

It is a dilemma that nearly every teacher faces—how to organize instruction to meet the needs of all the learners in the classroom. As pull-out programming of all types falls by the wayside, teachers face increasingly heterogeneous classes. As a result, using whole group instruction—essentially “teaching to the middle”—is no longer appropriate. Teaching the same information to all students is unlikely to meet the needs of many of them.

High-achieving children—the gifted and talented—are part of this heterogeneous mix. Just as pull-out programs for lower level education students have begun to disappear, so, too, have pull-out programs for the gifted. Gifted students now are likely to receive the majority of their instruction in the regular classroom.

Is it practical to expect teachers to tailor instruction to meet the needs of gifted students when many teachers are already taxed by trying to differentiate curriculum for exceptional education students? It seems an impossible task, but teachers can create a learning environment that allows all students to better develop their abilities and interests. The secret is to offer easily manageable alternative learning experiences.¹

Curriculum compacting

One such strategy is curriculum compacting, which allows teachers to test students on upcoming material to avoid teaching them what they already know.

Curriculum compacting has been a part of my middle school classroom for years, and, while it takes some time to get the program up and running, it has proved to be both a popular and rewarding instructional option. By working with

the middle school gifted and talented coordinator, I have been able to organize the curriculum compacting experience to fit both my teaching style and the course content.

Getting started

I start by introducing the process of curriculum compacting and explain that there will be two different groups working in the classroom—a group that “compacts” and a group that does not. Using a flowchart, I compare the curriculum compacting process to the standard classroom procedures so that all the students can see what happens in both groups during the course of a two- to three-

Curriculum

by Kimberly Kode Sutton

Teaching science in a

week unit of study (Figure 1). Introducing curriculum compacting, explaining the compacting process, and answering questions often takes one or more class periods. During this time, I also explain that the students will not have the option of curriculum compacting with units where it is not appropriate, such as human development

After I introduce the procedure and preview the unit, I let each student decide if he or she is interested in compacting the unit. Students who commit to try curriculum compacting sign and return a two-part contract (Figure 2). This contract addresses appropriate behavior and study habits, study group selection, teacher's expectations, grades, and consequences of violating the terms of their contract. The contract also states that a student who is compacting may choose to return to the

teacher-directed group at any time before the compacting group takes the curriculum compacting test. This gives students an "out" if they try curriculum compacting and find it too difficult or time-consuming. Finally, the contract states that if the student fails to demonstrate mastery of a unit's concepts at 80 percent or higher, that student must rejoin the teacher-directed group.

Because the students self-select, I never know which students will be in the curriculum compacting group until the contracts are returned. Sometimes the compacting group is made up only of my brightest students, but usually the group is as heterogeneous as the teacher-directed group.

Certainly there are always children who should be using curriculum compacting that

heterogeneous classroom Compacting

do not, especially in the beginning. Sometimes these students are doing well with the regular class routine and are afraid that their grades might suffer from the risk. I have found, however, that curriculum compacting becomes popular through word of mouth—those bright students who opt out of compacting in the beginning often choose to compact later units and are successful with those units. I also have discovered that several of my lower level education students have experienced success with curriculum compacting. Simply put, they had interests and abilities that were not being tapped in the regular class routine.

Preparing for the curriculum compacting test

On the first day of the unit, the students assemble themselves into the two groups, divided visually with two movable walls. Some of the "compactors" work alone, some in pairs, some in groups of three or four—all of which is addressed in their contract. The students in the teacher-led group do what I have planned for the day—lab experiments, practical exercises, partner work, etc. The compactors are expected to be flexible enough to work around the activities of the teacher-directed group.

However, I don't just send the compactors on their merry way to learn the unit—this is where some early preparation is key. I provide compactors with unit study guides, practice worksheets, and outlines—all with answer keys

available. Because seventh graders are still learning to make notes and pick out important information, this ensures that they will focus on the correct material. The compactors can choose to opt out of this material, but most students learn very quickly that doing so all but

guarantees their return to the teacher-directed group. The teacher-directed group often sees the exact same material, but the material is given as an activity sheet or review exercise to see how much they remember from the prior day's lesson.

The curriculum compacting students are told from the start exactly how many days of class time they will be given to prepare for the compacting test, and often this time is not quite enough. When introducing the compacting process, I discuss the fact that some additional

Kimberly Kode Sutton is a lecturer in the Watson School of Education at University of North Carolina—Wilmington.

