United States Department of Education

- Technology Innovation Challenge Grants
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Who We Are

Manual Arts High School
Los Angeles, CA
Hub Site Manager:
Michael Lovelady

Manage curriculum content:
Language Arts/ESL

Fort Leavenworth USD #207
Fort Leavenworth, KS
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Fort Leavenworth
USD #207
Unified School District

Manage curriculum content:
Grades K - 8

North High School
Omaha, NE
Hub Site Manager:
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Manage curriculum content:
Science

Advanced Technologies Academy
Las Vegas, NV
Hub Site Manager:
George Breaz

Advanced Technologies Academy

Manage Curriculum Programs:
Applications and Training

Sprayberry High School
Marietta, GA
Hub Site Manager:
Bob Downs

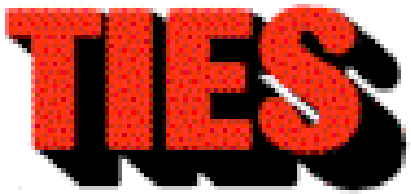
Manage curriculum content:
Social Studies

Mainland High School
Daytona Beach, FL
Hub Site Manager:
Doug Jackson

MAINLAND HIGH SCHOOL

Manage the grant project and curriculum content:
Mathematics

National Standards
Content With a Purpose



National Curriculum Experts from

NCTM, NCSS, NSTA, NCTE, AECT

Professional Development and Training

Curriculum Development Process

Project Documentation

CHALLENGE GRANT LEARNING INTERCHANGE

CHALLENGE GRANT LEARNING INTERCHANGE BROUGHT TO YOU BY:
Career Connection to Teaching with Technology Challenge Grant
CGLi.net
An Apple Learning Interchange Partner

Tuesday, February 8, 2000

Today's Features

Who We Are
Learn more about CGLi's hub sites, partners, and content specialists.Join us at FETC! Developing Standards-Based Lessons Using the Challenge Grant Learning Interchange (CGLI).

Join the "CGLi" Community
CGLi seeks to develop world class, K-12, curriculum content - unit plans and lessons - for 21st Century schools.

The National Digital Library Joins CGLi
Follow the link for a schedule of upcoming events.

ScholarAid
ScholarAid is a free scholarship search service. Try it!

Technology and

National Gallery of Art

Free Federal

Challenge Grant Learning Interchange ALI Partner

News

2/8/00

Subject Search | Keyword Search | Contribute

News of education and technology around the world, contributed by CGLi members.

Endangered Species, Less Endangered
Twenty-five years of Endangered Species Act enforcement seems to be paying off nationally.

Thawing Frozen Frogs: Kids' Books
Thawing Frozen Frogs? for hilarious kids' poetry, try Liverpool, England's Brian Padden.

Agriculture's Geek Revolution
Computers haven't replaced farmers but their increasing use has made agriculture more bountiful.

AFT Questions Edison Schools

State Information
Use CGLi to locate important state information.

FETC 2000
Join CCTT at FETC - register today!

WA58

- Developing Standards-Based Lessons Using the Challenge Grant Learning Interchange (CGLI)
- Marshall Ransom, CGLI and CCTT, with George Breaz and Robert Downs
- Learn about a database of standards-based lessons currently available on the Internet. You'll be

Vignette #1: An English teacher's reflection on her own learning

I felt then that my brain was a way station for material going in one ear and (after the test) out the other. I could memorize very easily and so became valedictorian, but I was embarrassed even then that I understood much less than some other students who cared less about grades.

Vignette #2: National Math Assessment 8th Grade Item

*How many buses does the army need to transport 1,128 soldiers if each bus holds 36 soldiers?"

Almost one-third of the 8th graders answered the question, "31 reminder 12" (Schoenfeld, 1988, p. 85).

Vignette #3: History Classroom

It is late April and the panic is beginning to set in. A quick calculation reveals to the world history teacher that he will not finish the textbook unless he covers an average of 40 pages per day until the end of school. He decides, with some regret, to eliminate a mini-unit on the Caribbean and several time-consuming activities, such as a mock United Nations debate and vote, and discussions of current international events in relation to the world history topics students have studied. To prepare his students for the departmental final exam, the teacher will need to switch into a fast-forward lecture mode.

Vignette #4: An Apple Unit

For two weeks every fall, all the 3rd grade classes participate in a unit on applies. They engage in a variety of activities related to the topic:

- Read *Johnny Appleseed* and view the filmstrip
- Write a creative story & illustrate it in tempera
- Collect leaves from nearby trees & make a giant leaf print collage on the hallway bulletin board
- Sing songs about apples. (*con't.*)

Vignette #4 (*con't.*):

- Use sense to observe & describe characteristics of different types of apples.
- "Scale up" an applesauce recipe to make enough for all 3rd graders
- Field trip to local apple orchard where they watch cider made and take a hayrack ride
- A culminating "applefest" that concludes with selected students reading their apple stories while everyone eats candy apples.

