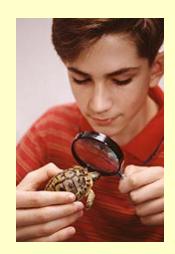
Curriculum Compacting: A Researchbased Strategy for Differentiating Curriculum and Instruction



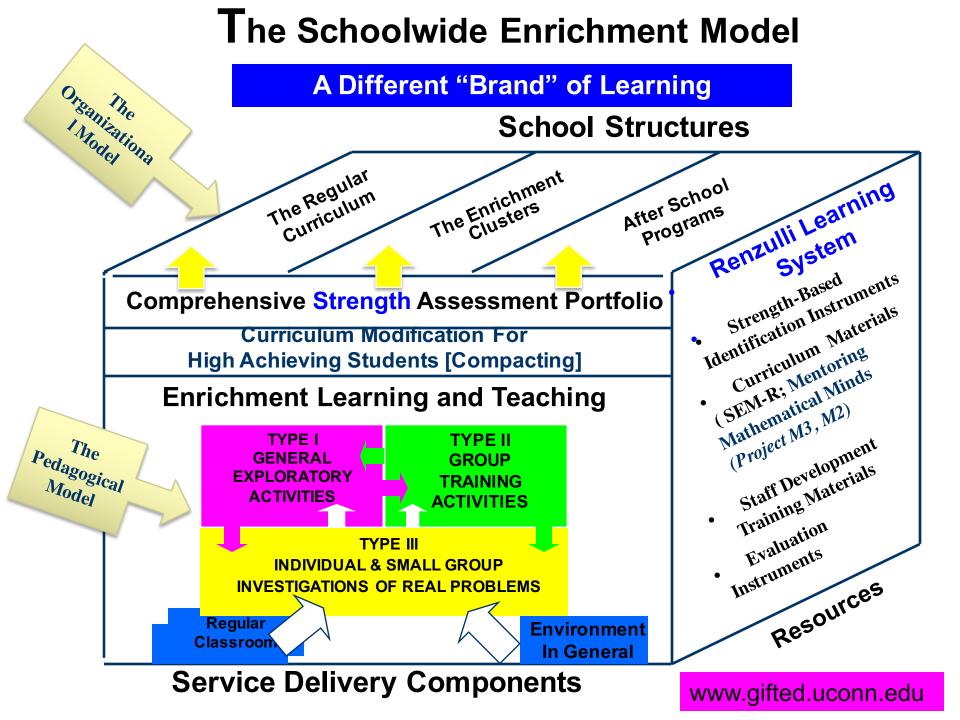












Enjoyment



Engagement



Enthusiasm for Learning

Continuum of Learning Theories*

All you ever neede d to know about

Deductive Didactic & Prescriptive **Pedagogy**

Inductive, Investigative & Inquiry Oriented

Knowledge Acquisition, Storage, and Retrieval. Prescribed & Predetermined Content Knowledge Application, High Engagement, Motivation And Enjoyment. J-I-T Content

Basic Skill Acquisition Text Consumption

Outcomes

21st Century Thinking Skills Creative Productivity

Behaviorists

Major Theorists

Constructivists

- Pavlov
- Thorndike
- •Skinner

•Pestalozzi, Torrance,

- •Montessori, Gardner,
- •Piaget & Bruner,
- ·Dewey, Sternberg

National Goals

Increased Academic Achievement Higher Test Scores Technically Proficient Professional and Skilled Workers

Inventors

Creative Designers in Sciences, Arts, & Technology Innovative Leaders Entrepreneurs Writers People Who Make a Difference

^{*}Both ends of this continuum are important, and schools should integrate them whenever possible to produce the best balance between the two models of learning.

Content Modifications

- More Material
- More Drill & Practice
- Easier Material
- Greater Depth & Complexity
- Student or Teacher Selected **Enrichment Opportunities Related** To A Topic or Unit of Study

On-line Courses Blogs, Wikis, Podcasts **RSS Feeders, Screencasts**

Flickr, Twitter **Social Networking Sites Renzulli Learning System**

Technology

Learning/Teaching Styles: Lecture, Discussion, Peer

Tutoring, Simulations Socratic Inquiry, CAI, **Dramatization, Problem Based Learning, Guided & Unguided Independent Study**

Classroom Organization:

Forum, Cinema, Laboratory, Café, Conference, Boardroom, Lecture Hall, Circle, Hot Seat, Study Carrels, Science/Media Labs, **Computer Lab, Interest** Centers, "Coffee House"

Grouping by:

Interests, Skill Levels, Ability, Within & Across-Grade **Cluster Grouping, Common** Tasks/Projects, **Complimentary Talents**, **Cooperative Learning**

KNOWLEDGE

Curriculum he Role of Content

Classroom Organization

The Teache

MANAGEMENT

Student **Products**

PEDAGOGY

Instructional

Strategies

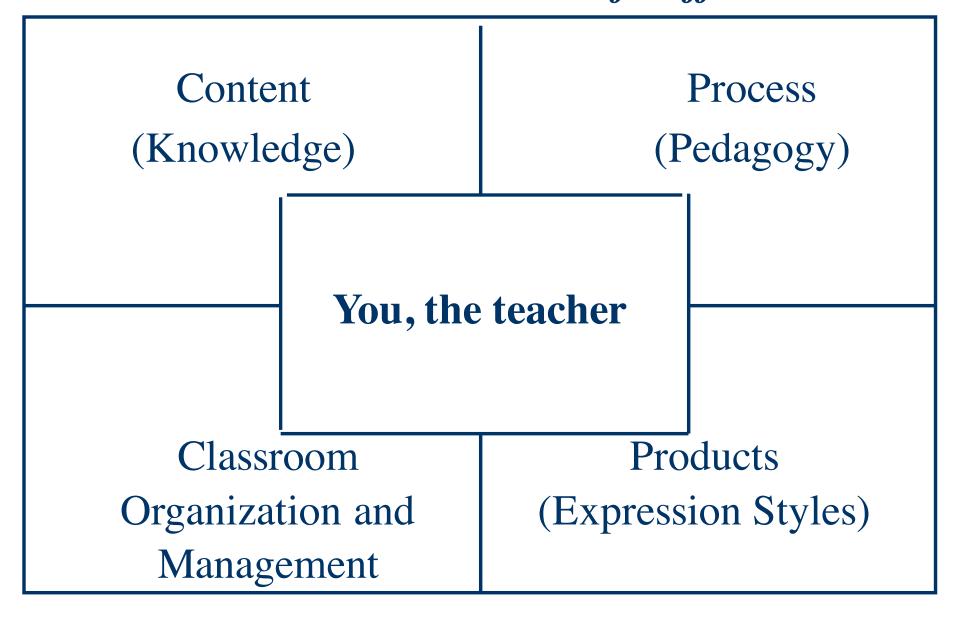
Expression Styles:

