

Prioritizing 9th Grade Math

The Challenge:

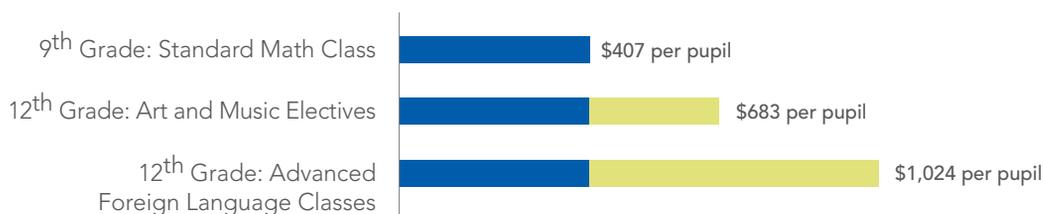
Research shows that students who end their 9th grade year on track are four times more likely to earn a diploma than those who fall off track. In fact, recent research finds that being on track in the 9th grade is a better predictor of high school graduation than race, income, neighborhood, and prior test scores combined. For many at-risk students, 9th grade math is the primary make-or-break hurdle determining whether they will end the year on track.¹ **How can districts invest in 9th grade students to help ensure they will succeed in such an important transition year?**

The Data:

Many schools and districts invest significantly more in upper-level elective courses than in critical 9th grade foundation courses. Why is this happening? It's not that schools or districts want to invest less in their 9th grade students. It's often the unintentional consequence of the fact that upper-level elective courses typically have smaller class sizes and are taught by more-experienced, and consequently, higher-paid teachers. Hence, they cost much more on a per-pupil basis.

For example, we examined an East Coast district of over 145,000 students and found that one of its schools spent \$407 per pupil for 9th grade students in standard math classes, but it spent \$276 more per pupil, or 1.7 times as much, on 12th grade students in art and music electives. It also spent \$617 more per pupil, or 2.5 times as much, on 12th grade students in advanced foreign language classes.

PER-PUPIL COST OF CLASS IN ONE SCHOOL (EAST COAST DISTRICT WITH 145K+ STUDENTS)



School System 20/20 Data Decisions highlights common opportunities ERS sees in districts across the country. The series explores how current resource choices can yield big results for students and teachers, getting districts closer to the School System 20/20 vision.

This trend is not uncommon. In fact, across the country, ERS has found that although many districts are concerned about the importance of 9th grade as a key transition year, very few districts actually invest in the success of their 9th graders in core subjects. This pattern is costly for districts, schools, and most importantly, students.

PER-PUPIL COST OF CLASS IN FIVE DISTRICTS

	DISTRICT A	DISTRICT B	DISTRICT C	DISTRICT D	DISTRICT E
	East Coast with 145K+ students	Southern with 86K+ students	Midwest with 38K+ students	Southern with 59K+ students	Southern with 96K+ students
9 th Standard Math Class	\$410	\$440	\$934	\$540	\$ 552
12 th Art and Music Electives	\$600	\$501	\$2,718	\$992	\$1,167
12 th Advanced Foreign Language Classes	\$609	\$650	\$1,456	\$614	\$959
Ratio of 12 th Art/Music to 9 th Standard Math	1.5 times	1.1 times	2.9 times	1.8 times	2.1 times
Ratio 12 th FL Advanced to 9 th Standard Math	1.5 times	1.5 times	1.6 times	1.1 times	1.7 times

The Trade-off:

These data show that one way to free resources for investing in mastery at the foundational level would be to redirect resources from higher-cost classes. In the case of our example school, if the per-pupil cost of the 12th grade advanced foreign language classes (\$1,024 per pupil) and the 12th grade art and music electives (\$683 per pupil) were both reduced so that they cost the same as the 9th grade standard math classes (\$407 per pupil), it would free up an additional \$56,000 for the school. Imagine all the ways \$56,000 could be spent to support struggling 9th grade students. The school could provide an after-school tutoring program, and/or hire an additional teacher to push in to 9th grade math classes for small-group instruction, and/or purchase an online support curriculum.

Today, districts have limited resources and continually face tough decisions about where to prioritize. The trade-off above is increasingly possible because less-costly ways now exist of providing the advanced electives including using creative scheduling, partnering with other schools, and/or using technology-enabled solutions. These opportunities give district leaders the ability to redirect instructional dollars to ensure our 9th graders get the foundation they need to get to the advanced levels.

Calculate Per-Pupil Cost of Class in Your District

The per-pupil cost of a class can be calculated by taking the teacher’s compensation, dividing that by the number of classes he or she teaches, and then dividing again by class size. For example, let’s take a teacher making the 2012–13 national average teacher salary of \$56,383, who teaches five periods a day, with the following class sizes:

COST OF CLASS CALCULATION FOR TEACHER EARNING \$56,383 PER YEAR

	COST PER CLASS \$56,383 ÷ 5 =	CLASS SIZE	PER-PUPIL COST PER CLASS \$11,277 ÷ CLASS SIZE =
Period 1	\$11,277	10	\$1,128
Period 2	\$11,277	15	\$752
Period 3	\$11,277	20	\$564
Period 4	\$11,277	25	\$451
Period 5	\$11,277	30	\$375

You can see that while teacher salaries and the number of classes taught are certainly important drivers of per-pupil cost per class, the largest driver by far is class size itself, with smaller classes drastically increasing the cost of the class on a per-pupil basis.

