

Building Better Secondary School Schedules to Raise Achievement .



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Key Concepts

- Before You Build a Schedule, Set Priorities
- Don't Focus on the Structure of Secondary Schedules
- Provide General Education Intervention
- Provide Access to Rigor
- Determine Nuanced Class-Size Targets
- Precisely Match Staffing to Course Enrollment
- Strategic Secondary Scheduling for Success



Building Better Secondary School Schedules to Raise Achievement

Nate Levenson and Amram Migdal

For many school and district leaders, scheduling is a source of frustration that prevents them from doing what they know their students need. Scheduling too often poses a barrier to the implementation of instructional priorities that drive achievement. While scheduling can be a significant challenge at the elementary level, the complexity becomes even greater at the secondary level with so many more classes, electives, and students to manage. When approached strategically, however, secondary school schedules can open the door to higher achievement while better serving the needs of students and teachers alike.

Before You Build a Schedule, Set Priorities

Some of the most important work necessary to build an effective schedule is done before the schedule is actually built. At DMGroup, we tell school districts, “You can schedule anything, but you cannot schedule everything.” Every district and school wants to provide as many courses and as much support as possible for students to flourish. But, with limited staff and limited time in the day, hard choices must be made.

This article represents the thinking and approach of District Management Group.

Before starting to build a schedule, schools and districts must pause to refine and hone a theory of action and set priorities that help schedulers manage the endless tradeoffs in a strategic and purposeful way. In addition to conducting a needs assessment, a priority assessment is critical. Districts will benefit from articulating priorities so that scheduling decisions can be aligned with their strategic vision. For example, a tight set of scheduling priorities for a high school might include:

- Advisory periods every week
- Math and English intervention every day
- Staff get common planning time every week
- Maximize electives offered, but run no class with fewer than 15 students
- Targeted instruction in reading for students who struggle with comprehension
- Hands-on learning opportunities every day

By collectively deciding on a prioritization of needs, districts and schools provide a guide for the person building the schedule to choose between competing priorities.

Don't Focus on the Structure of Secondary Schedules

The most common secondary school rotations are an A/B or 2-day schedule of four or five blocks, or a 5-day or 6-day schedule with six to eight periods per day. But the research is clear: no single scheduling structure is the “silver bullet” structure. Secondary-level scheduling research indicates:

- Period length only impacts student outcomes insofar as teachers effectively utilize the time;
- Block schedules have mixed results regarding impact on student achievement—there is no “right” number of courses for students to take at one time;
- There is a large, positive relationship between academic learning time—the period when instructional activity is perfectly aligned with a

student’s readiness and learning occurs—and student achievement. Schools and districts can schedule more learning time using any schedule format or structure.

As a general rule, districts should stick with the structure they have unless there is a significant and compelling reason to switch.

The work of scheduling strategically continues beyond the choice of the basic structure. With scheduling priorities specified and a structure in place, districts can proceed to building a schedule that will best meet their goals and support student learning.

Provide General Education Intervention

Research and DMGroup’s experience working with hundreds of school districts suggest that one of the most powerful levers to raise student achievement is to build extra time for by strategically increasing the right intervention opportunities into the schedule, an approach known as an “extra- time intervention strategy.” Many elementary schools have executed this strategy successfully in recent years, but secondary schools face unique challenges to integrating extra-time blocks into the schedule due to the greater variety of classes, the complexity of secondary staff schedules, and the different needs of students at that stage of their educations. While more difficult to schedule, it is also critical.

Secondary schools often provide intervention by squeezing extra help into the same class period that students are receiving core instruction. These interventions come in all forms, from co-teaching, push in, or paraprofessional support to employing a separate curriculum for struggling learners. More help and more adults are provided, but not more time to learn.

Best practices call for *extra* time, not “instead of” time, interventions (*Exhibit 1*). That means that struggling students are exposed to a first presentation of the content—100% of their current year materials—during core instruction, which allows them to be fully immersed in the classroom experience, learn from peer questions and interactions, stay socially engaged, and have the benefit of first being exposed to the material from their skilled core-instruction teacher. Then, in an extra period, students receive the interventions and supports they need to fully master the material.

