JLARC
JOINT LEGISLATIVE AUDIT
AND REVIEW COMMISSION

REPORT TO THE
GOVERNOR AND THE GENERAL ASSEMBLY OF VIRGINIA

Review of Year-Round Schools

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COMMONWEALTH of VIRGINIA

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November 28, 2012

The Honorable John M. O'Bannon III
Chair
Joint Legislative Audit and Review Commission
General Assembly Building
Richmond, Virginia 23219

Dear Delegate O'Bannon:

House Joint Resolution 646 of the 2011 Session directed the Joint Legislative Audit and Review Commission (JLARC) to study the efficacy of year-round schools. Specifically, staff were directed to determine which Virginia school divisions have implemented year-round schools and conduct a comprehensive analysis of each year-round school, examine year-round schools utilized in other states and countries, and review the Board of Education's procedure for approving year-round schools.

The final report was briefed to the Commission and authorized for printing on October 9, 2012. On behalf of the Commission staff, I would like to thank staff at the Department of Education for their assistance during this review. I would also like to thank the division- and school-level staff in Virginia who are currently operating year-round schools or have utilized them recently for the assistance and information they provided during this review.

Sincerely,

Glen S. Tittermary
Director

GST/mle

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JLARC Report Summary

Review of Year-Round Schools

Key Findings

- The Standards of Learning (SOL) test scores of the general student population were similar at year-round schools and traditional calendar schools. This suggests a year-round calendar does not necessarily improve the test scores of all students. (Chapter 2)

- SOL test scores of certain student groups, in particular black students, were more likely to increase at a faster rate at year-round schools over the nine-year period from 2001 to 2009 and were also more likely to exceed predicted 2009 SOL test scores. (Chapter 2)

- Year-round calendars increased annual school expenditures, on average, by about three percent in Virginia. This does not, however, include transportation and food service costs, which divisions were not able to accurately determine. (Chapter 3)

- Certain school divisions, particularly those with high percentages of student groups that appear to benefit from year-round schools, may want to consider implementing year-round calendars as a method to improve student performance. (Chapter 6)

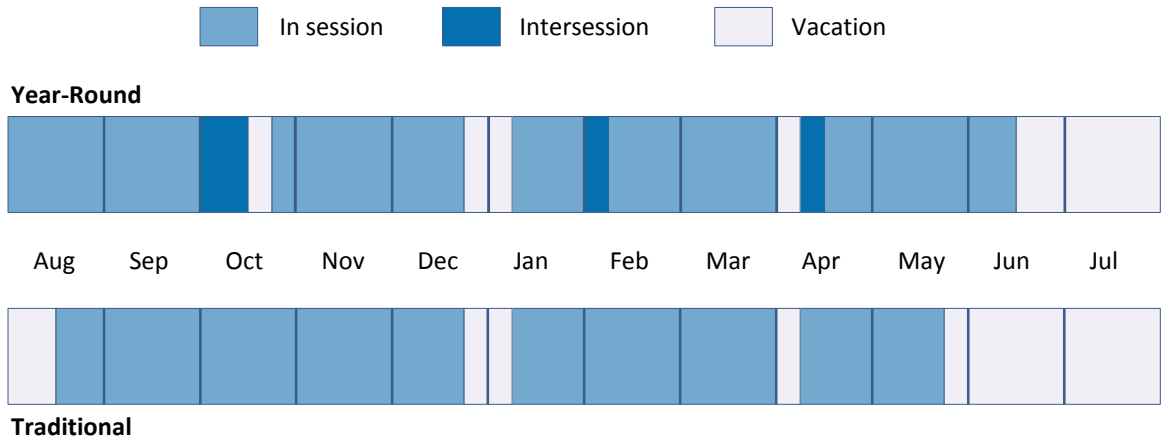
House Joint Resolution 646 from the 2011 General Assembly directs the Joint Legislative Audit and Review Commission (JLARC) to study the efficacy of year-round schools. The mandate directs JLARC staff to determine which Virginia school divisions have implemented year-round schools and conduct a comprehensive analysis of each year-round school, examine year-round schools utilized in other states and countries, and review the Board of Education's procedure for approving year-round schools. Research methods used during this review include interviews with division-level and school-level staff with year-round experience in Virginia and other states; site visits to schools in Virginia divisions using year-round calendars in 2011-2012; analysis of school-level Standards of Learning (SOL) test data for year-round schools operating in 2009; analysis of expenditure data for selected year-round schools; and surveys of school division administrators, instructional staff, and parents.

YEAR-ROUND CALENDARS HAVE SHORTER, MORE FREQUENT BREAKS COMPARED TO TRADITIONAL SCHOOL CALENDARS

Year-round calendars redistribute the standard 180-day school year across all 12 months rather than the traditional nine months. They do not necessarily increase the total number of instructional days in the school year; rather, they reallocate existing instructional days across the year more evenly by dividing the traditional three-month summer vacation into shorter, more frequent breaks. These breaks, known as intersessions, can be used for vacations or additional instruction. The figure below shows a year-round school calendar and a traditional school calendar, both of which are used in one of Virginia's school divisions.

Schools choose to implement year-round calendars for two primary reasons: (1) to improve academic achievement or (2) to increase building capacity. Depending on the desired goal, schools can implement a year-round calendar using a single- or multi-track design. Single-track calendars are normally used to increase student achievement through reduced summer learning loss and additional instruction provided during intersessions. Multi-track calendars are used to maximize building space, particularly during periods of rapidly rising student enrollment. Multi-track calendars achieve this by rotating groups of students on different cycles of instructional and intersession days so that the entire student body is never in school at the same time.

Year-Round Schools Typically Start Earlier Than Traditional Calendar Schools, But Have Intersession Breaks in Fall, Winter, and Spring



Note: Year-round calendar structures vary by division and include different in session, intersession, and vacation dates.

Source: 2012-2013 school calendars in Danville Public Schools.

LESS THAN ONE PERCENT OF VIRGINIA STUDENTS ATTENDED YEAR-ROUND SCHOOLS IN 2011-2012

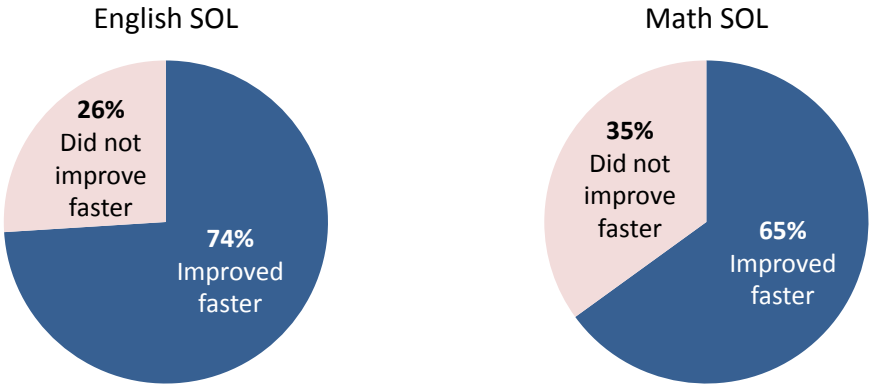
Year-round schools operated in 30 states, including Virginia, in 2008. Nine elementary schools in Virginia operated on a year-round calendar during the 2011-2012 school year. These were located in Arlington County and the Cities of Alexandria, Danville, Lynchburg, and Richmond. These nine schools accounted for about 0.8 percent of all elementary schools and 0.6 percent of all elementary school students in Virginia. This is a decrease from 31 year-round schools that operated in Virginia in 2009. Year-round schools in Virginia have primarily used single-track calendars with the goal of improving academic achievement.

SOME STUDENT SUBGROUPS AT YEAR-ROUND SCHOOLS APPEAR TO DO BETTER ON SOL TESTS

Analysis of SOL test data found no appreciable difference between the scores of the general student population at year-round schools and students at traditional calendar schools. However, certain student subgroups scored better at year-round schools. In particular, analysis showed a strong positive effect on the rate of increase of average SOL test scores for black students at year-round schools between 2001 and 2009. The average English SOL scores of black students at 74 percent of year-round schools improved faster than average scores at traditional calendar schools, and the average math SOL scores of black students at 65 percent of year-round schools improved faster than their traditional calendar peers (see figure).

Analyses of predicted and actual SOL test scores also found a strong positive effect for black students at year-round schools. At 29 percent of year-round schools, the average English SOL score for black students was at least ten points higher than predicted,

Average SOL Scores of Black Students Improved Faster at Year-Round Schools

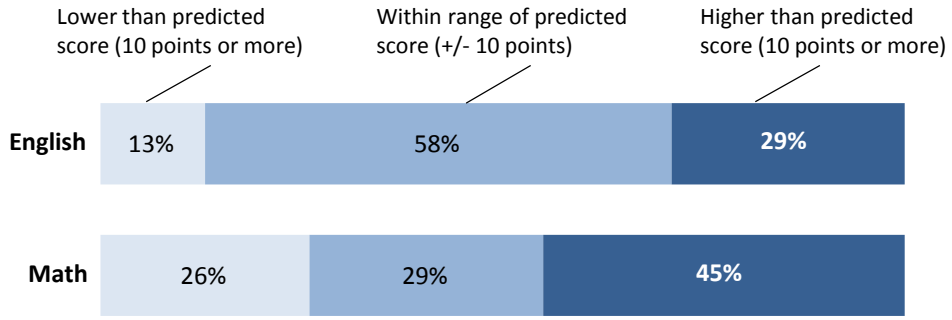


Source: JLARC staff analysis of Department of Education SOL test score data, 2001-2009.

and the average math SOL score for black students was at least ten points higher than predicted at 45 percent of year-round schools (see figure). At some schools, average scores on the English and math SOL tests of black student subgroups were much higher than predicted. For example, at nearly one-third of year-round schools, the math SOL scores of black students exceeded their predicted scores by more than 20 points.

Hispanic, economically disadvantaged, and limited English proficient (LEP) students also generally scored better at year-round schools than their peers at traditional calendar schools. However, their gains were not as strong or consistent as the gains found among black students.

Average Scores of Black Students at Many Year-Round Schools Were Substantially Higher Than Predicted, Especially on the Math SOL Test



Source: JLARC staff analysis of Department of Education school-level English and math SOL average scaled scores, 2009.

INTERSESSIONS MAY BE A PRIMARY REASON FOR IMPROVED PERFORMANCE OF CERTAIN STUDENT SUBGROUPS, BUT EDUCATIONAL BEST PRACTICES ARE ALSO NECESSARY

A distinguishing feature of single-track year-round schools is intersessions. Intersessions can provide remedial and enrichment opportunities for students, and there are a number of reasons why intersessions may lead to higher SOL test scores for certain student groups. Students likely benefit from the reinforcement of recently learned concepts during intersessions, and this positive effect is particularly true for students requiring remediation. Timely and targeted intersession remediation can help these students avoid accumulated learning loss, which is especially important for subjects, such as math, that require students to master core concepts before they can move to new material. Intersessions and shorter summer breaks may also be particularly helpful for students that have few educational opportunities outside of school.

While certain student groups appear to benefit from the attributes of a year-round calendar, educational best practices, such as hav-

ing effective teachers and a strong principal who provides leadership, also influence student performance. These best practices may be as, if not more, important for the academic achievement of students than whether the school operates on a year-round calendar.

YEAR-ROUND CALENDARS IN VIRGINIA RESULT IN SMALL TO MODERATE INCREASES IN TOTAL SCHOOL EXPENDITURES

Financial data from 16 year-round schools in Virginia shows that the year-round calendar resulted in small to moderate spending increases at these schools. Intersession courses were the primary factor leading to increased costs. Year-round schools in Virginia spent three percent, on average, of their total annual expenditures on providing these extra courses, with intersession per-pupil amounts ranging from one to nine percent of total per pupil expenditures at these schools.

The vast majority of intersession expenditures (over 90 percent on average) were to pay staff to teach students during intersessions. However, school divisions were unable to isolate some non-instructional expenditures related to the year-round calendar, such as student transportation and food services. Even though year-round calendars account for a fairly small portion of total school expenditures, the cost increases have led some Virginia school divisions to discontinue their year-round programs and others to avoid adopting year-round calendars.

TEACHERS, ADMINISTRATORS, AND PARENTS SUPPORT YEAR-ROUND SCHOOLS, BUT ACKNOWLEDGE CHALLENGES

Changes to the school calendar impact teachers, families, school division administrators, and businesses in the local community. Virginia parents and teachers with year-round school experience tended to view year-round schools positively. For instance, teachers with year-round school experience believed that the calendar generally has a positive influence on student achievement, and benefits teachers both personally and professionally. Similarly, parents of children that have attended year-round schools believed that the calendar positively affected their children academically. They also reported few negative impacts on their families related to scheduling vacations, participation in extracurricular activities, and securing childcare.

School division administrators, however, cited challenges associated with operating year-round schools. For example, administrators indicated the need for more careful planning to schedule professional development and extracurricular activities at the high school level when schools utilize a year-round calendar.

CERTAIN SCHOOL DIVISIONS MAY WANT TO CONSIDER YEAR-ROUND SCHOOLS AS A METHOD TO IMPROVE STUDENT PERFORMANCE

For a school division seeking to increase student performance, it may be most effective to use strategies that benefit student subgroups that have historically performed below average. Research shows that black, Hispanic, LEP, and economically disadvantaged students tend to perform below the general student population on standardized tests. These same groups, most notably black students, are also more likely to improve their test scores under a single-track year-round school model. Therefore, year-round calendars may be of particular interest to schools with high percentages of these student groups.

However, school divisions should be aware of the challenges occasioned by year-round schools. If schools intend to provide intersession instruction with high levels of student attendance, school costs can be expected to increase by approximately three percent, in addition to increased transportation and food service costs. Securing the support of parents and staff at the year-round school is also important. Finally, year-round calendars will be most effective when implemented in a school environment that includes educational best practices.

Chapter 1

Year-Round School Calendar Redistributes Traditional Summer Break Throughout Year

In Summary

Year-round school calendars spread instructional days across 12 months rather than the traditional nine-month school calendar by redistributing the summer break into shorter breaks, or intersessions, throughout the year. Depending on the desired goal, schools can choose to implement year-round calendars under a single- or multi-track design. Schools usually choose a single-track calendar with the goal of increasing academic achievement by providing additional instruction during intersessions. A multi-track calendar is used to increase building capacity by rotating students in and out of school during intersession. Nine elementary schools in Virginia used single-track year-round calendars during the 2011-2012 school year, which represented less than one percent of the State's total school population. Schools in 30 states utilized year-round calendars in 2008, and these schools accounted for about 14 percent of all U.S. public schools. The extent to which other countries use year-round calendars is unclear due to a lack of available information, though summer break lengths in some countries appear to be longer than U.S. year-round calendar breaks, but shorter than U.S. traditional calendar breaks.

House Joint Resolution 646 from the 2011 General Assembly (Appendix A) directs the Joint Legislative Audit and Review Commission (JLARC) to study the efficacy of year-round schools. The resolution appears to arise out of interest in year-round calendars as a method of school reform to address various educational issues in Virginia. The mandate directs JLARC staff to determine which school divisions have implemented year-round schools and conduct a comprehensive analysis of each year-round school. The mandate additionally directs JLARC staff to identify and review year-round schools offered by other states and countries, noting advantages and disadvantages and to review the Board of Education's procedure for approving year-round schools.

To address this mandate, JLARC staff conducted interviews with division-level and school-level staff with year-round school experience in Virginia, as well as school division staff in other states, academic experts, interest groups, and other stakeholders. JLARC staff also (1) conducted site visits to schools in each Virginia school division using year-round calendars in 2011-2012; (2) analyzed school-level Standards of Learning (SOL) test data for year-round schools operating in FY 2009; and (3) analyzed cost data in selected schools to determine the financial impact of the year-round calendar. Finally, staff surveyed school division administrators, in-

structional staff, and parents. More details on these research methods can be found in Appendix B.

NEARLY ALL VIRGINIA SCHOOLS OPERATE ON TRADITIONAL CALENDAR ROOTED IN AGRARIAN HISTORY

The overwhelming majority of schools in Virginia currently operate on the traditional nine-month calendar, which emerged as a way to standardize education systems between urban and rural communities. Year-round schools comprise less than one percent of all schools in Virginia, with nine schools currently using a year-round calendar. Schools in the State first began adopting year-round calendars in the 1970s and continued increasing their use until 2009. Since 2009, however, the number of schools in Virginia using a year-round calendar has substantially declined.

Traditional Calendar Was Compromise to Accommodate Agricultural Needs of Virginia Communities

The traditional nine-month school calendar originated during the post-Civil War era as a compromise between urban and rural school systems. Prior to this era, urban and rural school systems followed different academic calendars that reflected the specific needs of their communities. Rural schools in the 19th century implemented schedules that accommodated the agricultural needs of their local communities, and many rural schools were open for, at most, six months of the year. Conversely, many urban schools implemented much longer school calendars at that time, in some cases up to 49 weeks of school out of the year.

Urban and rural school systems abandoned these separate calendar structures in the late 19th century and moved to a standard nine-month school calendar due to increased pressure to create a compulsory system of education. This pressure arose from surges in student populations, the need for an increasingly educated workforce to accommodate rapid industrialization, and the passage of child labor laws. Urban districts also supported the movement toward a standard calendar with shorter school years and longer summer breaks due to growing industrial pollution, which rendered some schools uninhabitable in the summer months.

The year-round school calendar concept originated during the early 1900s as a way to address local community initiatives. The earliest year-round calendars were used for issues such as increasing the quality of education, addressing the needs of immigrant student populations, and using existing school capacity more efficiently. Many year-round programs dissolved during the late 1930s due to the Depression and World War II, which shifted the educational focus to accommodating rapidly rising enrollment rates rather than piloting novel school program reforms. School districts rein-

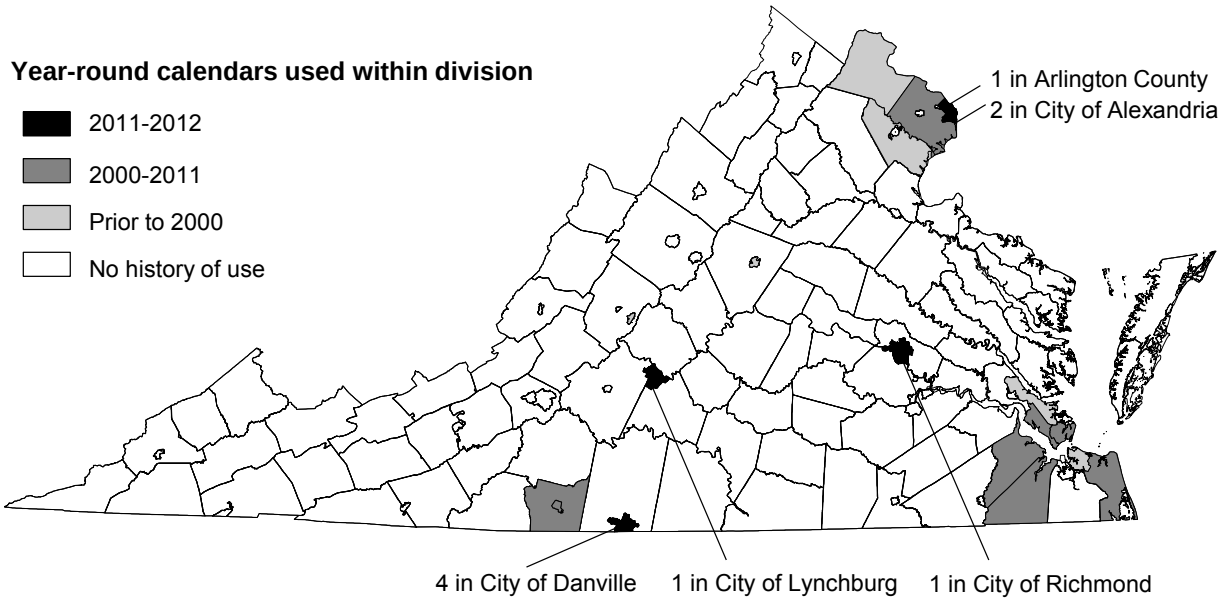
troduced the year-round concept during the 1970s, mainly to accommodate growing student populations. By 2000, school districts also began using the year-round model for its perceived educational advantages, rather than solely to accommodate more students by using capacity more efficiently.

Less Than One Percent of Virginia Students Currently Attend Schools Using Year-Round Calendars

According to Virginia Department of Education (DOE) data and a JLARC staff survey of school administrators, a total of 19 Virginia school divisions have used year-round calendars in 65 schools since the early 1970s (Figure 1). The number of year-round schools peaked in Virginia in 2009, at which time year-round calendars were used at 31 schools (Appendix C provides summary information about schools that currently use year-round calendars).

During school year 2011-2012, nine elementary schools in Virginia operated on a year-round calendar in five divisions: City of Alexandria, Arlington County, City of Danville, City of Lynchburg, and City of Richmond. These nine elementary schools represent about 0.8 percent of all elementary schools and 0.6 percent of all elementary school students in Virginia for 2011-2012.

Figure 1: Nine Schools Used a Year-Round Calendar Across Five Virginia School Divisions in 2011-2012



Source: JLARC staff analysis of Virginia Department of Education data and JLARC staff survey of school administrators, 2012.

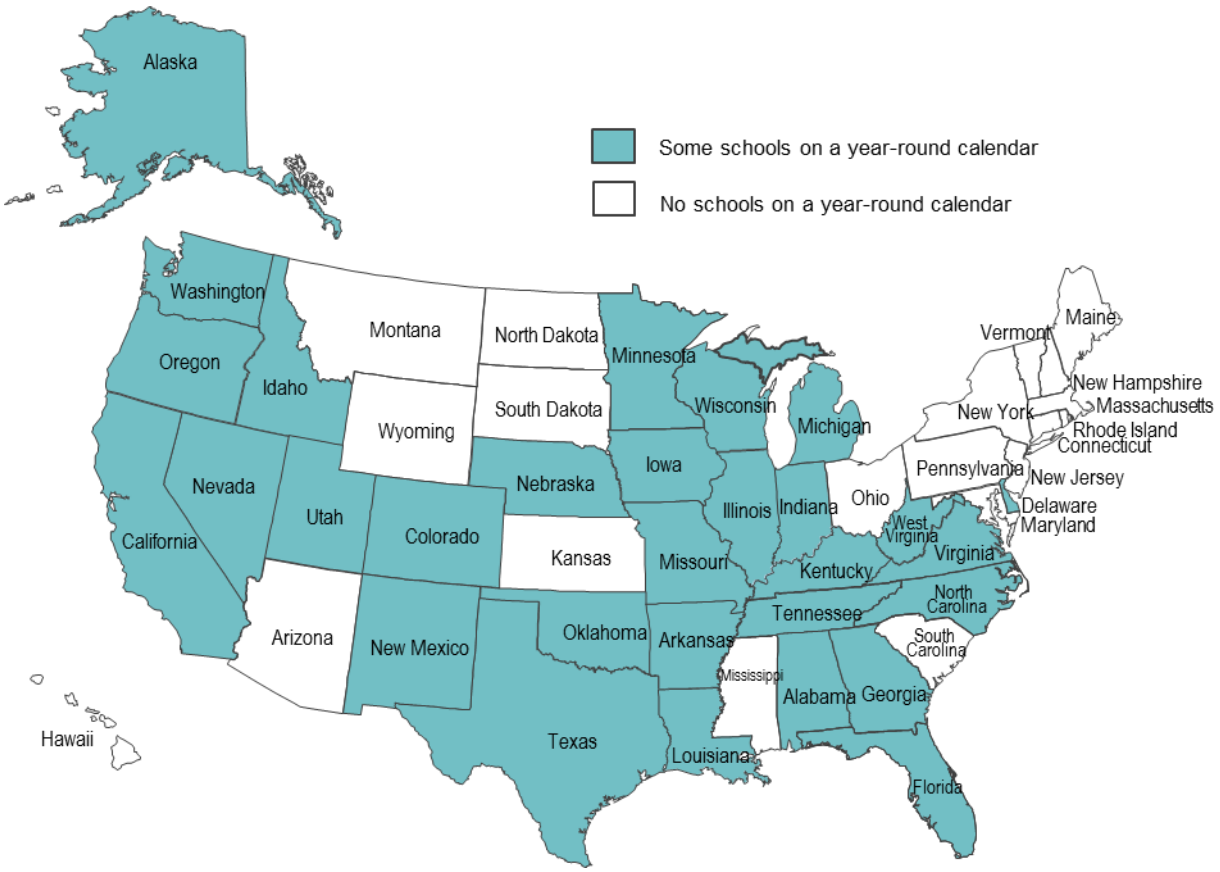
As of the 2011-2012 school year, 14 school divisions had discontinued year-round calendars and transitioned their schools back to the traditional calendar.

As of the 2011-2012 school year, 14 school divisions had discontinued year-round calendars and transitioned their schools back to the traditional calendar. On the survey of school administrators, eight of 12 divisions with year-round school experience since 2000 reported discontinuing year-round calendars due to (1) increased costs associated with the calendar or (2) difficulty coordinating certain activities with traditional calendar schools in their respective divisions, such as scheduling professional development.

OTHER STATES ALSO USE YEAR-ROUND CALENDARS, WHILE OTHER COUNTRIES USE DIFFERING CALENDARS BUT TEND TO HAVE SHORTER SUMMER BREAKS

Year-round schools comprise about one-sixth of all schools in the United States. According to the National Center for Education Statistics (NCES), year-round schools operated in 30 states in 2008 (Figure 2). These schools were concentrated in certain states, with the highest number of school districts with year-round schools in Minnesota (134), California (130), Kentucky (27), Illinois (23), and North Carolina (19).