Do-it-Yourself Worksheet

Step 1: Calculate the Cost per Class

- 1. For the class that you want to analyze, what is the teacher’s salary? _____
- 2. How many classes does that teacher teach? _____
- 3. Calculate the cost per class [teacher salary ÷ # of classes taught] _____

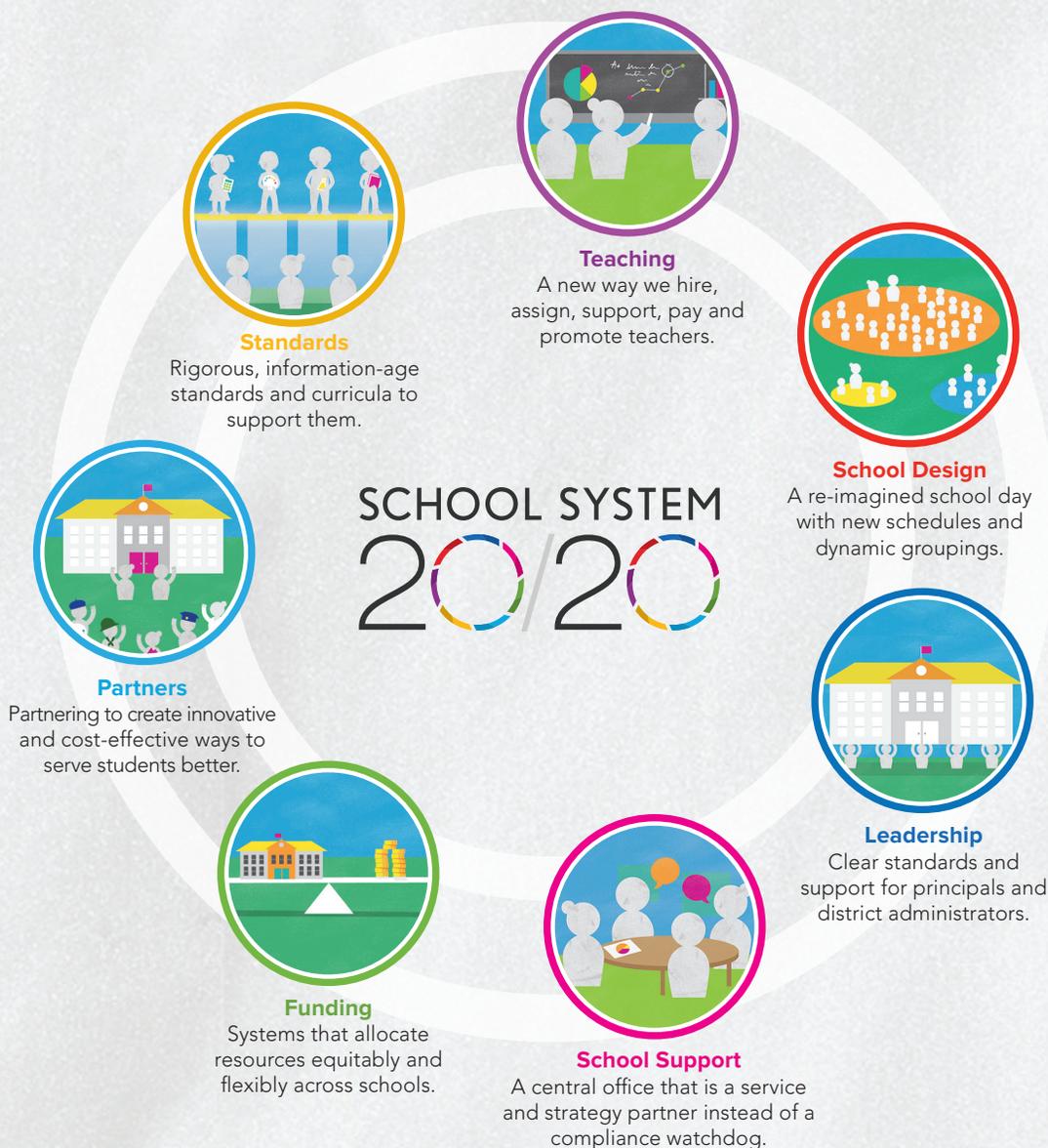
Step 2: Calculate the Per-Pupil Cost per Class

- 4. For the class that you want to analyze, what is the class size? _____
- 5. Calculate the per-pupil cost per class [cost of class ÷ class size] _____

Endnotes

1. Adams, Caralee. “Keeping 9th Graders on Track Can Move Grad Rate, Research Finds.” Education Week. September 2014. http://blogs.edweek.org/edweek/college_bound/2014/09/successful_9th_grade_transition_key_to_graduation.html.

School System 20/20: Tools for District Transformation



School System 20/20 includes both a vision for transformative change as well as a methodology for charting a path and measuring progress toward that change across the seven areas above. Using a data-driven approach, it enables districts to see exactly how resources— *people*, *time*, and *money*—are deployed, and identify where they can better meet student and teacher needs.

School System 20/20 assessment tools help district leaders measure and track the conditions for change and their resource use. Based on our experience working with districts, on our extensive district database, and on published research, the tools use qualitative and quantitative metrics to evaluate progress.

Education Resource Strategies (ERS) is a non-profit organization dedicated to transforming how urban school systems organize resources—people, time, and money—so that every school succeeds for every student.