Exhibit 1 SECONDARY INTERVENTION STRATEGY: TYPICAL AND BEST-PRACTICE APPROACHES

	Non-Struggling Student Schedule	Typical Struggling Math Student Schedule	Best Practice Schedule	
Period 1	Math	Math	Math	<ul style="list-style-type: none"> • First presentation of content • 100% current year material • Learn from peer questions
Period 2	English	English	English	
Period 3	Elective	Elective	Elective	<ul style="list-style-type: none"> • Pre-teach • Re-teach current year and prior year content • Address missing foundational skills • Un-teach misconceptions • Deliver specially designed instruction
Period 4	Social Studies	Social Studies	Social Studies	
Period 5	Science	Science	Science	
Period 6	Spanish	Spanish	Extra Math Support	

Source: District Management Group.

Extra-time interventions can include pre-teaching the next day’s lesson, re-teaching current-year materials, and going back to finally master prior-year content. Most students do not begin to struggle at the beginning of the school year. By the time they reach the secondary level, many struggling students need to address missing foundational skills and gaps that have accumulated from prior years.

Students who struggle need a lot of time to fill prior year gaps and master current year content. Teachers who provide extra-time support to struggling students, such as teachers providing extra math support, often complain that they only have time to cover so much, but core instruction teachers already have a full plate to teach this year’s content. Core teachers do not have time to teach the current material to all students and un-teach, re-teach, and pre-teach struggling students.

Provide Access to Rigor

Schools can also create better schedules by examining access to rigorous courses, including advanced placement (AP) and honors courses. While access to rigorous courses is crucial to raise student achievement, many districts do not systematically analyze scheduling data to understand how students are distributed among levels of rigorous courses in different departments.

A System for an Effective Reading Program



At the secondary level, intervention supports most often include English and math, but, in some districts with significant achievement challenges, it is vital to include reading intervention support as well—something which is often overlooked at the secondary level. Reading skills for struggling readers are distinct from the skills taught in English/ELA, which focus on interpretation, analysis, discussion, and writing. An extra period with an English teacher is not sufficient for struggling readers, who require the specific support of highly skilled and effective teachers of reading. Students who struggle with reading should receive at least 60 minutes of additional time each school day focused specifically on reading, with explicit teaching strategies for comprehension.

Exhibit 2 displays data gathered from a district that has a clearly stated commitment to providing high-rigor classes in every department. However, 21% of math seats are in AP or honors sections and only 15% of math seats are not at grade level. Meanwhile, in science, a similar 21% of students are in rigorous classes, with only 2% receiving below-grade-level content.

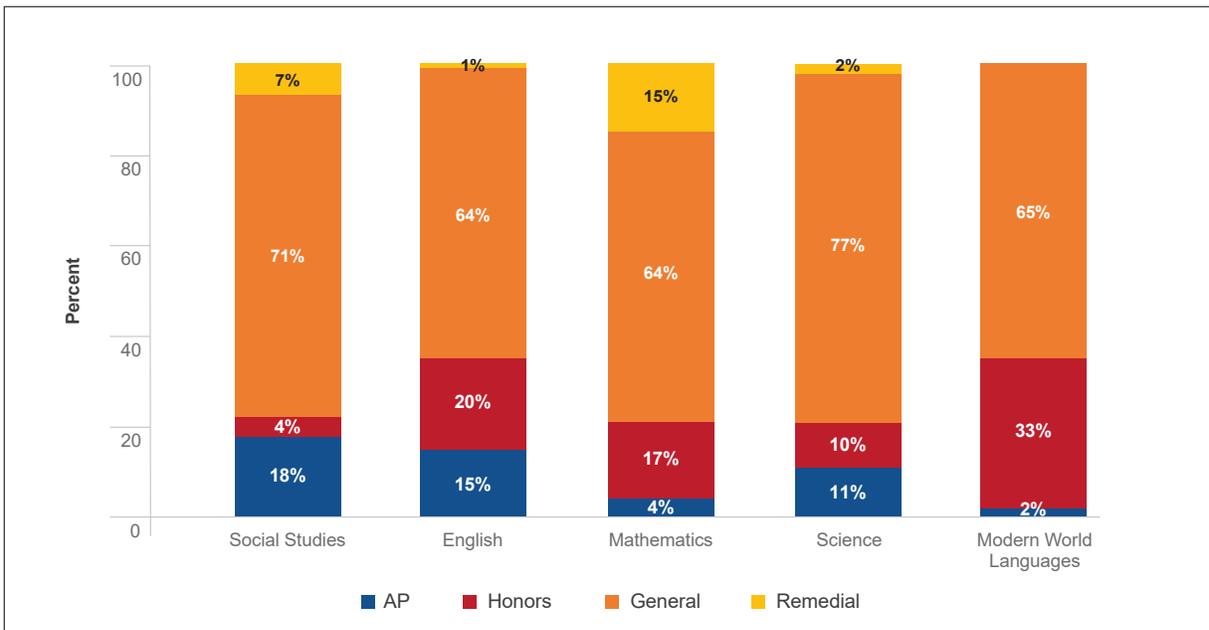
Dissecting data by department and level of rigor clarifies where there may be actions that don't match stated priorities. In this case, district leaders discovered that the Math department had set a very high bar for students to qualify for enrollment into AP and honors sections, which excluded some students who could handle greater rigor; they also discovered that there was an above-average number of students in “instead of” or remedial classes. The district shifted to prioritizing an extra secondary intervention strategy that allowed struggling learners to catch up to grade level and encouraged a greater number of students to enroll in advanced classes, especially in math.