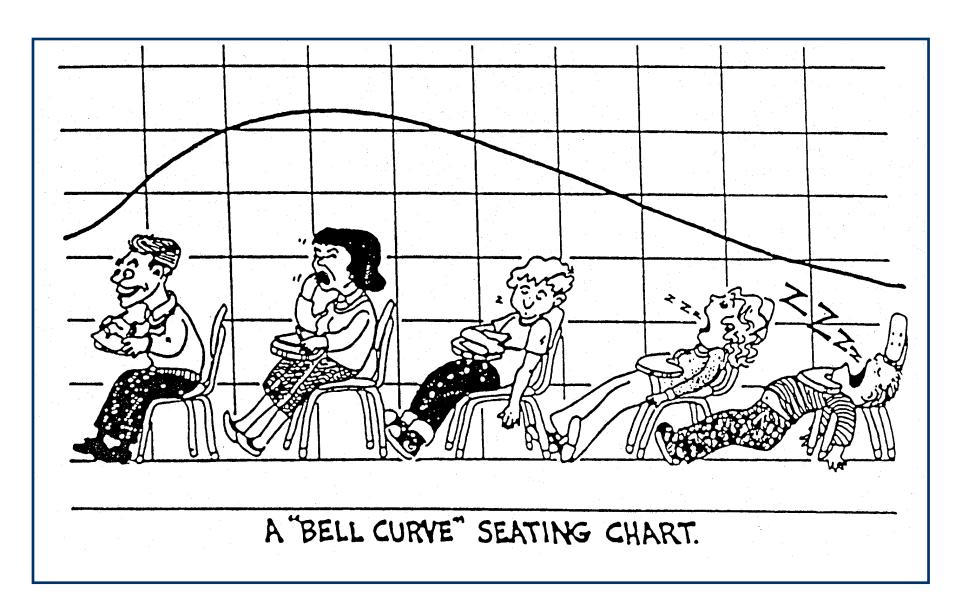
Oral, Visual, Graphic, Manipulative, Artistic, Written, Multi-Media, **EXPRESSION STYLE** Service, Combinations of the Above

Technology

Theory of Personalized Learning Five Dimensions of Differentiation (JSR: 1996)

Renzulli's Five Dimensions of Differentiation





From Get Off My Brain, by Randy McCutcheon, illustrated by Pete Wagner

Compacting... The Why's



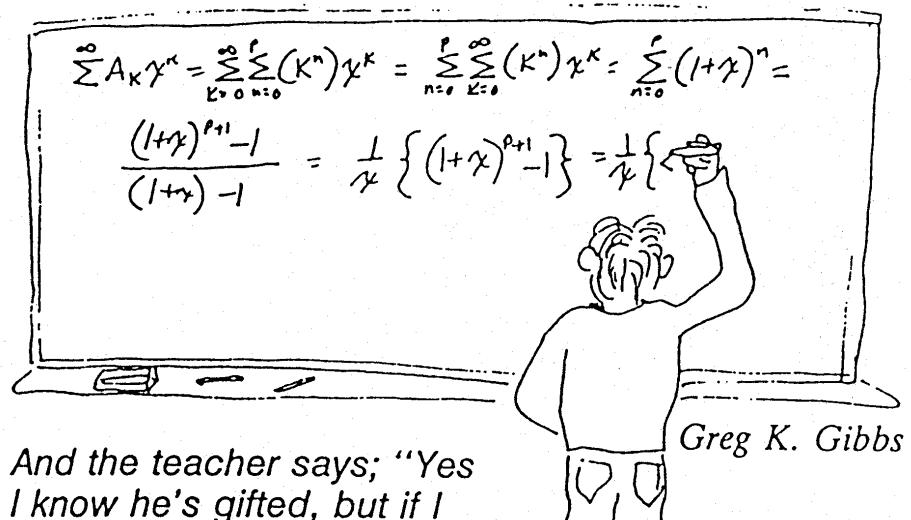
- High-ability or high-achieving students are frequently asked to participate in content, practice exercises, or instruction that they have previously mastered.
- Curriculum compacting is a process to eliminate, "streamline", reduce, and modify the grade-level curriculum by eliminating material that students have previously learned.

Why?

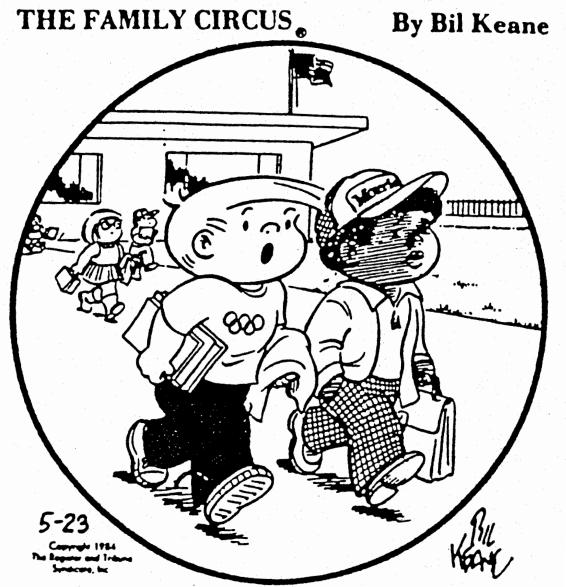
 Students who already know the material can face boredom, depression, inattentiveness, and underachievement, and often become discipline problems in their classrooms.



Less repetition of previously mastered material can result in more learning for some students.



And the teacher says; "Yes I know he's gifted, but if I put him in the next book what will they do with him in 4th grade?"



"This time of the year school is just like TV.
Nothin' but reruns!"

Learning Differences in Children

- * Aptitude and Ability
- * Achievement
- * Academic background—poor preparation and limited exposure
- * Cultural second language acquisition, interaction style differences
- * Affect (enthusiasm level and personality)
- * Effort (effort vs. ability issues)
- * Styles of learning style (visual, auditory, concrete, hands-on)
- * Interests
- * Product and processes
- * Self-regulation and study skills



The success of education depends on adapting teaching to individual differences among learners.