FIGURE 1 Curriculum compacting pathways

COMPACTING		NON-COMPACTING
sign contract		follow regular class procedures
prepare for test		
take compacting test		
score 80% or higher	score less than 80%	(labs, activities, homework...)
enrichment project	move to teachers group	
present project		take unit test

effort and time outside of class may be required, and that students need to think about that before signing a contract.

Testing for mastery

The curriculum compacting test is essentially a scaled-down version of the unit test that I give the teacher-directed group at a later date. The only schedule accommodation I make on the compacting test day is to ensure that the teacher-directed group works on something that will not give away any answers to the compacting group. I score the compacting tests that night so the results are ready for the compacting group the next day.

This test serves as a pretest to the unit test. If a compactor scores at least 80 percent, I record this score as the unit test grade. Students who obtain at least 80 percent have demonstrated mastery of the unit and do not have to take the final unit test given to the teacher-directed group. However, those students who achieve at least 80 percent but are unhappy with their score may choose to take the final unit test and have their two scores averaged as the unit test grade.

If a student makes less than 80 percent, the score does not count, and he or she must move into the teacher-directed group for the remainder of the unit. For these students I merely make a notation in my grade book that they tried. Often I write a note on their report cards praising them for attempting an advanced

level, and I encourage them to try again in the future with a different unit. There are no punitive consequences for not achieving mastery; these students are expected to jump in with whatever the teacher-directed group is covering and move on from there.

On the same day the test scores are returned to the curriculum compacting students, I allow all the students in the teacher-directed group to see, and if desired, take notes on, the compacting version of the unit test. Because some of the students now in the teacher-directed group were once compactors and took the test, this eliminates any perceived unfair advantage they might have. This also lets the teacher-directed group know what to expect on their test, and allows those students who did not achieve a mastery score of 80 percent to see what they got wrong. I do, however, set a time limit on how long they may see the tests. Depending on the length of the test, I usually allow approximately five minutes—enough time to see some examples of what they'll be held accountable for, but not enough time for them to copy the test.

Enrichment projects

As the teacher-directed group continues its routine, those compactors who did achieve mastery move onto enrichment activities. These projects may be experimental, model-related, or research-based, and each type of project has specific requirements (Figure 3). For example, enrichment activities for a unit on chemistry could include research into the background and historical uses of an element from the periodic table, a 3-D model of the atomic structure of a particular element, or an experiment designed to reveal how calcium carbonate reacts when exposed to substances of varying acidity.

Compacting students may decide to work with the same people they started the curriculum compacting process with or, because their partners did not achieve mastery, they may find themselves working with new people. Again, it is their choice, and this is addressed in their contract.

FIGURE 2 Compacting contract

Signature _____ Date _____ Chapter title and number _____

Student rights

Your rights include the following:

1. To receive all the study guides and worksheets that accompany the chapter.
2. To have these materials checked by a teacher, a peer, or yourself using an answer key.
3. To prepare for the pretest (compacting test) individually, with one partner, or in a small group (4 or fewer students).
4. To return to the teacher-directed group if you do not make the required 80 percent or better score on your pretest, or if your compacting attempt becomes too difficult for you.
5. To complete the pretest on or before the set deadline date of _____.
6. To work during class time to prepare for your pretest and to complete your project.
7. To obtain available supplies from the teacher.

Student responsibilities

Your responsibilities include the following:

1. To complete the pretest on or before the set deadline listed above.
 2. To request the pretest from the teacher on the first day back at school if you are absent on the deadline date for the test. If you do not request the test before the end of class, you will have lost your chance to test out of the final unit test, which will be given to the teacher-directed group.
 3. To work to prepare for the pretest or to complete work on your project during class time.
 4. To make arrangements for all the necessary materials and questions for the teacher on the first planning day using the daily log form. Interruptions will not be tolerated once class has begun. That means you will not be able to talk to the teacher nor will you be able to cross to the non-compacting side of the classroom.
 5. To obtain approval from the teacher before beginning any project. All safety issues will be addressed at that time. Projects deemed unsuitable or unsafe must be revised.
 6. To behave appropriately in class according to established class rules. Unacceptable behavior will result in group changes, seat changes, and/or the loss of your compacting opportunity.
 7. To work effectively with your chosen partners or in your chosen learning style. Any persons unable to work well together will face the consequences mentioned in #6 above.
 8. To make up any and all work missed after returning to the regular class setting. See your teacher regarding missed labs.
 9. To turn in projects on time during the class in which they are due. Late projects will be deducted 10 points for each day they are late. Projects for absent students must be turned in on the first day back or points will be deducted.
- Your project will count as your class work, homework, and labs if you test out of the chapter.
- Your pretest grade will serve as your final chapter grade if you make an 80 percent or better. If you make the required 80 percent but are unhappy with the score, you may take the final chapter test and the two grades will be averaged.

