

Rigor

rig-or noun \`ri-ger\
1.harsh inflexibility in opinion, temper or judgment
2.an act of strictness or cruelty
3.a tremor caused by a chill
4.strict precision
5.obsolete

- They underwent the rigors of military training.
- They conducted the experiments with scientific rigor.
- The scholar was known for her intellectual rigor.

General Physical Activities Defined by Level of Intensity

The following is in accordance with CDC and ACSM guidelines.

Moderate activity⁺ 3.0 to 6.0 METs* (3.5 to 7 kcal/min)	Vigorous activity⁺ Greater than 6.0 METs* (more than 7 kcal/min)
Walking at a moderate or brisk pace of 3 to 4.5 mph on a level surface inside or outside, such as <ul style="list-style-type: none"> • Walking to class, work, or the store; • Walking for pleasure; • Walking the dog; or • Walking as a break from work. Walking downstairs or down a hill Racewalking—less than 5 mph Using crutches Hiking Roller skating or in-line skating at a leisurely pace	Racewalking and aerobic walking—5 mph or faster Jogging or running Wheeling your wheelchair Walking and climbing briskly up a hill Backpacking Mountain climbing, rock climbing, rapelling Roller skating or in-line skating at a brisk pace
Bicycling 5 to 9 mph, level terrain, or with few hills Stationary bicycling—using moderate effort	Bicycling more than 10 mph or bicycling on steep uphill terrain Stationary bicycling—using vigorous effort
Aerobic dancing—high impact Water aerobics	Aerobic dancing—high impact Step aerobics Water jogging Teaching an aerobic dance class
Calisthenics—light Yoga Gymnastics General home exercises, light or moderate effort, getting up and down from the floor Jumping on a trampoline Using a stair climber machine at a light-to-moderate pace Using a rowing machine—with moderate effort	Calisthenics—push-ups, pull-ups, vigorous effort Karate, judo, tae kwon do, jujitsu Jumping rope Performing jumping jacks Using a stair climber machine at a fast pace Using a rowing machine—with vigorous effort Using an arm cycling machine—with vigorous effort
Weight training and bodybuilding using free weights, Nautilus- or Universal-type weights	Circuit weight training
Boxing—punching bag	Boxing—in the ring, sparring Wrestling—competitive
Ballroom dancing Line dancing Square dancing Folk dancing Modern dancing, disco Ballet	Professional ballroom dancing—energetically Square dancing—energetically Folk dancing—energetically Clogging
Table tennis—competitive Tennis—doubles	Tennis—singles Wheelchair tennis
Golf, wheeling or carrying clubs	-----
Softball—fast pitch or slow pitch Basketball—shooting baskets Coaching children's or adults' sports	Most competitive sports Football game Basketball game Wheelchair basketball Soccer Rugby Kickball Field or rollerblade hockey Lacrosse

Academic-Rigor

Searching-for-evidence

Inquiry

Acquire-and-apply-knowledge

Higher-order-thinking-skills

Taking-different-perspectives

Standards-based

Habits-of-mind

What rigor looks like...

What rigor looks like...



