

21st Century Skills in the Elementary Standards-Based Classroom



Dr. Debbie Powell
University of North Carolina Wilmington

A Day in a 21st Century Classroom

8:30-9:15 The Integrated Component (Content Learning)

- About 6 units a year built around the NC Standards
- Inquiry predominate mode of instruction
- Organized around a “big idea” or significant content
- Incorporates 21st Century content, skills and dispositions
- At least once a year, children are involved in a service learning project or a real community problem

9:15-10:00 Reading Workshop

- Shared & Guided Reading; whole class mini lesson
- 10:00-10:15 Recess

10:15-11:00 Writing Workshop

11:00-11:45 Reading Workshop

- Independent Reading; Literature Groups

11:45-12:30 Lunch and Recess

12:30-12:45 Read Aloud

12:45-1:45 Math Workshop

1:45-2:45 Special Classes: Art, Music, PE, etc.

2:45 – 3:00 Class meeting, clean up

3:00 Dismissal

Youtube Videos on 21st Century

A vision of K-12 students today:

http://www.youtube.com/watch?v=_A-ZVCjfWf8

21st Century: What Will It Look Like?

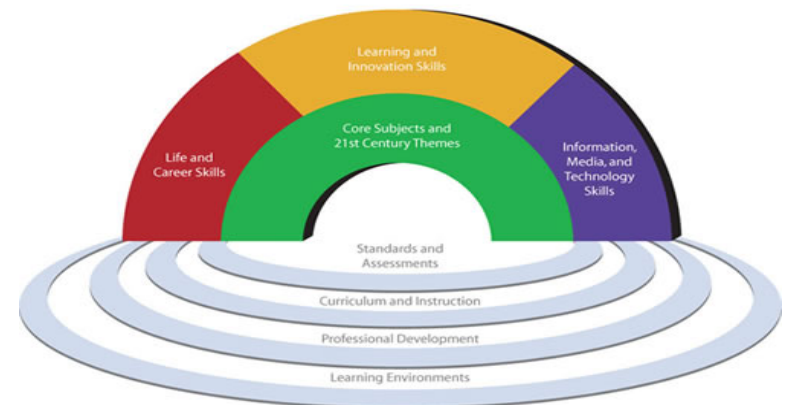
<http://www.youtube.com/watch?v=c1KEFgD6Dtg>

21 Century Pedagogy

<http://www.youtube.com/watch?v=l72UFXqa8ZU>

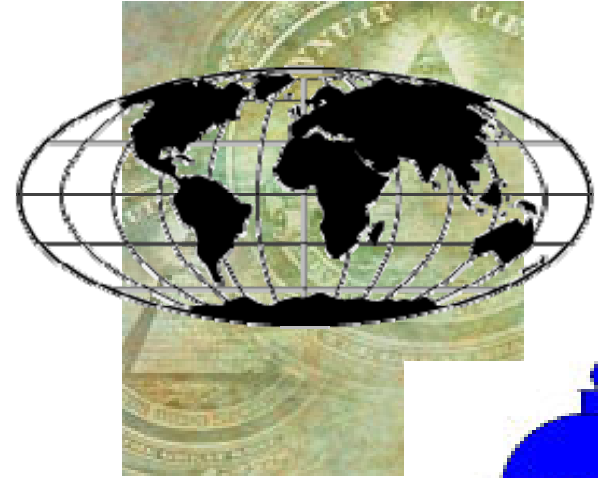
What “Skills” are 21st Century?

- Critical-thinking and problem-solving skills
- Communication and collaboration skills
- Creativity and innovation skills
- Information and communications technology literacy
- Contextual learning skills
- Information & media literacy skills



“Content” of 21st Century

Core Curriculum +



- Global awareness
- Financial, economic, business and entrepreneurial literacy
- Civic Literacy
- *Environmental awareness*



What Happens to the Air Pressure?

