Designing Strategic Secondary Schedules

A HOW-TO GUIDE





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Introduction

This guide is designed to help turn typical middle school and high school schedules into strategic schedules. What's the difference? Strategic schedules help ensure teaching and learning best practices guide every decision made while building the schedule.

Every middle school and high school, every year builds a new master schedule and they all "work" fine. This means every student gets lunch and the cafeteria isn't overloaded, elective courses are scheduled every day and classroom teachers have a good idea of how much time to spend on advisory, intervention and so on. So, why shift from typical schedules to strategic schedules? Because unlike a schedule that "works" (all the basics are covered), a strategic schedule can lead to dramatic gains in student achievement and improved equity.

A schedule is a means to an end, not an end in and of itself. The work of researcher John Hattie, the What Works Clearing House, the National Reading Panel, and the experience of achievement gap-closing schools paint a clear, undisputed picture of some key teaching and learning practices that should drive the development of secondary master schedules. These teaching and learning best practices are deeply intertwined with secondary schedules. How blocks of time are laid out in the schedule greatly influence whether, and if, these best practices can take place. Read on and learn how to build strategic middle school and high school schedules. To learn even more, contact us at info@newsolutionsk12.com

About New Solutions K12

New Solutions K12 helps school and district leaders address their biggest challenges and cost-effectively raise student achievement while improving equity. We believe that best practices and a shift from past practice can serve students, teachers, parents, and taxpayers well and lead to a better future for our children. Our team of consultants and experienced district leaders combines decades of on-the-ground experience with evidence-based research to help leaders not only understand what works, but also how to implement new solutions successfully in schools.





What Makes a Secondary Schedule Strategic?

1A. High-quality core instruction for at least 250 minutes per subject per week

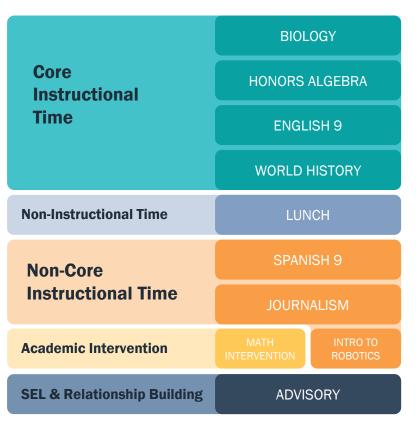
As students mature into middle and high school, one thing that doesn't change is that learning math, English, science, and social studies is still important. A strategic secondary school schedule should provide ample time for core subject classes, typically no less than 50 minutes a day or 250 minutes per week per subject.

More time on quality instruction results in more learning

The more time students spend receiving quality academic instruction taught by an effective teacher, the more they will learn. In a 180-day school year, for example, changing from a 50-minute math period to a 60-minute math period each day would result in the equivalent of an additional 36 days of instruction over the course of the year. Seemingly small changes in time allocation can make big differences in learning opportunities for students!

Prioritize core instructional time in the schedule

There are many important uses for time, and finding the right balance is key. One way to evaluate the balance is by categorizing the schedule into five types of time:



- Core Instructional Time: Instructional time devoted to English language arts, math, science, and social studies.
- Non-Core Instructional Time: Instructional time devoted to electives, enrichment classes, or specials such as art, PE, and music.
- Non-Instructional Time: Time devoted to activities such as homeroom, lunch, and transition times.
- Academic Intervention: Time devoted to providing academic intervention to students, either through content-specific interventions or "flex" blocks.
- **SEL & Relationship Building:** Time devoted to developing students' SEL skills and/or time for students to build relationships with one another, their teachers, and/or staff.

To figure out how much time should be devoted to each type of time, it is important to start with core instruction and work backwards from there. Review of hundreds of school schedules suggests the following balance of time for core instruction:

Grade Level	Typical Time on Core Instruction		Gold Standard" <u>Minimum</u> Time Spent on Core Instruction
	Hours per Year*	Percent of Total Time	Percent of Total Time
Elementary School	670 – 730 hrs	55 – 60%	55 – 60%
Middle School	490 – 550 hrs	40 – 45%	50 – 55%
High School	490 – 600 hrs	40 – 50%	50 – 55%

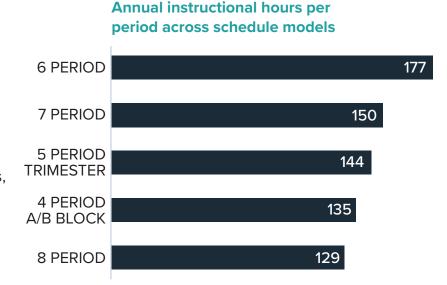
No one schedule model is best

Six-period or seven-period schedule? Block schedule or trimester schedule? There is no shortage of schedule options from which school and district leaders can choose. Existing (and extensive) research, however, has not identified a correlation between scheduling models and student achievement.