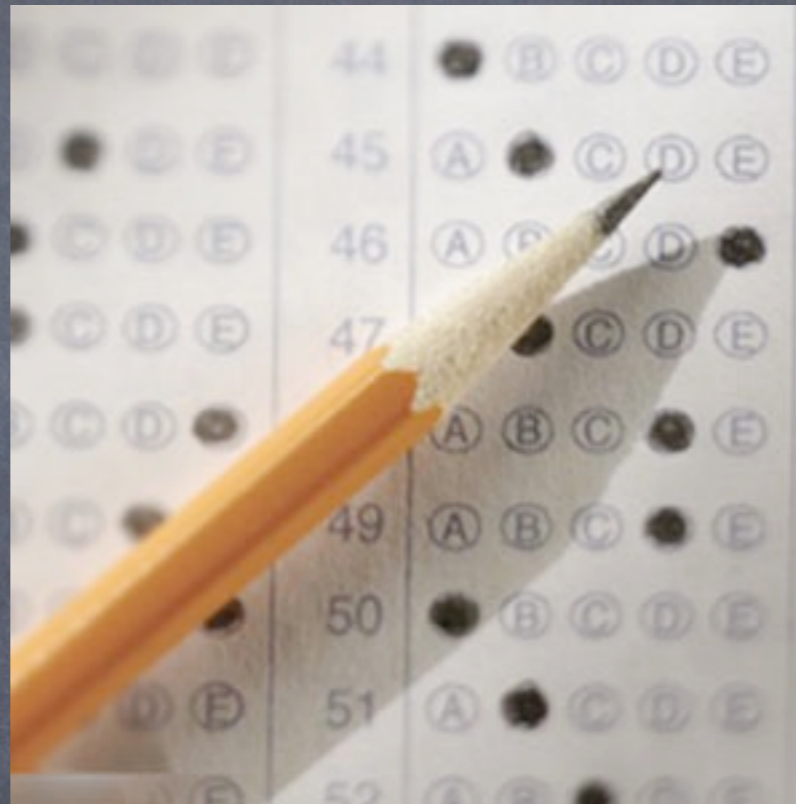
What rigor doesn't look like...

What rigor doesn't look like...



superstock.com

Sample Questions From Academic Tests World Wide



British

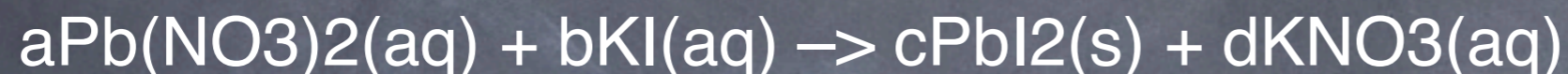
- Sarah is learning to drive. Her driving instructor points out the safety systems on the car. Three of them are important safety features. Which one is not a safety feature?
 - a. crumple zone
 - b. large wheels
 - c. seat belts
 - d. air bag

International

- A pizzeria serves two round pizzas of the same thickness in different sizes. The smaller one has a diameter of 30 cm and costs 30 zeds. The larger one has a diameter of 40 cm and costs 40 zeds.
- Which pizza is better value for money? Show your reasoning.

Singapore

The following equation represents the precipitation reaction between lead (II) nitrate solution and potassium iodide solution.



In an experiment, 20.0g of lead (II) nitrate and 20.0g of potassium iodide were dissolved separately to form 250cm³ of lead (II) nitrate solution and 250cm³ of potassium iodide solution.