As you go higher in altitude, air pressure decreases steadily. Air pressure is the force put on a given area by the weight of the air above it. Air is a mixture of gases. It is made mostly of molecules of nitrogen and oxygen. Molecules are the smallest pieces that a substance can be broken into without changing what the substance is.

The molecules have mass. They are attracted to the Earth by gravity, so they have weight. Normal air pressure is greatest at sea level. There the column of air extending above the surface to the top of the atmosphere is tallest. Sea level air pressure is about 1.04 kilograms per

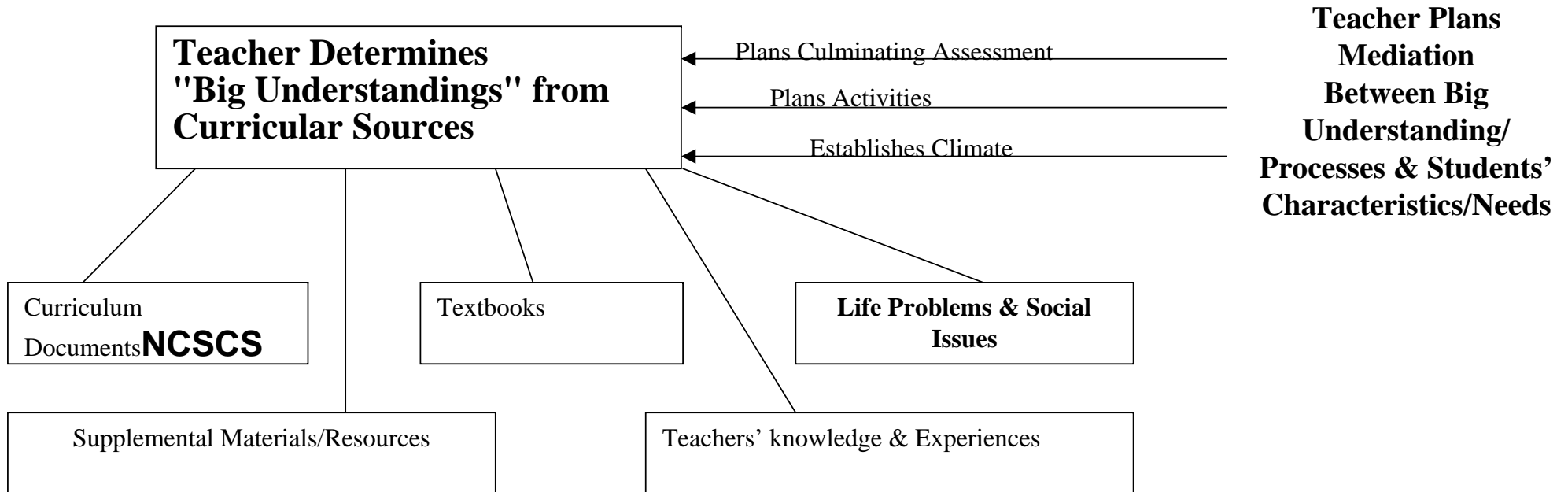
square centimeter (14.7 pounds per square inch). As you go higher in the altitude, the height of the column above you becomes shorter. Therefore the weight of that column---or air pressure---becomes less.

Air pressure depends on the weight of its molecules pressing down on a given area. Molecules are closer together, or more dense, at sea level than higher in the atmosphere. Denser air weighs more than an equal volume of less dense air and pushes down harder. That is why air pressure is higher at sea level than high in the atmosphere.

From: McGraw-Hill. Science. Level 5.
pp. D11-12.

Conceptual Understanding comes BEFORE Comprehension

An Inquiry Model for Teaching & Learning



1 Engagement Phase



Teacher Provides Stimuli, Assesses Prior Knowledge, Creates Disequilibrium and a "Need to Know"

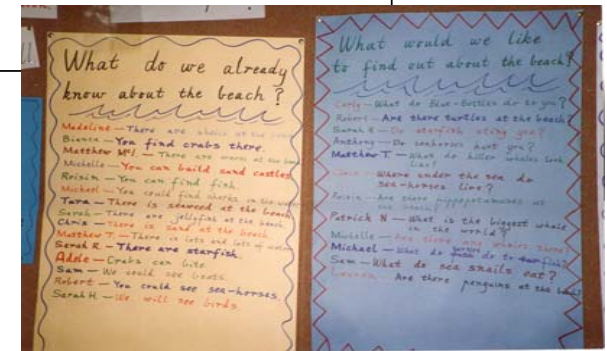
Students Develop Purpose/Ownership/Responsibility, Pose Questions and Select Strategies & Resources.

