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ED 331
Lesson Plan with Multiple Intelligence
3/14/13

1. Benchmarks:
   CCSS A3.3.2 Identify the elements of a parabola (vertex, x-intercepts, y-intercepts, direction of opening) given its symbolic form or its graph, or table and relate these elements to the coefficient(s) of the symbolic form of the function.
   CCSS A-CED.1. Create equations and inequalities in one variable and use them to solve problems.
   CCSS F.IF.7a Graph linear and quadratic equations and show intercepts, maxima, and minima.
   CCSS F-IF.9. Compare properties of two equations each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
   CCSS S-ID.6.a. Fit a function to the data; use equations fitted to data to solve problems in the context of the data.
2. Behavior Objective:
   a. Given a graph, table, or situation, the students will be able to explain and evaluate the vertical motion model with greater than 80% accuracy.
3. Anticipatory Set:
   a. The student will have fill out the multiple intelligence survey.
4. Objective/Purpose:
   a. "Today, we will create projects to explain the vertical motion model from different representations. You will work with a group of students who share similar learning styles. Together the team will create a project which demonstrates understanding of the vertical motion model. This encourages student participation by forming new connections of the vertical motion model with the real world situations and how gravity, velocity and height affects the vertical motion model."
5. Input:
   a. Task Analysis:
      i. The teacher will review the agenda for the day.
      ii. The teacher will introduce and go over the directions for the "Vertical Motion" in-class activity
         1. The students will separate into their learning styles group.
      iii. The students will work in their groups or individually on their project for 30-35 minutes.
      iv. The groups will present their projects in class.
      v. The teacher will end the class with an overall discussion on the purpose of the activity.
   b. Thinking Levels:
      i. Knowledge: state the vertical motion model equation.
      ii. Comprehension: explain the vertical motion model.
      iii. Application: demonstrate their understanding of the vertical motion model.
      iv. Analysis- compare and contrast their projects about the vertical motion model among their peer groups.

v. Synthesis: create examples of representations of the vertical motion model.
vi. Evaluation: justify their representation of the vertical motion model,

c. Learning Styles:
    i. Auditory- Students will listen as their peers explain the vertical motion model when they present their projects. The students will listen to the story telling of the vertical motion model.
    ii. Bodily/Kinesthetic- Students will perform a skit (role play) about the vertical motion model.
    iii. Interpersonal- Students have a choice to work independently on the "Vertical Motion" in-class activity.
    iv. Intrapersonal- Students have a choice to work independently on the "Vertical Motion" in-class activity.
    v. Musical- Students will sing or rap their music lyrics explaining the vertical motion model.
    vi. Logical/Mathematical- Students will demonstrate their puzzle of the vertical motion model.
    vii. Naturalistic: Students will demonstrate the natural phenomena of the vertical motion model.
    viii. Visual- The students will watch their classmates present their projects as well perceiving the spatial representation of the vertical motion model.
d. Methods and Materials:
    i. Ways of Presenting- small groups, discussions, document camera, projector
    ii. Materials needed: Poster boards, large sheets of paper, markers

6. Modeling:
    a. The teacher will explain what the students will need to incorporate into their class projects.
    b. The teacher will provide an example of explaining vertical motion model through one of the representation, which the students would be able to use.
7. Check for Understanding:
    a. The teacher will ask students to use hand signals within the three groups to check for understanding of the assignment.
    b. The teacher will ask some of the following open ended questions within the small groups:
        i. How can you represent/demonstrate the vertical motion model from your representation?
        ii. What natural phenomena are modeled by the vertical motion model?
        iii. Explain how gravity, velocity and initial height affect the projectile path?
    c. The students will work on the "Vertical Motion" in-class activity.
    d. Teacher will circulate to help with difficulties.
8. Independent Practice:
    a. The students have a choice to work on the "Vertical Motion" in-class activity and present their project in class by themselves.

9. Closure:
    a. After presenting the group projects, bring the class back together to for a class discussion and reflection on what they learned today about vertical motion.
        i. This will allow the students to reflect what they learn today.
    b. Wrap up and put away binders and calculators.