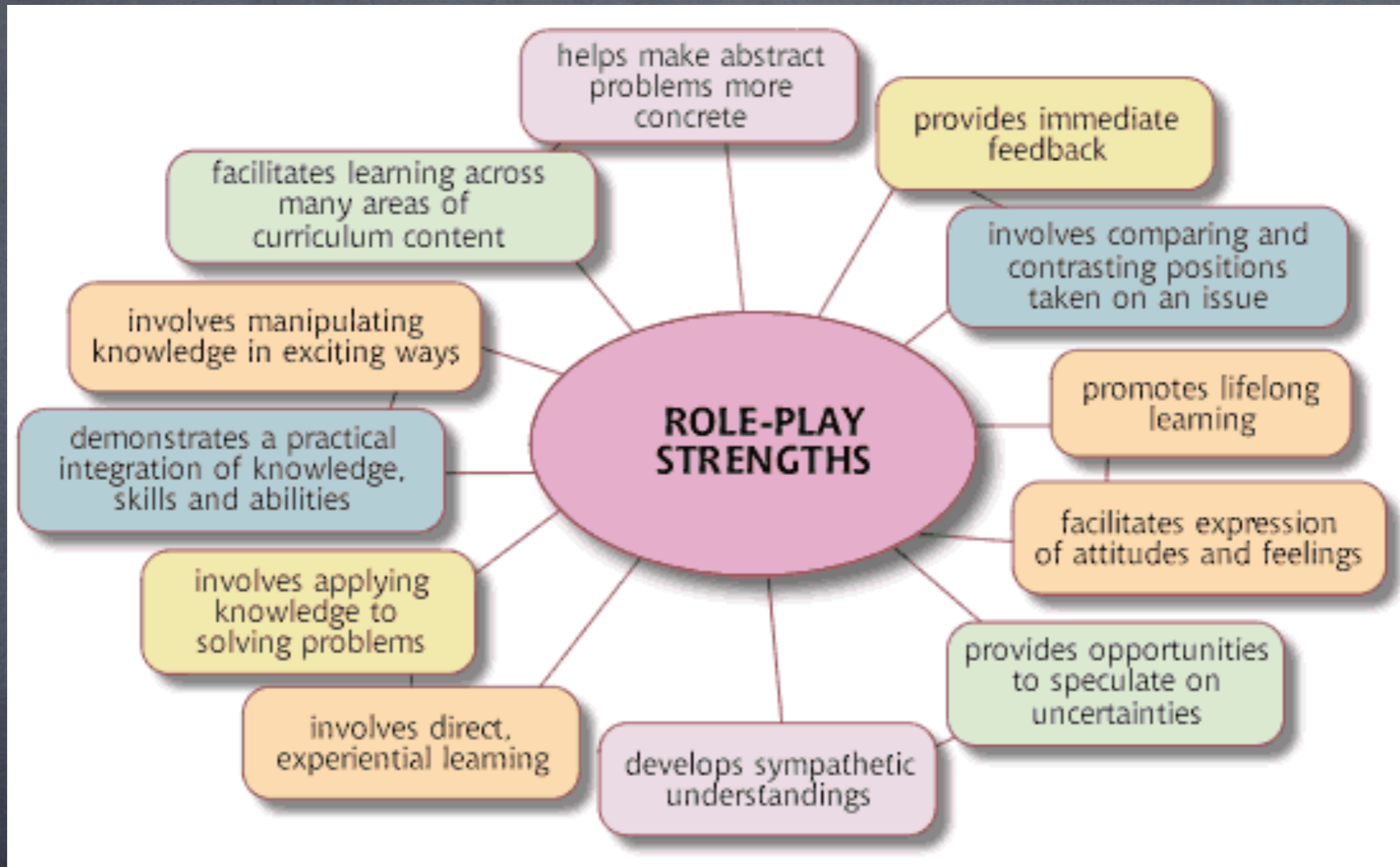
- Determine a, b, c and d.
- Using suitable calculation, identify the limiting reactant.
- What is the maximum mass of lead (II) iodide (PbI₂) that can be obtained from the experiment?
- What is the concentration of potassium nitrate in the reaction mixture when the reaction is completed? Give your answers in mol/dm³.
- Write an ionic equation for the above reaction and identify the spectator ion.

United States

California Achievement (Chemistry)

- When cations and anions join, they form what kind of chemical bond?
- a. ionic b. hydrogen c. metallic d. covalent