Figure 2: Year-Round Schools Operated in 30 States in 2008



Source: National Center for Education Statistics, 2008.

NCES reported that year-round schools accounted for 14.4 percent of all U.S. schools within these 30 states. Ninety-five percent of these were traditional public schools, and the remaining five percent were public charter schools. The majority of year-round schools in the United States operate on a school-by-school basis within school districts. Only a small portion of districts use a year-round calendar for all their schools, and there are no statewide year-round programs.

Other countries may also use year-round calendars, but no information is available about which countries use year-round calendars. However, school calendars in several countries do share the year-round calendar characteristic of a shorter summer break (Table 1). According to various sources, summer break lengths ranged from four to 12 weeks in six other countries, with Japan's summer break length most closely resembling that of a U.S. year-round calendar. Five of these countries had shorter summer breaks than the U.S. traditional calendar. All six countries appear to integrate similar numbers of academic breaks into the school year as both U.S. calendars, but it is unclear if intersession course equivalents are offered during these breaks. Chapter 5 includes more information about other countries.

Table 1: Summer Break Lengths in Selected Countries

Country	Summer break (weeks)
U.S. year-round	4-5
Japan	4-5
Netherlands	6
Norway	8
Luxembourg	8
Austria	9
Italy	12
U.S. traditional	12

Source: JLARC staff analysis of United Nations Educational, Scientific, and Culture Organization and Education, Audiovisual and Culture Executive Agency data, 2012.

YEAR-ROUND CALENDARS HAVE SHORTER, MORE FREQUENT BREAKS COMPARED TO TRADITIONAL SCHOOL CALENDARS AND ARE OFTEN USED TO INCREASE STUDENT ACHIEVEMENT

Year-round calendars redistribute the standard 180-day school year across all 12 months, rather than the traditional nine months. Year-round calendars do not increase the total number of instructional days in the school year; rather, they reallocate instructional days across the year more evenly by dividing the traditional three-month summer vacation into shorter, more frequent breaks that occur throughout the year. These breaks, known as intersessions, can be used for vacation or additional instruction.

Even though year-round calendars do not increase the number of required instructional days, the optional instructional days during intersessions can effectively lengthen the school year for students who choose to attend such intersessions.

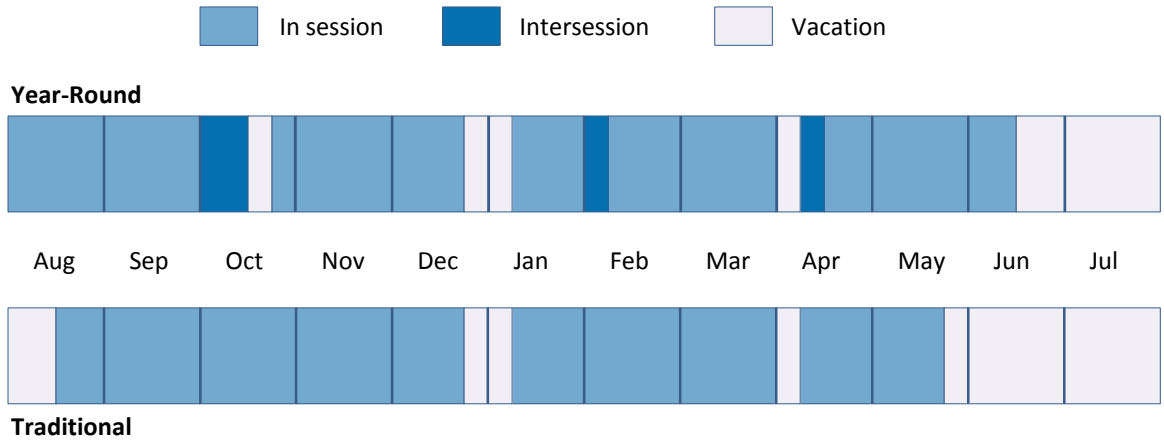
Even though year-round calendars do not increase the number of required instructional days, the optional instructional days during intersessions can effectively lengthen the school year for students who choose to attend such intersessions. For example, in a year-round school that offers 45 days of intersession instruction, all students will attend the required 180 instructional days. However, students who choose to attend the intersession days will receive an additional 45 days of instruction, thereby increasing their school year to 225 instructional days.

Figure 3 compares a year-round school calendar and a traditional school calendar used by one of Virginia's school divisions. For schools using the year-round calendar, school is in session from August through mid-June, with one- or two-week intersessions occurring in October, February, and April. The calendar also includes a two-week winter vacation and a one-week spring break in April. The summer break is approximately six weeks lasting from the middle of June through the end of July.

In contrast, for schools using the traditional calendar in this same division, the first day of school is two weeks later in the middle of August. The only significant breaks during the school year are the two-week winter vacation and the one-week spring break. The summer break, however, lasts for approximately 11 weeks from late May through mid-August.

Schools typically choose to implement year-round calendars for two primary reasons: (1) improving academic achievement or (2) increasing building capacity. Depending on the desired goal, schools

Figure 3: Year-Round Schools Typically Start Earlier Than Traditional Calendar Schools and Have Intersession Breaks in Fall, Winter, and Spring



Note: Year-round calendar structures vary by division and include different in session, intersession, and vacation dates.

Source: 2012-2013 school calendars in Danville Public Schools.

can implement a year-round calendar using a single- or multi-track design. Single-track designs are typically used to increase student achievement. In contrast, multi-track designs are used to maximize building space, particularly during periods of rapidly rising enrollment rates. Both designs include two to four instructional terms and two to four intersessions, followed by a three- to five-week summer vacation. Regardless of the design, all students at school on a year-round calendar share the same summer vacation.

Most Virginia Schools Have Used Single-Track Designs With Intent to Improve Academic Achievement

Virginia year-round schools have primarily used single-track designs. All 12 surveyed divisions with year-round schools since 2000 reported using the single-track design in schools to enhance academic achievement. A single-track design places all students on the same schedule of instructional and intersession days, which may increase achievement by decreasing the potential for loss of knowledge over the summer break and providing the opportunity for additional instruction during intersessions. Common single-track schedules include the 45-10, 45-15, and 60-20 patterns (Table 2). For example, students on a 45-15 single-track schedule attend 45 instructional days, followed by 15 days of intersession. Students complete four cycles of instructional and intersession days, at which point they begin a five-week summer vacation.

Table 2: Common Schedules for Schools Using a Single-Track Design

	Schedule		
	45-10	**45-15**	**60-20**
Length of term (days)	45	45	60
Number of cycles	4	4	3
Summer vacation (weeks)	5	5	5
Number of instructional days	180	180	180

Source: JLARC staff analysis of Table 3 in *Focus on the Alternative School Calendar: Year-Round School Programs and Update on the Four-Day School Week,* Southern Regional Education Board, 2011.

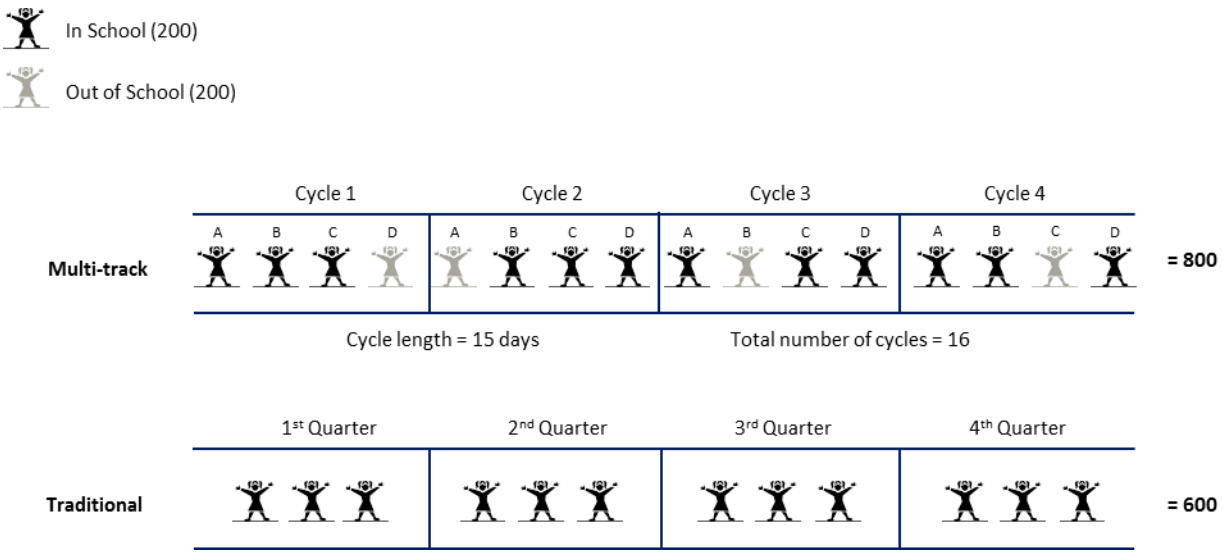
Seven of the 12 Virginia divisions with year-round school experience since 2000 reported following a 45-15 scheduling pattern. The remaining five divisions used other common single-track schedules or customized schedules. All divisions modified the established schedules in Table 2 to fit local community needs (such as certain holidays). Most divisions chose particular scheduling patterns to either: (1) offer the desired number of intersession days or (2) stay as close as possible to the traditional calendar.

Very Few Virginia Schools Have Used Multi-Track Designs, Which Can Be Used to Increase Building Capacity

A multi-track calendar is designed to maximize building space by rotating groups of students on different sets of instructional and intersession days. With this design, students are assigned to separate "tracks," each of which follows its own cycle of instructional and intersession days. At any given time, students in one track are out of school on intersession while students in the other tracks attend school. Thus, schools on a multi-track design can increase their enrollment up to 33 percent beyond building capacity. For example, a school designed to hold 600 students can increase its enrollment to 800 on a 45-15 multi-track calendar by assigning 200 students to each track (Figure 4). In any given 15-day cycle, 600 students in three tracks will attend school and 200 students in one track will remain out of school. Consequently, the school can enroll 200 additional students while staying within the school's 600-student building capacity limit. More information on multi-track schedules can be found in Appendix D.

The magnitude of the building capacity increase in multi-track designs depends on the chosen schedule. Table 3 shows commonly used multi-track schedules, which include the 45-15, 60-15, 60-20, and 90-30 schedules and the extent to which they increase capacity.

Figure 4: Schools Using a 45-15 Multi-Track Design Can Increase Enrollment up to 33 Percent Beyond Building Capacity



Source: JLARC staff analysis of academic research literature on year-round schools, 2012.

Table 3: Common Schedules for Schools Using a Multi-Track Design

	Schedule			
	45-15	**60-15**	**60-20**	**90-30**
Number of instructional days	180	197	180	180
Number of tracks	4	5	4	4
Length of terms (days)	45	60	60	90
Length of intersessions (days)	15	15-20	20	30
Number of cycles	4	4	3	2
Summer vacation (weeks)	5	3	5	4
Capacity increase	33%	25%	33%	33%

Source: JLARC staff analysis of Table 4 in *Focus on the Alternative School Calendar: Year-Round School Programs and Update on the Four-Day School Week,* Southern Regional Education Board, 2011.

Multi-track calendars in Virginia were used as a temporary solution to accommodate rapidly rising enrollment rates.

Only two Virginia school divisions reported having used a multi-track design. Schools in these divisions used this type of year-round calendar in the 1970s–1980s to increase building space for surges in student populations. However, these multi-track calendars were used as a temporary solution to accommodate rapidly rising enrollment rates. Once divisions had the resources to construct new buildings, they reverted back to a traditional calendar.

YEAR-ROUND SCHOOLS TEACH SAME CURRICULUM BUT USE INTERSESSIONS FOR EXTRA EDUCATIONAL OPPORTUNITIES

A distinguishing feature of year-round schools is intersessions, which can be used to provide optional remedial and enrichment courses for students. Intersession courses are a key feature of all year-round schools in Virginia and are used as extra learning opportunities to enhance student achievement. Schools strongly encourage all students to participate in intersessions, particularly those who have been identified as requiring remediation. Virginia school divisions reported high attendance rates during intersessions. While year-round calendars offer the opportunity for supplemental instruction during intersessions, they do not alter the core academic curriculum provided during the school year, although the pacing of the curriculum is different because these schools start earlier.

Curriculum Is the Same at Year-Round Schools, but the School Year Starts Earlier

Year-round schools typically follow the same academic curriculum as traditional calendar schools (outside of intersession). During interviews, division and year-round school staff in Virginia and other states reported making no changes to core academic instruction as a result of the calendar. Virginia division and school-level staff re-

ported that year-round schools embed existing division-wide curricula into the year-round calendar structure.

Although the same content is used, year-round schools typically require schools to start earlier. Therefore, year-round students receive core academic lessons ahead of their traditional calendar peers in the beginning of the year due to earlier start dates. However, since intersessions serve as breaks from required instructional days, the academic pace of the two calendars realigns by the end of the school year.

Year-round calendars appear to have little impact on standardized testing schedules. During interviews with division and school staff with year-round experience, few issues were reported in schools' abilities to schedule or administer SOL tests. However, one division reported needing an earlier SOL testing window for its year-round school due to students finishing classes several weeks earlier than traditional calendar students.

Year-Round Schools Use Intersessions During the Year to Provide Additional Remediation and Enrichment Opportunities

While year-round calendars can potentially reduce summer learning loss by shortening summer break, offering courses during intersessions also provides additional learning opportunities throughout the school year. Intersession courses typically focus on two main educational themes: remediation and enrichment. Whereas remediation courses focus on improving student performance in core academic areas, enrichment courses typically focus on reinforcing recently learned topics or providing students with unique learning opportunities that they may otherwise not receive on a traditional calendar. These include topics such as graphic design, drawing, and science lab.

Intersessions on Multi-Track Calendars

Multi-track schools offer intersession courses less frequently than single-track schools because they focus on increasing capacity, which often results in a lack of classroom space for additional instruction. For example, multi-track schools in California's Los Angeles Unified School District did not hold courses during intersession because no academic goals were associated specifically with the calendar. Conversely, some multi-track schools in North Carolina's Wake County Public School System provide intersession courses in school gyms or libraries.

Intersession courses are a key feature of Virginia year-round schools. Attendance rates in these courses appear to be higher compared to other states. Most divisions with year-round calendars in Virginia reported an average of 80 percent or more students attending intersession. In contrast, other states estimated student attendance at ten to 20 percent during intersession.

All schools in Virginia that currently are, or recently were, operating on a year-round calendar offer both remediation and enrichment courses during intersession. Students identified for remediation courses may be "invited," but are often required or strongly encouraged to attend intersession courses in their areas of weakness. Some schools rely on teacher referrals for intersession remediation, whereas others base referrals on student assessments administered prior to the intersession.

Though often required, school divisions indicated that they attempt to make the intersession remediation programs as appealing as the optional enrichment programs. For example, the fall 2007 intersession at one of Hampton's elementary schools followed a similar "Investigations" theme for both the remedial and enrichment courses. Those students identified for remediation received a registration flyer that included the invitation shown in Exhibit 1. Though designed to appeal to students, the flyer also stipulated that "intersession attendance is required of students who have been recommended by their teachers."

For those students attending intersession courses for enrichment or not specifically identified as remediation, a large variety of courses are frequently offered. Exhibit 2 provides examples of courses that were offered at Barcroft Elementary School in Arlington County during the spring 2012 intersession. In recent years, Virginia school divisions reported creating a more direct link between intersession enrichment courses and the SOLs, and at least one division reported dropping enrichment courses for which it was difficult to make such a connection.

Some year-round schools in Virginia now charge a fee or tuition for intersession courses to help offset school costs. For instance, Barcroft Elementary School in Arlington County charges a one-time $100 registration fee per child for intersession courses each year, although some students are eligible for a reduction in fees. For the 2011-2012 school year, Alexandria also charged an intersession fee of $25 per session, with a maximum of $50 per session per family. The fee was $5 per session for students qualifying for free or reduced lunch. (For the 2012-2013 school year, Alexandria year-round schools will be charging $125 for each two-week intersession. The fee for students qualifying for free or reduced lunch will be $10 per two-week intersession.) However, tuition cannot be charged for intersession remediation courses due to a requirement in §22.1-253.13:1 of the *Code of Virginia* that "students who are required to attend such summer school programs or to participate in another form of remediation shall not be charged tuition by the divisions."

Exhibit 1: An Invitation to Attend Remedial Intersession Programs

Don't forget to register to be a part of INVESTIGATIONS Fall Intersession 2007!

Student Attendance: Please contact the school office if your student must be absent. *Please take care of medical appointments after 12:30 PM.* Students who are absent for more than one day may be removed from Intersession. Be sure pick-up arrangements have been made and that your student knows the plan; staff members cannot supervise students after hours.

Discipline: Our *Hampton City Schools Students' Rights and Responsibilities Handbook* will be used as our guide for making disciplinary decisions. Appropriate behavior is expected.

Meals: There is *no lunch* served during Intersession. Breakfast will be provided. Please send a *nutritious* snack with your student to school each morning when they come to school.

Medical Concerns: The school nurse will be present during Intersession and will continue to adhere to all school policies concerning supporting the medical needs of all students. You will be contacted in the event of an illness.

Transportation: Buses will be provided for students who are eligible for transportation during the regular 180 days of school.

Reminder: Fall Break is October 15 - 19, 2007.

Intersession Daily Schedule

7:45 AM	**Morning Assembly**
8:00 AM	**Class sessions start**
10:00 AM	**Snack Time**
12:15 AM	**Class sessions end**
12:30 PM	**Dismissal**

Congratulations!

You have been selected to participate in INVESTIGATIONS Fall Intersession 2007! ***Based upon your teacher's recommendation, you have been chosen to be part of this incredible learning opportunity.*** During INVESTIGATIONS Fall Intersession 2007 you will have the opportunity to:

- *Explore New Ideas*
- *Uncover Awesome Skills*
- *Reach New Heights in Learning*
- *Improve Your Grades*
- *Conquer the SOLs & Quarterly Assessments*

Come be a part of this special chance to excel in school. Student enrollment is limited and students are assigned on a first come, first served basis.

Intersession attendance is required of students who have been recommended by their teachers. As outlined in the HCS Retention Policy, students who elect to not attend Intersession and who perform unsatisfactorily on report cards, Quarterly Assessments, and/or SOLs can be considered for retention. Intersession is the summer school alternative for Merrimack as a Year Round School.

Please return the registration form to the teacher no later than Friday, September 21, 2007. Registrations received after September 21 will be placed on a wait list and may not be allowed to register for INVESTIGATIONS.

We look forward to seeing your student at INVESTIGATIONS Fall Intersession 2007.

Mr. Eric Stone Mrs. Aurora Sweet

Source: Hampton City Schools.

Exhibit 2: Examples of Non-Remedial Intersession Course Offerings

Course Title	Course Description
"Math Around the World" – 2nd Grade	Use math you know to: • play games, • do projects, • and solve puzzles from around the world. We will explore how: • African storytellers use drawings of complex patterns to give meaning to a story, • Swedish mitten patterns use a square grid map, and • Japanese origami uses geometric patterns.
"Drawing and Painting Animals" – 2nd and 3rd Grades	Birds, cats, giraffes, and more will be part of your jungle fun as you explore painting. Paint your favorite animals while learning about: • color mixing, • techniques, and • famous artists.
"Sifting Through Science" – 1st Grade	Do you want to be a scientist? Curious about what scientists do? Take this fun class where you will: • make predictions, • run experiments, and • see if your best guesses are correct!

Source: Barcroft Elementary School spring 2012 intersession course catalog, Arlington County Public Schools.

LOCAL, STATE, AND FEDERAL FUNDING SOURCES ARE USED FOR YEAR-ROUND SCHOOLS IN VIRGINIA

Spending on year-round schools is not tracked at the State level so DOE does not report how much is spent statewide by schools in Virginia implementing year-round calendars. (More information on the school- and division-level costs of year-round calendars is provided in Chapter 3.) However, a variety of local, State, and federal funding sources are available to support these programs, in particular the cost of providing intersessions. School division finance staff most frequently reported that local funds support their year-round school programs. About half of those school divisions responding to a JLARC staff survey also indicated that federal Title I funds had been used to help offset costs associated with the year-round calendar. One school division mentioned using federal American Recovery and Reinvestment Act funds for this purpose, and DOE staff indicate that federal School Improvement Grant funds could potentially be used for those schools that qualify.

School divisions less frequently mentioned using State funds to support their year-round school programs, although a number of State funding sources can be used for this purpose. DOE staff indi-

Federal Funding Sources

The **Title I** program provides financial assistance to school divisions and schools with high numbers or high percentages of children from low-income families.

The **American Recovery and Reinvestment Act** of 2009 was passed as a response to the ongoing economic crisis and provided financial aid directly to local school districts.

School Improvement Grants are provided through a competitive grant process to raise the achievement of students in school divisions' lowest-performing schools.

cate that State basic aid funds can be used to support year-round schools as long as the funds are not specifically designated for other educational uses. State remedial education payments and remedial summer school funds can also be used to pay for remediation during intersessions.

Although State funds have not specifically been provided for year-round schools recently, programs and funds have been created previously which could be used for this purpose. In 2000, the General Assembly created the Extended School Year Incentive Program (§22.1-98.1 of the *Code of Virginia*). The purpose of this program was to award incentive grants to public school divisions that extend the length of the school year or day, but the grants could potentially be used to help offset intersession costs at year-round schools. According to DOE staff, this program has never received funding so no grants have been awarded through the program.

In FY 2001, $400,000 was appropriated by the General Assembly as part of the State's various remedial education payments to help offset the costs of intersession days "provided to students in [year-round] schools at high risk of educational failure." Only schools with existing year-round programs were eligible for the funding. Thirteen divisions received the one-time funding in FY 2001 to assist with intersession costs.

Chapter 2

Test Scores of Certain Students at Year-Round Schools Were Better Than at Traditional Schools

In Summary

The Standards of Learning (SOL) test scores for the general student population at year-round schools improved at similar rates to students at traditional calendar schools between 2001 and 2009. Consequently, it does not appear that a year-round calendar is associated with higher test scores for all students. However, analysis of SOL test scores at year-round schools found that black, Hispanic, limited English proficient, and economically disadvantaged students improved at a faster rate than their peers at traditional calendar schools. Black students, in particular, were far more likely to improve their English SOL scores at a faster rate if they attended a year-round school. These student subgroups also more often exceeded their predicted 2009 SOL test scores, and scored lower less often, than the general student population. A likely contributing factor to this improvement for certain student groups is the additional instructional time provided to year-round school students during intersessions, as well as reduced summer learning loss. Other educational best practices also likely impact student performance in addition to a year-round calendar.

One of the main goals of a single-track year-round calendar is to improve academic achievement. To evaluate the academic achievement of schools on year-round calendars, in Virginia and in other states, JLARC staff conducted interviews and focus groups with State-, division-, and school-level staff, and reviewed relevant academic literature. JLARC staff also analyzed the Standards of Learning (SOL) test scores of year-round schools in Virginia to assess whether their performance increased over time, and whether students at year-round schools performed better than predicted.

RESEARCH FINDS LIMITED ACADEMIC IMPACT OF YEAR-ROUND SCHOOLS, BUT THAT CERTAIN STUDENT SUBGROUPS MAY BENEFIT

Year-round calendars have been more widely adopted by schools in other states than in Virginia, and there is a large body of research examining the academic outcomes of year-round schools in these other states. In general, the research literature identifies little, if any, relationship between year-round calendars and the academic performance of all students. However, research has indicated that some student subgroups, such as economically disadvantaged students, black students, Hispanic students, and limited English proficient (LEP) students may improve academic performance while attending year-round schools if the school follows a single-track design.

Limited English Proficient Students

Pursuant to the federal "No Child Left Behind" law, students are classified as limited English proficient if their native language is not English, come from an environment in which a language other than English is dominant, and whose difficulty speaking, reading, writing or understanding English may impair their academic achievement.

Economically Disadvantaged

Economically disadvantaged students are those from households whose incomes qualify students to receive free or reduced lunch under the Federal School Lunch Program.

Socioeconomic Status

Socioeconomic status, often used for research and analytical purposes, is a classification based upon household education, income, occupation, and wealth.

Research Literature Suggests Single-Track Year-Round Calendars May Benefit Certain Students

Single-track year-round calendars have been implemented primarily to improve academic achievement. Most studies of the academic impact of single-track year-round calendars have found limited results at the general population level, and statistically significant, but small, improvements in performance among certain student groups.

For example, Cooper et al. (2003) found that some student subgroups, such as those classified as economically disadvantaged or LEP, may experience statistically significant academic gains from year-round schools. However, the study also concluded that year-round schedules do not appear to significantly increase test scores for the general school population. In a two-year assessment of 345,000 students in North Carolina, McMillen (2001) found statistically significant differences between year-round and traditional calendar schools in the achievement of certain student subgroups, but concluded that these differences were small and year-round calendars "might best be judged on factors other than achievement." The study also found no significant difference in academic achievement between the general student populations of year-round and traditional calendar schools.

Economically Disadvantaged Student Groups May Benefit From Shorter Summer Breaks Associated With Year-Round Calendars. Several studies have found that during a traditional length summer break, students lose some of the skills and knowledge they acquired in the previous academic year. Cooper et al. (1996), found that during out-of-school summer months, learning loss is higher (and skill acquisition lower) among students at lower socioeconomic levels compared to more economically advantaged students. This is likely because low socioeconomic status (SES) students typically receive fewer opportunities for learning and educational enrichment outside of school than their more affluent peers.