Yuezheng, in 4th century B. C. Chinese treatise, Xue Ji

What is Differentiation?

Matching appropriately challenging curriculum and instruction with a student's abilities, interests, and learning styles through a variety of instructional strategies and challenging curriculum.

But.....

- Is it happening?
- Even with good teachers?

Or is compacting too hard for most teachers to do well and consistently? Too many teachers feel like this on a regular basis—differentiation is a challenging task.



Why aren't you differentiating?



The National Research Center on the Gifted and Talented

The University of Connecticut Yale University • The University of Virginia http://www.gifted.uconn.edu

Why Not Let High Ability Students Start School in January? The Curriculum Compacting Study

Sally M. Reis
Karen L. Westberg
Jonna Kulikowich
Florence Caillard
Thomas Hébert
Jonathan Plucker
Jeanne H. Purcell
John B. Rogers
Julianne M. Smist

The National Research Center on the Gifted and Talented

In this national study, we learned that

Approximately 40-50% of traditional classroom material could be eliminated for academically talented students.

INDIVIDUAL EDUCATIONAL PROGRAMMING GUIDE The Compactor

Prepared by: Joseph S. Renzulli Linda M. Smith

NAME	AGE TEACHER(S)	Individual Conference Dates And Persons Participating in Planning Of IEP
SCHOOL	GRADE PARENT(S)	
CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting.	PROCEDURES FOR COMPACTING BASIC MATERIAL Describe activities that will be used to guarantee proficiency in basic curricular areas.	ACCELERATION AND/OR ENRICHMENT ACTIVITIES Describe activities that will be used to provide advanced level learning experiences in each area of the regular curriculum.
Name it.	Prove it.	Change it.
What material needs to be covered?	Exactly what material is to be excluded?	What enrichment and/or acceleration activities will be included?
What evidence shows a need for compacting?	How will you prove mastery?	Independent Study Acceleration Mini-courses Honors Courses College Courses Mentorships
		Small Group Investigations Work Study

When teachers eliminated as much as 50% of the curriculum, no differences were found between treatment and control groups in most content areas. In fact, students whose curriculum was compacted scored higher than control group students in some areas.

Student Behaviors Suggesting that Compacting May Be Necessary





"First grade would be all right if it weren't for the 11 sequels."

- Consistently finishes tasks quickly
- Finishes reading assignments first
- Appears bored during instruction time
- Brings in outside reading material
- Creates own puzzles, games, or diversions in class
- Consistently daydreams
- Uses vocabulary and verbal expression advance of grade level

- Has consistently high performance in one or more academic areas
- Tests scores consistently excellent
- Asks questions that indicate advanced familiarity with material
- Is sought after by other students for assistance
- Expresses interest in pursuing alternate or advanced topics.

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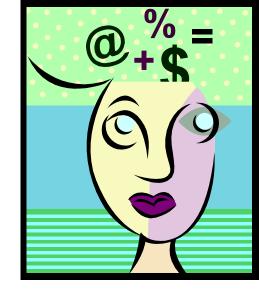
Goals of Compacting



- Create a challenging learning environment for all children!
- Define objectives and guarantee proficiency in basic curriculum.
- Find time for alternative learning activities based on advanced content **and** individual student interest.



Types of Compacting



Basic Skills Compacting:

- Eliminates specific skills that students have already acquired.
- Spelling, mathematics, or grammar.
- Pre-testing is easier to accomplish.
- Mastery can be documented more easily /objectively.

Types of Compacting



Content Compacting

- Social studies, science, and literature
- Students may already know the objectives or may be able to read the material and master the objectives in a fraction of the time.
- More flexible—students can absorb the material at their own speed.
- Evaluation may be less formal—essays,
 interviews, or open ended tasks

Column One: Identify the objectives in a given subject area.





- Which objectives cannot be learned without formal or sustained instruction?
- Which objectives reflect the priorities of the school district/state department of education?



- Point out that some students will already be familiar with the material.
- Ask if any students would like to demonstrate that they already know the objectives being taught



- Assure the students they they're not expected to be competent in all the objectives being tested.
- Tell the students that their curriculum may be streamlined if they can exhibit partial mastery of the objectives

Who gets pre-tested?

- All or some
- Although this may seem like more work for the teacher, it provides the opportunity for all students to demonstrate their strengths or previous mastery in a given area.



Eliminate instructional time for students who show mastery of the objectives.















Streamline instruction of those objectives students have not yet mastered but are capable of mastering more quickly than classmates.













Offer challenging alternatives for time provided by compacting

Specific Documentation:

• Specificity is extremely important, depending on the subject. Recording an overall score of 85% on ten objectives, for example, sheds little light on what portion of the material can be compacted, since students might show limited mastery of some objectives and high levels of mastery on others.



Filling in the holes...

• Students may be asked to sit in on whole group lessons on an area in which they demonstrate a need or weakness.



Providing Acceleration and Enrichment Options

- A critically important phase of the compacting process is based on cooperative decision making and creativity on the parts of both teachers and students.
- Efforts can be made to gather enrichment materials from classroom teachers, librarians, media specialists, and content area or gifted education specialists.

Enrichment:

 Materials may include selfdirected learning activities, instructional materials that focus on particular thinking skills, and a variety of individual and group project oriented activities that are designed to promote hands on research and investigative skills.



Strengths and Preferences:

• The *Interest-A-Lyzer* (Renzulli) provides profiles of general categories of student interests.

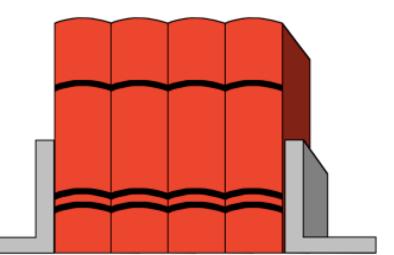
https://www.prufrock.com/pdfs/SEM_We
 b_Resources/Interest-A-Lyzer.pdf



 https://nrcgt.uconn.edu/underachievement _study/curriculumcompacting/cc_section11/

Find a Variety of Alternatives

Request help from all available resources in order to create a wide range of opportunities and alternatives to replace content that has been eliminated through compacting.