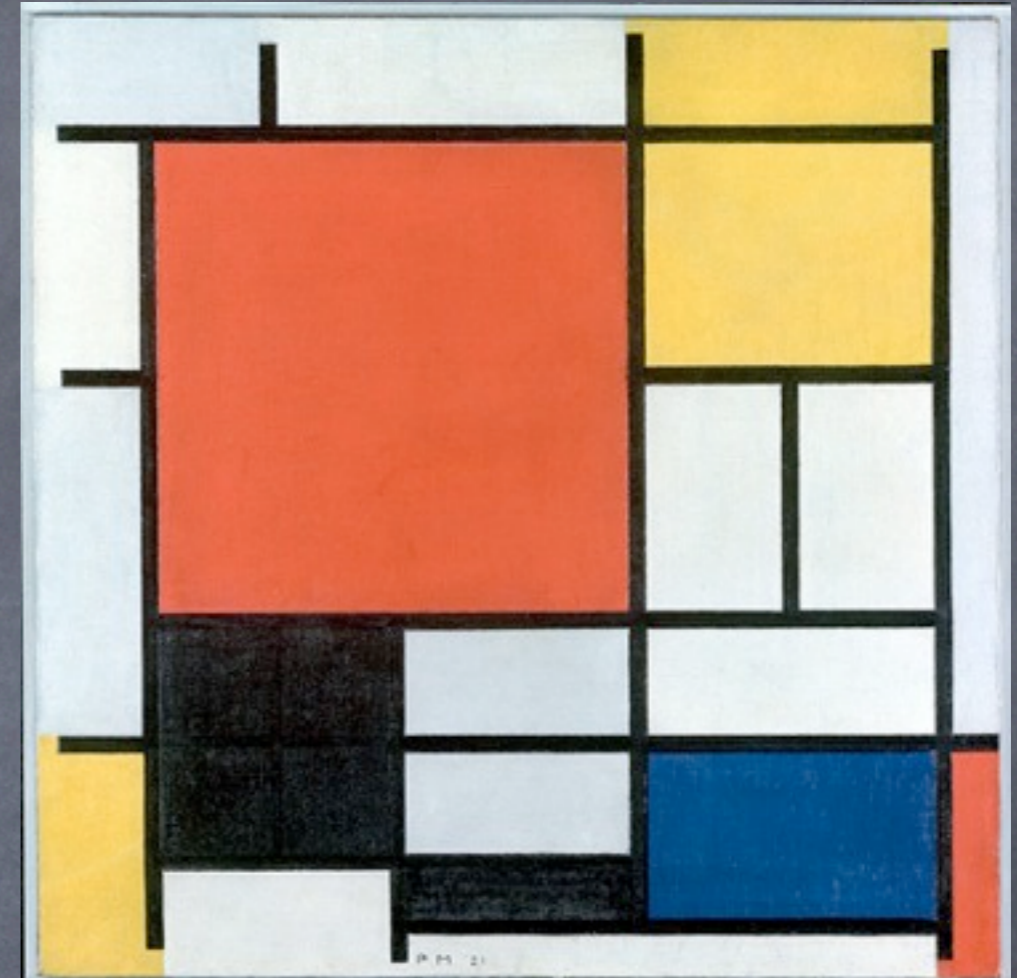
Activity



Directions

- You will have ten minutes to plan and rehearse your role play scenario with your group.
- Groups:
 - K & 5
 - 1 & 3
 - 2 & 4
 - Specialists
- When you hear the sound, stop and be ready to present.