Characteristics of Initiating Activities

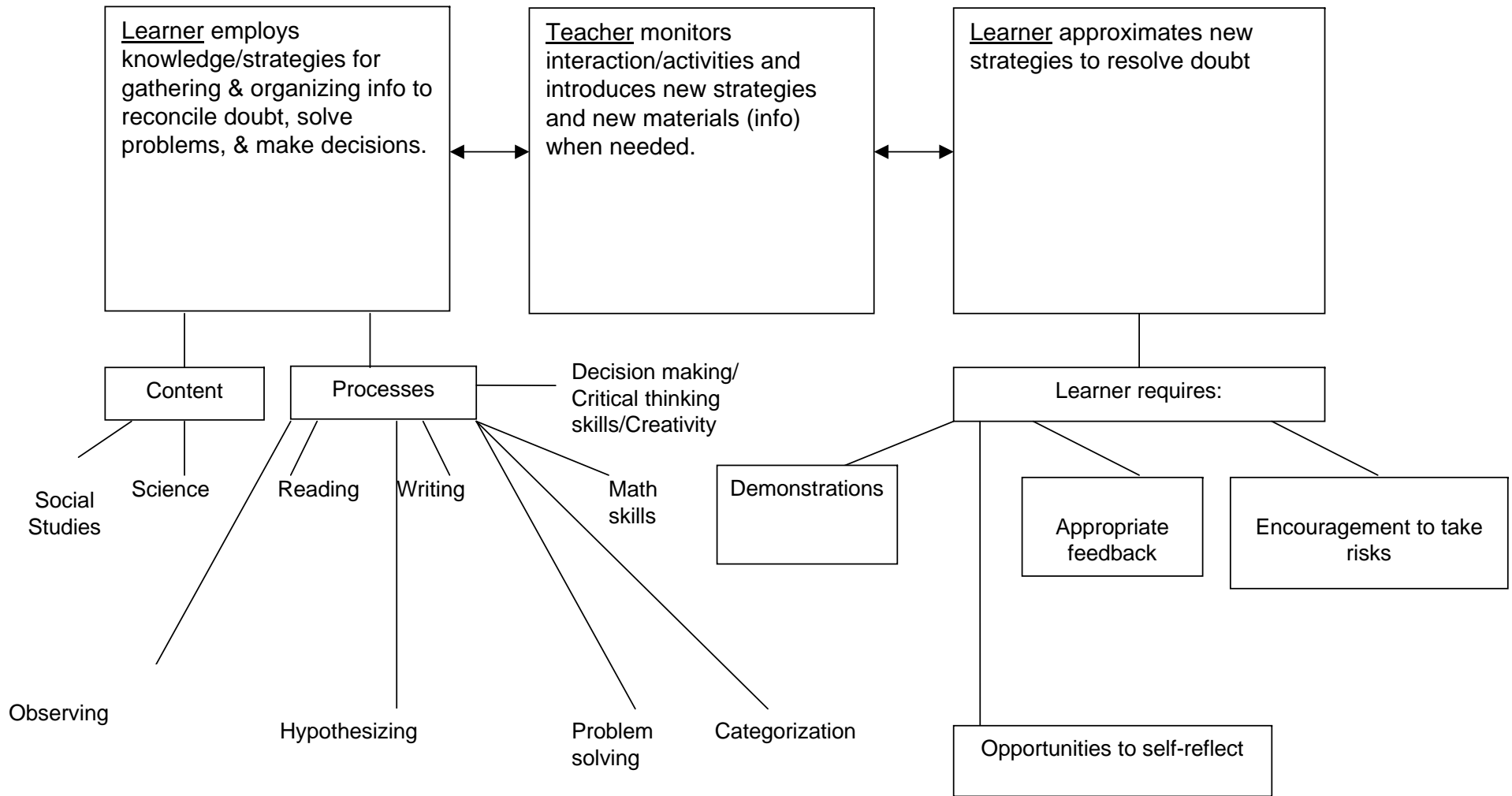
Meaningful & Purposeful

Promotes Curiosity, Doubt & Disequilibrium

Reasonable & Attainable



2 Exploration Phase