The most common schedule models are listed below. Each seems to have passionate fans and furious detractors.

- 4-Period A/B Block
- 5-Period Trimester
- 6-Period
- 7-Period
- 8-Period

While each of these types of schedules can successfully incorporate many best practices, the schedule model can greatly impact the amount of time devoted to core instruction. The chart below shows how much time any given class meets over the course of a year, given the different types of schedules.

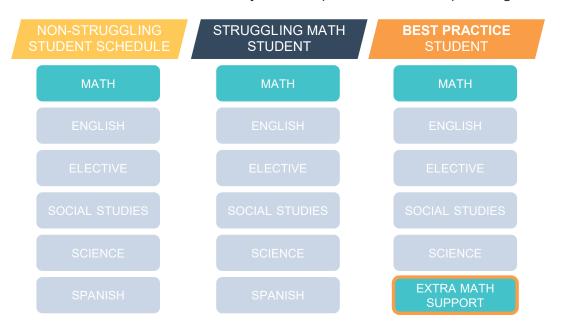


Time per course can vary significantly across schedule model types. Math, for example, meets for 177 hours a year in a six-period schedule and just 129 hours a year in an eight-period schedule.

1B. Daily access to extra-time intervention provided by content-strong staff

Regular class time is not enough for many students to master the skills and content necessary to be successful. This is especially true for knowledge and skills in foundational subjects like math, reading, and writing, which are necessary for nearly every other type of course at every grade level.

Best practice research provides a clear and compelling roadmap for how to catch kids up academically: students who struggle academically need effective core instruction, plus extra time to learn from a content-strong teacher. The extra time is used to teach foundational skills, content not yet mastered from prior years, to re-teach current content in new ways, and to pre-teach critical upcoming lessons.



Focus on literacy, writing, and math

Some skills are foundational. Prioritize mastery of reading, writing, or math when it comes to intervention, not because of state tests but because students who struggle in these subjects will struggle all through middle school, high school, and often after graduation as well. Giving up a semester of foreign language or an elective is a small price to pay for a lifetime of benefit.

Focus on one subject, not two

It's better to go deep than wide. Schools that have dramatically closed the achievement gap allow students to concentrate on catching up in just one subject for at least half a year, rather than trying to address multiple subjects at once. This allows enough time to achieve meaningful growth, which greatly increases student motivation.

Create content-specific intervention courses with course code

The best way to provide extra-time intervention from content-strong staff at the secondary level is through the creation of extra-time, content-specific intervention courses that are built into student and teacher schedules. This is otherwise known as a "double-time" model.

Adding a course code and credit to an intervention course helps gives it the necessary "weight" for it to be respected by both students and staff. It makes it clear that it should be taken as seriously as any other course.

1C. Designated time for relationship building

The research is clear that students care more about school when at least one adult at school cares about them. The good news is that schools can use strategic schedules to facilitate student and teacher relationships.

The most common example of relationship building time in secondary schedules is an advisory period. Done well, advisory periods incorporate consistent rituals and routines and are designed around the needs of students. They provide opportunity for students and teachers to share their thoughts, discuss timely issues, and develop supportive relationships. They should not be used as a period for announcements, general updates, and homework completion. Impactful advisory requires student choice and a plan for the teacher.

Schools can also consider other strategies to facilitate relationship building, such as "clubs" during the school day and lunch with teachers.

1D. Opportunity to incorporate student voice and choice to build engagement

Nearly all schools are striving to improve student engagement. The most common strategy is to find dedicated time in the schedule for building relationships, but engagement can also be improved by giving students more control over what is in their schedule. This is especially relevant for middle school students who often want more voice and choice than they are traditionally offered.

Student voice

Student voice means giving students input into what courses are offered. The easiest way to learn what interests students is to just ask them. A student voice survey is often the best way to begin this journey. A two-step survey can be best. The first is an interest survey; it seeks to understand what excites kids. The second survey reframes what's learned in the first and asks students to rank which potential new courses interest them the most.

One of the stated goals of non-core classes, which account for 30-40% of every student's day, is to create engagement. But do they? If non-core courses are to increase student engagement, to be the hook for eagerly coming to school, then they must tap into student interests and passion. However, many offerings haven't changed much over the decades.