Scenario #1



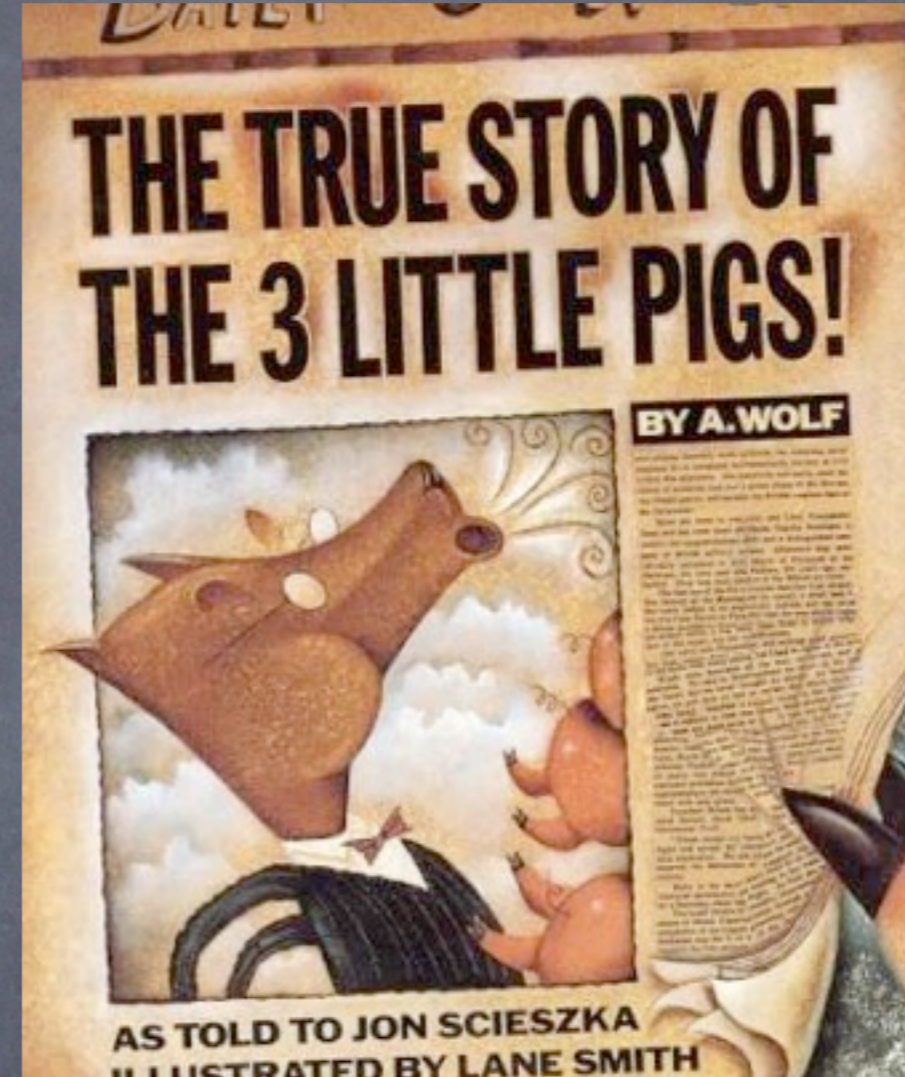
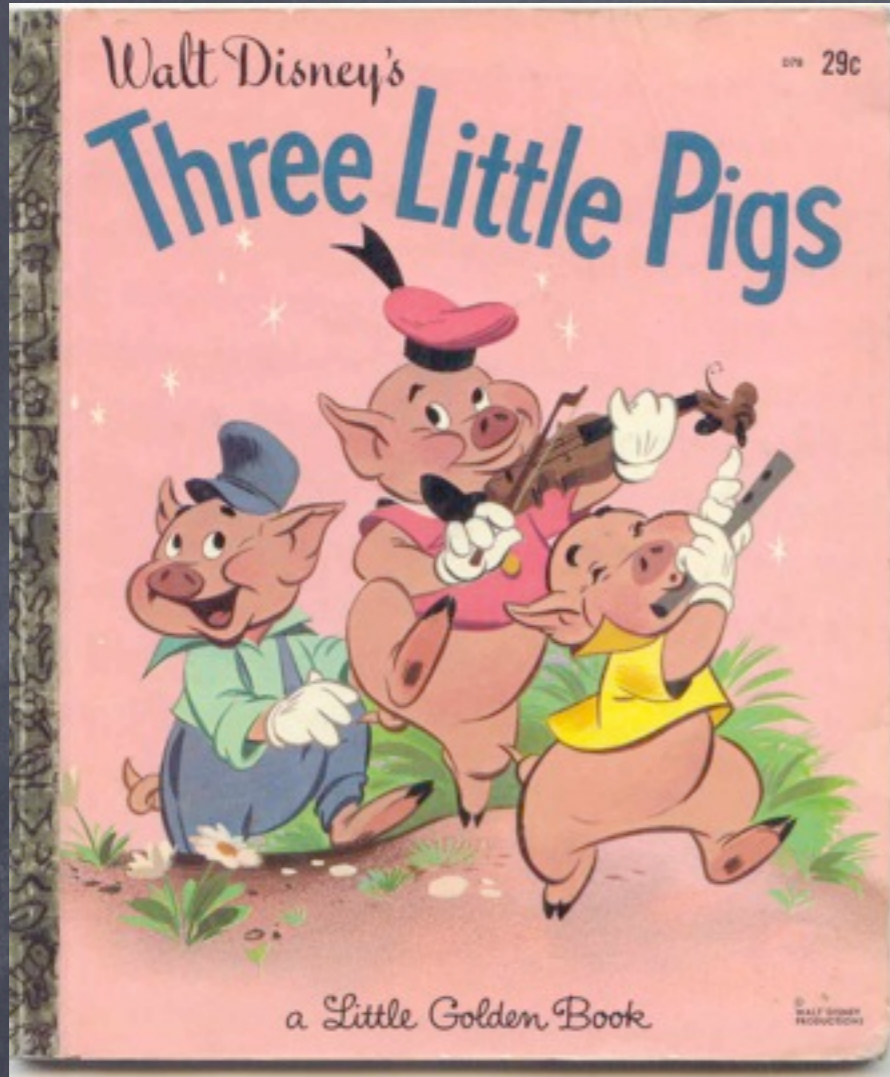
Piet Mondrian - Komposition mit großer roter Fläche, Gelb, Schwarz, Grau und Blau, 1921 © Mondrian/Holtzman Trust, c/o HCR International, Warrenton VA