The consequences of summer learning loss can have long-lasting impacts on student achievement.

The consequences of summer learning loss can have long-lasting impacts on student achievement. Alexander et al. (2007) found that the primary reason for the achievement gap between low and high SES students was the difference in summer and out-of-school learning opportunities between the two groups. The study indicated that most of the achievement gap between low and high SES students occurs in elementary school, and that year-round, supplemental educational programs may be effective in lessening that gap or preventing its increase.

Other Student Groups May Also Benefit From Shorter Breaks Throughout the School Year. Besides economically disadvantaged students, other groups may benefit from the shorter breaks and

additional instruction during intersessions at year-round schools. Differences in family structure are likely a major determinant of household income (which itself is strongly correlated to race) and may influence academic performance. The 2011 JLARC study *Strategies to Promote Third Grade Reading Performance in Virginia* found that black and Hispanic households were headed by a single parent much more frequently than the households of white and Asian students.

According to several studies, family structure can have a large impact on students' academic achievement. For example, students in single-parent households reported that their families expressed lower educational expectations for their children. These students also believed that their parents were less likely to monitor their school performance. Students in single-parent households are also less likely to receive opportunities for academic enrichment during breaks in the school calendar.

Research Literature Identifies No Improvement in Academic Achievement at Multi-Track Year-Round Schools

Schools in other states have commonly adopted multi-track year-round calendars in order to accommodate rapid growth in the student population while avoiding, or delaying, the construction of additional classroom capacity. Quinlan et al. (1987), Gandara & Fish (1994), and others indicated that generally, when controlling for demographics and other school-level factors, students attending schools operating on multi-track year-round calendars performed no better than students attending traditional calendar schools. Shields and Oberg (2000) found that in many instances, schools that have adopted multi-track year-round calendars have transitioned to single-track year-round or traditional calendars once student capacity issues have been addressed. This is likely because multi-track year-round calendars are not typically adopted as an approach to improving students' academic achievement.

SOME STUDENT SUBGROUPS AT YEAR-ROUND SCHOOLS APPEAR TO DO BETTER ON SOL TESTS

Academic achievement can be defined as the grades students receive, how they score on standardized tests, or in other less measurable ways. While Standards of Learning (SOL) test scores are not the only way to assess academic achievement, they are one readily available measure to compare academic achievement over time and among schools. Students at year-round schools and schools on traditional calendars are all required to take SOL tests, therefore allowing SOL test scores of similar students to be compared between these two types of schools.

Comparing SOL Scores at Year-Round Schools to Schools on Traditional Calendars Provides Insight Into Whether Year-Round Calendars Contribute to Better Test Scores

In an attempt to isolate and measure the effect that a year-round calendar has on SOL test scores, two analyses of average SOL test scores in Virginia were conducted. Both of these analyses had the goal of comparing (1) all students and (2) students in certain subgroups at year-round schools to students at schools on traditional calendars. In general terms, the more students that did better on SOL tests at year-round schools compared to traditional calendar schools, the more likely it is that a year-round calendar has some positive effect on test scores, and thus, academic achievement.

The first analysis compared average school-level SOL test scores of students over time. Average SOL test scores were gathered for all schools in those divisions that had implemented year-round programs between 2001 and 2009. Division-wide average student scores were then calculated for traditional calendar schools. The rate of change in division-level average scores over this time period was compared to the rate of change at each year-round school. This comparison revealed whether year-round schools were increasing test scores at a faster or slower rate than the traditional calendar schools in the same division. If the rate of improvement of year-round schools was faster than the average rate at traditional calendar schools, it suggests that year-round schools may have a positive effect on improving average test scores during this time period.

If the rate of improvement of year-round schools was faster than the average rate at traditional calendar schools, it suggests that year-round schools may have a positive effect on improving average test scores.

The second analysis used a variety of factors, such as the economic status, disability status, and race of the students, to predict how students at year-round schools would be expected to score on SOL tests in 2009. The predictive model was developed using average test scores at traditional calendar schools across the State. (Similar models have been used to predict test scores in the 2011 JLARC report cited previously, and the 2004 *Review of Factors and Practices Associated with School Performance in Virginia*.) The actual average test scores at year-round schools were then compared to their predicted scores. If the actual test scores were higher than predicted, the year-round schools were scoring better than would be expected given their student demographics and assuming they were using a traditional calendar. Conversely, if actual test scores were lower than predicted, the year-round schools were scoring worse than expected. If a large portion of year-round schools scored better than predicted, the year-round calendar may be having a measurable positive effect on improving SOL test scores. A more detailed discussion of the statistical methods used to analyze SOL test performance of students at year-round schools can be found in Appendix E.

If a large portion of year-round schools scored better than predicted, the year-round calendar may be having a measurable positive effect on improving SOL test scores.

No Appreciable Difference Between SOL Test Scores of the General Student Population at Year-Round and Traditional Calendar Schools

Analysis of SOL test scores between 2001 and 2009 found no major difference in the rate of improvement between average scores of the general student population at year-round calendar and traditional calendar schools. For the general student population, scores at about half of the year-round schools improved faster than traditional calendar schools and scores at the other half of year-round schools did not. More precisely, the general student population average English SOL score at 42 percent of year-round schools improved faster than the English SOL average at traditional calendar schools. Similarly, the average math SOL score at 55 percent of year-round schools improved faster.

Analysis of predicted and actual SOL test scores in 2009 also found no major difference for the general student population. For English SOL scores, the majority of year-round schools had average test scores that were not substantially different than their predicted scores. For math SOL scores, a minority of schools (19 percent) had average test scores that were substantially above their predicted scores. The remaining year-round schools had average math scores that were similar to, or below, their predicted scores. These findings about the general student population are consistent with research literature discussed above, which indicated that the effect of a year-round calendar on the total student population is limited.

Black Students at Year-Round Schools Scored Better Than Their Peers at Traditional Calendar Schools

In contrast to the total student population, black students at most year-round schools did demonstrate substantially improved average test scores. This difference was relatively large for all test scores compared for both analyses conducted. These findings are also consistent with some of the research literature which suggests that certain student subgroups can benefit from targeted remediation during intersessions and the reduced summer learning loss associated with year-round calendars.

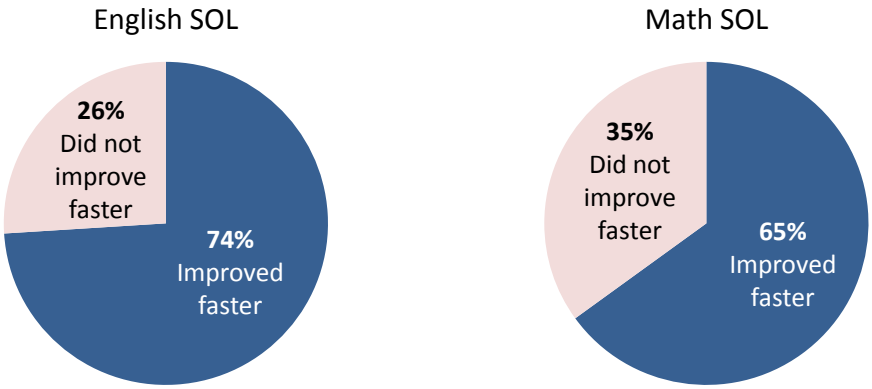
Analysis of SOL test scores between 2001 and 2009 found a strong positive effect on the rate of improvement of average scores of black students at year-round calendar compared to traditional calendar schools. The average English SOL score of black students at 74 percent of year-round schools improved faster than average scores at traditional calendar schools (Figure 5). Similarly, the average math SOL score of black students at 65 percent of year-round schools improved faster. In these cases, a large majority of year-round schools were able to improve the SOL scores of black

students at a faster rate than traditional calendar schools in the division.

Analysis of predicted and actual SOL test scores in 2009 also found a strong positive effect for black students (Figure 6). At 29 percent of year-round schools, the average English SOL score for black students was 10 points or higher than predicted. Moreover, at 45 percent of year-round schools, the average math SOL score for black students was 10 points or higher than predicted. This is noticeably higher than the differences in scores for the general student population.

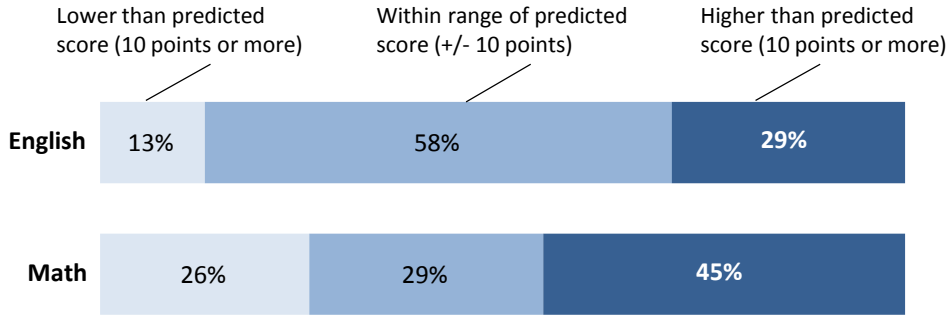
Within the group of year-round schools with black students that scored higher than predicted, certain schools far exceeded expectations. The black student subgroup average at some schools was much higher than predicted. For example, at nearly one-third of year-round schools, the math SOL scores of black students exceeded their predicted scores by more than 20 points.

Figure 5: Average Scores of Black Students Improved Faster at Year-Round Schools



Source: JLARC staff analysis of DOE SOL test score data, 2001-2009.

Figure 6: Average Scores of Black Students at Year-Round Schools Were Substantially Higher Than Predicted, Especially on the Math SOL Test



Source: JLARC staff analysis of DOE school-level English and math SOL average scaled scores, 2009.

Hispanic, Economically Disadvantaged, and LEP Students Also Often Scored Better Than Their Peers at Traditional Calendar Schools

The SOL test scores of Hispanic, economically disadvantaged, and LEP students at year-round schools were also often better than their peers at traditional calendar schools. Analysis of SOL test scores for 2001 through 2009 found substantial improvement in English scores for these subgroups, while the math scores of these groups improved at rates similar to their peers at traditional calendar schools. These subgroups were also likely to substantially exceed their predicted math SOL test scores in 2009 (Figure 7 at end of section).

Hispanic Students Improved English SOL Scores Faster Than Their Peers and Performed Better Than Predicted. Analysis of SOL test scores from 2001 to 2009 found a strong positive effect on the English scores of Hispanic students at year-round schools, but less so for math scores. At 76 percent of year-round schools, the English scores of Hispanic students improved at a faster rate than the scores of their peers at traditional calendar schools within the same school division. In contrast, only about half of year-round schools (53 percent) had the math SOL test scores of Hispanic students increase at a faster rate than their traditional calendar peers.

Analysis of predicted and actual SOL test scores in 2009 also found that Hispanic students at year-round schools scored higher than predicted on the English SOL, but not for math (Figure 7). At 27 percent of year-round schools, the English SOL scores of Hispanic students was ten points or higher than predicted. The math SOL scores of Hispanic students at one-third of year-round schools were ten points or higher than predicted. However, more year-round schools had math scores that were lower by ten or more points than predicted.

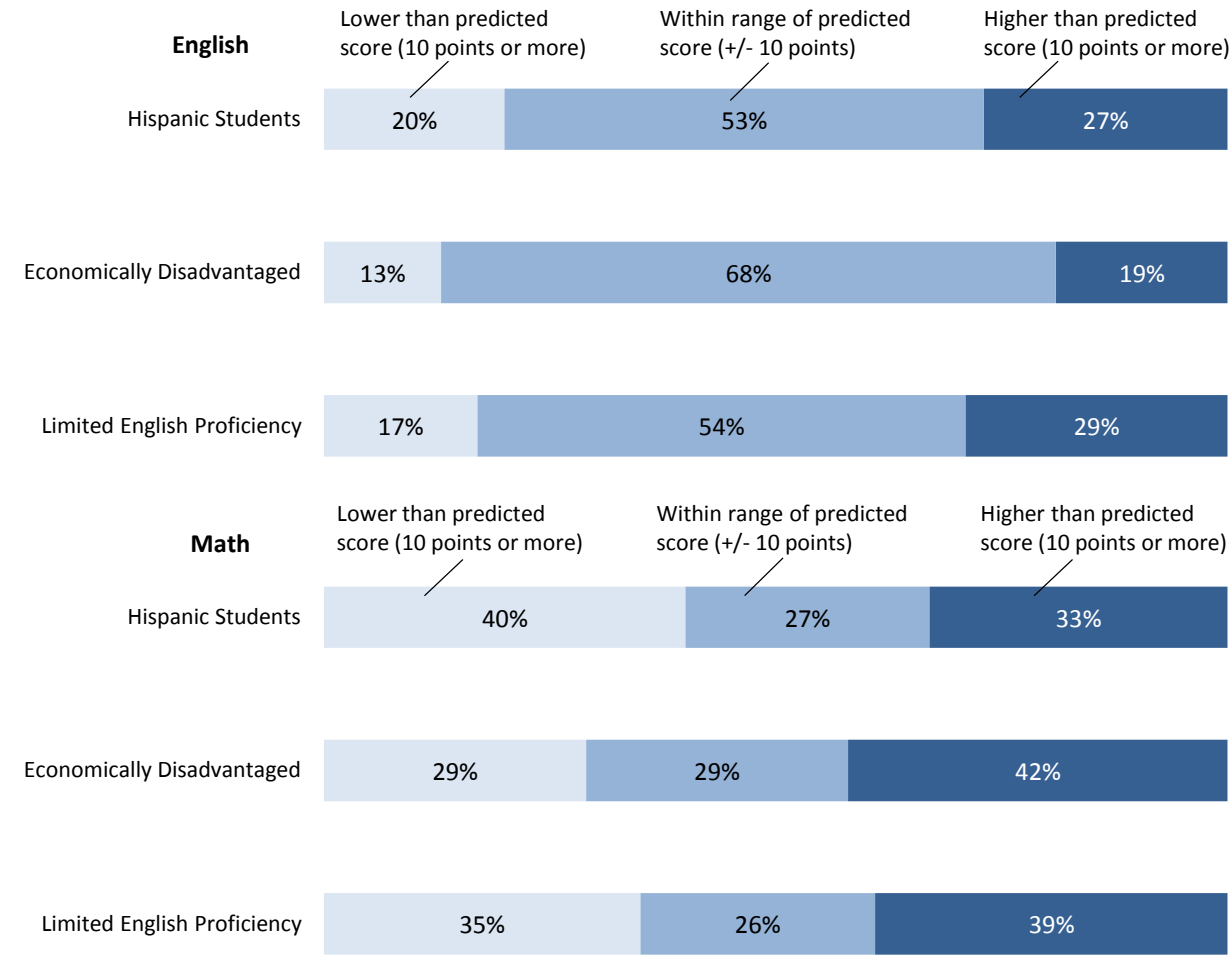
Economically Disadvantaged Students Improved English SOL Scores Faster Than Their Peers and Often Exceeded Their Predicted Math Scores. Economically disadvantaged students more often had greater improvement in English SOL scores than their peers at traditional calendar schools within the same division. However, this student subgroup less often saw faster improvement in math SOL score. At 61 percent of year-round schools, the improvement in the English scores of economically disadvantaged students was greater than experienced at traditional calendar schools. Conversely, only 42 percent of year-round schools had math SOL scores for economically disadvantaged students improve at a faster rate.

Comparison of predicted and actual SOL scores of economically disadvantaged students at year-round schools found positive ef-

fects for both English and math (Figure 7). For example, at 42 percent of year-round schools, the math SOL scores of economically disadvantaged students was ten points or higher than predicted.

LEP Students at Year-Round Schools Also Improved Their SOL Scores. Between 2001 and 2009, the English and math SOL scores of LEP students at a majority of year-round schools improved at a faster rate than their peers at traditional calendar schools. At 69 percent of schools, the English SOL scores of LEP students improved at a faster rate than the scores of LEP students at traditional calendar schools in the same division. Math scores of LEP students improved at a faster rate at 54 percent of year-round schools.

Figure 7: Hispanic, Economically Disadvantaged, and LEP Students at Year-Round Schools Frequently Met or Exceeded Predicted English and Math SOL Scores



Source: JLARC staff analysis of DOE school-level English and math SOL average scaled scores, 2009.

Analysis of 2009 English and math SOL scores found that LEP students at year-round schools often exceeded their predicted scores (Figure 7). For example, the math SOL scores of LEP students at 39 percent of year-round schools exceeded their predicted score by ten points or more.

INTERSESSION INSTRUCTION AND SHORTER SUMMER BREAKS MAY BE REASONS FOR HIGHER SOL TEST SCORES OF CERTAIN STUDENT GROUPS

A review of the literature and interviews with division- and school-level staff in Virginia suggests that one of the primary differences between year-round and traditional calendars is that schools operating on a year-round calendar can provide intersession instruction. In Virginia, all year-round schools operating in 2009 provided intersession courses to offer their students remediation and enrichment opportunities. School staff identified intersession courses as the main academic benefit attributable to the year-round calendar, and there are several possible reasons why intersession instruction may improve SOL test scores of certain student subgroups.

It appears to be how the intersession instructional time is used—not the mere existence of the additional instructional time itself—which has academic benefits.

However, while intersession attendance potentially increases the amount of academic instruction for students in year-round schools, it appears to be how intersession instructional time is used—not the mere existence of the additional instructional time itself—which has academic benefits. As discussed below, particular aspects of intersession instruction may explain the test score improvement of certain students at year-round schools. This is reinforced by the fact that, as shown in Chapter 5, there appears to be no relationship between increased mandatory instructional time and the test scores of students in Virginia schools.

Timely and Targeted Intersession Remediation May Help Students Avoid Accumulated Learning Loss

Pull-Out Instruction

Pull-out instructional programs remove students from the classroom for portions of the school day in order to provide them with specialized instruction.

Staff at Virginia year-round schools identified the timely and targeted remediation offered during intersession courses as an important component of the year-round calendar. On a traditional calendar, students that fail benchmark tests (or otherwise show signs of struggling with core academic concepts) receive remediation through pull-out instruction, after-school remediation, or through attending summer school. At year-round schools, students identified by benchmarking tests (or by other means) receive remediation through one- or two-week intersession courses that focus on core curriculum areas such as English and math. Intersessions may also provide additional opportunities for students to review recently learned material before moving on to new areas of the curriculum.

Principals and teachers at Virginia year-round schools identified two primary advantages of remediation through intersession. First, with intersession remediation, time is taken to master recently covered core academic concepts with which students struggled. This occurs before moving onto new material to be learned in the following academic quarter. In contrast, at traditional calendar schools, students are often pulled from their regular instructional time or enrolled in after-school instructional periods for remediation, meaning that remediation does not address core weakness areas before new material is learned. Students receiving remediation in the traditional way are required to simultaneously continue with the rest of the curriculum while still trying to master concepts upon which the new curriculum builds.

Second, staff said remediation offered through summer school does not prevent accumulated learning loss resulting from students not mastering core concepts early in the school year. For example, a teacher at a year-round school stated that if students on a traditional calendar are struggling to learn multiplication in the first quarter, they will be unlikely to master division or fractions in the next quarter. By the time the students enter summer school, instead of one or two core concepts needing to be addressed, the students may have spent the entire academic year struggling, and may need extensive remediation covering substantial portions of the previous academic year's curriculum.

Remediation during intersession allows deficiencies in core areas of the curriculum to be addressed as they arise throughout the school year.

Remediation during intersession allows deficiencies in core areas of the curriculum to be addressed as they arise throughout the school year, and reduces the likelihood that a student will struggle with future learning that builds on prior learning.

Intersession Courses Can Reinforce Recently Learned Core Academic Concepts

In addition to receiving remediation in areas with which they struggled, students attending intersession courses also can receive additional exposure to core academic concepts they mastered in the previous academic quarter. Staff at several year-round schools suggested that students not needing remediation still benefit from additional exposure to previously learned material because it leaves them better prepared to master subsequent material. One principal interviewed by JLARC staff mentioned that intersession instruction also allows stronger students to help tutor peer students struggling academically, which helps reinforce the material being covered.

Increased Time for Remediation and Shortened Breaks May Particularly Benefit Certain Groups

Intersession courses and the reduced length of summer breaks at year-round schools may help certain student groups in particular. As mentioned previously, various family structure and socioeconomic factors can lead to more pronounced learning loss and greater academic achievement gaps among economically disadvantaged students, LEP students, and students from black and Hispanic households. Staff at Virginia year-round schools interviewed by JLARC staff believe that high attendance rates during intersession and the shorter summer break improved the academic performance of the students in their school because students had greater opportunity for remediation and enrichment, with shorter breaks in which academic skills may decline.

Shorter Academic Breaks Reduces Time Spent Reviewing Proper School Behavior

While not directly related to intersessions, another benefit of shorter summer breaks identified by staff at several year-round schools was the reduced need to review classroom expectations, rules, and proper school behavior with students at the beginning of the year. Several schools noted that, whereas on a traditional calendar it can take instructional staff two or more weeks to get students back into "school mode," students at year-round schools need only about a week. This has the impact of increasing the amount of time early in the academic year that can be used for academic instruction.

Whereas on a traditional calendar it can take instructional staff two or more weeks to get students back into "school mode," students at year-round schools need only about a week.

Differences in Design and Use of Intersession Courses May Explain Varying Test Scores Among Year-Round Schools

Year-round schools in Virginia reported varying designs, goals, and utilization of intersession instructional periods. Because intersession courses are the primary purported academic advantage of year-round calendars, it is likely that their design may influence students' performance. The number and length of intersessions, the proportion of students attending intersession instruction, and whether half- or full-day instruction was offered by the school during intersession also varied at year-round schools.

For example, one year-round school with high SOL test scores focuses its intersession curriculum on remediation in core English and math skills and concepts. The curriculum is structured around core SOL requirements and closely monitored by the school's principal. All students attending intersession, even those not identified as needing remediation, receive instruction in core academic areas.

In contrast, a year-round school with mixed SOL test scores has an intersession curriculum featuring both remediation and enrichment. Instead of an intersession curriculum designed to meet the specific remediation needs of the student body (as done in the school discussed above), the school's remediation curriculum is largely based upon the school division's general and summer school curriculum. Further, students not needing remediation can attend solely enrichment courses, meaning intersession instruction was not necessarily used to review or reinforce core academic concepts from the preceding academic quarter.

EDUCATIONAL BEST PRACTICES INFLUENCE STUDENT ACHIEVEMENT REGARDLESS OF THE SCHOOL CALENDAR

While this study found that some student groups may benefit academically from a year-round calendar, the use of educational best practices at year-round schools also influences student performance. These educational practices are not specific to the year-round calendar and impact student achievement regardless of school calendars. However, the extent to which year-round schools in Virginia implemented best practices may also be a factor explaining the variation in test scores among different year-round schools. In fact, division- and school-level staff in Virginia and other states indicate that educational best practices affect student performance more than the school calendar.

While this study did not seek to specifically assess the use of educational best practices, staff at Virginia year-round schools did cite specific educational best practices which were also observed by JLARC staff during site visits to certain year-round schools. These best practices are widely identified in the research literature and have been noted by several previous JLARC reports (Table 4).

For example, strong and stable leadership by principals appeared to be in place at some of the highest scoring year-round schools. However, this was not universal, as some year-round schools with apparently strong and stable principal leadership still struggled, while other year-round schools with less stability in the principal position over time were among the stronger performers.

Several year-round schools in Virginia also appeared to use data to assess student weaknesses, such as benchmarking tests to identify students for remediation. The test scores at these schools varied and there was an unclear relationship between the use of these benchmarking tests and SOL test scores at these schools. However, the year-round schools that had not implemented benchmarking tests to identify students needing remediation were among the lower performers.

Finally, effective teachers were also identified by staff at all year-round schools as a best practice that affects academic achievement. However, while most year-round schools visited by JLARC staff reported having highly qualified and experienced staff, their academic outcomes varied widely. One year-round school with high teacher turnover, however, was among the lower performing schools visited.

Table 4: Examples of Educational Best Practices and Their Impacts on School Performance

	Impacts on school performance
Strong and stable leadership by principals	• Serve as instructional leaders of school • Develop overall instructional strategy of school
Data-driven assessment of student strengths and weaknesses	• Assess students' competence in core areas of the curriculum • Identify areas of strengths and weaknesses at the individual, class, and grade levels. • Allow teachers to adjust approach to instruction, or re-teach material not understood the first time
Effective teaching staff	• Receive relevant skills through appropriate professional development • Continually work to address personal and student weakness

Source: *Review of Factors and Practices Associated with School Performance in Virginia*, 2004.

Chapter 3

Financial Impact of Year-Round Schools Depends on Their Design and Purpose

In Summary

The research literature indicates that year-round schools using a multi-track design may delay or avoid projected capital expenses, while a single-track design may increase operating costs. Financial data from 16 year-round schools in Virginia shows that single-track calendars resulted in small to moderate increases in school expenditures. Intersession courses and associated additional instructional resources were the primary factor increasing costs for schools using the single-track calendar. Year-round schools in Virginia spent, on average, about three percent of their total annual expenditures on intersessions. The vast majority of these costs, over 90 percent on average, were to pay instructional staff to teach students during the intersessions, although school divisions were unable to quantify some non-instructional costs. Even though year-round calendars appear to account for a small percentage of total school expenditures, increased cost is the most frequently cited reason for discontinuing year-round schools in Virginia.