FIGURE 3 Compacting grading policy**Experimental projects will be graded on the following basis:**

- One project planning log (from first day of planning only) 20 pts
- All daily logs (from all other compacting work days) 20 pts
- Compacting planning forms (all sheets completed) 20 pts
- Experiment write-up 20 pts
- Resident expert worksheet with presentation to class 20 pts

Library research projects will be graded on the following basis:

- One project planning log (from first day of planning only) 20 pts
- All daily logs (from all other compacting work days) 20 pts
- Rough draft 20 pts
- Finished, professional-looking product 20 pts
- Resident expert worksheet with presentation to class 20 pts

Model projects will be graded on the following basis:

- One project log (from first day of planning only) 20 pts
- All daily logs (from all other compacting work days) 20 pts
- Model write up 20 pts
- Finished, professional-looking product 20 pts
- Resident expert worksheet with presentation to class 20 pts

FIGURE 4 Project planning log

Answer the following questions on the first day of your project:

- Tomorrow we will complete the following: _____
- We need our teacher to answer these questions: _____
- We will bring the following supplies for our project: _____
- We need our teacher to supply these things: _____

FIGURE 5 Daily project log

Answer the following questions each day you work on your project:

- Tomorrow we will complete the following: _____
- We need our teacher to answer these questions: _____

FIGURE 6 Compact planning form

Possible experiment questions

Examples

- What would happen if _____?
- What effect would _____ have on _____?
- How would _____ affect _____?

Don't forget: Your experiment must have observable and measurable results!

1. _____
2. _____
3. _____
4. _____
5. _____

Selection criteria:

Your experiment question must

- be safe;
- be interesting and provide valuable information;
- use simple, available equipment;
- have accessible resource information; and
- be able to be completed within the assigned time frame.

Criteria grid

Using these criteria, rate each of your possible experiment questions on a scale of 1 to 5 (5 = best) according to how well it meets each criteria. Use this grid to record your ratings.

Criteria #	1	2	3	4	5	Total
Question #						
1.						
2.						
3.						
4.						
5.						

Since it meets all the criteria and yields the highest total, our experiment question is _____

FIGURE 7 Resident expert worksheet

Student name(s): _____

Date: _____

The topic we researched for this science unit was _____

What we wanted to learn was _____

Sources of information we used included _____

The most interesting information we discovered was _____

In our presentation to the class we will _____

These compactors are responsible for turning in specific paperwork during the course of the project, so they continue to receive grades. Their unit test grade is the curriculum compacting test grade plus enrichment project homework and lab grades (Figure 3).

Compacting students must turn in a first-day log (Figure 4) and a daily log (Figure 5) for each subsequent class so that I know what they plan to be working on the next class day and what supplies they may need to do their work. Sometimes students need passes to the library to do research for their project, or they might need a pass to the computer lab to enter their data. Each group's enrichment project determines that group's needs.

I designate one classroom closet with lots of shelving as a compacting supply closet where students may help themselves to whatever is available. I have also worked with my principal to set aside a small amount of money from my science budget to buy compacting supplies on an as-needed basis.

Again, the compacting students are working with a set deadline. Their project needs to be ready to present to the full class the day after the teacher-directed group takes their unit test. By discussing their enrichment projects with

everybody, the compacting students not only share what they learned but provide free advertising for the curriculum compacting process. After the teacher-directed groups see the success of their fellow classmates and friends, many decide to try compacting when it is offered the next time.

Conclusion

Providing the opportunity for curriculum compacting takes time and effort on the part of the teacher. It requires a keen sense of "with-it-ness," and can require support from resources personnel and administrators. However, in the end, it is worth it. Curriculum compacting streamlines the curriculum by eliminating material that students have already learned. Once in place, it affords the teacher the time to provide more one-on-one attention to students that need additional help, while buying time in the classroom for enrichment projects. Curriculum compacting has the potential to improve the learning experiences for all students, and isn't that the goal of teachers everywhere?

References

1. Winebrenner, S. 1994. How gifted kids survive in "inclusion" classrooms. *Understanding our gifted* 6 (6):1,8.