- Individual or small group projects using contracts or management plans
- Interest or learning centers
- Opportunities for self-directed learning or decision making
- Mini-courses on research topics or other high interest areas

Replacement activities must be based on:

- The needs of the students
- Time
- Space
- Resources
- School policy
- Support personnel









MY ENRICHMENT ACTIVITIES:

Here are some enrichment activities that might interest you. Click any of the icons below to view the activities:

Check this box to view only your favorites!





real field trips 448 Activities



creativity training 107 Activities



critical thinking 88 Activities



projects & independent study 211 Activities



contests & competitions 36 Activities

research

sites



195 Activities



books (fiction) 137 Activities



books (non-fiction) 191 Activities



books (how-to) 47 Activities



summer programs 37 Activities



on-line classes & activities 131 Activities

37 Activities



videos & dvd's 89 Activities

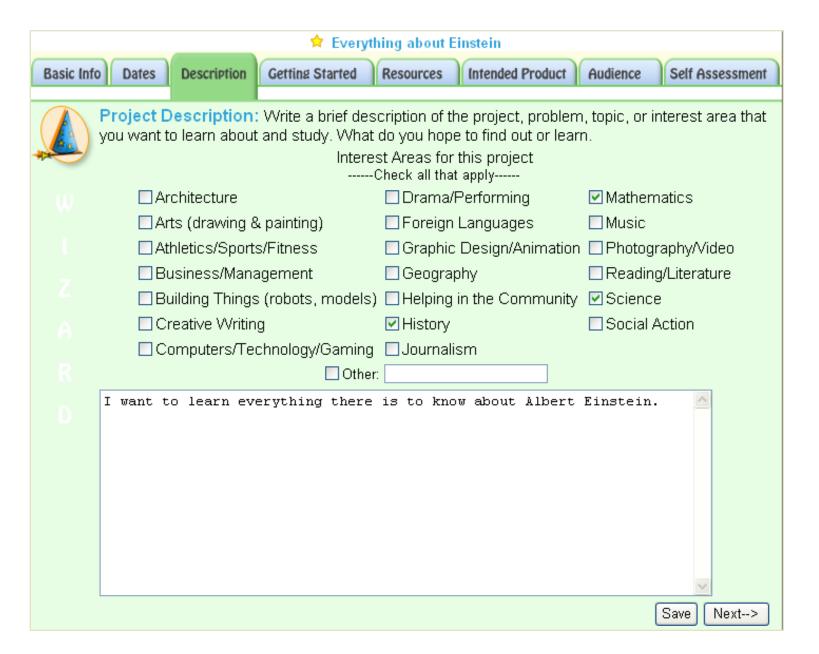
A University of Connecticut Research & Development Corporation Company

The Wizard Project Maker™Step-by-Step Tool



🖈 Everything about Einstein						
Basic Info Dates	Description Getting St	arted Resources	Intended Product	Audience	Self Assessment	
Dates: Start Date: (mm/dd/yyyy) Completion (mm/dd/yyyy) Dates for P My Teacher (mm/dd/yyyy)	n Date: Progress Meetings with		3/10/2006		Save Next>	

The Wizard Project Maker™Step-by-Step Tool



Compacting

- Recognizes large reservoir of knowledge
- Satisfies hunger to learn more about self-selected topics
- Encourages independence
- Eliminates boredom resulting from unnecessary drill and practice



Compacting



- Explain the process and its benefits to students and parents
- Document preassessment
- Allow student choice in use of time bought through previous mastery
- Use written plans and timelines for accelerated or enrichment study
- Try group compacting for several students

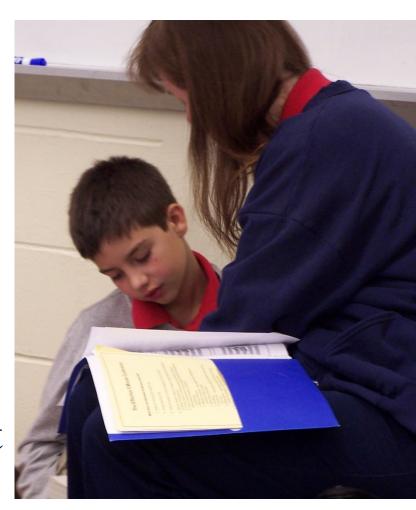
Considerations...

• Care should be taken to select activities and experiences that represent individual strengths and interests rather than the assignment of more-of-the-same worksheets or randomly selected kits, games, and puzzles.



Motivation and Underachievement...

 When some previously bright but underachieving students realized that they could both economize on regularly assigned material and "earn time" to pursue self-selected interests, their motivation to complete regular assignments increased. As one student put it, "Everyone understands a good deal!"

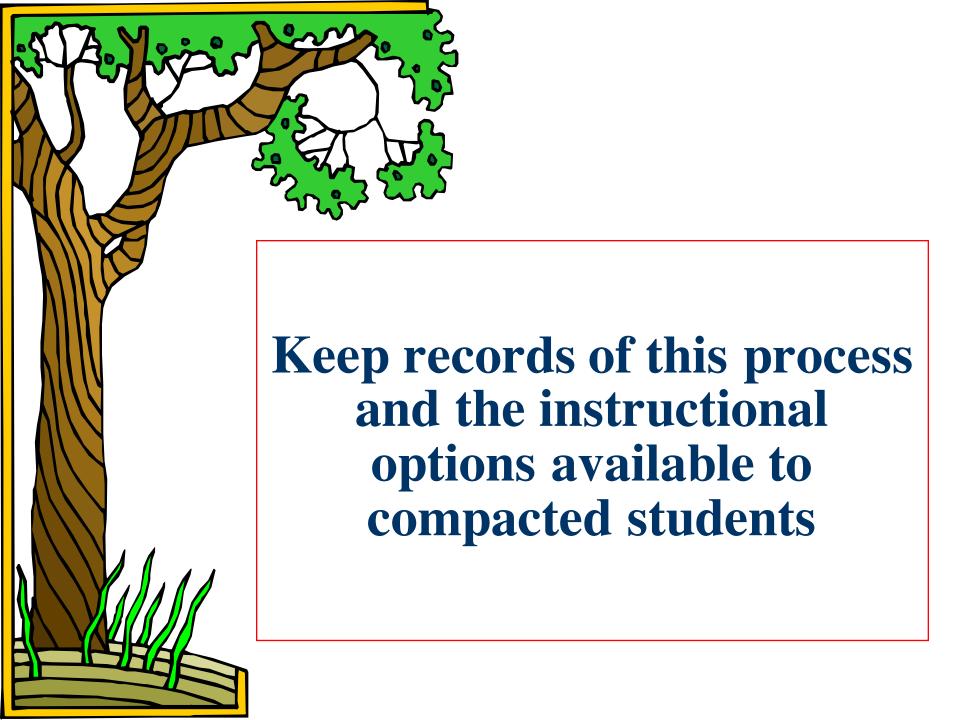


PLAN FOR COMPACTING AND EXTENDING THE CURRICULUM

Student's Name:
Learning Objective
Level of Mastery Date demonstrated:
How demonstrated:
Strengths
Preferred intelligence(s):
Preferred learning style(s):
Other strengths:
Extension Options

Documentation of Mastery:

- Teachers should detail the pretest vehicles they select, along with test results.
- Level of Mastery:
- How demonstrated: _____ date: ____
- The pretest instruments can be formal measures, such as pencil and paper tests, or informal measures, such as *performance assessments* based on observations of class participation and written assignments. (You can attach these to your cover sheet-essay, photos, video, multimedia, etc.)



