St. Bernard Science Workshop

6.9-10.14

Instructional Shifts need to be interwoven throughout instruction. (Science Quality Rubric- ODE)

1. Build a deep understanding of content and effectively apply learning within and across disciplines
2. Craft responses based on evidence including: demonstrate understanding, explain reasoning and or justify a position.
3. Use technology appropriately, strategically and ethically in academic and real-world settings.

Agenda

Day 1 (9:00 am – 3:00 pm)

(Pre- Survey- Poll Everywhere)

1. Inquiry Investigations Stations
2. Force – Motion PHET Activity- Self guided- Notes/Learning Targets
3. Rubber-Band Cannon Inquiry Lesson- 5E's Lesson
4. **Lunch 11:30 am – 12:30 pm**
5. Force and Motion Reading Activity- CER
6. Presentation of Findings (EQ's/Learning Targets)

Day 2 (9:00 am – 3:00 pm – 1 hour lunch)

1. Science Quality Rubric- Rate Lesson from Day #1
2. Cognitive Demand Activity
3. Bugs-O-Copter- How does changing the mass affect speed/rotation?
    a. Science Inquiry and Application Skills / 15 Steps of Investigation
4. Bugs-O-Copter- Challenge: Make both Copters hit the ground at the same time?
    a. Seven Segments of Inquiry with Exploratory Questions
5. Ball Drop (Flour) Inquiry Activity- Teacher Choice- Levels of Inquiry- IQ Template
6. 5E's Learning Cycle-Instructional Model
7. **Lunch 11:30 am – 12:30 pm**
8. Modification of Labs/Investigations- Teachers
9. Evaluation of Inquiry- Teachers/Students
10. Development and Modifying of lessons- Working Time
11. Inquiry Investigations and Sharing
12. Post Assessment- Poll Everywhere

3-5th Grade Lesson/Unit

Interconnections within Systems

This theme focuses on helping students explore the components of various systems and then investigate dynamic and sustainable relationships within systems using scientific inquiry.

"Energy is the ability to cause motion or create change."

Content Statements by Grade

3-Heat, electrical energy, light, sound and magnetic energy are forms of energy.

4-The total amount of matter is conserved when it undergoes a change.

5-The amount of change in movement of an object is based on the mass* of the object and the amount of force exerted.

Essential Questions:

Does Energy always create change when it causes motion?
Does Energy always cause motion when it creates change?
Does Energy always cause motion when it creates change at the same time it creates change when it causes motion?
What is the relationship between force and motion?

Learning Targets:

I can articulate a claim that energy is always creating change when it causes motion.
I can articulate a claim that energy is always making motion when it is creating change.
I can articulate a claim that force and motion have a direct relationship to each other and energy.