Using Instructional Strategies to Motivate Students

Green Lake Agenda

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Thursday May 1, 2008

8:00 am

**Walking In... Give each person a playing card
5 min  Introductions
5 min  Word Splash (handout and transparency)
  •  KWL (handout and transparency)
  •  Think Pair Share

**Move into number alike groups as suits pick up appropriate paper
  (Spades = Blue, Hearts = Red, Clubs = Orange, Diamonds = Green)
10 min  Activity Review
  •  Create a problem for the given situation
  •  Surface Area, Pythagorean Theorem, Volume, Trig Ratios

**Move into Suit groups of 4 by color
20 min  Teach each other the problems that were created
  •  Round Robin each problem
  •  Each person takes turns giving the situation
  •  Everyone does the given problem

5 min  Free Association around groups
  •  Geometry
  •  Measurement
  •  Trigonometry

10 min  Silent Rally with shoulder partner
  •  Post It Problems

10 min  Gallery Walk
  •  Post It Problems
  •  Make + and - comments on the back of the sheet

10 min  Pictionary
  •  Use Word Splash Vocabulary

15 min  Question and Answer Debrief
  •  Distribute Recipe cards

**Give Dum Dums for participation
**Blank Transparencies and overhead markers for Pictionary
**Deck of Cards
Geometry
Surface Area
Measurement
Volume
Ratio
Pythagorean Theorem
Prism
Pyramid
Tangent
<table>
<thead>
<tr>
<th>What words do you know?</th>
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<tbody>
<tr>
<td><strong>Words I know and CAN state the definition of 😊</strong></td>
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Create a real world situation using the topic below for your group. Sketch the appropriate diagram and solve your problem. Make sure everyone in your group is prepared to teach others about your topic.

<table>
<thead>
<tr>
<th>Pythagorean Theorem</th>
<th>Trig Ratio</th>
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<td>Surface Area</td>
<td>Volume</td>
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<td>Geometry</td>
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<td>Volume</td>
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<td>Trigonometry</td>
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<td>Sine</td>
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<td>Tangent</td>
<td>Pythagorean Theorem</td>
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<td>Triangle</td>
<td>Prism</td>
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<td>Pyramid</td>
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1. **Word Splash**  
   *Vocabulary Builder*  
   1 list of vocabulary words from a unit arranged "creatively" on paper  
   1 sheet of paper with the following headings:  
   - Words I can state the definition of  
   - Words I recognize  
   - Words I am not familiar with  
   30 seconds for each student to discuss the words with a partner  
   Choose random students to share with the class  
   Use before a unit, in the middle of a unit, and at the end of the unit

2. **Cooperative Learning Groups**  
   *A way to group students that encourages them to communicate*  
   1 deck of cards  
   4 students in a group  
   Group students by face value or number  
   1 problem  
   Students are only allowed to ask a question when they give up a card to the teacher.  
   Possible incentive for students who have the most cards by the end of the problem

3. **Silent Rally**  
   *A fun way to check for understanding!*  
   1 new concept  
   2 students working together as a team  
   1 pencil for each pair  
   A class of silent students  
   Each student alternates steps in solving a problem using only 1 pencil.  
   There is no talking! Students raise their hands when finished.  
   The teacher checks for accuracy.  
   If they are incorrect they repeat the process until successful.
4. **Gallery Walk**

   *Empowering the students voice*

   1 complete project per group
   1 set of post-it notes, or a sheet of paper per group
   1 pencil for each student
   
   A class of silent students with creative minds
   
   Place completed projects on desks around the room with a set of post-it notes at each project. Each student silently visits each project and writes positive comments or corrections on the post-it notes that relate to the students work.

5. **Free Association**

   *Reinforces Vocabulary*

   1 vocabulary word that’s been learned
   2 students sitting next to each other
   
   The teacher says one word from the vocabulary
   
   Students rally back and forth with one word responses associated with the word
   
   Teacher calls on the last student from each pair who spoke.
   
   Students state what the last word was to the class and why it was said

6. **Pictionary**

   *A vocabulary review game*

   Words from the word splash
   
   Dry erase board, chalkboard, or overhead projector
   
   2 teams of students
   
   Student’s alternate turns drawing the vocabulary word
   
   Teams take turns guessing the vocabulary word
   
   Points awarded to the team that gets the correct answer
   
   The team with the most points wins
1. Use Pythagorean Theorem to find side $c$ if $a = 7$ and $b = 4$.
   Answer: $\sqrt{65} = 8.06$
2. Use Pythagorean Theorem to find side $b$ if $a = 9$ and $c = 24$.
   Answer: $\sqrt{495} = 22.25$
3. Use Pythagorean Theorem to find side $a$ if $b = 26$ and $c = 58$.
   Answer: $\sqrt{2688} = 51.85$
4. Find the surface area of the equilateral triangular prism with height of triangle 10 cm, sides of triangular bases 12 cm, and prism height of 14 cm.
   Answer: 624 cm$^2$
5. Find the surface area of the cube with sides 8 in.
   Answer: 384 in$^2$
6. Find the surface area of the rectangular prism with length 5m, width 3m, and height 8 m.
   Answer: 158 m$^2$
7. Find the volume of the triangular prism with height of triangle 10 in, sides of the bases 12 in, and prism height of 14 in.
   Answer: 840 in$^3$
8. Find the volume of the cube with sides 8 mm.
   Answer: 512 mm$^3$
9. Find the volume of the rectangular prism with length 5cm, width 3cm, and height 8cm.
   Answer: 120 cm$^3$
10. Use trig ratios to find $LA$ in $\triangle ABC$ if $a=4$ and $b=12$ with $C$ as the right angle.
    Answer: 18°
11. Use trig ratios to find the length of $e$ in $\triangle DEF$ if $LE = 30°$, and $d = 12$ with $F$ as the right angle.
    Answer: 6.9
12. Use trig ratios to find angle $G$ in $\triangle GHJ$ if $g=9$ and $j=13$ with $J$ as the right angle.
    Answer: 44°