There are three ways to update and invigorate non-core offerings:

- New flavors of old favorites: Art and music, for example, are still very interesting and important, but they can come in many more forms. In this strategy, keep the non-core course already offered, but upgrade the content and units within the courses. This is also an issue of equity. Often non-core course offerings are not culturally relevant or affirming for students of color, as they were developed by and for white middle class teachers and students. Music, for example, moves from a generic survey to one of any number of specialty areas such as electronic music, world music, or DJ-ing. Similarly, PE becomes yoga, free weights, jogging, or team sports.
- Embrace modern trends: Some of today's hobbies didn't exist 20 years ago. It's not surprising that some new courses are needed. This strategy involves updating the list of non-core courses offered. For example, app design or entrepreneurship shark tank.
- Look to the core: Surprisingly, many popular non-core classes address topics best taught by core subject teachers or are spinoffs of content or units from core classes. For example, fantasy sports math, podcasting 101, or social justice.

Student choice

While student voice gives students input over what courses are offered, choice gives students the ability to select what courses they take from a menu. Even with increased voice, few offerings will excite all students.

While student choice is the standard at most high schools, choice is less common at middle schools. Fortunately, there are options that can mitigate the concerns and many ways to increase student choice. Rather than full choice of students picking electives from a menu, bounded choice can be a great compromise. Bounded choice ensures students sample all the disciplines, but still have much autonomy. For example, they might be required to take one art, one music and one PE course each year, but within each of these areas there is a great deal of choice. Scaled choice is also a popular middle ground that allows students to rotate through a set of exploratory courses in art, music, PE etc. before allowing student choice.

1E. Ample access to rigorous learning opportunities

Access to rigorous coursework is key to a strategic secondary schedule because it directly impacts equity. Some think rigor simply means lots of homework, doing more work, or making things more difficult. A better definition is the academic or intellectual challenge of a class and the degree to which students are prepared, expected, and able to achieve at high levels.

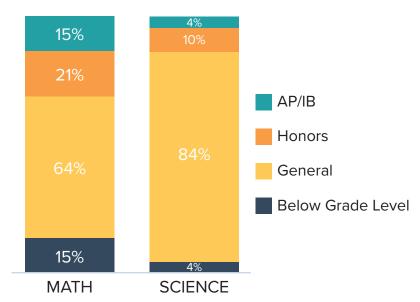
Rigor can help supercharge student learning because it provides an entry point to higher-level content and skills. To assess whether all students have equitable access to rigorous courses, schools should ask three important questions:

How many students are taking rigorous courses?

Start by examining what advanced and high-rigor courses students are actually enrolled in. Wide variation in access to rigor by department is often the norm, not the exception. As an example, one STEM-focused high school found that its math department offered many AP and honors courses, which aligned with the school's overall STEM mission, but also many remediation-level courses teaching below grade level that did not to set students up for success in future math classes. One in six students was not enrolled in a grade-level math class in a STEM focused school. This was a surprise, but easily discovered, had they looked.

Which students actually take rigorous courses?

Student enrollment patterns are an additional metric to determine the status of access to rigor. Many schools experience some student groups enrolling in honors and advanced courses at a disproportionate rate relative to their peers. In fact, while The College Board has reported that overall AP enrollment for all student groups has steadily grown over time, program expansion has not addressed the gap in participation by race, ethnicity, or socioeconomic status.



Collecting enrollment figures for all honors and advanced courses and disaggregating the data by student group is a good place to start.

Course placement and prerequisite policies are often to blame for inequitable access to rigorous courses. Often this is the result of an overreliance on teacher recommendations, which despite teachers' best intentions can be biased, and course grades, which were a better measure of student effort than actual mastery of content or skills.

Student Group	Percent of Total District Enrollment	Percent of Total Honors and Advanced Course Enrollment
Asian or Pacific Islander	22%	38%
Black	14%	8%
Latinx	35%	17%
Native American	3%	2%
White	26%	35%
Total	100%	100%

Which students succeed in rigorous courses?

The final question to ask in order to assess access to rigor is how well students that did take high-rigor courses actually achieve.

Upon looking at rigorous course achievement data across subjects, many schools see wide variation in how well students do. This can often show whether or not prerequisite courses are preparing students for eventual enrollment in advanced courses. While a school may offer plenty of advanced courses, they also must build up student skills over time to succeed in those courses. Remember: rigor means asking more of students and preparing them to meet those expectations.

