4. Hydrogen
5. Solar
6. Ethanol
7. Geothermal
8. Methane

Make an advertisement

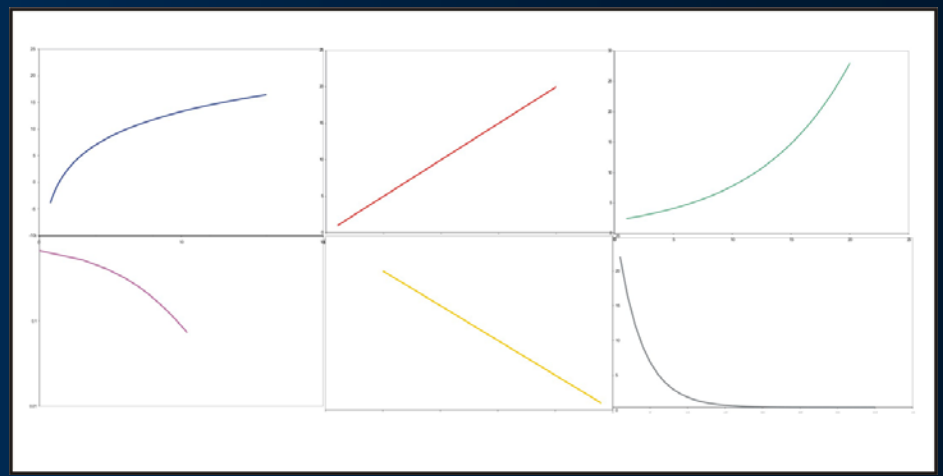
- Poster
- Newspaper ad
- Radio/TV commercial

Must consider the needs of ALL of the stakeholders

Quantitative Reasoning

- Used existing lessons on inverse power functions from Integrated Math and Astronomy
  - Distance and light intensity
  - Distance and gravitational force

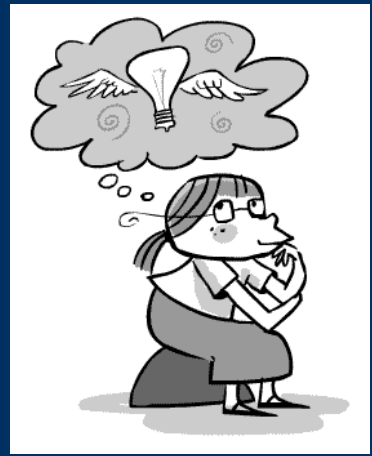
$$F = \frac{-G\, m_1\, m_2}{d^2}$$



Formative Assessment

Administered formative assessment probe on gravity

- –Structured a debate among the students based on responses
- –Ben believes that gravity needs an atmosphere and air to exist
- –Kelly believes gravity does NOT require air and atmosphere



I agree with Ben because that's what the world is made of air and atmosphere and without all that would we have anything in are universe?

I agree with Kelly because gravity needs something to act on without anything for gravity to act on its pointless.
It also needs to come from something

Reflections on Lesson Study and GK-12 experience

Lesson Study

- Valuable strategy that can turn the classroom into a research opportunity
- Can take many forms, but reflection is critical
- Understand how students learn
- ***Learn how to work effectively in groups for the benefit of everyone involved***

GK-12 experience

- Respect for students!
- Respect for educators
- Work with experienced teachers, PIs

Acknowledgments

The students

The GK-12 project leaders

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Howard High school teachers

Carol Buswell, Ralph May, Tami Lunsford, Fran Smart

Delcastle High school teachers

2006 and 2007 GK-12 fellows

Research advisor: Jim Pizzuto