Scenario #1

Work with your tablemates to complete and present the following tasks:

1. Find out how and why Mondrian changed.
2. Present three paintings from 3 different periods in his career and be able to explain Mondrian's metamorphosis.
3. Search out an example of one other artist that went through a metamorphosis during his/her career.
4. Explain why change happens. Decide if it has value.

Scenario #2



Scenario #3

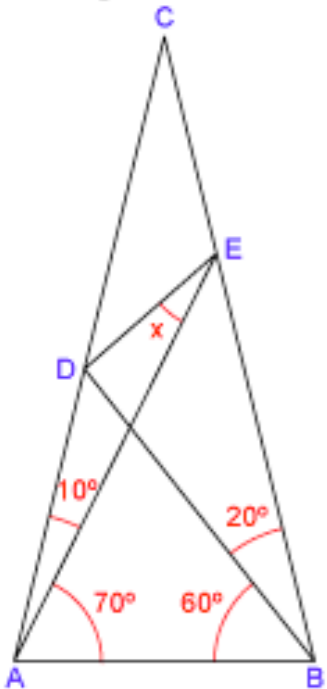
What would it look like if people could sense stranger danger? Draw a picture.



Scenario # 4

World's Hardest Easy Geometry Problem

Triangle Problem 1



This diagram is not drawn to scale.

Using only elementary geometry, determine angle x . Provide a step-by-step proof.

You may use only elementary geometry, such as the fact that the angles of a triangle add up to 180 degrees and the basic congruent triangle rules (side-angle-side, etc.). You may not use trigonometry, such as sines and cosines, the law of sines, the law of cosines, etc. There is a review of elementary geometry below.

This is the hardest problem I have ever seen that is, in a sense, easy. It really can be done using only elementary geometry. This is not a trick question.

Here is a [very small hint](#). Here is a [small hint](#). These hints are not spoilers.

Based on what you just witnessed, can you describe a rigorous classroom?

- ▶ What caused some of the discussions to be rigorous?
- ▶ Which "classroom" does your own sound most like?



Next time...

How do you take an everyday task and make it rigorous?