One thing is clear. We don't have the option of turning away from the future. No one gets to vote on whether technology is going to change our lives.

Bill Gates, The Road Ahead

Independent Projects





- Builds student interest
- Satisfies curiosity
- Planning and research skills at advanced levels
- Encourages independence
- Enables work with complex
 & abstract ideas
- Allows long-term and indepth work on topics of interest
- Taps into high motivation



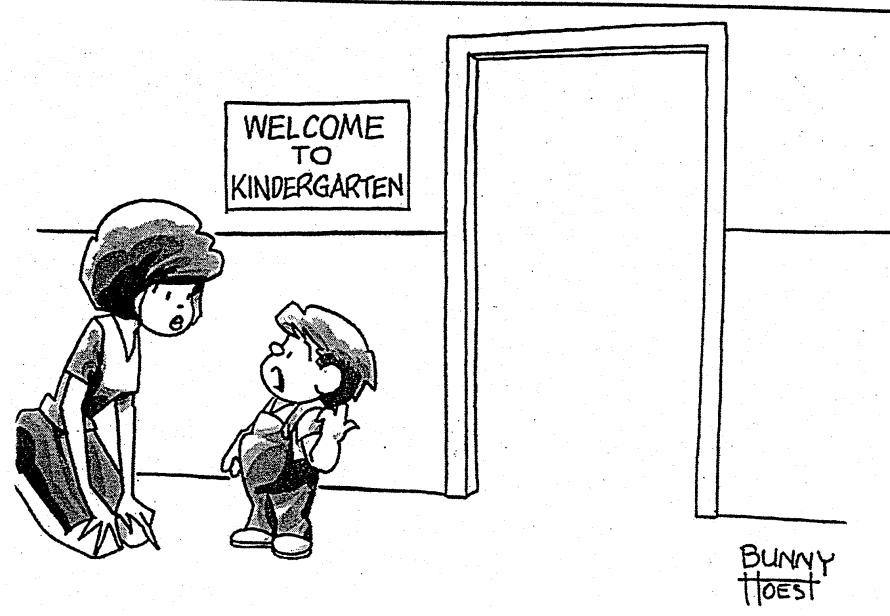
MANAGEMENT PLAN FOR INDIVIDUAL AND SMALL GROUP INVESTIGATION

NAME(S)SCHOOL	GRADE _	Beginning Date Estimated Ending Date			
What idea do you plan t	to investigate? Why?				
What form(s) will the fi	nal product take?	List some possible intended at (Name and addresses of contact persons groups on local, state or national level)			
How will you communic your investigation to an audience?					
Getting Started: What types of information or data will be needed to begin your project? Where can you find that information?					
Vinera cum you muc muci mutum.					
How-to-do-it books/written materials: Use bibliography format.					

Adapted from Renzulli, J. S., & Reis, S. M. (1985). The Schoolwide Enrichment Model: A comprehensive plan for educational excellence (p. 439). Mansfield Center, CT: Creative Learning Press.



Check the boxes below of all the ways you intend to get new information to complete your project and list the specific sources:						
Viewing TV, videos, films, etc. (which?)						
Interviewing people (who?)						
Observing/collecting data (what?)						
Surveying (who?)						
Taking a class or working with a mentor (specify)						
Attending a performance (specify)						
	Other (specify)					
List all materials and equipment needed:						
TASKS: List in order	To be completed by:					
1						
2						
3						
6						
7						
8.						
9						
10.						
11						
I realize that it is my responsibility to have the appropriate resource materials to work						
with in class everyday.						
Student Signature	Resource Teacher					



"It's a pleasant place in a lot of ways, Mom, but you wouldn't believe the paperwork."

Other Resources to Help You

https://gifted.uconn.edu/schoolwide-enrichment-model/sem3rd/

https://confratute.uconn.edu









Recommendations for Implementation









Consider some forms of Grouping for most effective compacting

Flexible grouping within classrooms

Cluster grouping within and across classrooms

Separate classes for gifted and high achieving students

BUT: IT IS NOT THE GROUPING THAT MATTERS, IT IS WHAT HAPPENS WITHIN THE GROUPS!

Start Small



Start the compacting process by targeting a small group of students for whom compacting seems especially appropriate.

Select One Content Area



- The targeted student has demonstrated previous mastery or curriculum strengths
- Teachers have the most resources available to pretest for prior mastery and to enrich and accelerate the content.

Experiment with Pretesting or Preassessment

- Try different methods of pretesting or assessment.
- Be flexible in accomplishing this by experimenting with different systems
- Ask for assistance from other faculty members, aides, or volunteers.
- Decide in advance what score constitutes a pass.



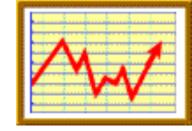
Compact by Topic



Compact by unit, chapter, or topic rather than by time (marking period or quarter)

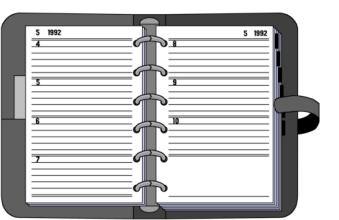






Decide How to Document

Decide how to document compacted material and define proficiency based on staff consensus and district policy.



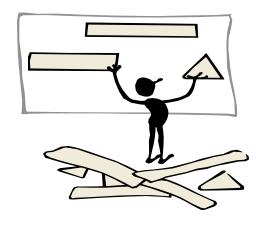
Various Differentiation Strategies Used with Compacting

Curriculum Compacting PLUS--Tiered Assignments Alternate Choice Assignments Enrichment Acceleration **Using Higher Order Questions Grouping Options Independent Study and Research Studies**



It Begins with Good Instruction

How will you start to differentiate?