Determine Nuanced Class-Size Targets

Another key preparatory step before building the schedule is to determine a nuanced approach to class-size targets. All schools have class-size targets upon which they base their staffing and scheduling needs, but these targets typically refer to the school-wide average pupil-to-teacher ratio across all classes. A nuanced analysis shows that school-wide averages can mask disparities in average class sizes between different types of classes (core, elective, advanced, interventions, etc.). For example, regular-level core classes often have the largest class sizes, resulting in an unintentional investment in small class sizes for electives and advanced classes (Exhibit 3).

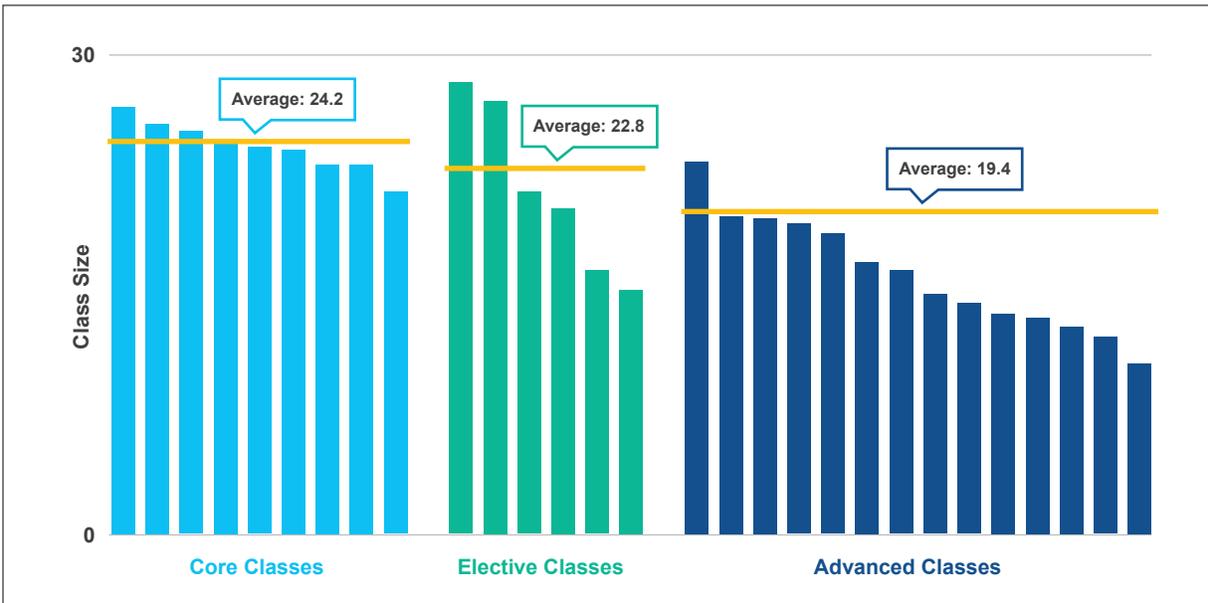
Section-by-section data may reveal that elective classes are smaller than core classes or that honors classes are smaller than general classes. Yet most school leaders agree that advanced students and electives do not benefit as much from smaller class sizes. Schools and districts that set class size targets differently by level,

Exhibit 2 COURSE RIGOR ANALYSIS EXAMPLE



Source: District Management Group.

Exhibit 3 CLASS-SIZE AVERAGES FOR REPRESENTATIVE CLASSES



Source: District Management Group.

by core/non-core, by intervention, and by grade (e.g., in order to schedule larger classes for 11th and 12th grade to prepare students for college-size courses) are better able to achieve their scheduling priorities.