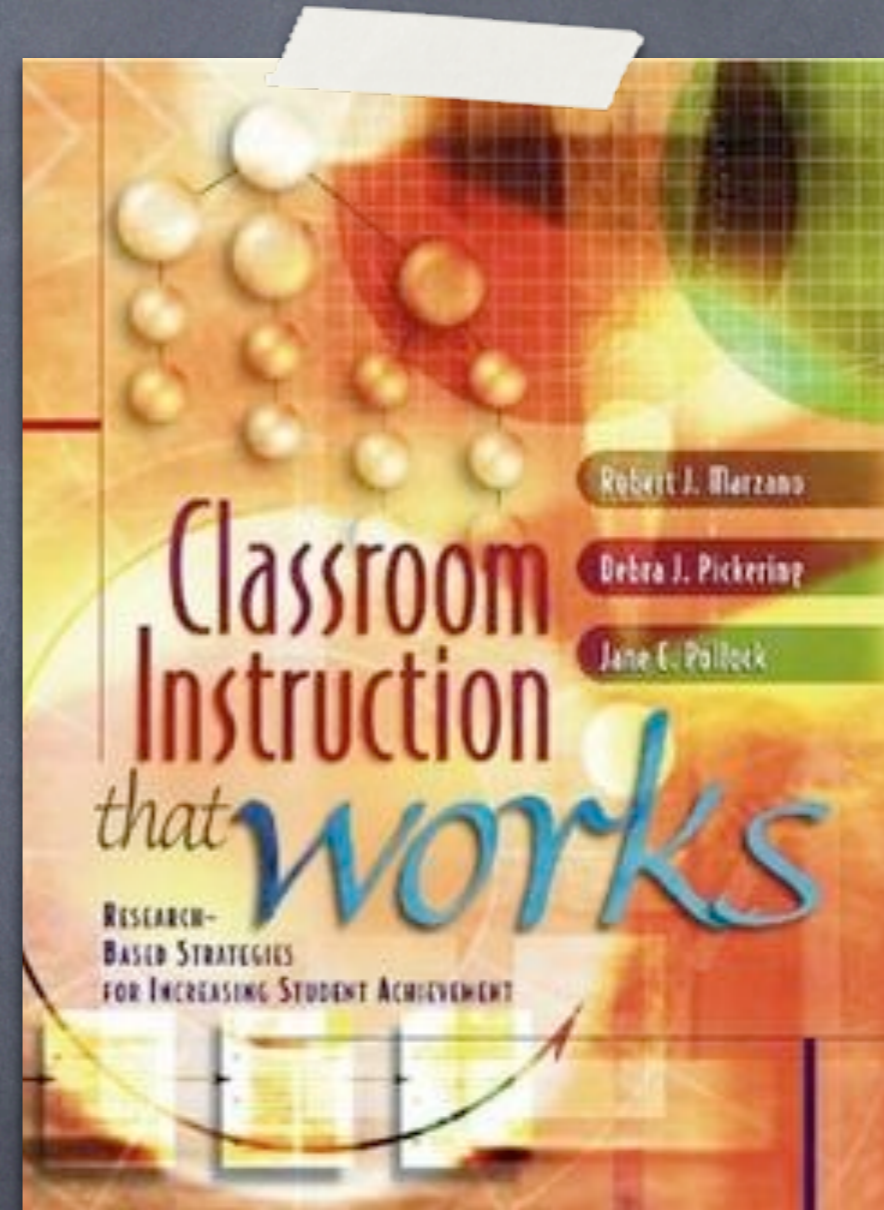
How can you add more rigor to what you are already doing?

How does the core curriculum fit in?