Renzulli describes five dimensions of differentiation

Teachers differentiate in five dimensions:

- Curriculum and content
- Process skills and instruction
- *Classroom organization and management
- Student products
- *Teacher (personal choices and preferences in how one teaches)

Purpose of Differentiation

- 1. Enhance learning match between student and curriculum;
- 2. Change depth or breadth of student learning;
- 3. Use varied learning strategies, groupings and management;
- 4. Enable all students to make continuous progress in all areas.



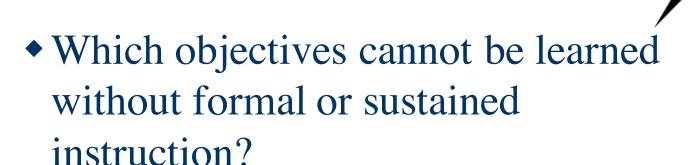
Why Differentiate?



- Standard-based classrooms
- No Child Left Behind
- Student diversity in all areas
- New research on human learning
- Rapid societal and technological change
- The amount of repetitive content for some students

First: Identify the objectives in a given subject area.

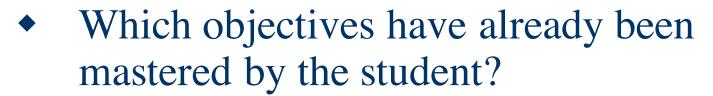




• Which objectives reflect the priorities of the school district/state department of education?

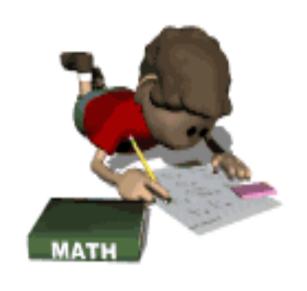
Next: Find appropriate techniques for pre-assessment and identify which students should be assessed





- Which objectives have not already been mastered by the student?
- Which problems might be causing students to fall short of reaching any of the objectives?

Okay, what do I use for pretests?



- Unit pretests, or end-of-unit tests that can be administered as pretests are ready made for this task, especially when it comes to the assessment of basic skills.
- Pre-testing enables the teacher to document proficiency in specific skills, and to assess weak spots as well.

(Gifted kids have "holes" in their learning too.)



- Look at the individual strengths of students in your class.
- Use academic records, class performance, and evaluations from former teachers to identify candidates for pre-testing.

Next: Pretest students to determine their mastery level of the chosen objectives.





- Point out that some students will already be familiar with the material.
- Ask if any students would like to demonstrate that they already know the objectives being taught



- Assure the students they they're not expected to be competent in all the objectives being tested.
- Tell the students that their curriculum may be streamlined if they can exhibit partial mastery of the objectives

Pretesting: sources of help



- Parent volunteers, aides, tutors
- Reading, math, and other curriculum specialists to help identify learning objectives
- District consultants and teachers of gifted children
- New computer technology to pretest, posttest, and provide individual instruction

Examples of performance based pre-assessments

- Students could write and submit a persuasive essay which teacher would read and analyze for content.
- Use student portfolios and work samples which show mastery of the learning objectives.
- Observe students taking notes, tracing thought patterns, and posing open ended questions.

Next: Eliminate instructional time for students who show mastery of the objectives.





- Students who have a thorough grasp of the learning objectives should be allowed to take part in enrichment or acceleration activities.
- Some students may be excused from specific class sessions, while others may skip certain chapters or pages in the text or specific learning activities.













Next: Streamline instruction of those objectives students have not yet mastered but are capable of mastering more quickly than classmates.

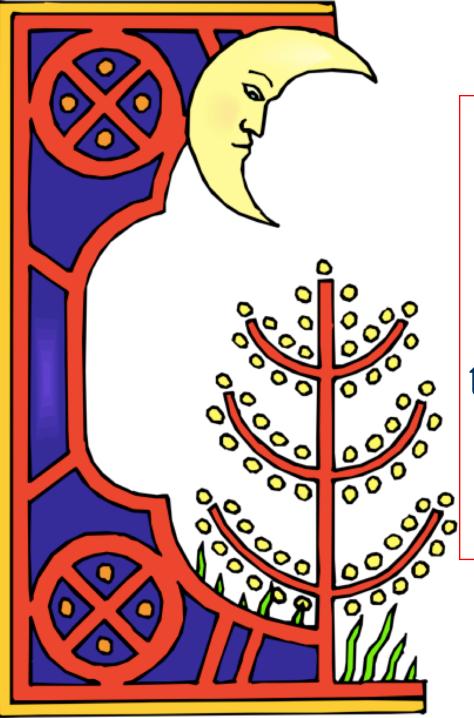












Offer challenging alternatives for time provided by compacting

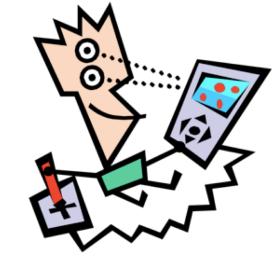


- Individual or small group projects using contracts or management plans
- Interest or learning centers
- Opportunities for self-directed learning or decision making
- Mini-courses on research topics or other high interest areas

Possibilities for replacement activities

- Small seminar groups for advanced studies
- Mentors to guide in learning advanced content or pursuing independent studies
- Units or assignments that are self-directed, such as creative writing, game creation, creative and critical thinking training

Possibilities for replacement activities



- Accelerated curriculum based on advanced concepts
- More challenging content
- Classwork adapted to curricular needs or learning styles
- Interest or learning centers
- Opportunities for self-directed learning or decision making

Base decisions about replacement activities on

- The needs and interests of the students
- Time
- Space
- Resources
- School policy
- Support personnel