A year-round calendar can affect costs for the schools and the divisions in which they reside. These cost implications, which vary depending on the type of year-round calendar, may be important to school divisions considering the adoption, continuation, or discontinuation of a year-round calendar. The potential costs associated with single-track year-round calendars, in particular, may be a key consideration for school divisions when deciding whether to maintain year-round programs at selected schools, especially if those schools are not experiencing expected gains in academic achievement for certain student subgroups.

RESEARCH INDICATES SINGLE-TRACK DESIGN INCREASES COSTS, WHILE MULTI-TRACK DESIGN CAN AVOID FUTURE CAPITAL COSTS

Research has found different financial impacts for single and multi-track year-round schools. Studies of single-track schools often reported increases in school and division expenses. In contrast, studies of multi-track designs primarily reported a decrease in projected capital costs at the division level. These cost differences appear to be driven by the different uses of intersession periods in each design.

Past research has utilized three primary cost models to measure the financial impact of year-round schools: (1) comparing traditional and year-round costs at the same school, (2) comparing traditional and year-round costs between two different schools, and

(3) comparing actual costs in a year-round school to the hypothesized costs of operating the same school on a traditional calendar. These approaches, coupled with study-specific assumptions, limit the ability to generalize study results to school costs in Virginia.

Single-Track Designs Increase School Costs

Research has identified intersessions as the primary cause of higher school costs in single-track designs. Academic studies frequently cite increased need for personnel as contributing to intersession expenses. For example, Fardig (1992) reported that Florida provided additional compensation to intersession staff in a single-track school. The research literature also noted additional pupil transportation services as contributing to intersession costs. For instance, one school district in Tennessee reported a $15,000 increase in transportation costs to bus ten percent of its student population during intersession. In addition to costs specific to intersessions, researchers reported higher school costs that were linked to the year-round calendar, but not necessarily to intersession courses. For instance, Smith (2011) noted increases in spending on support staff compared to traditional schools.

Multi-Track Designs Can Allow School Divisions to Avoid Costs

In contrast to single-track designs, multi-track designs allow school divisions to avoid some additional costs. In particular, school districts using multi-track calendars do not spend funds that would have otherwise been spent on constructing new school buildings. The use of intersessions to rotate students in and out of school accommodates rising enrollment rates, which can preclude the need to construct new schools and other associated expenses. Past research reported these avoided capital costs range from $7 million to $75 million, depending on the state and the number of years the calendar was in operation. For example, Worthen and Zsiray (1994) reported one Florida school district retained $7 million in capital funds and $88,000 in personnel funds for each new school not built. Daneshvary and Clauretie (1999), who conducted a cost study involving 26 year-round schools in one Nevada school division, found a 31 percent decrease in school construction costs as a result of the multi-track calendar. They also projected $10.5 million in savings if the entire school division used a multi-track design.

While the avoidance of capital costs appears clear, research has shown mixed effects on operating costs at multi-track schools. Some studies noted per pupil cost decreases in personnel and transportation costs, which are likely due to more efficient use of such resources. For instance, Bradford (1995) reported that transportation costs decreased by almost ten percent by consolidating bus routes in California's Oxnard school district. Conversely, other

research reported increased personnel and transportation costs as a result of the multi-track calendar. For example, two studies revealed eight to 31 percent increases in instructional and support staff stemming from contract extensions required to cover all tracks. Fardig (1992) reported additional transportation days on the multi-track calendar, which created higher transportation costs.

YEAR-ROUND CALENDARS IN VIRGINIA RESULT IN SMALL TO MODERATE INCREASES IN TOTAL EXPENDITURES

In recent years, year-round schools in Virginia have used single-track designs, which have led to a small to moderate increase in school expenditures. Of 12 divisions with year-round school experience since 2000 responding to a JLARC staff survey, eight divisions indicated that year-round calendars increased costs, one division responded that the cost impact varied by school, and three divisions said that year-round calendars had little or no effect on costs. None of the school divisions reported that year-round calendars decreased costs.

To conduct a more in-depth analysis of the cost impact of year-round calendars in Virginia, JLARC staff used both a "during" and "after" analysis and a peer school analysis of year-round school expenditures. For the during-after analysis, financial data was collected from seven former year-round schools in the City of Hampton, Fairfax County, and the City of Danville. Hampton and Fairfax County discontinued their year-round programs in the 2009-2010 and 2010-2011 school years, which provided an opportunity to review school expenditures for the same schools both while they were utilizing a year-round calendar and after they had transitioned back to a traditional calendar. Danville also has had one school transition back to a traditional calendar for the 2010-2011 school year.

"During" and "After" Expenditure Analysis

Seven former year-round schools from the City of Hampton, Fairfax County, and the City of Danville were included in the during-after analysis. Three of these schools were selected to provide the experience of middle schools and high schools. (All of the current year-round schools are elementary schools.) The remaining four elementary schools were selected to help balance the overall student demographics for the schools included in the financial analysis.

In addition to the during-after analysis, a peer school analysis was used for nine schools in the City of Alexandria, the City of Danville, Arlington County, the City of Lynchburg, and the City of Richmond that are currently operating on year-round calendars. Each year-round school was matched to a peer school in the division on a traditional calendar. Factors considered when selecting the peer schools included school size (as defined by fall membership), Title I status, and percentage of students that were economically disadvantaged, black, and identified as limited English proficient. To be consistent with the years used for the SOL test score analysis in Chapter 2, financial data for the 2008-2009 school year was used. An exception to this was the City of Richmond because this school did not begin operating until the 2010-2011 school year.

Intersessions Require Instructional, Support, and Other Resources That Can Increase Costs

Virginia school divisions report that the primary factor increasing the cost of year-round calendars is providing course offerings to students during intersessions. Table 5 lists the additional resources most frequently reported by school divisions as necessary to offer intersessions. Both instructional and non-instructional resources are required to provide intersession courses. Instructional and instructional support resources are directly related to providing intersession courses to students and include resources such as teachers, instructional aides, and instructional supplies. Non-instructional resources typically available during intersessions include school nurses, operations and maintenance staff, student transportation, and school food services. Some year-round schools also report having a designated intersession coordinator position to help plan and coordinate intersessions.

The extent to which the resources in Table 5 are needed depends on the length, attendance rates, and services provided during intersessions. Table 6 shows the characteristics of the intersessions in the divisions that were included in this study's financial analysis. The number of intersession instructional days and the length of intersession days varied across divisions. The total number of intersession days ranged from 19 to 30, and the hours per day ranged from four to seven. Student attendance rates also varied, although most divisions reported attendance rates of 80 percent or higher, particularly at the elementary school level.

Table 5: Additional Resources Typically Required to Provide Intersessions

Resource	Description or use
Instruction and instructional support resources	
Teachers	Number for a typical intersession ranged from 40 percent or greater than number of teachers required for the regular session
Instructional aides	All divisions reported using
Instructional supplies	
Instructional support	Includes librarians (if not otherwise on a 12-month contract) and other activities such as curriculum development
Non-instructional resources	
Intersession coordinator	Employed by some, but not all, year-round schools
Nurses, front office staff, and operations and maintenance staff	If not otherwise on a 12-month contract
Student transportation services	Provided by all but one year-round school during intersessions
School food services	Provided by the majority of year-round schools

Source: Virginia school divisions, 2012.

Table 6: Characteristics of Intersessions at School Divisions in Virginia With Recent and Current Year-Round Schools

Division	Year	Total days	Hours per day	Average attendance rate (%)	Lunch provided	Transportation provided
Fairfax[a] (Elementary schools)	2009-2010	25-30	6.5-7	80%-95%	✓	✓
Fairfax[a] (High school)	2008-2009	29	4-7	3-15	✓[b]	✓[b]
Hampton	2008-2009	28	4	70-75		✓
Danville (Elementary schools)	2008-2009	26	5	80-90	✓	✓
Danville (Middle school)	2009-2010	20	5	65	✓	✓
Alexandria	2008-2009	25	6.5	96	✓	✓
Lynchburg	2008-2009	20	7	30-50[c]	✓	✓
Richmond	2011-2012	20	6	80		
Arlington	2008-2009	19	6.5	80	✓	✓

[a] Days and hours varied by school and/or intersession.
[b] Provided during full day intersessions only.
[c] Intersessions held early in the year limited to 12 students per grade. All students in selected grades were invited for later intersessions to assist with SOL testing preparation.

Source: Virginia school divisions, 2012.

Five of the seven divisions reported providing lunch during intersessions, and all divisions other than the City of Richmond reported providing transportation.

Intersessions Have Cost, on Average, About Three Percent of Total Year-Round School Expenditures

According to school expenditure data reported for this study, intersessions account for a fairly small portion of total year-round school budgets. While individual annual school expenditures for intersessions ranged from more than $550,000 to as low as $31,000, when averaged across schools, intersessions accounted for approximately three percent of school expenditures (Table 7). They are the most identifiable cost associated with year-round schools, and in many cases would not occur in the absence of the year-round calendar.

Over 90 percent of reported intersession expenditures, on average, were for instruction and instructional support.

Intersession Expenditures Are Largely for Instruction. The vast majority of intersession expenditures reported for the year-round schools included in this study were for the resources listed in the instruction and instructional support category in Table 5. Divisions reported that an average of over 90 percent of intersession expenditures were for instruction and instructional support, which is similar to the 83 percent of school expenditures dedicated to this purpose during the regular session for these schools. The majority

Table 7: Intersession Expenditures Were an Average of Three Percent of Total School Expenditures

School	Intersession expenditures[a]	Percent of total school expenditures
1	$552,159	8%
2	436,720	7
3	262,353	4
4	105,363	1
5	97,647	2
6	94,393	2
7	72,727	2
8	71,374	3
9	66,241	1
10	64,925	3
11	61,786	3
12	57,727	2
13	38,248	2
14	37,907	2
15	33,241	1
16	31,000	2
		3% (Average)

Note: Most school expenditure data is for the 2008-2009 school year. For schools included in the during and after analysis and schools that started after the 2008-2009 school year, data is for more recent years.

[a] Does not include student transportation or food service expenditures.

Source: Data from selected school divisions, 2012.

of intersession instructional and instructional support expenditures were used to pay stipends to teachers and instructional aides who worked during intersessions. Divisions reported that the number of teachers involved in running a typical intersession ranged from 40 percent of the number of teachers required for the regular session, to more than the total number of teachers required for regular session. (In some cases, schools may have hired teachers from outside the school to assist with intersessions.)

A much smaller portion of intersession expenditures (on average, less than ten percent) were for non-instructional resources. Expenditures for non-instructional resources covered items such as extending contracts or paying stipends for school nurses, front office staff, and custodians to be available during intersessions. Additionally, two school divisions reported expenditures related to designated intersession coordinator positions at the year-round schools.

The amount of non-instructional expenditures attributed to intersessions varied by division. Some school divisions indicated that the year-round calendar did not increase the cost for most non-instructional resources because people in these positions would be

on 12-month contracts regardless of the school calendar. Similarly, divisions reported only negligible operations and maintenance costs, such as utilities, related to intersessions because the schools were typically open and used for various purposes throughout the calendar year.

Some Non-Instructional Expenditures Are Underreported. Two additional intersession expenditures could not be quantified by most school divisions: pupil transportation and school food services. None of the six divisions submitting financial data for this study were able to isolate pupil transportation expenditures related to intersessions, even though all but one of these divisions provided this service (Table 6). However, the costs for providing transportation are likely sizeable. For example, according to *Program Evaluation of Year-Round Education* by Hampton City Schools, intersession transportation costs ranged from $15,582 to $43,381 for its individual year-round schools during the 2005-2006 school year.

Similarly, only two of the four divisions that reported providing breakfast and/or lunch during intersessions were able to isolate costs for this service. For one of these divisions, school food services were the largest non-instructional cost reported for intersessions.

Intersession Costs, Per Pupil, Range From One to Nine Percent of Total Year-Round School Expenditures

While the range in intersession expenditures may be somewhat explained by varying school sizes, when calculated on a per-pupil basis, there was still a wide range in intersession expenditures. Table 8 shows the average annual per-pupil intersession expenditures by division. Average per-pupil expenditures varied from $1,033 in Division A to $83 in Division F. However, despite this range, average per-pupil intersession expenditures were still relatively small compared to the average total per-pupil expenditures at these same schools (Table 8).

For Divisions A and B, the relatively higher average per-pupil expenditure can be explained by a number of factors. Both divisions reported relatively high daily teacher stipends. (School divisions reported daily stipend amounts ranging from $110 to $322, with some divisions paying teachers a per diem amount.) Both divisions were also among those with the longest intersession day in terms of hours, and Division B had among the greatest number of intersession days. Both divisions further reported compensation for intersession coordinators, whereas other divisions incorporate this responsibility into existing positions. Additionally, school division finance staff in Division A indicated that there was an emphasis on having very small intersession classes for the 2008-2009 school

year, which is the year for which financial data was reported. (Finance staff indicated that the intersession class sizes have since increased, which may affect per pupil costs.)

Table 8: Average Annual Per-Pupil Expenditures for Intersessions Were Typically Low Compared to Average Total Per-Pupil Expenditures

School division	Average intersession per-pupil expenditure[a]	Percent of average total per-pupil expenditures
A	$1,033	9%
B	483	4
C	186	2
D	176	3
E	143	1
F	104	1
G	83	1

Note: Most school expenditure data is for the 2008-2009 school year. For schools included in the during and after analysis and schools that started after the 2008-2009 school year, data is for more recent years.

[a] Does not include student transportation or food service expenditures.

Source: Data from selected school divisions, 2012.

Apart from Divisions A and B, it is less clear what accounts for the differences in average per-pupil intersession expenditures among divisions. Surprisingly, per-pupil amounts were not strongly related to the number of intersession days or the length of intersession days reported in Table 6. It may be the case that other factors not specifically reported by divisions, such as intersession class size, may also affect per-pupil amounts. Regardless, except for Division A, the increased expenditures for intersessions was four percent or less of total per-pupil expenditures.

It appears that intersession per-pupil expenditures would be higher if transportation and food service expenditures were included.

While every attempt was made to obtain comparable financial data for the study, some of the differences in per-pupil expenditures may also be related to school divisions' inability to isolate expenditures related to intersessions. Also, the average per-pupil amounts in Table 8 do not include transportation and food service expenditures because expenditure data was not provided for these items by most divisions. However, it appears that intersession per-pupil expenditures would be higher if transportation and food service expenditures were included. Using 2005-2006 intersession transportation expenditures from the Hampton City Schools report cited earlier, per-pupil intersession costs could have been nearly 15 percent higher at year-round schools in that division if transportation costs had been included. Also, school finance staff in the City of Danville estimated that food service expenditures were approximately ten percent higher at year-round schools compared to tradi-

tional calendar schools as a result of the additional intersession days.

Intersession Expenditures Are Not Simply a Substitute for Summer School

One consideration is whether intersession expenditures at year-round schools simply replace summer school expenses. However, intersessions are more comprehensive than summer school, and thus are not simply replacing the same costs for summer school. Some students do receive their remediation during intersessions rather than attending division-wide summer school offerings. However, both remediation and enrichment courses are typically provided during intersessions, particularly at the elementary school level. Further, in Virginia, the attendance rates for intersessions are much higher than summer school. Most schools currently operating on a year-round calendar report intersession attendance rates ranging from 80 percent to more than 90 percent of student fall membership in recent years. This contrasts with the summer school attendance rates reported by two divisions included in this study which range from eight percent to 33 percent of fall membership. Finally, four of the seven divisions providing financial data indicated that students at year-round schools were also eligible to attend summer school offered through the division. In these cases, intersessions provide another remediation opportunity beyond summer school.

Regular Session Cost Differences Were Largely a Result of Factors Other Than the School Calendar

Although intersessions are typically identified as the primary factor driving increased costs at year-round schools, this study also examined whether there are differences in regular session costs as a result of the year-round calendar. For the schools included in the study, regular session per-pupil expenditures were higher at all but one year-round school compared to either their peer school or when the schools were operating on a traditional calendar. Regular session expenditures were ten percent higher, on average, for the year-round schools. Expenditures ranged from 23 percent higher than the traditional calendar school to 24 percent lower.

However, interviews with school division finance staff revealed that, in general, differences in regular session per-pupil expenditures at year-round schools were not related to the school calendar. Instead, these differences were more a result of factors such as varying levels of staff experience and commensurate pay, as well as specialized programs at the schools. Also, in some cases the year-round schools had lower fall membership than their peer schools or the year the school returned to a traditional calendar,

which led to higher per-pupil amounts for fixed cost items, such as school nurses.

In Fairfax County and Hampton City, for example, per-pupil expenditures decreased after several schools returned to a traditional calendar because of division-wide budget cuts that occurred in the same year. In Hampton, per-pupil expenditures decreased because some experienced teachers retired and were replaced with less experienced, lower paid teachers at the schools. In Danville, two of the year-round schools were small and had a "family-like" environment. Staff tended to stay longer at these schools resulting in more experienced and higher paid teachers compared to the peer schools.

In another example, per-pupil expenditure differences among schools in Alexandria were due to specialized programs at the schools and differences in the age of school buildings. For example, one of the peer schools in Alexandria had a dual language program and a special education preschool program, which led to higher per-pupil expenditures compared to the year-round school. The peer school was also much older than the year-round school leading to higher operations and maintenance and facilities expenditures.

COST IS THE PRIMARY REASON REPORTED BY VIRGINIA SCHOOL DIVISIONS FOR DISCONTINUING YEAR-ROUND CALENDARS

Even though factors associated with the year-round calendar account for a fairly small portion of total school expenditures, the cost increase was enough for some school divisions to discontinue their year-round programs and others to avoid adopting a year-round calendar. Since 2000, eight school divisions in Virginia reported that they have discontinued the year-round calendar at some or all of their year-round schools. Of those divisions, six reported cost-related issues were a reason the year-round programs were discontinued. For divisions reporting that they have considered adopting a year-round calendar, 38 percent said that cost implications are what have prevented them from doing so.

The City of Hampton and Fairfax County are two of the most recent divisions to discontinue their year-round programs. These divisions discontinued all of their year-round programs at a total of 19 schools in the 2009-2010 and 2010-2011 school years. Both divisions stated that they were not experiencing academic gains that justified the increased expenditures related to year-round programs. This was foreshadowed in the 2005-2006 Hampton City Schools program evaluation which found that "a cost-benefit anal-

ysis reveals that the benefit derived from year round [calendars] is not warranted when compared to the associated costs."

Additionally, financial staff in Fairfax County indicated that, in a climate of budget cuts, the division had to weigh maintaining what it viewed as a "nice to have" program versus laying off teachers throughout the division. When aggregated across all 11 of its year-round schools, Fairfax reported spending a total of $2.6 million on year-round schools in FY 2009. However, in the context of the division-wide budget, the costs specific to the year-round calendar in both Hampton and Fairfax were less than one percent and would be even less in divisions with just one or two schools on a year-round calendar.

Therefore, even though the additional costs related to the year-round calendar are not particularly large relative to a school's total budget, some cost items, such as the additional compensation required for teachers, are easily identified. Consequently, if schools are not experiencing the expected academic gains or if school divisions are facing a challenging budget period, divisions may not consider the additional costs of year-round schools warranted. This may be particularly true when considering that the additional funds required only benefit those schools that are on the year-round calendar and not students in the division as a whole.

Chapter 4

Teachers, Administrators, and Parents Support Year-Round Schools, but Acknowledge Challenges

In Summary

Year-round calendars affect a variety persons in the community, including teachers, administrators, families, and some local businesses. Teachers are generally supportive of year-round calendars and have experienced few negative personal or professional impacts. Administrators believe implementing a year-round calendar requires careful planning and cite difficulties coordinating professional development and transportation for year-round schools. Parents generally perceive year-round calendars as having a positive impact on academic achievement. However, while parents of children with year-round school experience identify few negative impacts of the year-round calendar, parents without this experience are more skeptical of how it would affect family vacations, extracurricular activities, and childcare arrangements. To date, year-round schools have had an unknown, though likely minimal impact, on Virginia businesses in the travel and hospitality industry. Childcare providers may be required to change how their services are delivered if year-round calendars are more broadly adopted, but would likely be able to adapt.

Changes to the school calendar may have distinct impacts on various members of the local community, including school administrators, teachers, and families. Businesses may also be impacted insofar as their operations are affected by the school calendar. Concerns about the impacts of year-round school calendars in particular are found in the research literature, and have influenced the consideration, design, and implementation of year-round calendars in Virginia and other states.

TEACHERS REPORT YEAR-ROUND SCHOOLS CAN BENEFIT STUDENTS, BUT ADMINISTRATORS AND TEACHERS AGREE THEY COMPLICATE CERTAIN DIVISION OPERATIONS

Other than students, teachers, other school staff, and families are the groups most directly impacted by adopting year-round calendars. Generally, these groups are consulted by administrators prior to the successful implementation of a year-round calendar.

Most Teachers Believe Year-Round Schools Benefit Students and Many Cite Personal and Career Advantages

Teachers are both professionally and personally affected by working at a school on a year-round calendar. For example, teachers may find their ability to earn a supplemental income during the summer reduced by the shorter break typically associated with year-round schools, or may have different or fewer opportunities for personal vacations. To gain the perspective of Virginia teachers regarding year-round schools, a statewide survey of instructional

JLARC Staff Survey of Virginia Instructional Staff

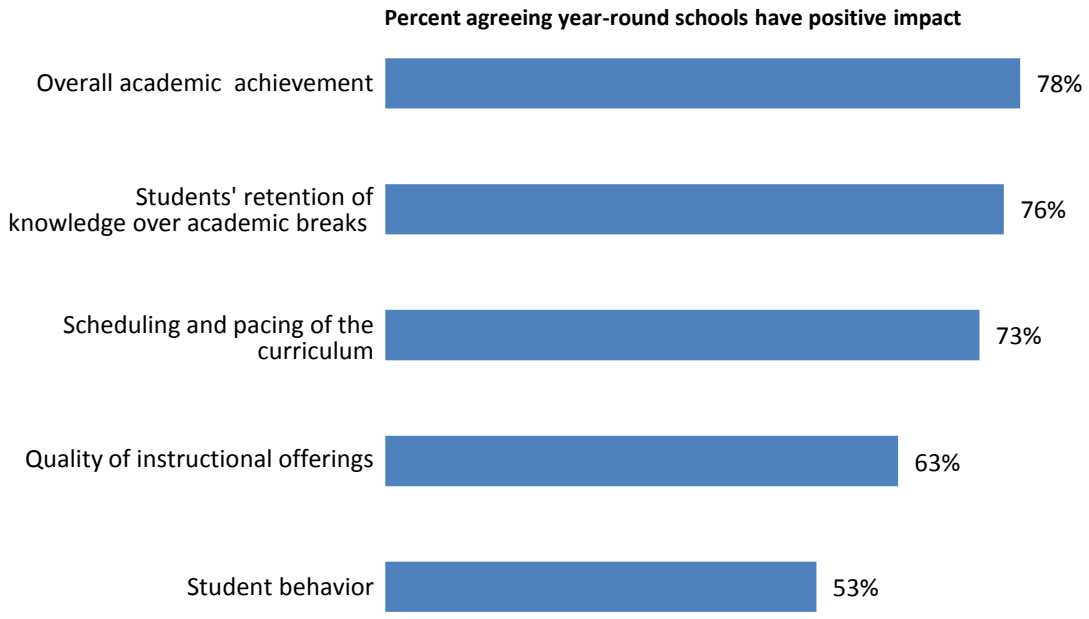
JLARC staff conducted a survey of Virginia instructional staff to gain their perspective on year-round calendars. A total of 299 teachers responded to the survey. Sixty-one (20 percent) reported having experience teaching at a year-round school while 238 (80 percent) reported they did not have experience with the year-round calendar.

staff was administered and teacher focus groups were conducted at four year-round schools.

Virginia teachers with year-round school experience generally believe that the year-round calendar positively influences academic achievement and benefits students in several other ways (Figure 8). These other benefits for students include improved retention of knowledge and better scheduling and pacing of the curriculum. Year-round school teachers participating in focus groups shared similar beliefs. While the pace of the curriculum is unchanged on the year-round calendar, the participants stated that intersession instruction allowed students more time to learn and review academic material before moving on to subsequent areas of the curriculum.

Most teachers with year-round school experience also believe that the calendar improved the quality of instructional offerings at the school and had a positive impact on student behavior. Focus group participants identified the ability to present new and different lesson plans during intersession instruction as an improvement upon the standard curriculum. Several teachers also mentioned that the shorter academic breaks reduced the need to review proper school and classroom behavior, and generally reduced the number of behavior problems experienced throughout the school year.

Figure 8: Most Year-Round School Teachers Believe the Year-Round Calendar Benefits Students Academically



Source: JLARC staff survey of Virginia instructional staff, 2012.

Teachers with year-round school experience also identified several areas in which the year-round calendar had positive personal and professional advantages. Many noted that the calendar facilitated personal vacations, just at different times of the year. Approximately half of survey respondents also believed that the calendar reduced their feelings of "burnout" and actually increased their opportunity to earn supplemental income by teaching during intersessions. In fact, several focus group participants stated that they often taught during one or two intersessions per year in order to finance vacations during a later intersession.

Teachers Without Year-Round School Experience See Potential Benefits of the Year-Round Calendar, but Express Concerns

The perspective of teachers without year-round school experience can be informative when considering whether to transition a traditional calendar school to a year-round calendar. Teachers without year-round school experience express generally positive views of the year-round calendar, but have several concerns not shared by teachers with such experience. Of teachers responding to the survey, nearly three-quarters without year-round school experience had either positive or neutral views of the schools and reported that they would be willing to consider taking a teaching position at a year-round school.