Often, analyzing courses with low enrollment helps identify opportunities to potentially free up resources, especially by identifying and strategically scheduling and staffing single-section, low-enrollment courses. Most schools wish to provide students with a range of opportunities that allow them to learn, explore, and engage in their passions, including ELA and math electives, business classes, arts and music classes, and science, technology, engineering, and math (STEM) offerings, among others. With careful scheduling and

advanced planning, it is possible to reduce the number of low-enrollment courses without limiting student choice. Three tactics can be particularly effective:

Merge

Merge similar courses (e.g., multiple levels of a world language, like *French III* and *French IV* or multiple art classes at the same time).

Rotate

Offer low-enrollment courses on a rotating basis, e.g., every other year or only in a given semester. Many colleges and universities do this, informing students so they can plan and anticipate when to register for the electives they want.



Schools and districts that set class size targets differently by level, by core/non-core, by intervention, and by grade are better able to achieve their scheduling priorities.



Set Minimums

Establish a minimum threshold of enrollment for a course as a pre-requisite for offering that course. This ensures courses are of interest to students and encourages teachers to recruit students and share why the course is valuable and exciting.

Engaging teachers and other stakeholders in discussions about low-enrollment courses prior to building the schedule helps set expectations and avoid conflicts and disappointments. Waiting until significant portions of the schedule are already built and completed before discovering that certain classes must be eliminated can create disappointment for teachers and already-registered students.

Precisely (to the Decimal Place) Match Staffing to Course Enrollment

Every principal, superintendent, and CFO asks how many of each type of teacher is needed each year. Using current guidelines for class size and teaching load, determining the FTE needs for each department, subject, and school is fairly straightforward. A typical process for determining staffing needs might begin with setting a class size target of 25 students per section and a teaching load requirement of five sections per FTE. By dividing the number of students enrolled or anticipated to enroll in a given department’s course offerings by the class size target, the district arrives at the total number of sections the department needs to staff. Then, using the teaching load rules, the district can determine its staffing needs.

For example, with a class-size target of 25 students per section (except for 20 students in extra-help classes) and a teaching load of five sections per FTE, the school can calculate that it needs 7.4 FTEs to staff its math department (*Exhibit 4*).

Exhibit 4 DETERMINING STAFFING NEEDS WITH GUIDELINES

1. Class-size guideline: Target class size of 25

Determine the number of sections needed

Course	Current enrollment	Target class size	Sections needed
Algebra 1	300	25	12
Algebra 1 honors	50	25	2
Algebra lab	50	20	3
Geometry	320	25	13
Geometry honors	80	25	4
Statistics	15	25	1
AP calculus	32	25	2
Total Sections Needed			37

2. Teaching load guideline: 5 sections per FTE

Determine FTE needed

Staffing Calculation	
Sections needed	37
Sections per FTE	5
FTE needed	7.4

Source: District Management Group.

However, when a district is faced with needing a partial FTE to meet staffing requirements, a typical solution is to “round up” to 8.0 FTE and schedule a few more sections, marginally reducing the number of students per section. But expert schedulers look for opportunities to maximize the impact of every resource when only a partial FTE is required. Districts can rethink what to do when course enrollment suggests not every position would have a full teaching load at current class size targets.

Add Intervention or New Strategic Offering

Replace a reduced section of an existing course with an intervention section or a new elective aligned



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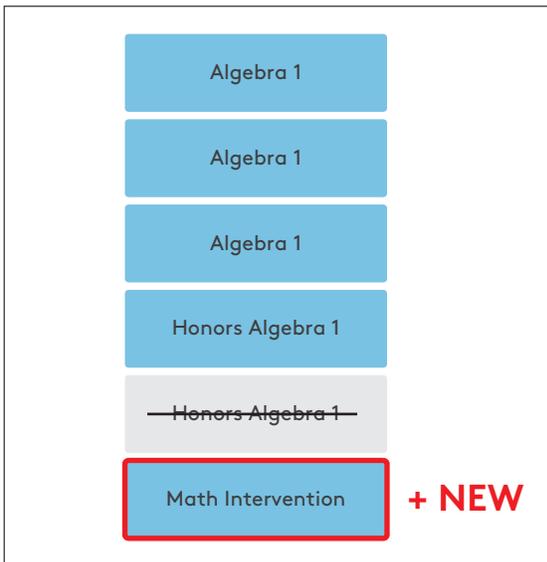


with the school's strategic direction (*Exhibit 5*). This option can allow the school's best teachers to provide more value to the students who most need it. For example, two honors sections can be combined and the teacher who would have been teaching a small section can instead staff a new intervention period.