What is understanding/misunderstanding?

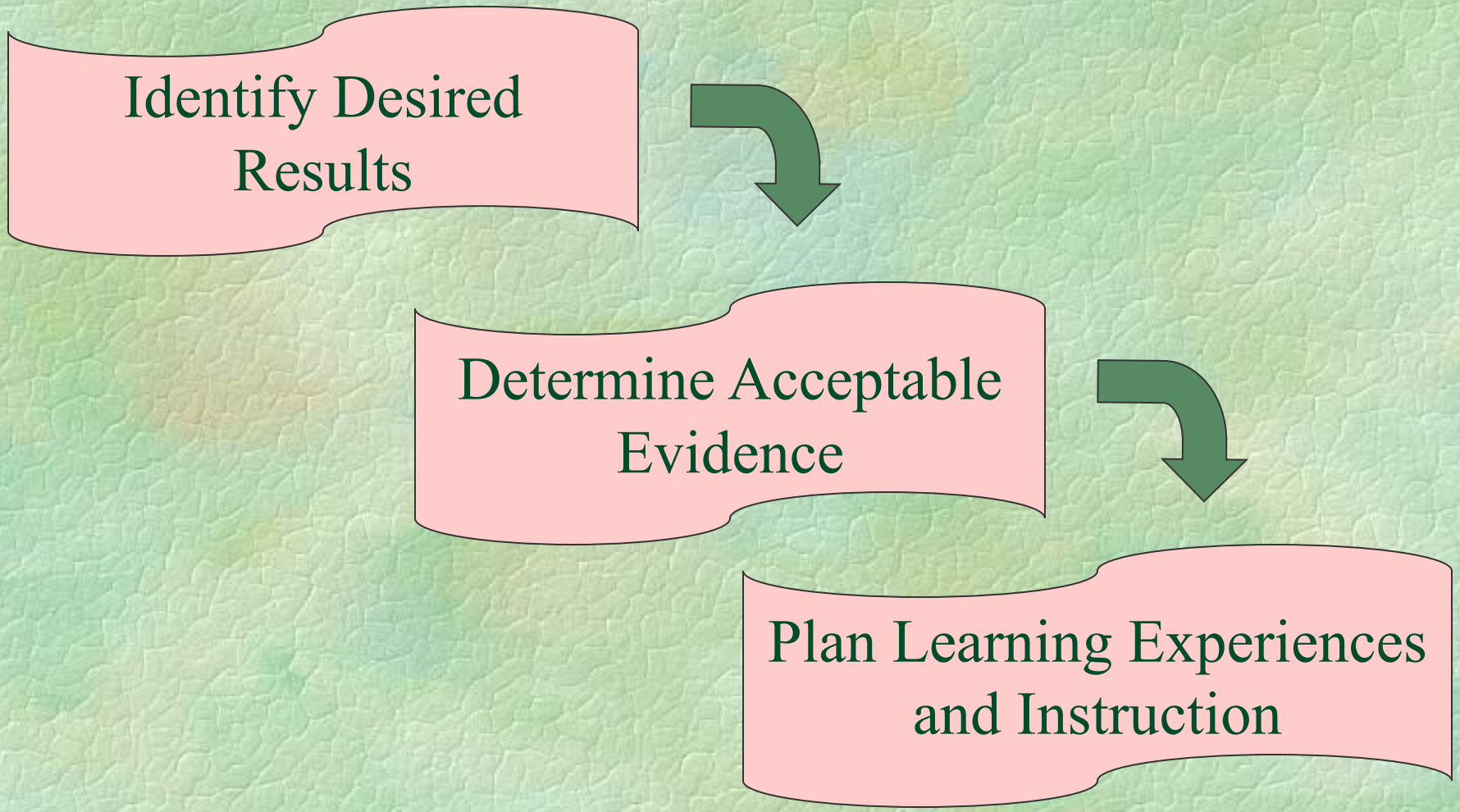
- Real knowledge involves using learning in new ways (transfer)
- It symbolizes not one achievement but several and is revealed through diverse performances and products
- It is not immediate, not a "get it or you don't," but a matter or degree.
- It implies the ability to escape a naïve or inexperienced point of view.
- "Well-intentioned" students can take away lessons that their teacher never intended.
- Even the best students, who appear to understand material, later reveal significant misunderstanding of what they learned.