Teachers without year-round school experience identified several reasons why they would consider taking a position at a year-round school. These reasons included the staggered pacing of the curriculum on a year-round calendar, increased academic achievement of students, and a belief it would reduce feelings of "burnout." Less than a quarter of teachers that would consider a year-round school position identified the ability to earn a secondary income and improved opportunities for professional development as benefits of the calendar.

Teachers that would not consider positions at year-round schools identified several areas in which they believe year-round calendars would have a negative impact. The concern most commonly identified by a nearly all teachers without year-round school experience was increased feelings of burnout on a year-round calendar (94 percent). Many of these teachers also believe that the year-round calendar would reduce their ability to earn a secondary income, impinge upon their opportunities for professional development, and negatively impact the academic achievement of their students.

Some School Staff Believe Year-Round Schools May in Certain Cases Benefit Special Education Students

According to division and school staff in Virginia and other states, the year-round calendar has no negative impact on special educa-

tion processes or instruction, and may in fact improve certain aspects of special education. During interviews with these staff members, few or no problems were reported with fulfilling the requirements for the Individual Education Program (IEP) process, which qualifies a student to receive special education services. Staff from two Virginia year-round schools indicated that intersessions actually create a more inclusive learning environment for special education students, which enhances their learning experience. Instructional staff also reported that special education students benefitted from working alongside students of different ages, grades, and skill sets during intersession classes.

Extended School Year (ESY)

ESY provides special education and/or related services beyond the regular school year to students whose academic gains would be significantly jeopardized by long academic breaks.

A year-round calendar's academic break structure and intersession courses may also preclude the need for, or provide more timely delivery of, extended school year (ESY) services. Division and school staff in one Virginia division indicated that fewer special education students needed ESY at year-round schools because students were better able to maintain their academic progress throughout the year. The year-round calendar appears to have fostered this progress by reducing the potential for student regression by having evenly distributed academic breaks and a shorter summer break. For those students who did require ESY, two divisions noted that year-round schools provided ESY earlier in the year during intersessions, rather than waiting until summer.

Year-Round Schools Can Complicate Staff Training and Student Transportation

School division administrators interviewed by JLARC staff believed that operating one or more schools on a year-round calendar was manageable, but did create some administrative difficulties. Administrative complications identified by Virginia school divisions with year-round schools included arranging division-wide professional development for instructional staff, hiring and training new instructional staff for year-round schools, and arranging transportation for year-round school students. Five of the eight Virginia school divisions that have discontinued year-round schools stated that administrative difficulties related to coordinating year-round schools with traditional calendar schools in the rest of the division were a factor in the decision to discontinue their year-round programs.

Earlier Start Date at Year-Round Schools Can Complicate Division-Wide Professional Development. The difficulty related to year-round calendars most commonly identified by administrative staff was including teachers at year-round schools in division-wide professional development before the beginning of the academic year at those schools. The earlier start and shorter summer break at year-round schools complicated offering professional development, and

provided administrators less time to develop the professional development training.

For traditional calendar schools, division staff have several weeks between the end of school in mid-June and the beginning of in-service professional development in mid-August to develop materials and training for instructional staff. In contrast, teachers at year-round schools often begin their in-service between mid-July and early August, meaning that they must receive professional development training earlier than the rest of the division.

School divisions stated that these differences in the timing of professional development may also increase costs. The division may have to offer two professional development sessions (one for year-round schools, one for traditional calendar schools), which may lead to increased costs for outside consultants who conduct the sessions. Increased costs can also stem from paying for substitute teachers while year-round school teachers attend professional development after the school year has already begun. However, as the school year progresses, year-round and traditional calendars begin to align, making division-wide professional development easier to offer later in the academic year.

Early Start at Year-Round Schools Can Also Complicate Hiring and Training of New Instructional Staff. The early start of the academic year at year-round schools can also complicate the hiring and training of new instructional staff. Principals at year-round schools interview and hire teachers earlier than their counterparts at traditional calendar schools to ensure that positions are filled before the beginning of the year. However, new graduates may not be ready to begin teaching as early as July, and experienced teachers from other schools, divisions, or out of state may not be ready to apply for a different position so early in the summer. Further, orientation of new teachers, often handled by the division, is typically scheduled around the traditional school calendar. Therefore, new teachers at year-round schools may need to start the school year without having received their new teacher orientation, and may require substitutes to cover classes while they attend orientation after the school year has begun.

Providing Transportation for Year-Round Schools Requires Additional Planning. Year-round schools require transportation to be provided at different times than traditional schools, due to the earlier start of their school year and the operation of intersession instructional periods. Administrators noted that ensuring transportation for students at year-round schools required additional planning and coordination, particularly in the period immediately following initial implementation of the year-round calendar.

Year-Round Schools Can Complicate Extracurricular Activities, Particularly for High Schools

According to staff at current and former year-round schools in Virginia, as well as other states, extracurricular activities are minimally affected by the use of year-round calendars at elementary schools. As mentioned previously, only five of the 31 Virginia year-round schools were operating at the secondary-level in 2009, of which two were high schools. For the 2011-2012 school year, all year-round schools in Virginia were elementary schools. Because few school-sponsored extracurricular activities are offered at the elementary level in Virginia, the year-round calendar has little impact in this area.

Division staff mentioned that scheduling extracurricular activities (such as interdivision sports) at year-round high schools requires careful planning to ensure transportation and supervision are available for students to attend events while on intersession break. However, they believe that the ability of middle and high school students to participate in extracurricular activities is minimally affected by the year-round calendar. Students at year-round schools can attend activities during school breaks, much like students at traditional calendar schools. For example, many activities, such as football or marching band, hold practices and tryouts in summer months before the traditional school calendar has begun. This is comparable to students at year-round schools attending activities during their intersession academic breaks.

PARENTS OF YEAR-ROUND SCHOOL STUDENTS HAVE POSITIVE VIEWS ABOUT THE CALENDAR

JLARC Staff Survey of Virginia Parents

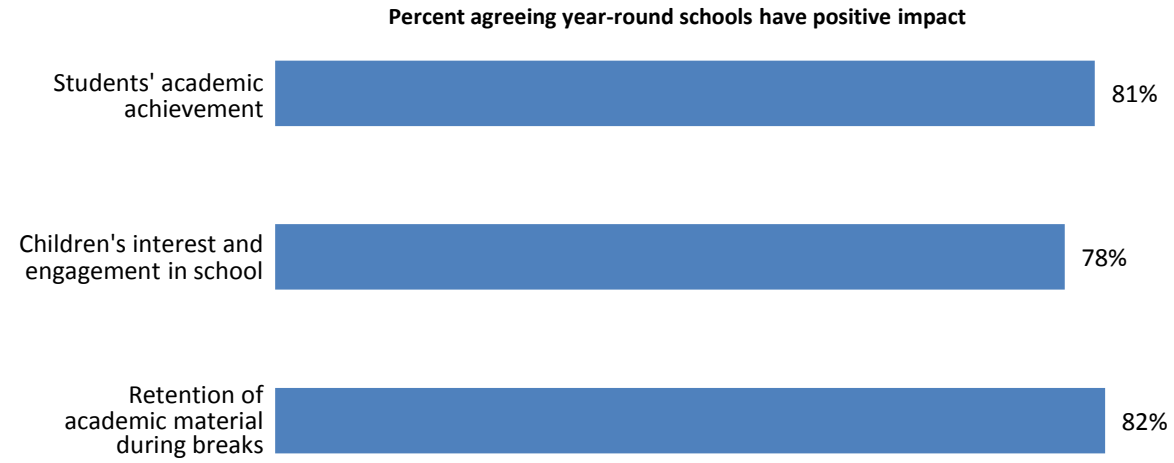
The survey of Virginia parents was distributed to the more than 300,000 subscribers to a biweekly electronic newsletter published by the Virginia Parent Teacher Association. A total of 8,518 Virginia parents responded to the survey, including 404 parents with children that have attended year-round schools.

Staff at year-round schools in Virginia and other states believe that educating parents about year-round calendars and obtaining parental support for a year-round calendar before its implementation are critical to successfully operating a year-round school. As part of this study, a survey of Virginia parents was conducted to gather their perceptions and concerns regarding year-round calendars.

Virginia parents of children that have attended year-round schools believed that the year-round calendar positively affected their children's academic achievement, and the parents themselves experienced few personal challenges related to attending year-round schools (Figure 9). Most of these parents believed their children's interest and engagement in school and retention of academic material during breaks in the school calendar were increased.

Parents of children that attended year-round schools also report few negative logistical impacts. Few parents (less than one-quarter) believe that the year-round calendar negatively impacted

Figure 9: Parents Whose Children Have Attended Year-Round Schools Reported Academic Benefits of the Calendar



Source: JLARC staff survey of Virginia parents, 2012.

their ability to schedule family vacation or secure childcare, and most parents, like most administrators, believe that the year-round calendar did not make it more difficult for their children to participate in extracurricular activities.

The views of parents whose children have never attended a year-round school should also be noted, as administrators considering a year-round calendar would likely be required to consult with and address the concerns of these parents before the calendar can be adopted. According to the JLARC staff survey, parents of children at traditional calendar schools are more skeptical of the year-round calendar than parents of children at year-round schools. For example, fewer parents of children at traditional schools believe that the year-round calendar would positively impact academic achievement than parents with children at year-round schools. Parents of traditional school students were also more likely to perceive negative personal impacts of the year-round calendar. For example, slightly less than half of traditional school parents believe the year-round calendar would negatively impact their ability to schedule family vacations, and these parents were approximately twice as likely as parents with children in year-round schools to believe year-round calendars would hinder their children's ability to attend extracurricular activities and negatively affect their childcare arrangements.

YEAR-ROUND CALENDARS HAVE UNKNOWN, BUT LIKELY MINIMAL, NEGATIVE EFFECT ON TOURISM BUSINESSES AND CHILDCARE PROVIDERS

Language in the resolution requesting this study suggests that year-round schools may negatively affect the ability of families to take vacations or arrange childcare. Several types of businesses, including the tourism industry and childcare providers, may be impacted by the timing and length of breaks in the academic calendar. The timing of family vacations, as well as arranging out-of-school care for children, can be driven by the school calendar and thus impact these businesses.

Current Use of Year-Round Schools in Virginia Has Unknown, Though Likely Minimal, Impact on Tourism

In 2011, tourism-related businesses represented approximately 4.6 percent of Virginia's economy. Virginia's tourism and hospitality industries have expressed concern that year-round calendars, and pre-Labor Day school starts generally, may reduce revenues during August, and reduce the available labor pool of high-school aged students. Travel and hospitality businesses believe that reductions in revenue would result from decreased family travel in August due to schools beginning before Labor Day. Some of these businesses, particularly those employing high school students as a temporary workforce during the summer, also express concern that if these students attend school during the month of August, they will be unable to work.

Determining the merits of these concerns about revenue reductions would require at least two key pieces of information. First, businesses would need to identify the residency of their patrons and use that information to estimate the percentage of their revenues during August that are derived from families living in localities operating a year-round calendar or beginning the school calendar before Labor Day. Second, businesses would have to ask customers how the funds they would have spent on an August vacation would instead be spent. This second piece of information is important, as funds not spent on vacation during summer months may be spent in other areas of the Virginia economy or on family vacations at other times of the year.

The above information is not currently available. However, the Virginia Hospitality and Tourism Association released a consultant study in 2010 that attempted to quantify the revenue and employment impacts on business of all Virginia schools beginning the academic calendar before Labor Day. The study concluded that there would be a sizable impact, but there were several limitations to the methodology used to generate the revenue impact. The primary limitation of the methodology was its use of the entire over-

18 population in Virginia as a proxy for the impact of pre-Labor Day school on family travel in Virginia. This approach likely overestimates the impact of pre-Labor Day school starts on family travel, as only a subset of the over-18 population in Virginia have school-aged children. Another likely limitation of the methodology is its reliance on survey responses from Tennessee adults as an indicator of the travel and spending decisions of Virginia families with school-aged children.

In 2009, at the peak of year-round calendar use in Virginia, only 1.4 percent of Virginia's K-12 student population was enrolled in year-round schools. Additionally, because only three Virginia high schools have recently operated on a year-round calendar and no high schools are currently operating on a year-round calendar, the impacts of year-round calendars on summer employment of high school students at tourism destinations is likely small.

Finally, the demographic characteristics of students in year-round schools in Virginia are another indicator that they have had a minimal impact on the travel and hospitality industry. Virginia schools that have implemented year-round calendars generally have had higher proportions of economically disadvantaged students than Virginia schools generally. It is unlikely that these students' families travel for vacation in August. It is also highly unlikely that when these students' families did travel, that they substantially contributed to the revenue collected during August by the tourism and hospitality industry.

Childcare Providers May Need to Change Programs and Hiring Practices or Make Capital Improvements, but Would Likely Adapt

In order to accommodate the change in scheduling created by adopting a year-round calendar, childcare providers may be required to change their program offerings or hiring practices. In some cases, childcare providers may also be required to make additional capital investments to maintain their program offerings while accommodating children attending year-round schools.

"Wrap-around" childcare services, such as before- and after-school care provided while parents are working, are unlikely to be negatively impacted by the implementation of a year-round calendar. However, staff schedules may have to be adjusted. For example, before and after school care may need to be provided to children attending a year-round school during July, when students on a traditional calendar are either enrolled in all-day care, at home with family, or enrolled in summer activities.

Chapter 5

Expanded Instructional Time May Have No Clear Positive Impact on Student Test Scores

In Summary

Expanded instructional time (EIT) is an educational program that lengthens the school day or adds more days to the school year. EIT programs are distinct from year-round programs and can be implemented using either traditional or year-round calendars. EIT programs have been implemented at schools in 37 states, but are not used in most U.S. schools. In Virginia, 55 school divisions appear to expand school time beyond the minimum 990 hours required by the State. However, most divisions appear to increase time to accommodate schedule changes or create "banked time" for inclement weather, not to increase achievement. Research literature has not shown a clear relationship between EIT and student achievement in the United States, and analysis of Standards of Learning (SOL) test scores in Virginia also did not show a positive relationship between test scores and EIT. There also does not appear to be a discernible relationship between instructional hours and student achievement internationally.

In addition to reviewing year-round schools, there has also been specific interest in information about expanded instructional time (EIT). Given EIT's similar goal of improving academic achievement, as well as growing nationwide interest in increasing learning time across U.S. schools, analyses of EIT were included in this report.

EIT is distinct from the year-round calendar, and can be implemented in schools following a traditional or year-round calendar. EIT is considered by some educational policymakers as a way to increase the academic achievement of students. These policymakers believe there can be value in lengthening the school day or adding days to the school year to increase the amount of time students have to learn and master academic concepts. While EIT expands instructional time, depending on how additional time is spent, it may not necessarily improve academic achievement.

EXPANDED INSTRUCTIONAL TIME (EIT) INCREASES REQUIRED SCHOOL TIME FOR ALL STUDENTS

An EIT program lengthens the amount of mandatory school time for all students. The primary purpose of EIT is to enhance student achievement. Increasing the amount of time in school, in theory, enables students to better retain knowledge from academic lessons.

Schools can implement EIT through either an expanded day or expanded year. While an expanded day model increases the number of hours in a school day, the expanded year model increases the number of days in a school year. The EIT model adopted by schools can determine its financial implications. Most teacher contracts appear to be based on the number of work days. Therefore, increasing the number of hours in a school day would not necessarily have significant cost implications. However, increasing the number of days could lead to cost increases, depending on how many days are added. Regardless of the EIT model adopted, these increases to *mandatory* time during the regular school schedule distinguish EIT programs from both year-round schools and optional EIT, such as after school or summer classes.

EIT Programs Are Distinct From Year-Round Schools

EIT programs and year-round school programs have different structures and rationales. Whereas an EIT program lengthens required school time, a year-round school calendar rearranges required school time. A year-round school program primarily attributes lower achievement to a long summer vacation. Conversely, an EIT program attributes lower achievement to a shortage of instructional time (Table 9). Despite these differences, year-round schools and EIT are not mutually exclusive and can be implemented concurrently.

A year-round school program can have the effect of increasing instructional time for many students through the availability of intersession courses. However, intersession courses are not mandatory for most students (other than, in some cases, those identified for remediation), so are not considered a full EIT program for the purposes of this study.

Table 9: Year-Round School and EIT Attempt to Improve Academic Performance Through Different Methods

	Year-round calendar	Expanded instructional time
Assumed cause of lower academic performance	Summer learning loss	Inadequate instructional time
Proposed solution	Rearrange existing instructional days across 12 months	Add extra instructional hours to school day or more days to the school year
Rationale	Integrating summer vacation days into the school year and providing opportunity for more frequent or additional remediation can reduce the likelihood of academic regression by shortening non-instructional time periods	More time dedicated to instruction increases the opportunity for mastering academic concepts

Source: JLARC staff analysis of year-round school and EIT academic literature, 2012.

Optional EIT Extends Time Outside of the Regular School Day and Year

Optional EIT programs provide supplementary learning opportunities outside of the normal school schedule. Unlike expanded day or year programs, all students are not required to attend these sessions. These programs often build upon, or are designed similarly to, after-school and summer school programs. The structure and content of optional EIT programs vary widely. This variation usually is driven by the availability of funding and community partnerships. For example, schools in Providence, Rhode Island, were able to implement after-school programs due to an intermediary that raised more than $2 million annually to run such programs.

Optional EIT programs are prevalent in Virginia and the nation and are cited as the most common method for expanding instructional time in U.S. schools. In Virginia, approximately 80 percent of school divisions responding to a JLARC staff survey reported having after-school tutoring or other related programs in all their schools. However, over half of responding divisions also reported less than 50 percent of their students attend such programs.

Technology can be used as a tool to provide optional EIT online. Virginia schools can potentially employ this tool through its two virtual learning programs, Virtual Virginia and Virtual Schools & Courses. Both programs allow students to take extra computer-based classes outside of their normal school schedule. However, the content and availability of these extra courses vary by program. Virtual Virginia offers mainly advanced placement, world language, and other enrichment online classes to middle and high school students in the State. Virtual Schools & Courses allows State-approved providers to offer core and enrichment courses to all K-12 students, though enrollment may be limited to certain grade levels depending on the administering division. For example, while York County offers online courses to students in grades 7-12, Carroll County offers online courses to grades K-8.

IT APPEARS THAT LESS THAN HALF OF VIRGINIA SCHOOL DIVISIONS EXPAND THE SCHOOL DAY; OTHER STATES AND COUNTRIES USE BOTH EXTENDED YEAR AND EXTENDED DAY MODELS

There is no standard definition of EIT, so its prevalence is difficult to measure. However, the majority of U.S. public schools do not appear to expand instructional time. JLARC staff survey results provide some evidence of expanded time in Virginia. International data also indicates a wide range of instructional days and hours across countries, with the United States falling near the middle of instructional time depending on how it is measured.

Schools in 37 States Expanded Instructional Time in 2012

Analysis of National Center for Time and Learning (NCTL) data found that 991 public schools implemented EIT in the 2011-2012 school year. NCTL defines EIT as increasing school time by at least 30 minutes per day or ten days per year beyond time averages in surrounding schools. These schools, however, represent a small portion of all U.S. schools, as most recent national statistics reported 98,817 total public schools in 2010. Over 70 percent of the 991 EIT schools used an extended day model (Figure 10). EIT schools are concentrated in certain states, with nearly half located in North Carolina, California, New Jersey, Massachusetts, and Illinois.

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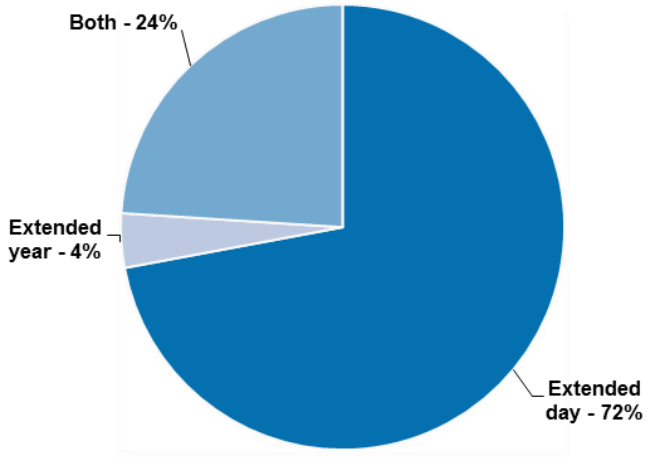
Figure 10: Nationally, Extended Day Model Is Most Commonly Used Form of EIT



Source: JLARC staff analysis of National Center for Time and Learning data, 2012.

Because of differing definitions of EIT, the data reported by NCTL can differ from statistics on EIT presented elsewhere. The federal government also has several different definitions for EIT. The U.S. Department of Education defines EIT broadly through its School Improvement Grant application as "significantly increasing the total number of school hours." Research literature indicates that about 4,000 schools qualify as expanding time under this definition. In contrast, 2011 Congressional bills H.R. 1636 and S. 851 recommended EIT be defined as adding at least 300 hours to the school year schedule. This more stringent definition would significantly reduce the number of schools that meet the EIT standard. As of September 2012, however, the U.S. Congress has yet to pass these bills.

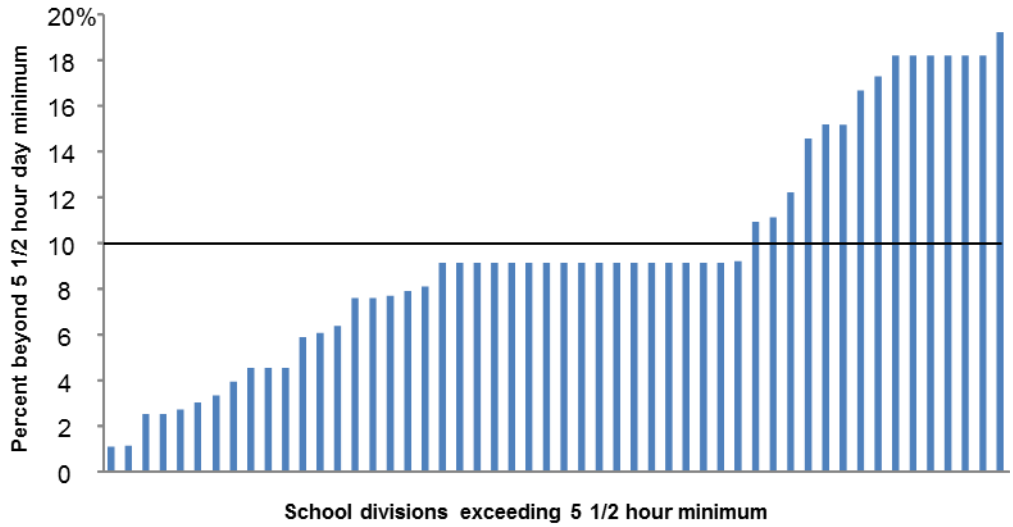
Fifty-Five Virginia Divisions Report They Require Longer School Days

The *Code of Virginia* and *Virginia Administrative Code* specify minimum instructional time requirements for schools. Section 22.1-98 of the *Code of Virginia* requires a minimum of at least 180 instructional days or 990 instructional hours in any given school year. The *Virginia Administrative Code* (Section 8VAC20-131-150) stipulates that the combination of instructional hours and days must equate to at least five and-one-half instructional hours per day. Failure to meet these requirements can result in a reduction of State funds; however, school divisions may choose to exceed these requirements without State approval or monetary consequence.

Fifty-five divisions reported that all of their schools exceed the school year instructional hour minimum by ten to 277 instructional hours.

Results from a JLARC staff survey of school division administrators suggest that about 40 percent of Virginia school divisions lengthen the school day beyond State minimum requirements. Fifty-five divisions reported that all of their schools exceed the school year instructional hour minimum by ten to 277 instructional hours. These additional hours per year equate to four to 90 minutes of daily instructional time beyond the State minimum (an increase of one to 27 percent). Divisions reported adding one to 19 percent more time to the school day in elementary schools, with 70 percent of divisions extending the school day at elementary schools by 10 percent or less (Figure 11). However, more than half of divisions using EIT reported adding more than ten percent to required daily instructional time at the middle and high school levels.

Figure 11: Majority of School Divisions With Longer School Days Exceed the 5-1/2 Hour Instructional Minimum by Ten Percent or Less at the Elementary School Level



Source: JLARC staff analysis of data from survey of school division administrators, 2012.