Using technology and media sources throughout the exploration

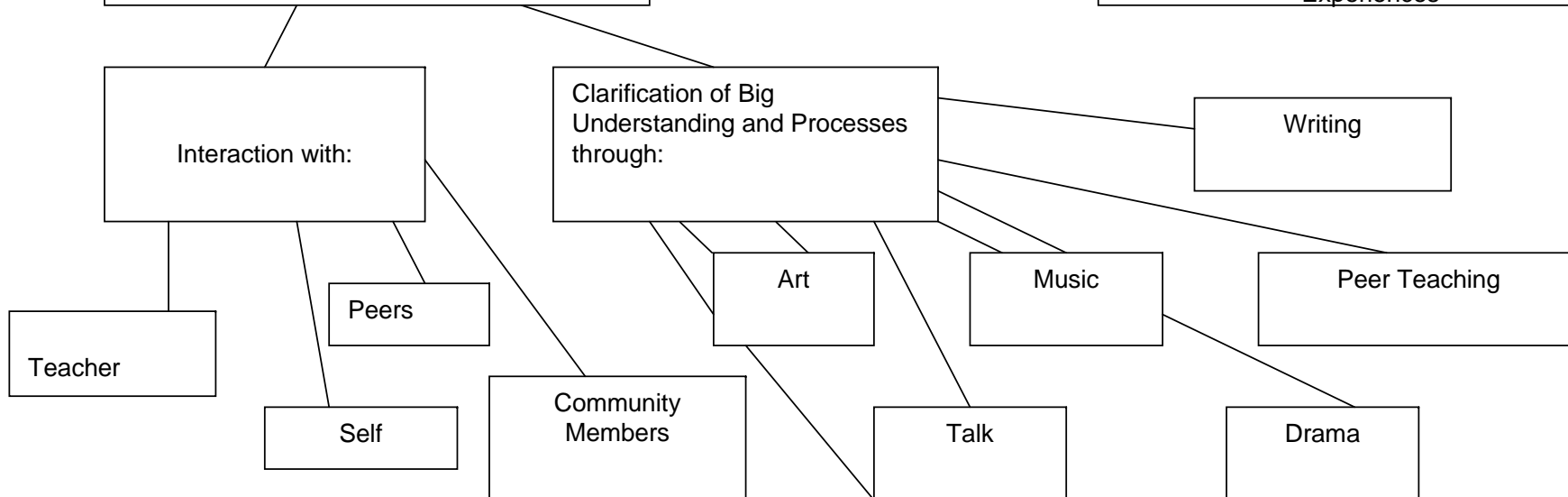
3 Explanation Phase



Students Share Their Understandings, Use of Strategies/Skills, and Express Attitudes