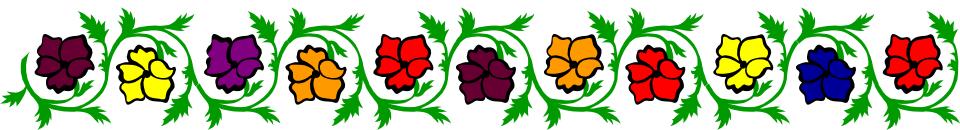
Set Criteria for Mastery

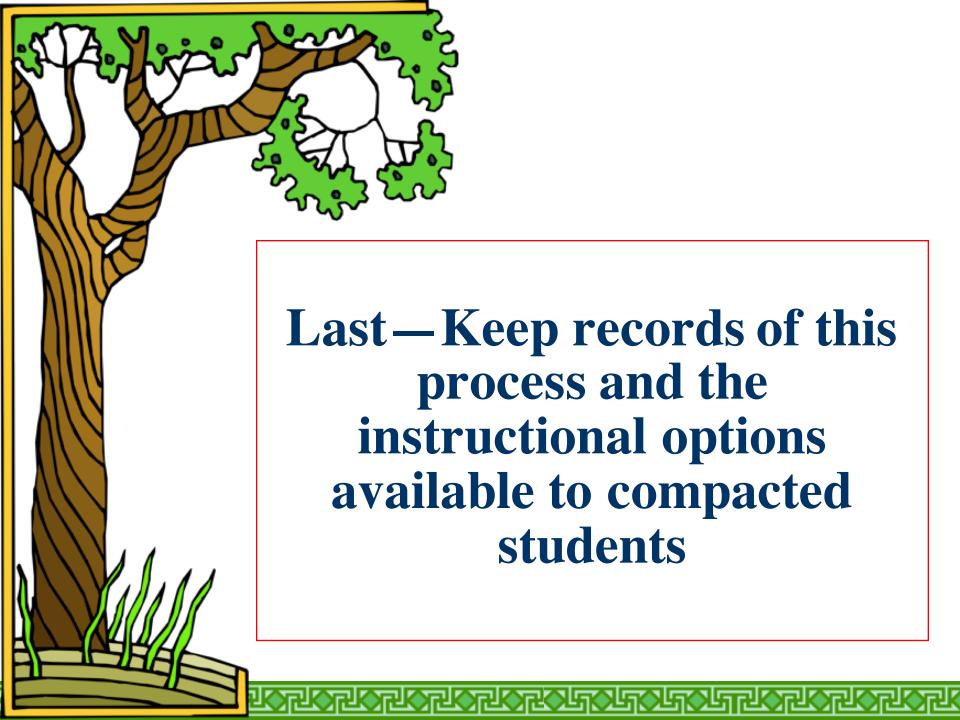
- Criteria for demonstrating mastery = 90% or higher on the pretest.
- Criteria for demonstrating partial mastery = 80% or higher on the pretest
- Students who demonstrate complete mastery will be compacted out of the entire unit.
- Students who demonstrate partial mastery will be compacted out of selected lessons / portions of the unit.



Replacement activity ideas

- more advanced work
- Enrichment activity in an area of student interest
- Learning contract for another appropriate topic of student selected interest.
- Literature circle (Especially effective if a small group of students compact out of the same unit)











Recommendations for Implementation









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Select One Content Area



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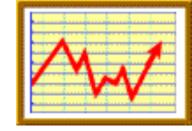
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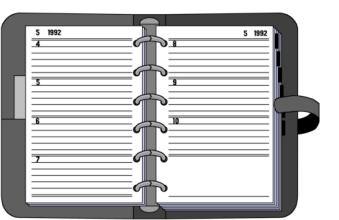






Decide How to Document

Decide how to document compacted material and define proficiency based on staff consensus and district policy.



Various Strategies Used to Differentiate

Curriculum Compacting Tiered Assignments Alternate Choice Assignments Enrichment Acceleration **Using Higher Order Questions Grouping Options Independent Study and Research Studies**

Other Strategies for Differentiation

Learning Centers

Acceleration
Independent or Group Type III Projects
Grouping
Renzulli Learning

Ways to Differentiate Content

- Compacting
- Independent Study
- Tiered Assignments



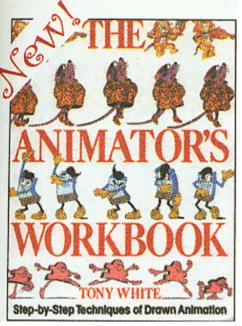
What are Tiered Assignments?

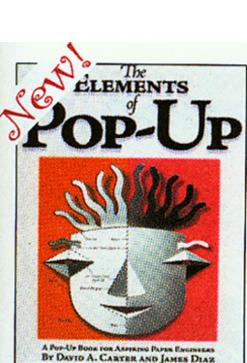
- One form of differentiation.
- Ensures that students with different learning needs work with the same essential ideas and use the same key skills but at different levels of
 - complexity
 - abstractness
 - open-endedness

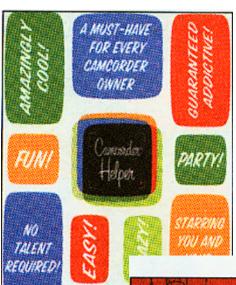


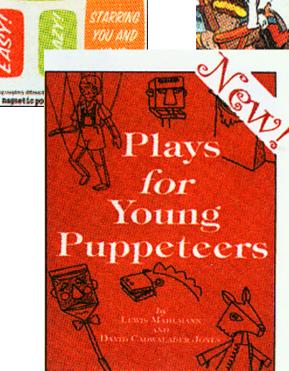
- Experiments
- Materials
- Assessments
- Writing Prompts
- Projects

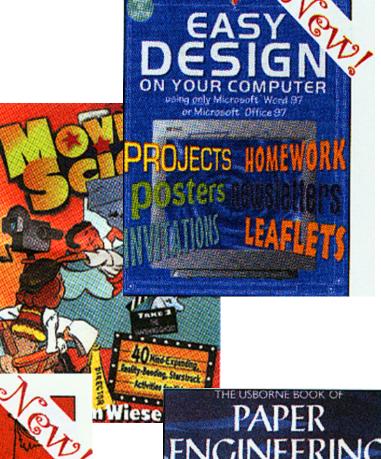
- Experiments
- Materials
- Assessments
- Writing Prompts
- Projects