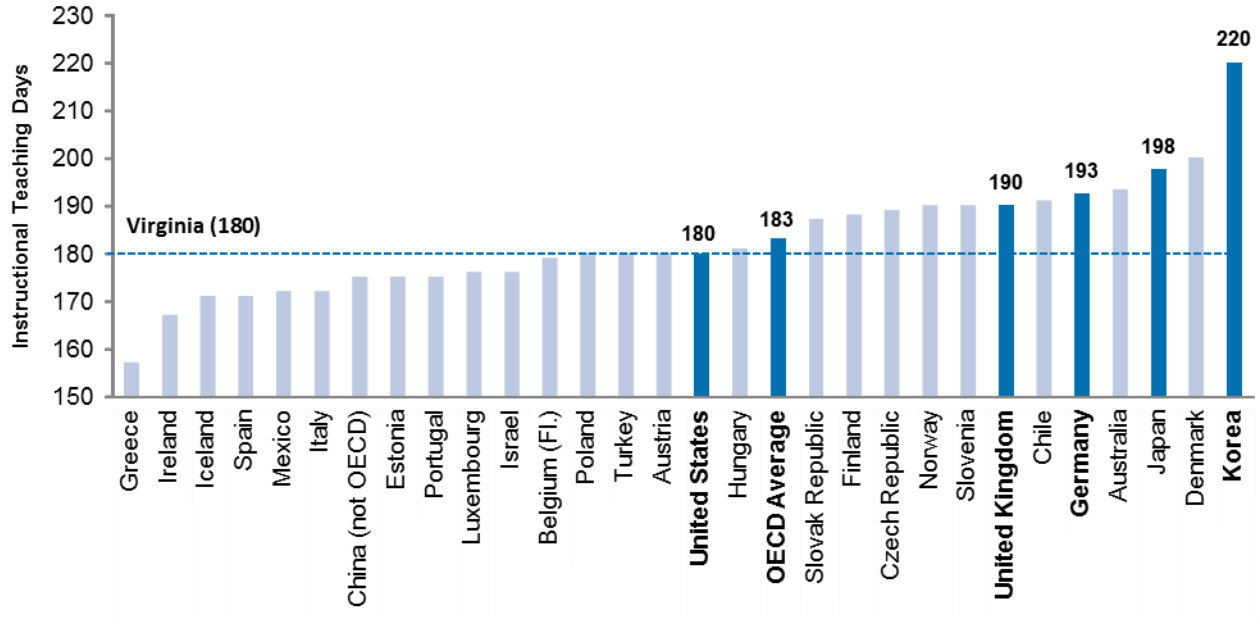
Some instructional hours included non-instructional activities, such as lunch or recess.

Despite these findings, it appears that additional school hours reported by divisions may be imprecise or the product of school reforms unrelated to EIT. Follow-up interviews with division staff indicated that some instructional hours included non-instructional activities, such as lunch or recess. Of the divisions that confirmed extra time as instructional, many noted the increase was a response to broader school reforms or circumstances that required a longer school day. For example, several divisions mentioned that adopting block scheduling at the high school level required more instructional time to fulfill accreditation requirements. Others reported dedicating "banked time" to instruction, which is extra time built into the academic year to compensate for potential inclement weather days. However, no divisions reported expanding instructional time explicitly as a means to increase student achievement.

United States and Virginia Are About Average in Number of Teaching Days When Compared to Other Countries

According to the Organization for Economic Cooperation and Development (OECD), which includes 34 member countries, the amount of time students spend in school varies by a substantial amount. Based on the OECD data, the United States and Virginia are near the middle of annual instructional teaching days reported in 29 countries, which ranged from 157 to 220 days (Figure 12). Instructional days in the United States and Virginia are three days, or two percent, below the OECD average.

Figure 12: United States and Virginia Offer Slightly Fewer Instructional Days Compared to the OECD Average



Source: Data from Table D4.1 in *Education at a Glance 2011*, OECD, and *Code of Virginia*.

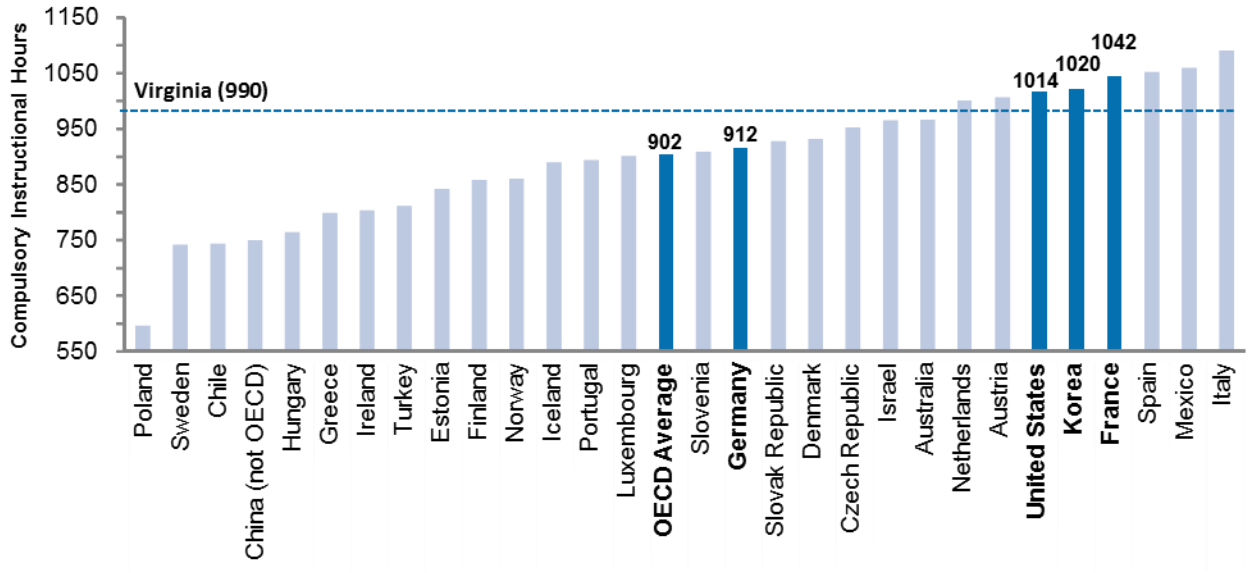
The United States and Virginia offer fewer instructional days compared to other countries with large economies. For example, Korea and Japan offer 40 and 18 more instructional days per year than the United States and Virginia, and Germany and the United Kingdom offer 13 and 10 more days annually.

United States and Virginia Have More Instructional Hours Than Many Other Countries

The United States and Virginia rank near the top in compulsory instructional hours reported across 29 countries, which ranged from 595 to 1,089 hours. Both the United States and Virginia ranked in the top ten, and the U.S. ranks 6th highest for instructional hours. The United States and Virginia exceed the OECD average for instructional hours by 112 and 88 hours, which equates to 12 and 10 percent, respectively, more time than the average (Figure 13).

Similar to comparisons of instructional days, other countries with large economies tend to offer more instructional hours compared to the United States and Virginia. For example, France offered 28 and 52 more hours than the United States and Virginia. Similarly, Korea outranked the United States and Virginia by six and 30 hours. In contrast, Germany offered 102 and 78 fewer hours than the United States and Virginia.

Figure 13: United States and Virginia Rank Among the Top Ten for Number of Instructional Hours



Source: Data from Table D1.1 in *Education at a Glance 2011*, OECD; *Code of Virginia*; JLARC staff analysis of National Center for Education Statistics data, 2011.

MANDATORY EIT APPEARS TO HAVE NO MEASURABLE IMPACT ON STUDENT ACHIEVEMENT

Expanding instructional time is thought by some policymakers to be a way schools can improve students' academic performance. However, no significant or clear positive relationship between expanded instructional time and academic achievement has been identified by research, nor was such a relationship identified by an analysis of the SOL test scores of Virginia schools with EIT. Further, analysis shows no correlation between student achievement and annual instructional hours internationally, and only a weak correlation with instructional days internationally.

Research Identifies No Significant Relationship Between EIT and Student Achievement

A review of the research literature examining the relationship between EIT and academic achievement suggests that, generally, the performance of students in schools with mandatory EIT time is not significantly different than the performance of students in schools without EIT. In their evaluation of the Massachusetts expanded learning time initiative, Abbott and Associates (2011) found that there were no statistically significant effects of EIT after one, two, or three years of implementation, regardless of the grade-level or academic subject areas analyzed. Frazier and Morrison (1998) similarly found no significant difference in academic achievement between students on a standard calendar and students attending a school with expanded instructional time. Silva (2012) also found that states requiring more time in school perform similarly to states that do not require EIT. These findings suggest that it is not the amount of time spent in school, but rather, the quality and content of education offered in school that influences the academic performance of students.

It is not the amount of time spent in school, but rather, the quality and content of education offered in school that influences the academic performance of students.

No Clear Positive Relationship Between EIT and SOL Test Scores Found at Virginia Schools

Analysis of English and math SOL test scores of Virginia students attending schools with mandatory EIT also found no positive relationship between time in school and academic performance. In fact, analysis suggested a counterintuitive negative relationship between EIT and certain test scores in Virginia. To assess whether mandatory EIT positively impacted students' academic performance, 2009 school-level English and math SOL scores were compared to the predicted performance of the schools. (An explanation of the methodology used can be found in Appendix E.)

The analysis found that the general student populations of schools with EIT more often had English and math SOL test scores lower than predicted. For example, even though 17 percent of schools

with EIT had SOL English scores ten points higher than predicted, there were 28 percent that scored more than ten points lower than predicted. Similar results were found among black, Hispanic, limited English proficient (LEP), and economically disadvantaged students.

However, there were some exceptions. For example, at 33 percent of schools with EIT, the average English SOL scores of black students were more than ten points higher than predicted. This was higher than the 23 percent of schools with EIT that had scores much lower than predicted for black students.

Divisions in Virginia have not typically expanded instructional time as a method to increase academic achievement.

A possible explanation for these results is that, as indicated previously, divisions in Virginia have not typically expanded instructional time as a method to increase academic achievement. For example, several school divisions stated that they increased the school day by approximately one-half hour to accommodate a transition to block scheduling. The extra half hour was used to ensure that students had equal amounts of time in each class period, not to focus on remediation or the core SOL curriculum. Another commonly identified reason for adding school hours or days was to build so-called "banked time" into the schedule. In such situations, schools will only make up lost instructional time to ensure they meet minimum State requirements, or if the time is kept, it is not included in the initially planned curriculum.

The findings also suggest that the improvements in SOL test scores seen among some subgroups at year-round schools (discussed in Chapter 2) result not from increased instructional time during intersessions, but from the targeted remediation offered for students struggling with English and math. If there is a desire to examine in more detail whether EIT programs impact student performance in Virginia, a more comprehensive effort would be required to identify the extent to which any divisions are truly expanding instructional time to improve academic performance.

No Clear Relationship Between EIT and International Test Scores

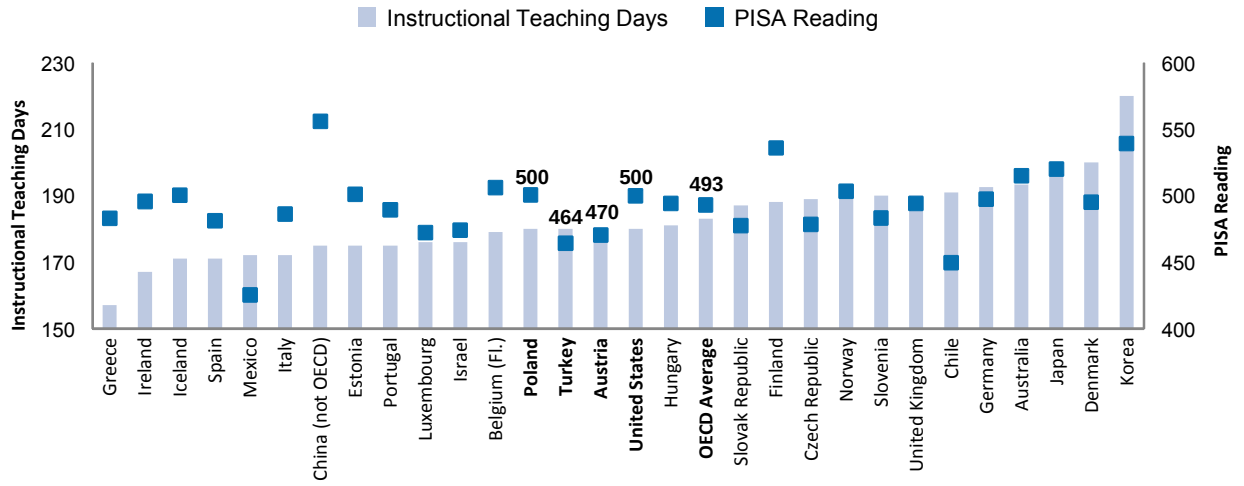
More broadly, instructional time also does not appear to adequately explain differences in academic achievement among OECD countries. In particular, analysis of OECD data found no conclusive relationship between instructional teaching days or compulsory instructional hours and Program for International Student Assessment (PISA) scores.

Program for International Student Assessment (PISA)

PISA, which is coordinated by the OECD, measures skills of 15-year-olds in reading, math, and science every three years.

There is no discernible relationship between PISA scores and instructional days (Figure 14). Scores in OECD countries fluctuate as the number of instructional days increase, suggesting that more school days per year do not necessarily translate to higher PISA

Figure 14: No Clear Relationship Between Instructional Days and PISA Scores



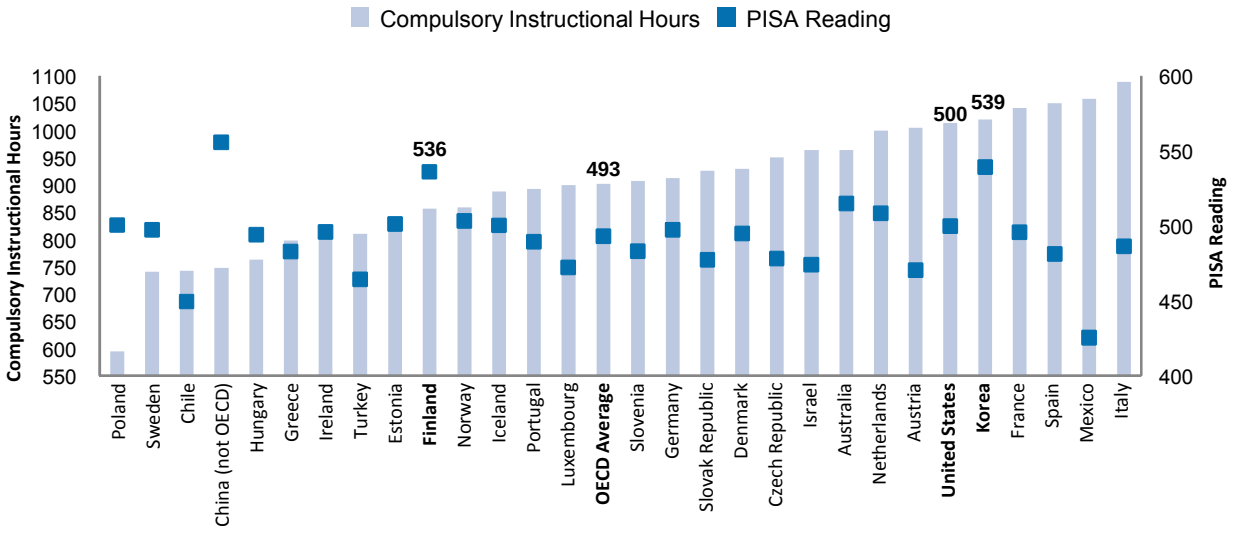
Source: Data from Table D4.1 in *Education at a Glance 2011* and Figure 1 in *PISA 2009 Results: Executive Summary*, OECD.

scores. For example, Poland, Turkey, Austria, and the United States all offered 180 instructional days, yet their corresponding reading scores varied significantly below, above, or at OECD averages depending on the country and subject.

Although PISA scores appear to trend in the same direction as instructional days in some countries, this trend is inconsistent and does not hold true for other countries. For example, students in Korea achieved the second highest reading scores on a schedule with the highest number of instructional days compared to other OECD countries. However, Chinese students outscored Koreans in reading on a school schedule that offered 45 fewer days than Korea and eight fewer days than the OECD average. Similar trends were found between instructional days and PISA math scores.

There was also no relationship between instructional hours and PISA scores, as reading scores varied as the amount of annual instructional hours increased (Figure 15). For instance, Australia and Israel offered the same number of annual instructional hours; however, Australian students scored significantly above, and Israeli students scored significantly below, OECD reading averages. Similar to trends in instructional days, some countries achieved similar PISA scores using different amounts of instructional hours. For instance, Korea offered 164 more instructional hours annually than Finland, but students in both countries had similar reading scores significantly above OECD averages. Similar unpredictable relationships were also found between instructional hours and PISA math scores.

Figure 15: No Clear Relationship Between Instructional Hours and PISA Scores



Source: Data from Table D1.1 in *Education at a Glance 2011* and Figure 1 in *PISA 2009 Results: Executive Summary*, OECD; U.S. data from NCES.

A common perception is that U.S. academic performance suffers because U.S. students spend less time in school than students in other countries. However, Figures 14 and 15 show that U.S. PISA reading scores were not significantly different from the OECD average. Furthermore, Figures 14 and 15 suggest that U.S. instructional time amounts are similar to other OECD countries. Although the United States fell significantly below the OECD average for PISA math scores, instructional days and hours are just two of 29 educational indicators reported by OECD. It is likely that a combination of some, or all, of these factors may explain variations in PISA test scores, rather than instructional time alone.

Research literature has also shown that non-educational characteristics, such as family structure and student well-being, may also play a role in varying achievement rates across countries. More information on these factors is discussed in the JLARC 2011 report *Strategies to Promote Third Grade Reading Performance in Virginia*.

JLARC 2011 Study

JLARC's 2011 study, *Strategies to Promote Third Grade Reading Performance in Virginia*, found that the United States frequently ranks low on a variety of factors addressing the well-being and family situations of children.

Chapter 6

Year-Round Calendars Can Be a Useful Approach for Certain Schools

In Summary

Certain Virginia school divisions may want to consider year-round schools as a method to improve student performance. Year-round calendars may be of particular interest to schools with high percentages of certain student subgroups, such as black students, that appear to benefit academically from their use. The processes and key steps used by Virginia localities that have implemented year-round calendars previously may be useful for those divisions wishing to pursue them in the future, and may also impact their success. Key steps include conducting an assessment of the costs and benefits of the year-round calendar, developing a proposal for consultation with stakeholders, and seeking approval of the calendar. State involvement in the local decision to adopt year-round calendars is primarily limited to approving pre-Labor Day school start dates through a waiver process, if necessary.

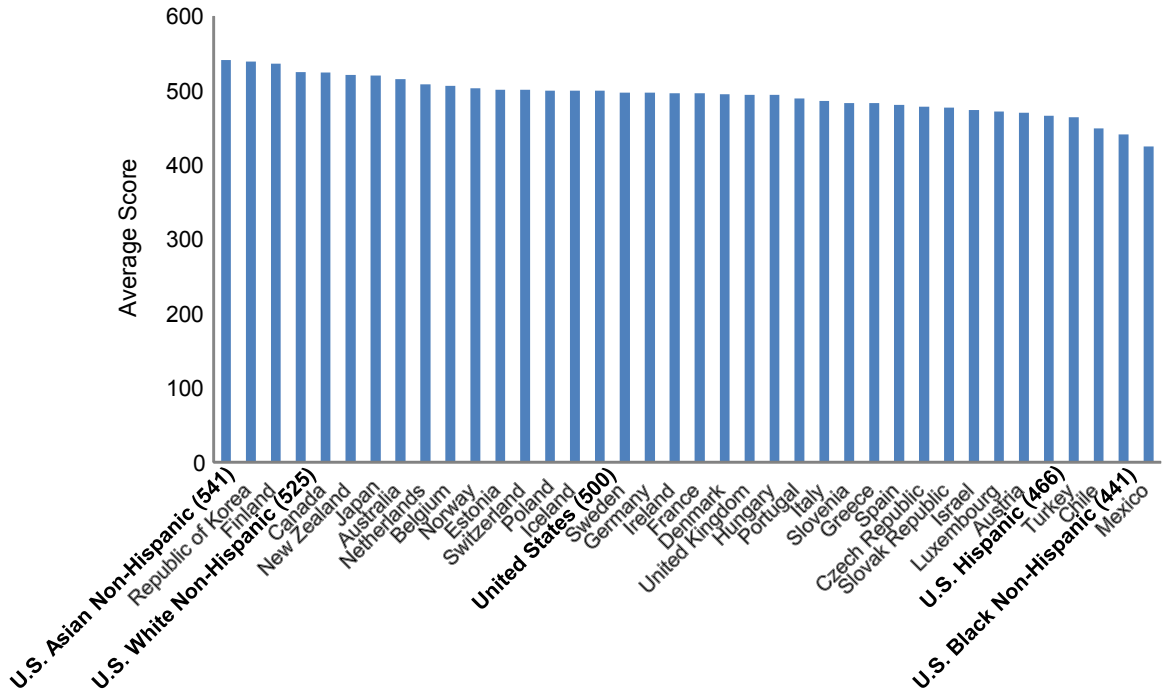
Year-round schools may be of particular interest to schools and divisions with high percentages of certain student subgroups. For those divisions interested in exploring year-round calendars, effective planning is necessary to adequately consider the potential benefits, costs, and additional administrative coordination associated with year-round schools.

CERTAIN DIVISIONS MAY WANT TO CONSIDER YEAR-ROUND CALENDARS AS A METHOD TO IMPROVE STUDENT PERFORMANCE

As described in Chapters 1 and 2, a year-round calendar can be an effective tool to help schools improve the achievement of certain student subgroups. Consequently, certain schools or divisions in Virginia may wish to consider the feasibility of using a year-round calendar.

The research literature and this study's assessment of Virginia year-round schools show that black, Hispanic, and economically disadvantaged students as a group are more likely to improve their test scores under the single-track year-round school model. These student groups also tend to perform below the general student population. For example, the 2011 JLARC report *Strategies to Promote Third Grade Reading Performance in Virginia* showed that on the 2009 PISA reading test, U.S. Asian and white students as a group outperformed nearly all other Organization for Economic Cooperation and Development (OECD) countries, while U.S. Hispanic and black students scored near the bottom of OECD countries (Figure 16).

Figure 16: On 2009 PISA Reading Test, the Average U.S. Student Score Was Similar to Many Other OECD Countries but Masked Significant Race/Ethnicity Score Differences



Source: Figure 1, *Strategies to Promote Third Grade Reading Performance in Virginia*. Data from Tables 3 and 5 in *Highlights from PISA 2009*, U.S. DOES National Center for Education Statistics.

If a division or individual school has a goal to increase student performance, it may be most effective to use strategies that benefit student groups that have historically performed below the average. This may be particularly true at schools with high proportions of these at-risk students. The additional opportunities for remediation during intersessions, as well as reduced loss of learning during shorter summer breaks, are two attributes of a year-round calendar that may specifically help these student groups improve their test scores.

However, school divisions should weigh this potential benefit against the cost and effort associated with year-round schools. If schools intend to provide intersession instruction with high levels of student attendance, school costs can be expected to increase by approximately three percent, in addition to increased transportation and school food service costs. Securing the support of parents and staff at the year-round school is also important. Finally, year-round calendars will be most effective when implemented in a school environment that uses educational best practices.

STATE HAS MINIMAL ROLE IN LOCAL DECISION TO OPERATE A YEAR-ROUND SCHOOL

The State's role in the decision to operate schools on a year-round calendar is largely confined to the school start date. Section 22.1-79.1 of the *Code of Virginia* requires school divisions to "set the school calendar so that the first day students are required to attend school shall be after Labor Day." However, this section of the *Code* also identifies several "good cause" requirements for which school divisions may receive waivers and begin instruction before Labor Day, including

- an average of eight closings per year in any five of the previous ten years due to severe weather conditions, energy shortages, power failures, or other emergency conditions;
- the dependency of an instructional program upon a school in another division that qualifies for a waiver;
- an experimental or innovative instructional program; or
- the school division being surrounded by another school division that has received a waiver.

Pre-Labor Day Waiver

Virginia is one of 14 states with statutes setting the start or finish of the school year. Pre-Labor Day start waivers have been obtained by 77 Virginia school divisions since 1986. The vast majority of these waivers are for inclement weather.

The Labor Day requirement is relevant for year-round schools because they typically start their academic years in July or August to ensure adequate time to cover the curriculum before SOL testing. However, year-round schools do not necessarily need to be directly approved by the Virginia Board of Education. If a school division already has a pre-Labor Day start waiver for one of the above requirements stated in the *Code*, schools within that division may operate on a year-round calendar without obtaining separate approval. In fact, the majority of school divisions have pre-Labor Day waivers to accommodate missed school days for inclement weather during the winter. However, if a school division does not have a pre-Labor Day start waiver but wishes to operate a year-round school starting before Labor Day, the division must apply for a pre-Labor Day start under the "experimental or innovative instructional program" exemption.

Because the majority of divisions have pre-Labor Day waivers, and a school within the division can operate a year-round calendar under this waiver, the Board of Education may not necessarily be aware of all year-round schools operating. In fact, of the nine year-round schools, only four are operating under an innovative or experimental program waiver. The other five year-round schools operate under pre-Labor Day waivers obtained at the division level. One year-round school is in a division with an inclement weather waiver, while another division operates four year-round schools under the exception allowing divisions surrounded by other divisions with waivers to open before Labor Day.

DOE has recently streamlined its reporting requirements for year-round schools operating with a pre-Labor Day waiver granted under the innovative or experimental program exception. DOE previously required divisions to report information on year-round schools operating under this waiver exception, but recently removed the requirement to lower the reporting burden on school divisions. Currently, divisions with a year-round school operating with an innovative or experimental program wavier must only certify whether a school continues to operate on a year-round calendar when submitting its annual reports to DOE.

DOE staff could not recall an experimental or innovative program request involving a year-round school being denied by the Board of Education.

DOE staff could not recall an experimental or innovative program request involving a year-round school being denied by the Board of Education. Furthermore, it appears no year-round school programs have been cancelled or modified at the request of the State. Consequently, the State's role in the local decision to begin and continue operating a year-round school is minimal.

There appears to be no compelling reason to recommend additional DOE oversight of year-round schools because they are already subject to the same State and federal oversight required of all public schools. Further, State funds are not provided explicitly for the purpose of operating year-round schools and, as discussed throughout this report, the school calendar is only one of many factors that may affect student achievement.