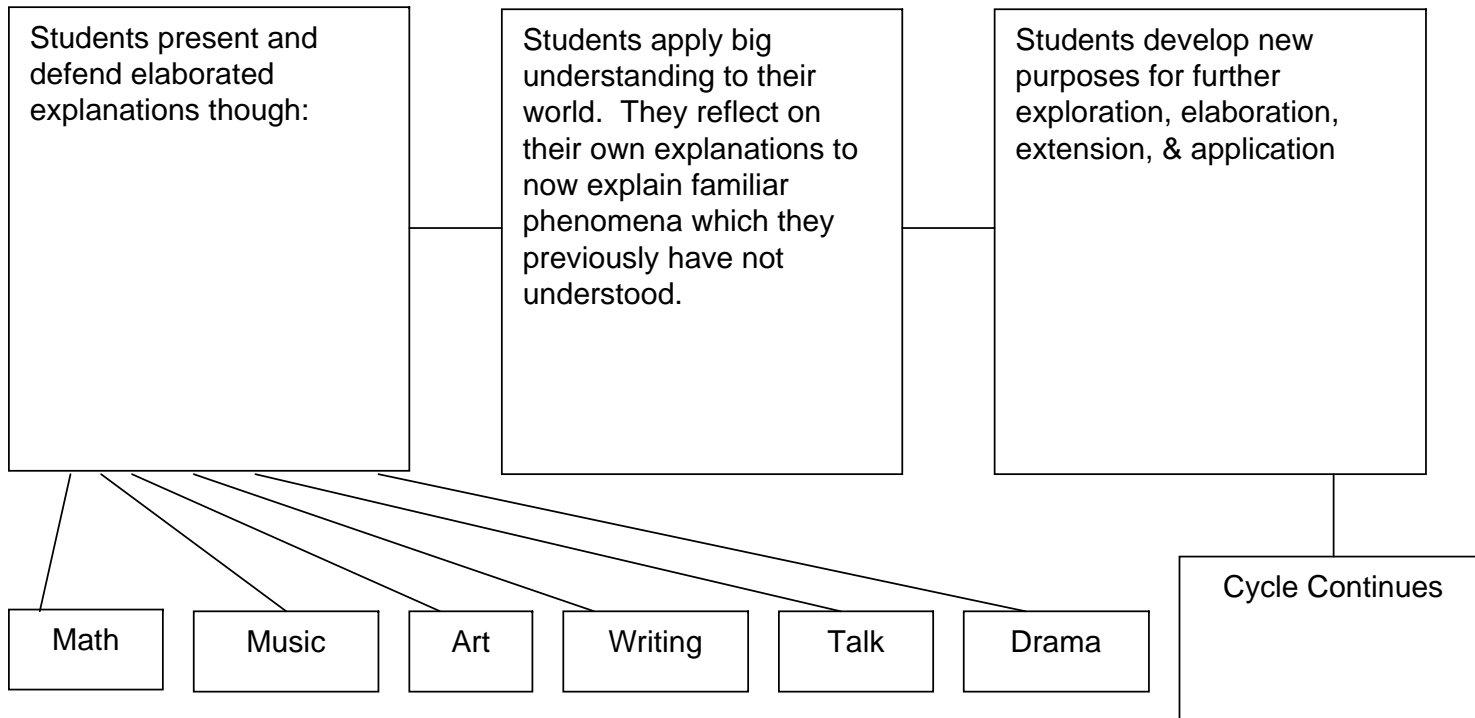


Teacher Assesses and Further Directs student learning by Clarifying Misconceptions, Providing Vocabulary for Concepts, and Suggesting Further Learning Experiences



Further Reading for Clarification

4 Elaboration Phase



Sites for Problems and Global Connections

Creating a Flat Classroom (great site from a classroom teacher)

<http://academyofdiscovery.wikispaces.com/Creating+Classrooms>

e-pals (check out projects)

<http://www.epals.com/international/index.tpl?sessf=112829>

eMINTS National Center <http://www.emints.org/join.shtml>

eThemes <http://www.emints.org/ethemes/>

Students in service to America (scoll down a ways for some good sites)

http://www.studentsinservicetoamerica.org/tools_resources/national.html

Global School Net <http://www.globalschoolnet.org/index.cfm>

Captain Planet <http://www.captainplanetdn.org/aboutUs.html>

Carnegie Mellon <http://www.etc.cmu.edu/projects/currentprojects.php>

Kids for Saving Earth <http://www.kidsforsavingearth.org/programs.html>

Edutopia <http://www.edutopia.org/start-pyramid>