Using a Backwards Design Process

- It is easy for teachers to use
- It supports student understanding
- It is standards-aligned
- It provides consistency in curriculum design across disciplines
- It focuses on assessment

...Grant Wiggins & Jay McTighe, 1998

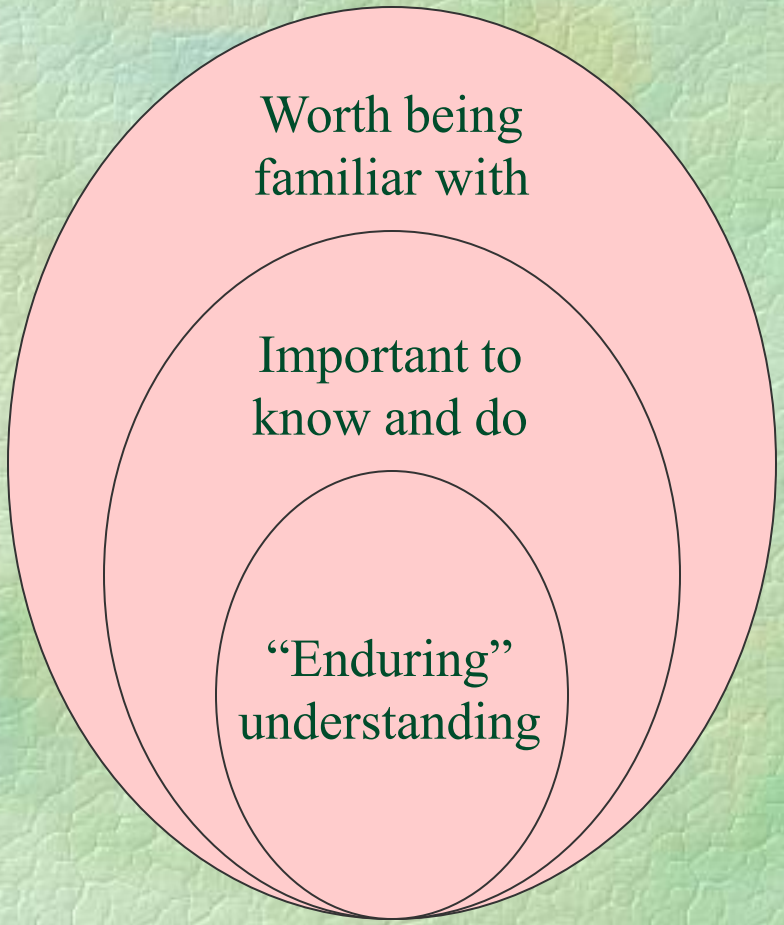
THE PROCESS: What is Backward Design?



Identify Desired Results:

What is worthy and requiring of understanding?

Establishing Curricular Priorities



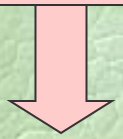
Filters for selecting enduring understandings?

Represent a big idea having enduring value beyond the classroom.

Reside at the heart of the discipline
(involve "doing" the subject").

Require uncoverage (of abstract
or often misunderstood ideas).

Offer potential for
engaging students.



"Enduring" Understanding

PAUSE FOR ACTION!

- Identify an enduring understanding
- Identify an essential question related to this understanding
- Identify several associated unit questions
- If necessary, identify entry-point questions

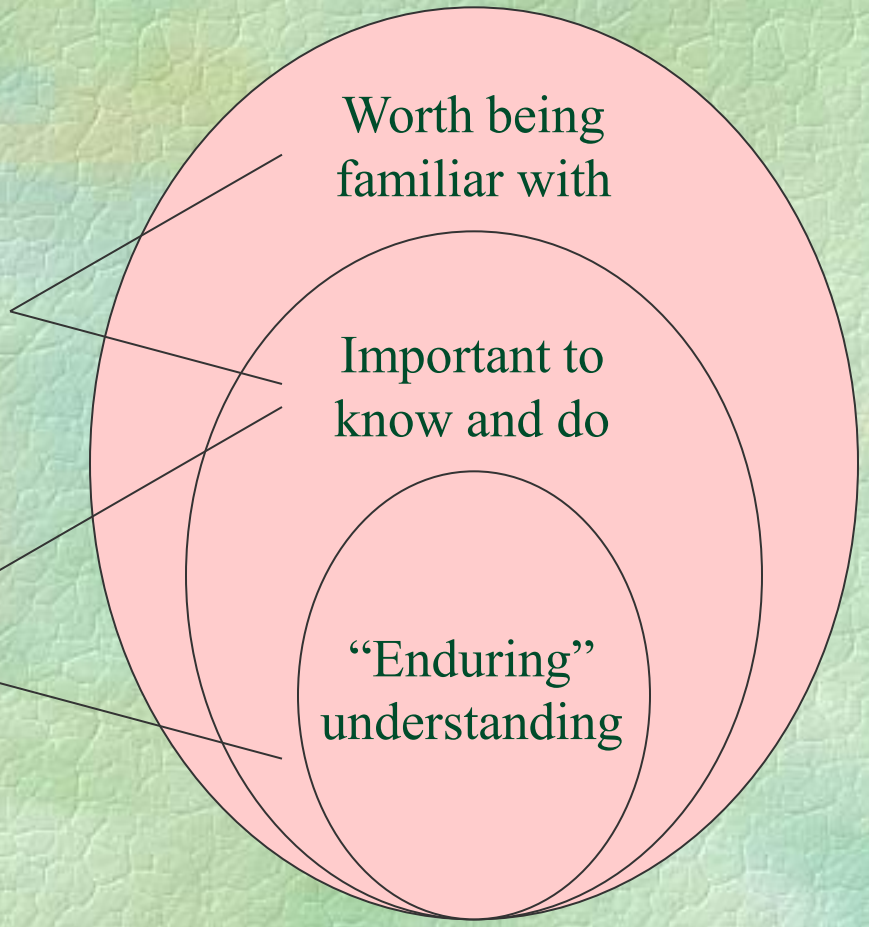
Determine Acceptable Evidence:

What is evidence of understanding?

CURRICULAR PRIORITIES AND ASSESSMENTS

Assessment Types:

- *Traditional quizzes and tests*
  - Paper/pencil
    - selected-response
    - constructed-response
- *Performance tasks and projects*
  - open-ended
  - complex
  - authentic



What is understanding? The Six Facets

- **Facet 1: A student who understands can explain. Accurate, coherent, justified, predictive**
- **Facet 2: A student who understands can interpret. Meaningful, insightful, significant, illustrative**
- **Facet 3: A student who understands can apply. Effective, efficient, fluent, adaptive, graceful**
- **Facet 4: A student who understands can see in perspective. Credible, revealing, insightful, plausible, unusual**
- **Facet 5: A student who understands demonstrates empathy. Sensitive, open, receptive, perceptive, tactful**
- **Facet 6: A student who understands reveals self-knowledge. Self-aware, meta-cognitive, self-adjusting, reflective, wise**

Plan Learning Experiences and Instruction: What do the facets imply for unit design?

W here are we headed?

H ook the student

E xplore and enable/equip

R eflect and rethink

E xhibit and evaluate

here are we headed?

- The first requirement of effective, user-friendly curriculums is that the designer must make the goals clear to *students*.
  - What are the performance obligations?
  - Is the work purposeful for student?

ook the student

When are students most engaged in their work?

- Instant immersion in questions,problems, challenges, situations, or stories that require the student's wits, not just school knowledge
- Thought provocations
- Experiential shocks
- Differing points of view or multiple perspectives on an issue

Hook the student

When are students most effective in their work?

- It is focused on clear and worthy goals.
- Models and feedback are provided.
- Students understand the purpose of, and rationale for, the work.
- Clear, public criteria and models allow the students to accurately monitor their progress.
- The ideas are made concrete and real through activities linking to students experiences.
- Built-in opportunities to self-assess and self-adjust based on feedback.

Explore and enable/equip

Must be carefully designed to meet these goals

- Present and clarify key problems needing solution.
- Call for students to dig deeper and go broader to make sense of things.
- Investigate differing points of view that have emerged.
- Pursue essential questions in depth.
- Learn needed facts, examine relevant theories, find and explore resources, and develop needed skills.
- Aim for final performance, study models, and practice or rehearse.
- Provide as much direct experience as possible to give meaning to key ideas.

Reflect and rethink

- Sophisticated understanding requires that students constantly use and rethink their concepts, points of view, and theories.
- Rethinking as a design element causes students after developing their initial idea, explanation, concept, or theory, to encounter and make sense of
  - related but dissimilar experiences.
  - Shifts in perspective (different people's views, books, theories, and events).
  - Weird facts, anomalies, or surprises.

Exhibit and evaluate

- *What* and *how* we assess signals what we value
- Establish criteria and standards at the outset to inform student learning, self-adjustment and self-assessment
- In the entire course of study, the six facets should be cycled through many times
- The final assessment should identify remaining questions, set future goals, and point toward new units and lessons.

Criteria for Designing a Sequence of Learning:

- An engaging and coherent unfolding of topics that seems logical and sensitive to learners (avoid front-loading; rather immerse students in stories or performance).
- Reiterations and rethinking of key ideas and skills (constantly call for and require key ideas).
- A curriculum construed as a narrative, with each unit being a chapter (units as parts of a naturally unfolding story).
- Some “hook” to maximize student interest and persistence.
- Flexibility with clear goals (build in room for change as a result of difficulties, emerging questions, and student performance results).

PAUSE FOR ACTION!

- Reflect on the knowledge and skills needed
  - What students will need to know
  - What students will need to be able to do

- Identify the teaching and learning experiences will equip students to demonstrate targeted understandings.