Enrolling students in AP, IB and honors is not the same as students mastering the content. Avoid confusing the appearance of rigor with actual access to rigor for all. Some high schools become committed to getting many students in high rigor classes, which is good, but choose to ignore the achievement of students in those classes.

Avoid a one-size-fits-all approach to rigor in middle school

One popular solution to the challenge of meeting the needs of middle school students who are ready for more rigorous math instruction is to accelerate math for all middle school students. For example, in this model, all 8th grade students would take Algebra 1, not just students in the accelerated class. This one-size-fits-all approach fails to differentiate course offerings based on what students need. Further, it has the unintended impact of discouraging many students from STEM careers and undermining their ability to succeed in high school math—the exact opposite of the goal.

1F. Regular time for teacher collaboration

Research is robust that quality collaboration leads to better teaching. The positive effects of well-used teacher collaboration time include improved self-efficacy, increased teaching effectiveness, and high-quality instruction. There are two important types of collaboration to consider when scheduling: content planning and grade-level/school-wide planning. Both are important, but different:

1. Content planning time including:

- Curriculum, unit pacing, and lesson planning
- Analyzing and discussing assessment results
- · Learning, sharing, and improving instructional strategies for teaching specific content or lessons

2. Grade-level/school planning time including:

- Discussing student social, emotional, and other non-academic needs
- Aligning on behavioral expectations and cultural norms
- Preparing events and school climate-building activities

Finding the time for collaboration

There are many ways to thoughtfully carve out time (virtually and in-person) for planning and collaboration time for teachers. Specific methods include:

- Using scheduling software to prioritize teacher collaboration time
- Incorporating regular early dismissal or late arrival days
- Scheduling "internal" early release days
- Aligning bell schedules by grade level

Ensuring collaboration time is used well

Setting aside time for collaboration does not mean that teachers will know how or be prepared to use that time effectively. Planning time needs an agenda, a focus, and an expert. Each session should have a clear focus so that a concrete action can be taken by each teacher immediately, and, most importantly, each teacher team needs someone with expertise to guide the session. This person can be a highly effective teacher, a department chair, or an instructional coach.

1G. Precise matching of staffing to enrollment based on clear class size guidelines

Even before the pandemic, teacher and staff shortages were a challenge for many schools and districts. Districts have explored many different options to address these shortages, especially for positions that provide intervention and acceleration support to students. Scheduling and staffing precisely is an incredibly impactful way to address this challenge.

Staffing precisely to enrollment is about maximizing opportunities for students by freeing up staff to teach more sections of electives, intervention, or other academic coursework—at no extra cost. With some careful, thoughtful adjustments to staffing and course offerings, schools can create more and better opportunities for students.

To staff precisely, determine projected enrollment for each course and set a target class size. From there, calculate the projected number of sections needed for each course and decide whether to combine sections.

Department	Course Name	Projected Course Enrollment	Target Class Size	Projected Section Count
	Algebra	330	25	13
	Algebra Honors	95	25	4
Math	Geometry	250	25	10
	Pre-Calculus	235	25	9
	Calculus	85	25	3
	Animation	88	27	3
	Ceramics & Sculpture I	17	27	1
Visual Arts	Drawing I	75	27	3
	Painting I	55	27	2
	Painting II	30	27	1

1H. Creative management of low-enrollment courses

A high percentage of low-enrollment or single-section courses can be the result of many different factors and, in and of themselves, are neither good nor bad. In schools that schedule strategically, the number of low-enrollment or single-section courses is known, expected, and part of a school's overall scheduling strategy and vision. All of that said, two rules of thumb to follow are:

- 1. The lower the number of low-enrollment courses, the better.
- 2. The number of low-enrollment, single-section courses should be extremely low, if not zero.

Here is how to effectively manage low-enrollment and single-section courses:

Combine similar courses

Consider combing related low enrollment courses. For example, journalism and intro to podcasting can be combined to create media studies if the same teacher normally teaches both.

Combine levels of the same subject

Explore mixing the enrollment of two different levels of a course if they each have low enrollment. This strategy can work for electives, like Accounting 1 and 2, as well as for sequential courses, such as French 3 and 4. Be sure to consult with the teachers potentially impacted, however, and ask for volunteers first.

Alternate course offerings by quarter, semester, or year

Not all courses need to run every term or year. High schools can run low-enrollment electives every other semester or year. For example, creative writing may only run during the fall term, not the spring. This way, students from the spring term also take the course in the fall, which increases class size to a more typical level and saves a section in the spring.