LOCALITIES REPORTED KEY STEPS IN DECIDING WHETHER TO ADOPT YEAR-ROUND CALENDARS

The processes previously used by Virginia school divisions to consider and implement year-round schools may be useful to other divisions interested in exploring year-round calendars at their schools. A summary of these processes, which consists of three phases, is shown in Figure 17 at the end of this chapter.

Phase I: Conduct Preliminary Assessment of Benefits and Costs of Year-Round School

The first phase in the process of considering a year-round calendar is to conduct preliminary assessment and planning. The main focus of this phase is to compare the school's objectives to the benefits that a year-round calendar can provide, select the appropriate model that provides those benefits, and then assess the potential cost implications. This phase is critical to understanding whether the benefits that a year-round calendar can provide address local objectives, and whether the cost implications seem reasonable to achieve those objectives.

The first step in this phase is to assess whether year-round schools would help the school or division in a measurable way.

The first step in this phase is to assess whether year-round schools would help the school or division in a measurable way. For exam-

ple, divisions that are seeking to reduce summer learning loss, provide more frequent remediation, or expand enrichment opportunities would explore the single-track model.

After assessing the potential benefits and choosing the appropriate year-round school model, it is also important to assess the potential financial impact. The single-track model has, in Virginia, increased costs by an average of three percent, ranging from one to nine percent (not including student transportation and food service costs).

Alternatively, divisions with increasing student populations but insufficient funds to expand their schools would explore the multi-track model. This model would, at least temporarily, be a way for a division to delay expanding or building a new school to accommodate more students.

Phase II: Develop Specific Proposal for Stakeholder Consultation

The second key phase cited by school divisions was to develop a process for consideration and a specific proposal for discussion by the affected stakeholders. Because the details of the calendar, intersessions, staffing, and transportation will determine how stakeholders are affected, crafting a specific proposal for discussion is important. Without a detailed proposal, it is less likely that key stakeholder groups will be able to provide relevant feedback about the plan.

Early in the planning process, the local school board was typically consulted to assess the feasibility of implementing the calendar and to gain approval for a process outlining further consideration of the year-round calendar. School boards have usually suggested or approved a broad outline of the planning process and have typically identified key stakeholders. Local school boards have also defined the requirements that must be met before approving the year-round calendar.

Designing the year-round calendar (including the school start date) and planning the use of intersessions are key steps in the planning process. School and division leadership usually also propose the design and use of intersession instructional periods, including the number and length of intersessions, as well as the focus and design of the intersession curriculum. For example, several schools stated that during the planning process or early operation of the year-round calendar, the remediation portions of the division's summer school curriculum were used as a basis for content and lesson plans.

Staff involved in the operation of year-round schools in Virginia also suggested that ongoing planning and administration are needed to ensure proper coordination of services with the year-round school and to address unexpected complications that may arise. A common example cited was coordination of professional development of instructional staff at year-round schools. Due to differences in the start dates between year-round and traditional calendars, professional development offerings were altered to ensure that teachers at year-round schools have the opportunity to participate.

Because year-round schools in Virginia cost more, school or division leadership also identifed funding sources for the year-round program. School division staff identified several sources of funds that have been used to cover increased year-round school costs, including summer school funds, other local funds, or other programs such as targeted or schoolwide Title I funds.

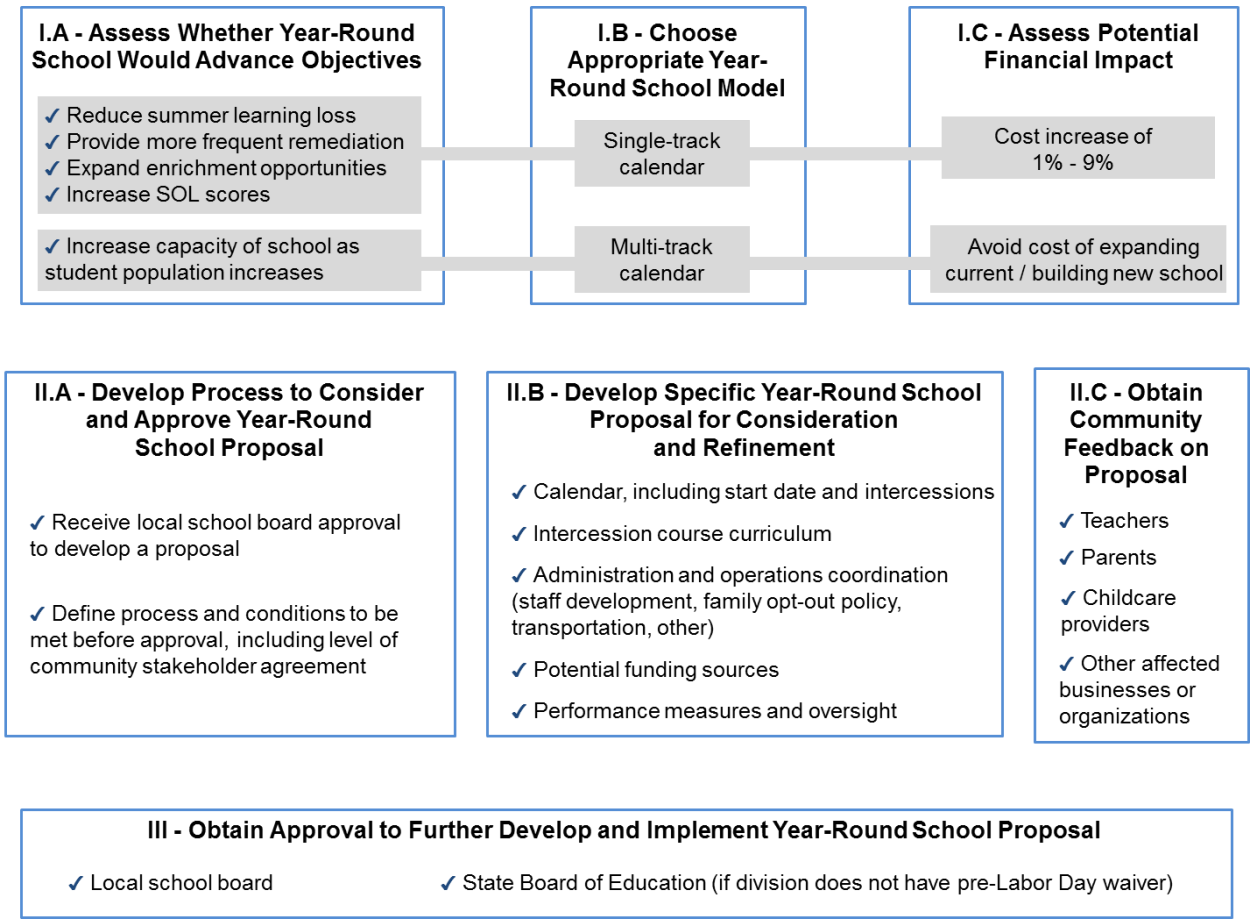
All Virginia year-round schools and their respective divisions also identified consultation and buy-in of stakeholders as a critical step in the consideration of the year-round calendar. School boards or division staff sought certain levels of acceptance of the year-round calendar before it was implemented. For example, in one school division the local school board required that 80 percent of both teachers and parents of children in the school vote in favor of the year-round concept. Some year-round schools in other states noted that childcare providers and other local business should be a part of this phase as well.

One school division reported that their local school board required that 80 percent of both teachers and parents of children in the school vote in favor of the year-round concept.

Phase III: Seek Approval From School Board and State, If Necessary

The third phase involved obtaining local approval to further develop and eventually implement the planned year-round calendar. Schools noted that it often took several years to reach this point. School boards should be aware of the benefits, costs, and other implications of the proposed calendar change. If the school board approves the plan, State Board of Education approval may be necessary. As noted earlier, no approval is needed if the division already has a pre-Labor Day start waiver. However, if the division does not have a waiver, the division must apply under the experimental or educational program waiver.

Figure 17: Three Key Phases to Effectively Consider and Implement Year-Round Schools



Source: JLARC staff analysis of interviews with Virginia school divisions that have implemented year-round schools, 2012.

Appendix A Study Mandate

HOUSE JOINT RESOLUTION NO. 646

Directing the Joint Legislative Audit and Review Commission to study the efficacy of year-round schools. Report.

Agreed to by the House of Delegates, February 4, 2011
Agreed to by the Senate, February 22, 2011

WHEREAS, year-round education is not a novel concept; however, in the wake of school reform efforts and concerns about student achievement, overcrowded schools, school construction costs and empty buildings during the summer, idle youth, and rising educational costs and strained school budgets, states are searching for ways to improve student academic performance and maximize state and local investment in public education while decreasing costs to taxpayers; and

WHEREAS, most traditional schools in the country operate on a 10-month system established when the American economy was centered on farming; and

WHEREAS, the traditional and year-round school calendars both are based on 180 instructional days; and

WHEREAS, public schools on the year-round education calendar generally use either the 45-15, 60-20, or 90-30 plan models, which spread out the instructional days with shorter or longer breaks between each term; and

WHEREAS, year-round education is believed to have certain benefits, among them improved student academic performance; minimization of summer learning loss; reinforcement of learning; accommodation of students with certain educational needs; less need for students to repeat the process of acclimating to new teachers, classmates, and classroom procedures; reduced classroom overcrowding; efficient use of school facilities; reduced capital expenses; opportunities for teachers to spend less time reviewing previously taught material; opportunities for teachers to earn extra income during term breaks; reduced student and teacher absences; less teacher and student fatigue and burnout; lower incidence of student misconduct; and opportunities to utilize flexible staffing patterns, alternative salary and benefit programs, and part-time staff; and

WHEREAS, many educators and parents cite the following concerns in their opposition to year-round schools: the initial cost to establish year-round schools may be prohibitive; savings from year-round schools may be offset by increased costs for school renovations and the hiring of additional staff; changing school schedules may be problematic; and carefully coordinated school transportation, child-care arrangements, special education services, athletic and extracurricular programs, school functions, parent conferences, and family time and vacations may be disrupted; and

WHEREAS, although research on the benefits and effectiveness of year-round education is inconclusive, and several school divisions have received permission from the Board of Education to implement year-round schools, numerous factors must be carefully evaluated before establishing year-round schools statewide; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Joint Legislative Audit and Review Commission be directed to study the efficacy of year-round schools.

In conducting its study, the Joint Legislative Audit and Review Commission shall (i) review the Board of Education's procedure for approving year-round schools; (ii) determine which school divisions have implemented year-round schools and evaluate their experience with this alternative method of providing education; (iii) conduct a comprehensive analysis of each year-round school, including scheduling format, offerings of instructional and extracurricular programs, and the enrollment in the year-round school; (iv) consider the minimum number of required teaching days or hours that should constitute the length of a school term and the issues attendant thereto; (v) identify and review year-round schools offered by other states and countries, noting advantages and disadvantages; (vi) ascertain and weigh the essential factors that must be considered before implementing year-round schools statewide, including, but not limited to, instructional costs, transportation and special education services, and the need for additional classroom teachers, staff, and support services; (vii) evaluate the impact of changing the scheduling format on school functions, length of terms, and school breaks; and (viii) consider and thoroughly vet other issues and matters related to year-round schools as the Commission may deem necessary to provide feasible and appropriate recommendations.

Further, in conducting its study, the Joint Legislative Audit and Review Commission shall seek and include classroom teachers, school administrators, parents, representatives of localities with and without year-round schools, the Virginia School Boards Association, and the Virginia Association of School Superintendents, as well as other educational organizations and other persons with expertise in alternative educational programs and options, in the Commission's deliberations.

Technical assistance shall be provided to the Joint Legislative Audit and Review Commission by the Department of Education. All agencies of the Commonwealth shall provide assistance to the Commission for this study, upon request.

The Joint Legislative Audit and Review Commission shall complete its meetings for the first year by November 30, 2011, and for the second year by November 30, 2012, and the Chairman shall submit to the Division of Legislative Automated Systems an executive summary of its findings and recommendations no later than the first day of the next Regular Session of the General Assembly for each year. Each executive summary shall state whether the Joint Legislative Audit and Review Commission intends to submit to the General Assembly and the Governor a report of its findings and recommendations for publication as a House or Senate document. The executive summaries and reports shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports and shall be posted on the General Assembly's website.

Appendix B

Research Activities and Methods

This chapter describes the research activities and methods used by JLARC staff to assess the outcomes of year-round calendar implementation in Virginia and other states. Key research activities and methods for this study included

- analysis of school-level Standards of Learning (SOL) test result data provided by the Virginia Department of Education (DOE),
- analysis of school-level and division-level demographic and other data from various sources,
- survey of school divisions about year-round calendar programs and expanded instructional time,
- survey of year-round school administrators regarding the costs of operating on a year-round calendar,
- surveys of Virginia parents and teachers regarding the impacts of year-round calendar implementation, and their perceptions of year-round calendars,
- site visits to six Virginia year-round schools to interview teachers, principals, and division-level staff,
- structured interviews with DOE staff and experts in the field of year-round calendars,
- a review of documents provided by DOE and local school divisions, and
- an extensive review of year-round school and expanded instructional time literature.

ANALYSIS OF SCHOOL-LEVEL SOL TEST RESULT DATA

JLARC staff received school-level reading, writing, and mathematics SOL score results from DOE for all schools in Virginia, for the years 2001 through 2009, and 2011. The data set contained school-level average SOL scaled scores for all Virginia schools in the period. The data for years 2001 through 2009 was obtained in order to assess the academic performance of students in year-round schools by student subgroup, while controlling for various demographic factors. Year-round schools were assessed for both the rate at which their average scores exceeded their predicted scores, as well

as the rate at which their student subgroups improved at faster or lower rates than peers within the same school division. The data for 2011 was used to assess the rate at which schools with expanded instructional time substantially exceeded (or underperformed) their predicted SOL performance.

JLARC staff added several school-level and division-level independent variables to the school-level SOL test result dataset it received from DOE. The school- and division-level data were primarily demographic in nature, and were merged with the DOE SOL test dataset using school and/or division numbers. Once these demographic variables were merged with the SOL test result dataset, JLARC staff performed correlation and regression analyses to identify the rates at which student subgroup average scores at year-round schools exceeded their predicted performance, and the rate at which these subgroups improved their SOL performance relative to peers within the same school division. A more detailed and technical explanation of the JLARC staff analysis of student achievement at Virginia year-round schools and schools with expanded instructional time may be found in Appendix E of this report.

SURVEYS OF SCHOOL DIVISION STAFF, TEACHERS, AND PARENTS

JLARC staff conducted three surveys in order to gather information on the actual and perceived impacts of year-round calendars on school divisions and key stakeholders in the educational community. Surveys were sent to all Virginia superintendents, instructional staff in Virginia schools, and parents of school-aged children in Virginia. JLARC staff also sent a data collection instrument to Virginia school divisions with experience operating year-round schools in order to assess the cost impacts of year-round calendar implementation.

Survey of School Administrators

JLARC staff surveyed the 132 school divisions to learn more about their experiences, if any, with year-round schools, and to gather information on the existence of expanded instructional time in Virginia schools. School division administrators were asked, with regard to year-round schools and expanded instructional times, what impact their implementation had on academic achievement, costs, administration and coordination of school services, and other relevant topics. One hundred and fifteen school divisions responded to the survey, an 87 percent response rate.

Survey of Virginia Instructional Staff

JLARC staff surveyed Virginia teachers in order to gather their perceptions of, and experiences with, year-round calendars. The survey was distributed through the monthly Virginia Education Association newsletter in order to increase awareness of the survey. Instructional staff with experience teaching at schools operating on a year-round calendar were asked about the personal and professional impacts resulting from working on a year-round calendar. Staff without year-round school experience were asked about their perceptions of the year-round calendar, and the professional and personal concerns they have with regard to working on the calendar. A total of 299 teachers responded to the instructional survey.

Survey of Virginia Parents

JLARC staff surveyed Virginia parents in order to assess the impact of year-round calendar implementation on families, and by extension, their children. The survey was transmitted to parents through the biweekly Virginia Parent Teachers Association newsletter, which has more then 300,000 subscribers. Parents were asked to describe the actual impacts the year-round calendar had on them, or that they perceive it would have, in several areas, including on

- the academic achievement of their children,
- the ability of their child to participate in extracurricular activities or work,
- childcare arrangements or the planning of family vacations.

A total of 8,518 parents responded to the survey, including 404 whose children at one time attended a school operating on a year-round calendar. Parents in 101 of 132 Virginia school divisions responded to the survey.

Financial Instrument for Divisions With Year-Round School Experience

To conduct an analysis of the financial impact of year-round calendars in Virginia, this study used both a "during" and "after" analysis, and a peer analysis of year-round school expenditures. Financial instruments were sent to six school divisions with recent or current year-round school experience and collected expenditure and personnel data for schools included in the analysis. All of the divisions that were asked to participate did so fully by completing the financial instruments for all requested schools.

To conduct the during-after analysis, financial data was collected from seven schools for the last year the schools were using a year-round calendar and the first year they transitioned back to a traditional calendar. Three of the schools were selected to provide the experience of middle and high schools. The remaining four elementary schools were selected to help balance the overall student demographics for the schools included in the financial analysis. The seven schools included in the during-after analysis are listed in Table B-1.

Table B-1: Schools Included in the During-After Analysis

Division	School Name	Years
Danville	Edward A. Gibson Middle	2009-2010/2010-2011
Fairfax County	Graham Road Elementary	2009-2010/2010-2011
Fairfax County	Stuart High School	2008-2009/2009-2010
Fairfax County	Timber Lane Elementary	2009-2010/2010-2011
Hampton	Aberdeen Elementary	2008-2009/2009-2010
Hampton	C. Vernon Spratley Middle	2008-2009/2009-2010 (intersession data for 2007-2008)
Hampton	Merrimack Elementary	2008-2009/2009-2010

Source: Schools and years identified by JLARC staff. Financial data provided by Virginia school divisions.

In addition to the during-after analysis, a peer analysis was used for the nine schools that are currently operating on year-round calendars. For the peer analysis, each year-round school was matched to a peer school in the division on a traditional calendar. Factors considered when identifying the peer schools included school level, school size as defined by fall membership, Title I status, and percentage of students that were economically disadvantaged, black, and identified as Limited English Proficient. To be consistent with the years used for the SOL test score analysis, financial data for the 2008-2009 school year was used. An exception to this was the

Table B-2: Schools Included in the Peer Analysis

Division	Year-Round School	Peer Comparison School
Alexandria	Samuel L. Tucker Elementary	John Adams Elementary
Alexandria	Mount Vernon Elementary	James K. Polk Elementary
Arlington	Barcroft Elementary	Campbell Elementary
Danville	Woodrow Wilson Elementary	Woodberry Hills Elementary
Danville	Glenwood Elementary	Woodberry Hills Elementary
Danville	Irvin W. Taylor Elementary	W. Townes Lea Elementary
Danville	Schoolfield Elementary	Park Avenue Elementary
Lynchburg	William Marvin Bass Elementary	Dearington Elementary
Richmond City	Patrick Henry School of Science & Arts	John B. Cary Elementary

Source: Schools identified by JLARC staff. Financial data provided by Virginia school divisions.

City of Richmond because this school began operating in the 2010-2011 school year. Table B-2 shows the schools that were included in the peer analysis.

SITE VISITS AND STRUCTURED INTERVIEWS

Site visits and structured interviews were a key research method used by JLARC staff in conducting research for this report. JLARC staff conducted site visits and structured interviews with division- and school-level staff of current and recent Virginia year-round schools, with administrators and year-round school researchers in other states, and with Virginia DOE staff.

Site Visits to Current Virginia Year-Round Schools and Structured Interviews With Division and School-Level Staff

JLARC staff conducted structured interviews with all school divisions currently operating year-round schools. JLARC staff conducted site visits to six of the nine Virginia public schools currently operating a year-round calendar, and one school that recently returned to a traditional calendar. On these visits, JLARC staff conducted structured interviews of principals and school division administrators, and held focus groups with teachers currently employed by year-round schools. The structured interviews and focus groups were designed to gather information on the impacts of year-round calendar implementation on planning, administration, academic achievement of students, and the personal and professional outcomes for affected staff members. Schools visited by JLARC staff are identified in Table B-3.

Table B-3: Schools Visited by JLARC Staff

School	School Division
Barcroft Elementary	Arlington County
Samuel W. Tucker Elementary	Alexandria City
Woodrow Wilson Elementary	Danville City
Edwin A. Gibson Middle	Danville City
William Marvin Bass Elementary	Lynchburg City
Patrick Henry School For Science and Arts	Richmond City

Additionally, JLARC staff conducted interviews with administrators in all school divisions operating at least one year-round school in 2009, except Virginia Beach. As with divisions currently operating year-round schools, the structured interviews covered topics related to planning and administration of the year-round calendar, as well as its impacts on academic achievement, the costs of operating year-round schools, and effects on instructional staff. Additionally, these school divisions were asked to share the reasons why their school divisions elected to discontinue their year-round calendars.

Structured Interviews With Educational Leadership and Experts in other States with Year-Round Calendars

JLARC staff conducted structured interviews with local- and state-level education administrators in other states, as well as researchers with expertise in the area of year-round calendars. The purpose of these structured interviews was to gather information regarding the outcomes of year-round calendar implementation in other states, and to identify additional studies or methods used to evaluate the outcomes of year-round schools.

Structured Interviews With DOE Staff

JLARC staff conducted structured interviews with DOE staff in order to discuss various aspects of the project. Topics discussed included pre-Labor Day waiver approval and ongoing oversight, year-round schools currently and formerly operating in Virginia, the availability of various types of data, and State requirements for instructional time.

REVIEW OF YEAR-ROUND SCHOOL AND EXPANDED INSTRUCTIONAL TIME LITERATURE

Through the course of the study, JLARC staff conducted an extensive review of literature pertaining to outcomes of year-round calendar implementation, as well as adoption of expanded instructional time. The study team also consulted previous JLARC reports on K-12 academic achievement to identify best educational practices. JLARC staff relied upon the advice of several experts in the field of year-round schools in order to identify relevant literature, and also used Internet searches to identify material of interest to the study team. JLARC staff also reviewed information on school start-date laws in Virginia and other states. Appendix G includes a bibliography listing many of the studies and articles which were cited within or made an impact upon the report.

Review of Documents Provided by DOE and School Division

JLARC staff also reviewed relevant documents provided by DOE staff and local school divisions. DOE staff provided background documents on current and former year-round schools in Virginia; the history of pre-Labor Day waiver regulations, and application and oversight process; and examples of reports submitted by year-round schools as part of the pre-Labor Day oversight process. Local school divisions provided JLARC staff with examples of traditional and year-round calendars, year-round school intersession curricula, year-round calendar planning documentation, and local assessments of the academic impacts of year-round calendar adoption.

Appendix C

Summary of Year-Round Schools in Virginia

As of the 2011-2012 school year, a total of nine year-round elementary schools were operating in Virginia. These schools are located in the City of Alexandria, Arlington County, the City of Danville, the City of Lynchburg, and the City of Richmond. Most of the information included below is for the 2008-2009 school year because this was the base year of analysis for much of this study.

CITY OF ALEXANDRIA

As of the 2011-2012 school year, two schools in Alexandria were operating on a year-round calendar—Mount Vernon Elementary and Samuel W. Tucker Elementary.

Table C-1: Summary Information for Mount Vernon Elementary

Year-round calendar inception	2005
Student information (2008-2009)	
Fall membership	564
% Economically Disadvantaged	60%
% Limited English Proficient	50%
Intersession information (2008-2009)	
Number of intersessions held	3
Total number of intersession days	25
Hours per intersession day	6.5
Types of courses offered	Remedial and enrichment
Approx. % of students attending	96%
Transportation provided	Yes
Lunch provided	Yes

Source: Alexandria Public Schools

Table C-2: Summary Information for Samuel W. Tucker Elementary

Year-round calendar inception	2004
Student information (2008-2009)	
Fall membership	657
% Economically Disadvantaged	53%
% Limited English Proficient	41%
Intersession information (2008-2009)	
Number of intersessions held	3
Total number of intersession days	25
Hours per intersession day	6.5
Types of courses offered	Remedial and enrichment
Approx. % of students attending	96%
Transportation provided	Yes
Lunch provided	Yes

Source: Alexandria Public Schools.

ARLINGTON COUNTY

As of the 2011-2012 school year, Arlington County administered one school operating on a year-round calendar, Barcroft Elementary.

Table C-3: Summary Information for Barcroft Elementary

Year-round calendar inception	2003
Student information (2008-2009)	
Fall membership	339
% Economically Disadvantaged	57%
% Limited English Proficient	60%
Intersession information (2008-2009)	
Number of intersessions held	2
Total number of intersession days	19
Hours per intersession day	6.5
Types of courses offered	Remedial and extension[a]
Approx. % of students attending	80%
Transportation provided	Yes
Lunch provided	Yes

[a] Staff at Barcroft report offering remediation, re-enforcement, and extension classes with enriching learning activities.

Source: Arlington County Public Schools.

CITY OF DANVILLE

As of the 2011-2012 school year, the City of Danville operates four schools on a year-round calendar – Glenwood Elementary, Schoolfield Elementary, Taylor Elementary, and Woodrow Wilson Ele-

mentary. The school division formerly administered a year-round calendar at Gibson Middle School from 2001 through 2009.