Marzano's High Yield Strategies

- 1) Identify Similarities & Differences- 45%ile
- 2) Summarize & Take Notes- 34%ile
- 3) Reinforce Effort- 29%ile
- 4) Assign & Allow Practice- 28%ile
- 5) Create Visual Representation- 27%ile
- 6) Use Cooperative Learning- 27%ile
- 7) Get Immediate Feedback- 23%ile
- 8) Generate Hypothesis & Test- 23%ile
- 9) Apply Graphic Organizers & Cues- 22%ile



based on the research from:
Classroom Instruction that Works
by Robert J. Marzano, Debra J. Pickering, Jane E. Pollock

Engagement Strategies: Modeled in PLTs

- ▶ Open Compare and Contrast
- ▶ Four Two One Summarizer
- ▶ Parts to Whole Organizer
- ▶ Reviewing With Analogies

Core Curriculum



2-3 grade reading sample

Babbitt, Natalie. *The Search for Delicious*. New York: Farrar, Straus and Giroux, 1969. (1969) From the Prologue

There was a time once when the earth was still very young, a time some call the oldest days. This was long before there were any people about to dig parts of it up and cut parts of it off. People came along much later, building their towns and castles (which nearly always fell down after a while) and plaguing each other with quarrels and supper parties. The creatures who lived on earth in that early time stayed each in his own place and kept it beautiful. There were dwarfs in the mountains, woldwellers in the forests, mermaids in the lakes, and, of course, winds in the air.

There was one particular spot on the earth where a ring of mountains enclosed a very dry and dusty place. There were winds and dwarfs there, but no mermaids because there weren't any lakes, and there were no woldwellers either because forests couldn't grow in so dry a place.

Then a remarkable thing happened. Up in the mountains one day a dwarf was poking about with a sharp tool, looking for a good spot to begin mining. He poked and poked until he had made a very deep hole in the earth. Then he poked again and clear spring water came spurting up in the hole. He hurried in great excitement to tell the other dwarfs and they all came running to see the water. They were so pleased that they built over it a fine house of heavy stones and they made a special door out of a flat rock and balanced it in its place very carefully on carved hinges. Then one of them made a whistle out of a small stone which blew a certain very high note tuned to just the right warble so that when you blew it, the door of the rock house would open, and when you blew it again, the door would shut. They took turns being in charge of the whistle and they worked hard to keep the spring clean and beautiful. had made a very deep hole in the earth. Then he poked again and clear spring water came spurting up in the hole. He hurried in great excitement to tell the other dwarfs and they all came running to see the water. They were so pleased that they built over it a fine house of heavy stones and they made a special door out of a flat rock and balanced it in its place very carefully on carved hinges. Then one of them made a whistle out of a small stone which blew a certain very high note tuned to just the right warble so that when you blew it, the door of the rock house would open, and when you blew it again, the door would shut. They took turns being in charge of the whistle and they worked hard to keep the spring clean and beautiful.

Core Curriculum (Grades 2–3)

Performance Tasks

- Students explain how Mark Teague's illustrations contribute to what is conveyed in Cynthia Rylant's *Poppleton in Winter* to create the mood and emphasize aspects of characters and setting in the story. [RL.3.7]
- Students read fables and folktales from diverse cultures that represent various origin tales, such as Rudyard Kipling's "How the Camel Got His Hump" and Natalie Babbitt's *The Search for Delicious*, and paraphrase their central message, lesson, or moral. [RL.2.2]
- Students describe the overall story structure of *The Thirteen Clocks* by James Thurber, describing how the interactions of the characters of the Duke and Princess Saralinda introduce the beginning of the story and how the suspenseful plot comes to an end. [RL.2.5]
- When discussing E. B. White's book *Charlotte's Web*, students distinguish their own point of view regarding Wilbur the Pig from that of Fern Arable as well as from that of the narrator. [RL.3.6]
- Students describe how the character of Bud in Christopher Paul Curtis' story *Bud, Not Buddy* responds to a major event in his life of being placed in a foster home. [RL.2.3]
- Students read Paul Fleischman's poem "Fireflies," determining the meaning of words and phrases in the poem, particularly focusing on identifying his use of nonliteral language (e.g., "light is the ink we use") and talking about how it suggests meaning. [RL.3.4]