Use virtual classrooms

Utilize technology and teachers' and students' increased experience and comfort with virtual instruction to offer select courses online. Very low enrollment courses can be combined across campuses and taught by a teacher at a single school. In one district, taking this approach involved students taking an advanced math course in middle school no longer needing to be bused across town to a common location; students simply log on and join the class from their home school.



Strategic Secondary Schedule Self-Assessment

MIDDLE SCHOOL STRATEGIC SCHEDULE SELF-ASSESSMENT

Strategic Schedule Best Practice	Does your schedule include these best practices?		
Strategic Scriedule Best Practice	Yes, Definitely	Sometimes	No, Not Really
1. Core subjects meet for at least 250 minutes a week (5 \times 50 min)			
2. All students who need extra help in reading, math, or ELA receive extra help in their greatest area of need			
3. Extra help is extra time, one period a day, and focuses on one subject			
4. Extra help is provided by teachers with deep content expertise			
5. All students with the requisite skills are provided accelerated math in 7th and 8th grade			
6. No student lacking the requisite math skills is placed in accelerated math, including Algebra 1 in 8th grade, until they have mastered the requisite skills			
7. Student voice, passion, and interest are reflected in non-core offerings in the schedule			
8. Students have some choice over non-core courses they take			
9. Advisory and other relationship-building efforts have a foundation of shared interests between student and teacher			
10. Staff and leadership believe strategic middle school schedules and the middle school model can co-exist			

HIGH SCHOOL STRATEGIC SCHEDULE SELF-ASSESSMENT

Stratogic Schodule Post Practice	Does your schedule include these best practices?		
Strategic Schedule Best Practice	Yes, Definitely	Sometimes	No, Not Really
1. Core subjects meet for at least 250 minutes a week (5 \times 50 min)			
2. All students with designated need in reading, math, or writing are enrolled in at least one content-specific, credit-bearing intervention course			
3. Content-specific intervention courses run daily ("skinny" period if block schedule) and focuses on one subject			
4. Intervention courses are taught by teachers with deep content expertise			
5. Departments offer a broad mix of course levels (general, honors, advanced) to meet the needs of and challenge students of all ability levels			
6. Prerequisites ensure equitable access to courses to all students and do not disproportionately screen out certain student groups			
7. Student voice, passion, and interest are reflected in elective offerings in the schedule			
8. Robust career and technical courses, early college (dual credit) courses, and internships in the community are available to students			
9. Advisory and other relationship-building efforts have a foundation of shared interests between student and teacher			
10. Staff and leadership believe a strategic high school schedule is a tool for, not a barrier to, student learning			

3

Approaching the Scheduling Process Strategically

3A. Approach building the schedule as a team sport

Building a great schedule is hard. No one person has all the wisdom, expertise, authority and data to build the best schedule by themselves. Changing a schedule can be politically challenging, and excluding teachers from the discussions often undermines support for a new, even better schedule. Building schedules as a team can help align schedules to priorities and ensure that they meet the needs of students and staff.



A SCHEDULING TEAM SHOULD INCLUDE:

School Principal

- Sets overall scheduling direction, goals, and priorities
- Works closely with assistant superintendent of teaching and learning to align on vision

Guidance Counselor / Assistant Principal

Manages logistics of scheduling process and keeps things on track

General Education Teacher(s)

 Provides input on scheduling decisions and tradeoffs from the perspective of general education instruction

Special Education Teacher

Provides input on scheduling decisions and tradeoffs from the perspective of student supports

Expert Scheduler

- Uses scheduling software to build student and teacher schedules
- Note: may be school-based or district-based

Assistant Superintendent of Teaching and Learning

- Sets overall direction, goals, and priorities for schedules across schools in the district
- Removes obstacles, clarifies constraints
- Provides scheduling guidelines and parameters

Taking a team approach to scheduling provides the benefit and opportunity to leverage staff expertise across roles and content areas, create a shared understanding of priorities, and focus on creating a schedule driven by student need.

3B. Set clear priorities and non-negotiables to guide the scheduling process

A set of clear goals, priorities, and non-negotiables can help transform the schedule to become a tool for truly and positively impacting teaching and learning.

Scheduling teams should first assess and collect feedback on the current schedule to inform potential priorities. They should then establish a small set of "must-have" and "nice-to-have" priorities to guide the schedule. Ultimately, the scheduling team should drive towards establishing a set of 3-5 specific priorities based on the school's need to help drive the scheduling design process.