Utilize Part-Time Staffing: A Win-Win

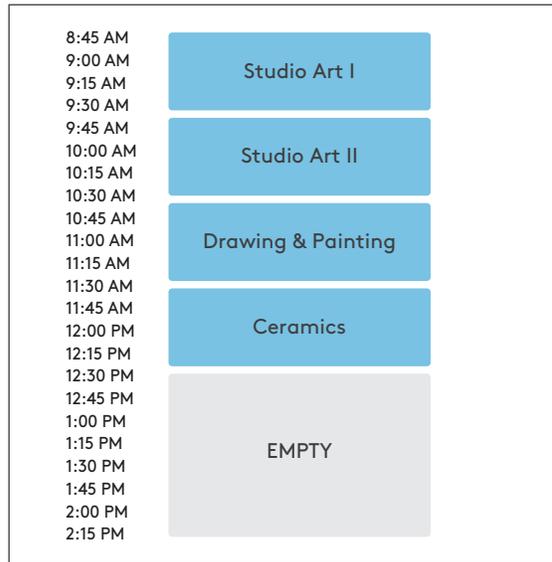
In today's world, it actually is possible to hire precisely 7.4 FTE teachers. Part-time positions can be a win-win, as they can provide needed work/life flexibility to teachers, allowing the flexibility to care for children or an elderly parent, take an off-hour shift elsewhere, or otherwise meet their own scheduling needs (*Exhibit 6*).

Exhibit 5 PROVIDE INTERVENTION OR NEW STRATEGIC OFFERINGS



Source: District Management Group.

Exhibit 6 PART-TIME STAFFING SCHEDULING EXAMPLE



Source: District Management Group.

Part-time staffing arrangements can typically be achieved through attrition without the need to eliminate existing staff, and these arrangements are most attractive when schools and districts are able to offer predictable, regular hours to part-time employees so they can schedule their other commitments.

Maximize Staff-Sharing Between Schools

If two schools need less than a full FTE, then let one person meet both these partial FTE needs. The key to making this work is putting in place norms and rules that make staff-sharing arrangements welcoming and easy for shared employees. Staff often dislike being shared across buildings because of the added commute time, the sense that they are “strangers” in both buildings, and the additional burden of attending faculty and department meetings in both schools. Districts and schools can ameliorate these concerns by doing the following:

- Assign staff a “home” school: staff attend faculty and department meetings at their “home” school, thereby avoiding a doubling of the meetings they must attend and creating a sense of belonging.
- Provide physical space at each school: have each school provide physical space for staff to prep and keep materials and belongings. This reduces the feelings of being a “stranger” in the building and can increase productivity.

Build Secondary Schedules Strategically for Success

Scheduling will always include tradeoffs and difficult choices—it is a challenging task. But scheduling does not have to be an activity that frustrates school and district leaders and keeps them from achieving important objectives. In fact, when approached strategically, scheduling can open the door to increased student achievement and better support for teachers.

Best practice scheduling acknowledges that the structure of the schedule is not the end-all-be-all choice that determines a schedule’s success. Different scheduling structures can all support instructional and other priorities. It is more important that the schedule support general education intervention in English, math, and reading and ensures access to rigorous classes. Strategic scheduling also means determining nuanced class size targets and minimum class sizes, precisely matching staffing to course enrollment, and utilizing partial and shared FTEs when appropriate. With careful advanced planning, it can be possible to transform scheduling from an obstacle that frustrates school and district leaders to a powerful tool for achieving district priorities and boosting student learning. ♦



District Management Group

Helping Schools and Students Thrive

District Management Group was founded in 2004 on the belief that management techniques combined with education best practices are key to addressing the challenges facing American public schools. Our focus is on partnering with school districts to achieve measurable and sustainable improvement in student outcomes, operational efficiency, and resource allocation to help schools and students thrive.

Ways we help school and district leaders include:

- Consulting services to help district leaders succeed in addressing complex challenges such as strategic planning, resource allocation, and program and initiative assessments
- Technology solutions to support strategic school scheduling
- Membership and learning programs to empower school district leaders
- Management and leadership resources for public school leaders

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