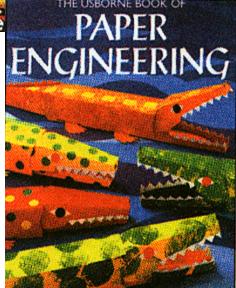


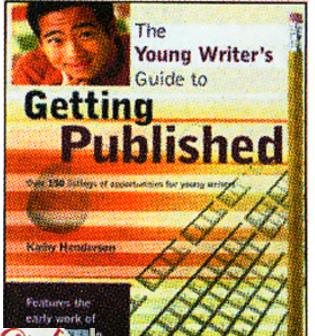


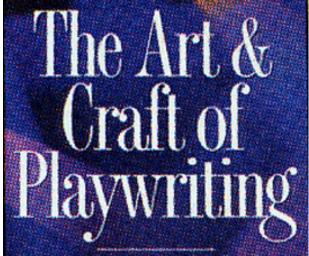






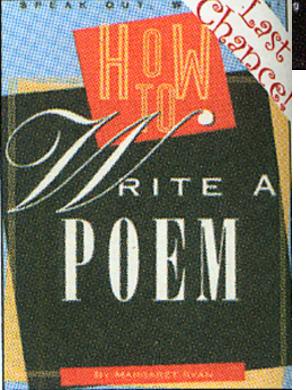


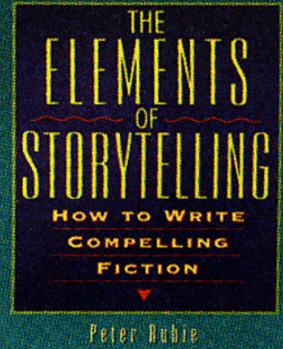


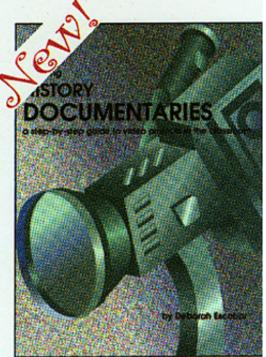


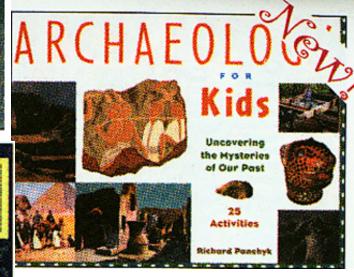
Includes
Interviews With
Lee Blessing
José Rivera
Marsha Norman

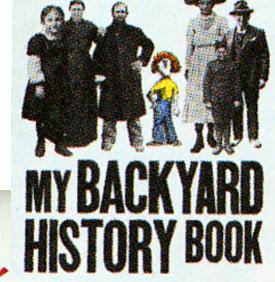
effrey Hatcher





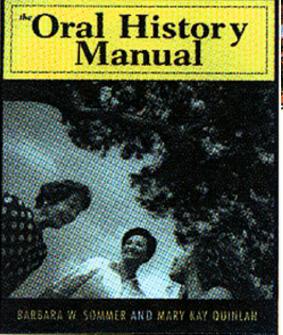


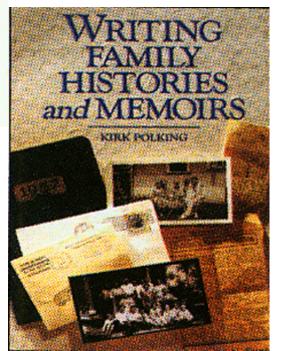


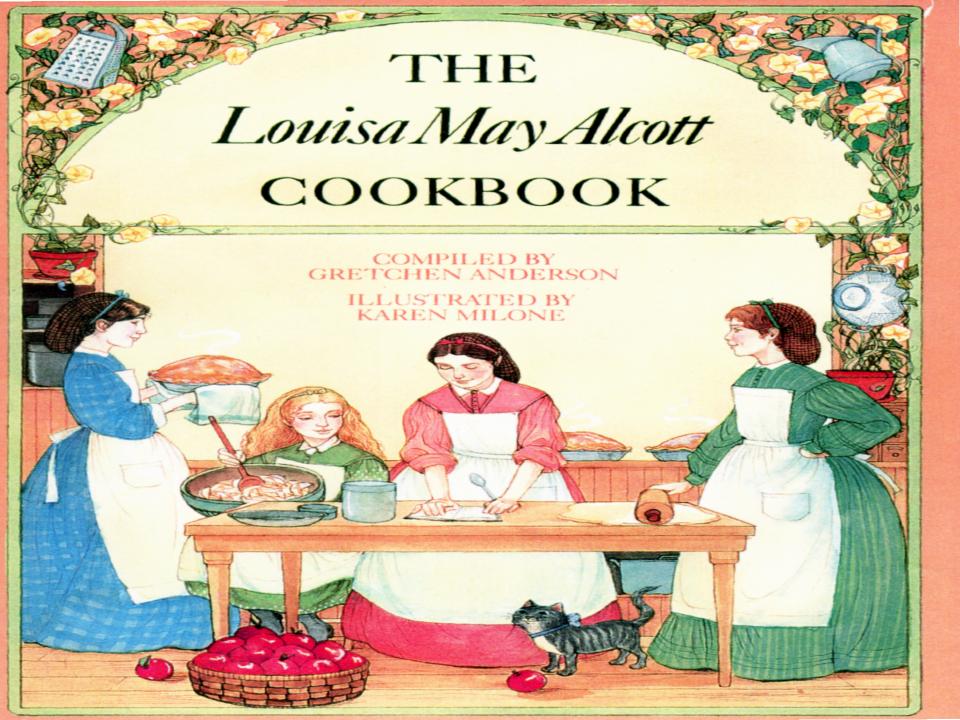


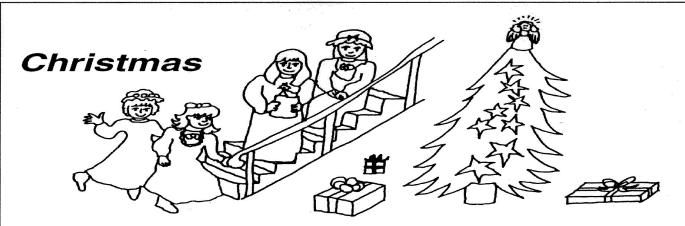
a Syown Paper School back

David Weitzman









It looked like a merry Christmas after all. Jo awoke on this special morning to find a lovely crimson book of the story of Christmas. But, when the girls went downstairs, their dear Marmee had gone. Hannah, the cook, informed them that she had gone to help a poor family. When Marmee returned, the Marches celebrated by giving the poor family their breakfasts.

When the Marches arrived at the poor family's house how the big eyes stared and blue lips smiled.

'Ach, mein Gott! It is good angels come to us!' said the poor woman, crying for joy.

'Funny angels in hoods and mittens,' said Jo, and set them all laughing.

Little Women, p. 26

Anyone would be pleased to be served this lovely breakfast, even if it weren't Christmas.

BUCKWHEAT CAKES

Difficulty = 大大

Ingredients:

1/3 cup of fine bread crumbs
2 cups of very hot milk (scalded)
1/2 tsp. of salt
I tablespoon of molasses
1/4 yeast cake
1/2 cup of lukewarm water
Buckwheat flour

Method:

- 1. Pour the milk over the bread crumbs.
- 2. Let them soak for thirty minutes.

Materials:

Measuring cup Measuring spoons Griddle or frying pan Ladle Spatula



Figure 74. Type III enrichment sample—Louisa May Alcott cookbook (continued).