Sample priorities include:

- At least 50% of a student's day is spent in core instruction.
- All extra-time academic interventions are taught by content-strong staff and are credit- or gradebearing.
- 8th grade students are given the ability to choose at least one enrichment offerings per semester.

3C. Align the scheduling process with staffing and budgeting timelines to ensure accurate and timely data

Schedules are not built in a vacuum. They are greatly influenced by staffing and budgeting decisions. Staffing and budgeting decisions are also impacted by scheduling decisions. In many school systems, the schedules come last in this relay race. A better process puts schedules first and then last again.

Student course selections and estimates of the number of students needing intervention should happen first. Draft schedules next, and then budgeting and staffing decisions made. Schedules should be finalized based on the budget decisions, but final schedules should closely resemble the desired ones.

3D. Utilize scheduling expertise to build the schedule

Designing a schedule takes a different set of skills than building a schedule. Expert schedulers can help ensure student needs and requests are met, that staff are used efficiently, and that the schedule aligns with leaders' vision and priorities. An expert scheduler should be intimately familiar with any scheduling software, tools, or process and be very familiar with goals and priorities established by the scheduling team.

3E. Train and support staff on how to make the most of the schedule

The final key step strategic scheduling teams take is to ensure teachers and staff are well trained and supported to implement the schedule as intended and effectively. If creating a new advisory period, for example, be sure to codify and share the vision for how the time should be used, both from the student perspective as well as the teacher perspective.

4

Scheduling Process Self-Assessment

Scheduling Process Best Practice	Does your scheduling process include this practice?		
Schedding Frocess Best Fractice	Yes, Definitely	Somewhat	No, Not Really
1. Establish a school-based scheduling team			
2. Assess and collect feedback on the current schedule			
3. Establish a set of 3-5 specific priorities			
4. Identify other non-negotiables and constraints			
5. Enlist an expert scheduler			
6. Prioritize what is scheduled first e.g., singleton courses, common planning time, etc			
7. Train staff on new schedule components			

5

A Step-by-Step Process

Create a scheduling team.

Build a scheduling team to leverage staff expertise, create shared priorities, and focus on student needs. A scheduling team should include:

- School principal
- Guidance counselor/assistant principal
- General education teacher(s)
- Special education teacher
- Expert scheduler
- Assistant superintendent of teaching and learning

Establish scheduling priorities and non-negotiables.

Research has not found any one "best" schedule model. Instead, the "right" schedule model for any given school should be based on that school's needs, goals, and priorities. Establish a set of 3-5 specific, measurable priorities based on the school's need to help drive the scheduling design process. Identify other non-negotiables or schedule constraints such as teacher contract and course-hour requirements.

Determine the program of studies and course offerings for each department.

Determine which courses to offer based on graduation requirements, student requests, and teacher interest. Carefully reconsider course offerings each year to meet the changing needs of students and staff.

Set guidelines for class size targets, minimums, and maximums.

Decide ideal class size by department and minimum and maximum class size. Prioritize which classes benefit from larger class size (e.g., PE, band) and which from small class size (e.g., intervention). Best practice recommends minimizing low-enrollment and single-section courses.

Project the number of sections for each course based on enrollment and class size guidelines.

After setting target class size, determine the projected enrollment for each course by dividing the projected number of enrolled students by the target class size. Use class size minimum and maximum thresholds to determine whether to round down or up.

6 Compare projected sections with existing staffing figures to identity gaps or opportunities.

Determine the number of FTE needed in each department by dividing the number of sections needed by the number of sections a teacher can teach. Compare FTE needed with FTE budgeted.

Adjust staffing and resources to align with projected section counts.

Often, these two numbers (FTE needed and FTE budgeted) don't align. If left with additional staff time in a department, figure out how to redistribute this staff time, e.g., intervention, electives, sharing staff. If more staff is needed, consider adjusting class size or sharing staff.

Explore options for creatively managing low-enrollment and single-section courses such as combining similar course and/or levels of the same subject, alternating course offerings, and using virtual classrooms.

8 Utilize scheduling software and a scheduling expert to generate student and staff schedules.

An expert scheduler should be very familiar with goals and priorities established by the scheduling team. Without this understanding, the expert scheduler will have little guidance for how to navigate the inevitable tradeoffs associated with building schedules.

- Share preliminary schedules with students and staff.

 Incorporate training on new components of the schedule into staff days prior to the start of the school year.
- Adjust section counts and schedules over the summer based on enrollment, budget, and staffing changes.