Table C-4: Summary Information for Glenwood Elementary

Year-round calendar inception	2001
Student information (2008-2009)	
Fall membership	216
% Economically Disadvantaged	89%
% Limited English Proficient	8%
Intersession information (2008-2009)	
Number of intersessions held	4
Total number of intersession days	26
Hours per intersession day	5
Types of courses offered	Remedial and enrichment
Approx. % of students attending	80%
Transportation provided	Yes
Lunch provided	Yes

Source: City of Danville Public Schools.

Table C-5: Summary Information for Schoolfield Elementary

Year-round calendar inception	1996
Student information (2008-2009)	
Fall membership	481
% Economically Disadvantaged	79%
% Limited English Proficient	5%
Intersession information (2008-2009)	
Number of intersessions held	4
Total number of intersession days	26
Hours per intersession day	5
Types of courses offered	Remedial and enrichment
Approx. % of students attending	80%
Transportation provided	Yes
Lunch provided	Yes

Source: City of Danville Public Schools

Table C-6: Summary Information for Taylor Elementary

Year-round calendar inception	2001
Student Information (2008-2009)	
Fall membership	300
% Economically Disadvantaged	81%
% Limited English Proficient	6%
Intersession Information (2008-2009)	
Number of intersessions held	4
Total number of intersession days	26
Hours per intersession day	5
Types of courses offered	Remedial and enrichment
Approx. % of students attending	80%
Transportation provided	Yes
Lunch provided	Yes

Source: City of Danville Public Schools

Table C-7: Summary Information for Woodrow Wilson Elementary

Year-round calendar inception	2002
Student information (2008-2009)	
Fall membership	180
% Economically Disadvantaged	92%
% Limited English Proficient	0%
Intersession information (2008-2009)	
Number of intersessions held	4
Total number of intersession days	26
Hours per intersession day	5
Types of courses offered	Remedial and enrichment
Approx. % of students attending	90%
Transportation provided	Yes
Lunch provided	Yes

Source: City of Danville Public Schools.

CITY OF LYNCHBURG

The City of Lynchburg operates one elementary school on a year-round schedule, William Marvin Bass Elementary. The City of Lynchburg has received a pre-Labor Day school-start waiver due to a history of school closures related to inclement weather.

Table C-8: Summary Information for William Marvin Bass Elementary

Year-round calendar inception	2004
Student information (2008-2009)	
Fall membership	246
% Economically Disadvantaged	72%
% Limited English Proficient	0%
Intersession information (2008-2009)	
Number of intersessions held	4
Total number of intersession days	20
Hours per intersession day	7
Types of courses offered	Remedial and enrichment
Approx. % of students attending	30%-50%[a]
Transportation provided	Yes
Lunch provided	Yes

[a] Intersessions held early in the year limited to 12 students per grade. All students in selected grades were invited for later intersessions to assist with SOL testing preparation.

Source: Lynchburg City Public Schools

CITY OF RICHMOND

The City of Richmond has one year-round school, Patrick Henry School of Science and Arts, which is a public charter school and has used a year-round calendar since it opened.

Table C-9: Summary Information for Patrick Henry School of Science and Arts

Year-round calendar inception	2010
Student information (2010-2011)	
Fall membership	146
% Economically Disadvantaged	30%[a]
% Limited English Proficient	0%
Intersession information (2011-2012)	
Number of intersessions held	4
Total number of intersession days	20
Hours per intersession day	6
Types of courses offered	Remedial and enrichment
Approx. % of students attending	80%
Transportation provided	No
Lunch provided	No

[a] Based upon school staff estimate. School does not participate in federal free and reduced lunch program.

Source: City of Richmond Public Schools.

Appendix D

Capacity Gain on Multi-Track Year-Round Calendars

This appendix provides an explanation of the process by which a multi-track year-round school can increase its enrollment beyond building capacity. The example presented below was provided by North Carolina's Wake County Public School System and represents the potential capacity gain on a 45-15 multi-track calendar.

Exhibit D-3: Example of Capacity Gain at Multi-Track Year-Round Schools

Capacity Gain at Year-Round Schools

How can year-round schools hold more students than those on the traditional calendar?

The Wake County Public School System operates its year-round schools on a multi-track calendar. This means that the students in the school are split into four groups or "tracks," with each track following a different schedule. The schedules are staggered so that at any given time, three of the tracks or groups are in school and one track is out on break.

Every three weeks, one of the four groups will "track out" and the teacher and students take a three-week break. At the end of the break, that teacher and his/her class will come back to school and move into the classroom that has been occupied by the next class to track out. This continues throughout the school year, with each class in school for 45 school days and then out of school for 15 school days.

To see a capacity gain, schools need to have at least four classes of students per grade level; schools with more classrooms see more of a gain. Depending on the number of classrooms, a school on the multi-track year-round calendar can hold 20 to 33 percent more students than a school on the traditional calendar. For every three schools on the year-round calendar, that's one less school that has to be built.

In a traditional calendar school, four classes of students need four classrooms. As seen in the table below, on the multi-track calendar, four classes of students only need three classrooms because one class is always tracked out. Each of the four classes is on a different calendar track, and only three tracks are in session at a

time. If a school has five classes per grade level, four classrooms are needed because one of the tracks will have two classes. When the bigger track (with two classes) is in session, along with two of the smaller tracks (each with one class), four rooms are needed. Similarly, six classes require five classrooms and two of the tracks have two classes. Seven classes require six classrooms and three of the tracks each have two classes. When a school is big enough to have eight classes on a grade level, it only needs six classrooms because every track is "doubled" with two classes on each track. Only six classes are in session at any one time.

Per Grade Level (K-5)	Number of Classes per Grade Level on Each Track	Needed Classrooms
3 rooms serve 4 classes	1 + 1 + 1 + 1	Each track has 1 class; all 3 rooms are always in use
4 rooms serve 5 classes	2 + 1 + 1 + 1	One track has 2 classes; 1 room is empty when track 1 is out
5 rooms serve 6 classes	2 + 2 + 1 + 1	Two tracks have 2 classes; 1 room is empty when tracks 1 or 2 are out
6 rooms serve 7 classes	2 + 2 + 2 + 1	Three tracks have 2 classes; 1 room is empty when track 1, 2 or 3 is out
6 rooms serve 8 classes	2 + 2 + 2 + 2	Each track has 2 classes; all 6 rooms are always in use

What does that gain mean in terms of students? An elementary school with six rooms per grade level (kindergarten through fifth), at 23 students per class, can hold 828 students on the traditional calendar (6 x 6 x 23). That same school on the multi-track year-round calendar, however, can hold eight sections per grade with 23 students per class, for a total of 1,104 students (8 x 6 x 23). Subtracting 828 from 1,104 shows the year-round school can hold 276 additional students, a 33 percent capacity gain.

When a school does not have enough classrooms to house six rooms per grade level at one time, the percentage of students gained will be lower. Capacity gains will also be impacted by fluctuations in enrollment from grade level to grade level. One grade level may be large enough for eight sections while another grade level may only need six or seven sections.

Source: Wake County Public School System, 2011.

Appendix E

Standards of Learning Test Score Analysis

A more detailed discussion of the data used to assess student achievement and the methods to analyze them are in this appendix.

THE TEST SCORE DATA

Standards of Learning (SOL) test scores in English and math were used as the primary means of assessing academic performance. JLARC staff had considered other measures of student achievement in previous studies (namely in *Strategies to Promote Third Grade Reading Performance in Virginia* and *Review of Factors and Best Practices Associated with School Performance in Virginia*), but found that experts considered SOL scores to be valid and accurate measures of academic performance.

For this study, JLARC staff obtained school-level average scaled score SOL test results in English and math from Fiscal Years 2001 through 2011 from the Virginia Department of Education (DOE), averaged by school for all students, and averaged (by school) for the following subgroups of students: economically disadvantaged; limited English proficient; students with disabilities; gender (male/female); and race/ethnicity (black, Hispanic, Asian, and white). In the spring of each year, the vast majority of students now take SOL tests. SOL scaled scores generally range from 200 to 600, with scores of 400 or greater considered as passing.

The average SOL scores of the students with disabilities subgroup were not analyzed in the same way as those of the other subgroups. Substantial proportions of students with disabilities at various schools may qualify to take alternative tests instead of the SOL tests, and the proportions may vary from school to school. Therefore, the school-level average SOL score may not as accurately represent the academic performance of this subgroup as it would for the other subgroups.

JLARC staff also obtained from DOE demographic information from each school for FYs 2009, 2010, and 2011. In particular, percentages of students at each school falling into the following categories were reported:

- economically disadvantaged (a student is identified as economically disadvantaged if at any point in the school year

he/she (1) is eligible for Free/Reduced Meals, or (2) receives Temporary Assistance to Needy Families (TANF), (3) is eligible for Medicaid, or (4) is identified as experiencing Homelessness);

- limited English proficient (LEP) status (defined by the federal government and the Commonwealth of Virginia as a person who is unable to communicate effectively in English because he/she was not born in the United States or whose primary language is not English);
- students with disabilities;
- gender (male/female); and
- race/ethnicity (black, Hispanic, Asian, white and other).

Students placed in disability categories may receive special education services under the federal Individual with Disabilities Education Act (IDEA). The disability categories include

- intellectual disabilities (the category "mental retardation" was redefined as "intellectual disability" effective July 2009);
- hearing impairment;
- speech or language impairment;
- visual impairment;
- emotional disturbance;
- orthopedic impairment;
- other health impairment;
- autism;
- specific learning disability;
- deaf-blindness;
- multiple disabilities;
- developmental delay; and
- traumatic brain injury.

To be consistent with the approach used in *Strategies to Promote Third Grade Reading Performance in Virginia*, "severe disability" was defined as including

- intellectual disabilities,
- hearing impairment,
- emotional disturbance,
- other health impairment,

- autism,
- specific learning disability,
- multiple disabilities,
- developmental delay, and
- traumatic brain injury.

Calculating Average English and Math Scores

For each school, averages were calculated of English and math SOL tests administered to certain grades. The specific method for calculating the average school English and math score changed from 2005 to 2006 because in 2006 the federal government required more grades to have tests administered, and starting in 2006, the number of students taking each test was recorded. Average English and math scores were calculated for all students, and for each subgroup of students generally consisting of over three percent of the student population at each school.

Elementary Schools. Specifically, average English and math scores of elementary schools were calculated as follows. From FY 2006 through FY 2011, elementary English scores were calculated as the weighted average of 3rd, 4th, and 5th grade reading test scores and 5th grade writing test scores, weighted by the number of students taking each test. Similarly, from FY 2006 through FY 2011, elementary math scores were calculated as the weighted average of 3rd, 4th, and 5th grade math test scores, weighted by the number of students taking each test. Sixth graders' test scores were not included because in some divisions 6th grade was in middle schools, when in others it was in elementary schools. However, in FY 2001 through 2005, 4th graders (and 6th graders) were not administered SOL tests, and there were no counts of the number of students taking each test available. So from FY 2001 through FY 2005 elementary English scores were calculated as the straight average of 3rd and 5th grade reading test scores and 5th grade writing test scores, and elementary math scores were calculated as the straight average of 3rd and 5th grade math test scores.

Middle Schools. Average middle school English and math scores were based on those of 8th graders in FY 2005 and before, and on a weighted average of those of 7th and 8th graders in FY 2006 and afterwards. Ninth graders' scores were not included in the middle school scores because in many divisions, 9th grade is in high school (when in some divisions it is in middle school). In particular, in FY 2006 and later, the average middle school English score was a weighted average of 7th and 8th graders' reading test scores and 8th graders' writing test scores (weighted according to the number of students taking each test); the average middle school math score

was a weighted average of 7th and 8th graders' math test scores (again weighted according to the number of students taking each test). But in FY 2005 and before, 7th graders were not administered SOL tests. So in FY 2005 and earlier, average English scores for middle schools were based on a straight average of 8th graders' reading and writing test scores, and 8th graders' average math scores represented the middle school's average math score.

High Schools. Average high school English test scores were based on an average of 11th graders' reading and writing test score (in FY 2006 and afterwards the average was weighted according to counts of the numbers of students taking each test). The average high school math score was based on an average of three end-of-course tests (for Algebra I, Geometry, and Algebra II). Again, in FY 2006 and afterwards the average was weighted according to counts of the numbers of students taking each test.

Division-wide Average Test Scores of Students Not in Year-round Schools

To compare the average English and math SOL scores of students in year-round schools with those of their counterparts who were in the same division but not in year-round schools, division-wide averages for students not in year-round schools were calculated as follows. In FY 2006 and afterwards, the division-wide average was simply a weighted average from non-year-round schools. The weights were determined by counts of the number of students taking each relevant test. However, in FY 2005 and earlier, these counts were not available. As a proxy to these counts, fall membership counts for each grade at each school for that year and an assumption were used. The assumption was that a constant proportion of students in a given grade at a given school who were there in the fall would be taking the relevant SOL test in the following spring, and that proportion is constant across all non-year-round schools in the division. This assumption was satisfactory for weighting school-wide average test scores in a division—big schools are weighted more than smaller schools in determining the division-wide average.

ANALYSIS OF TEST SCORE DATA

There were two approaches used to analyze the student performance data: (1) a within-year regression analysis (especially in FY 2009, the most recent year that had the most schools operating on a year-round schedule); and (2) a longitudinal analysis from FY 2001 to FY 2009 (or else, for those schools that were not on a year-round schedule during all of those years, of the year previous to when each school had a year-round schedule come into effect, plus the years when the year-round schedule was in effect).

Within-year Regression Analysis

Regression models were used to predict English and math SOL test scores, for year-round schools in FY 2009 and for schools with mandatory expanded instructional time in FY 2011. The regression models in FY 2009 were based on all schools not on a year-round schedule. The estimated parameters from these models were then applied to the year-round schools to predict the expected average test scores that would be expected if they were not on year-round schedules. The actual average test scores were then compared to the predicted test scores. Table E-1 shows the differences between the year-round schools' actual average test scores and their predicted average test scores in FY 2009.

Similarly, the regression models from FY 2011 were estimated from all schools in divisions without mandatory expanded instructional time (that is, operating at the State minimum requirement of 990 hours of instructional time per year). Estimated parameters from these models were then applied to those schools with mandatory expanded instructional time (that is, those that exceed the State minimum requirement). FY 2011 data was used because that was the most recent year for which SOL data was available, and the school divisions were asked primarily about their current practices regarding expanded instructional time.

The resulting predicted average test scores represent the levels that would be expected if schools in a given division did not have mandatory expanded instructional time, and actual average test scores were compared with the predicted test scores in schools with mandatory expanded learning time.

Table E-2 shows the numbers and percentages of schools with mandatory expanded instructional time whose actual average test scores were over ten or more points, within ten points, and under ten or more points from expectations.

Table E-1: Difference Between Actual and Predicted School-Level Average SOL Scores for Year-Round Schools (FY 2009) (% of students in each subgroup in parentheses)

Division	School	All Students		Economically Disadvantaged		LEP		Black		Hispanic		White		Asian	
		Eng.	Math	Eng.	Math	Eng.	Math	Eng.	Math	Eng.	Math	Eng.	Math	Eng.	Math
Elementary Schools															
Arlington	Barcroft	-12	-14	-16 (57%)	-22	-29 (59%)	-35	8 (14%)	-24	-12 (50%)	-24	9 (21%)	29	n.a. (3%)	n.a.
Fairfax	Dogwood	-3	-9	-10 (63)	-10	5 (46)	-14	-29 (16)	-27	8 (53)	-6	23 (15)	43	4 (9)	1
Fairfax	Franconia	-17	-9	-4 (26)	21	-1 (28)	-15	-3 (17)	31	-12 (19)	-27	-16 (34)	-22	-37 (22)	-34
Fairfax	Graham Rd	5	18	12 (80)	42	11 (48)	15	5 (14)	39	23 (64)	62	18 (4)	40	14 (16)	10
Fairfax	Timber Lane	-10	-18	-8 (52)	-14	-10 (40)	-13	-14 (10)	-19	-6 (44)	-19	8 (20)	-18	-2 (18)	-16
Fairfax	Glen Forest	-3	1	0 (66)	8	-5 (54)	-12	13 (16)	3	6 (37)	5	-30 (27)	-15	-8 (15)	-35
Fairfax	Parklawn	-5	11	7 (65)	22	1 (45)	5	5 (30)	14	2 (42)	19	-32 (13)	-20	-8 (11)	1
Fairfax	Annandale T.	-6	-8	-1 (67)	-4	-6 (51)	-5	10 (14)	17	0 (50)	-4	-21 (10)	-11	-1 (21)	-3
Alexandria	Mt Vernon	9	-16	-8 (60)	-27	-21 (49)	-54	12 (15)	-15	-4 (54)	-26	63 (26)	36	n.a. (3)	n.a.
Alexandria	Tucker	4	14	3 (53)	13	-2 (59)	9	21 (43)	15	0 (22)	21	-3 (17)	35	-9 (9)	11
Danville	Schoolfield	0	7	-6 (79)	-3	8 (4)	47	-2 (68)	2	-5 (5)	30	9 (27)	6	n.a. (1)	n.a.
Danville	Taylor	24	40	22 (81)	38	38 (6)	7	23 (82)	39	n.a. (3)	n.a.	31 (11)	49	-37 (4)	-44
Danville	Glenwood	4	30	0 (87)	20	-6 (8)	27	6 (54)	36	-6 (9)	24	-28 (37)	9	n.a. (0)	n.a.
Danville	Wilson	54	43	46 (92)	37	n.a. (0)	n.a.	57 (90)	48	n.a. (2)	n.a.	42 (8)	21	n.a. (0)	n.a.
Hampton	Cooper	-11	7	-8 (47)	17	n.a. (0)	n.a.	2 (82)	23	n.a. (2)	n.a.	-11 (15)	3	n.a. (1)	n.a.
Hampton	Wythe	-6	-12	-14 (63)	-21	n.a. (0)	n.a.	-10 (82)	-13	23 (4)	52	32 (12)	26	n.a. (2)	n.a.
Hampton	Aberdeen	-18	-13	-10 (78)	-21	n.a. (0)	n.a.	-11 (90)	-10	n.a. (3)	n.a.	-54 (6)	-23	n.a. (1)	n.a.
Hampton	Merrimack	-12	0	-7 (67)	-2	n.a. (0)	n.a.	0 (71)	24	-51 (4)	-82	-36 (24)	-32	n.a. (0)	n.a.
Hampton	Lee	-13	-7	1 (70)	-15	n.a. (1)	n.a.	2 (92)	-5	n.a. (2)	n.a.	-22 (6)	-23	n.a. (0)	n.a.
Hampton	Smith	-18	-19	-22 (56)	-18	n.a. (0)	n.a.	-18 (54)	-27	n.a. (3)	n.a.	-29 (43)	-36	n.a. (1)	n.a.
Hampton	Basset	5	-6	9 (70)	10	n.a. (0)	n.a.	3 (90)	-18	n.a. (1)	n.a.	1 (8)	-42	n.a. (0)	n.a.
Lynchburg	Bass	14	12	18 (72)	13	n.a. (0)	n.a.	22 (78)	18	n.a. (1)	n.a.	5 (19)	8	n.a. (0)	n.a.
Va. Beach	Seatack	4	9	9 (75)	10	n.a. (3)	n.a.	13 (45)	2	-24 (14)	-21	8 (33)	9	n.a. (2)	n.a.
Va. Beach	Plaza	4	0	11 (44)	1	n.a. (1)	n.a.	12 (33)	5	23 (10)	3`	-4 (47)	-4	n.a. (3)	n.a.
Va. Beach	Point O'View	-7	-1	2 (42)	14	n.a. (1)	n.a.	3 (28)	2	5 (9)	31	-4 (54)	14	n.a. (3)	n.a.
Va. Beach	Corporate L.	-10	0	6 (37)	23	n.a. (1)	n.a.	-4 (19)	8	-2 (8)	-8	-87 (62)	-3	n.a. (3)	n.a.
Middle Schools															
Fairfax	Glasgow	13	13	14 (59)	-21	3 (55)	-4	7 (12)	24	16 (42)	-1	-10 (26)	-16	13 (16)	22
Danville	Gibson	10	30	3 (72)	13	n.a. (3)	n.a.	8 (72)	23	n.a. (3)	n.a.	0 (22)	29	n.a. (0)	n.a.
Hampton	Spratley	-2	5	-9 (69)	-7	n.a. (0)	n.a.	-5 (76)	2	n.a. (3)	n.a.	-2 (20)	6	n.a. (0)	n.a.
High Schools															
Fairfax	Stuart	11	-5	1 (60)	-8	0 (47)	9	15 (10)	-12	13 (42)	-9	13 (27)	-3	10 (17)	4
Fairfax	Falls Church	-3	4	1 (48)	6	-5 (37)	11	10 (8)	17	9 (37)	3	-1 (28)	-5	-3 (23)	25

Note. "n.a." means "not available" because the number of students in that subgroup at a particular school was so low. Source: JLARC staff analysis of DOE data.

Table E-2: Actual Compared to Predicted Average SOL Test Scores for Schools With Mandatory Expanded Instructional Time (FY 2011)

	Elementary		Middle		High	
	English	Math	English	Math	English	Math
All Students						
Number of Schools						
Actuals Over 10 Points or More than Predicted	88	121	24	47	17	20
Actuals Were Within 10 Points of Predicted	256	181	89	42	67	65
Actuals Under 10 Points or More than Predicted	151	193	24	48	40	41
Total	**495**	**490**	**137**	**137**	**124**	**126**
Percentage of Schools						
Actuals Over 10 Points or More than Predicted	18%	24%	18%	34%	14%	16%
Actuals Were Within 10 Points of Predicted	52%	37%	65%	31%	54%	52%
Actuals Under 10 Points or More than Predicted	31%	39%	18%	35%	32%	33%
Economically Disadvantaged						
Number of Schools						
Actuals Over 10 Points or More than Predicted	104	122	25	53	19	19
Actuals Were Within 10 Points of Predicted	237	170	88	34	65	55
Actuals Under 10 Points or More than Predicted	153	202	24	50	40	52
Total	**494**	**494**	**137**	**137**	**124**	**126**
Percentage of Schools						
Actuals Over 10 Points or More than Predicted	21%	25%	18%	39%	15%	15%
Actuals Were Within 10 Points of Predicted	48%	34%	64%	25%	52%	44%
Actuals Under 10 Points or More than Predicted	31%	41%	18%	37%	32%	41%
Black Students						
Number of Schools						
Actuals Over 10 Points or More than Predicted	193	138	26	40	18	16
Actuals Were Within 10 Points of Predicted	113	131	78	36	60	55
Actuals Under 10 Points or More than Predicted	170	207	30	57	41	51
Total	**476**	**476**	**134**	**133**	**119**	**122**
Percentage of Schools						
Actuals Over 10 Points or More than Predicted	41%	29%	19%	30%	15%	13%
Actuals Were Within 10 Points of Predicted	24%	28%	58%	27%	50%	45%
Actuals Under 10 Points or More than Predicted	36%	44%	22%	43%	53%	42%
Hispanic Students						
Number of Schools						
Actuals Over 10 Points or More than Predicted	123	125	45	57	22	22
Actuals Were Within 10 Points of Predicted	152	123	55	28	41	53
Actuals Under 10 Points or More than Predicted	199	226	36	50	55	48
Total	**474**	**474**	**136**	**135**	**118**	**124**
Percentage of Schools						
Actuals Over 10 Points or More than Predicted	26%	26%	33%	42%	19%	18%
Actuals Were Within 10 Points of Predicted	32%	26%	40%	21%	35%	43%
Actuals Under 10 Points or More than Predicted	42%	48%	27%	37%	47%	39%
Limited English Proficient						
Number of Schools						
Actuals Over 10 Points or More than Predicted	143	153	61	68	28	37
Actuals Were Within 10 Points of Predicted	108	91	26	16	38	45
Actuals Under 10 Points or More than Predicted	168	178	38	39	34	23
Total	**419**	**422**	**125**	**123**	**100**	**105**
Percentage of Schools						
Actuals Over 10 Points or More than Predicted	34%	36%	49%	55%	28%	35%
Actuals Were Within 10 Points of Predicted	26%	22%	21%	13%	38%	43%
Actuals Under 10 Points or More than Predicted	40%	41%	30%	32%	34%	22%

Source: JLARC staff analysis of DOE data.

The regression models used in this study are based on the regression and correlation analyses done for *Strategies to Promote Third Grade Reading Performance in Virginia* and *Review of Factors and Best Practices Associated with School Performance in Virginia*. A key finding in these studies was that certain demographic differences in the student populations needed to be taken into account when comparing average test scores from one school to another. Consequently, all regression models used in this study to predict expected test scores control for certain demographic differences. For example, the regression models predicting the school-level average FY 2009 English and math SOL scores for all elementary students look like:

Eng_SCORE_PREDICTION = 459.6803
- -0.4491 (% economically disadvantaged students)
- -0.3313 (% on limited English proficient status)
- -0.1707 (% black students)
- +0.3203 (% adults with at least college degree)
- +0.6769 (% female students)
- -0.1386 (% severely disabled students)

MATH_SCORE_PREDICTION = 497.1640
- -0.4928 (% economically disadvantaged students)
- -0.3237 (% on limited English proficient status)
- -0.2280 (% black students)
- -0.0209 (% adults with at least college degree)
- +0.5470 (% female students)
- -0.0801 (% severely disabled students)

All percentage variables were on a scale of 0 to 100. So, for example, if a school had 50 percent of its students classified as "economically disadvantaged," its predicted average English test score would be 0.4491*50, or 22.455, points lower (holding everything else constant to the school-wide average).

The variable "% adults with at least college degree" is a proxy variable for parental education. Because the education level of the parents of students at the school could not be directly observed, the best proxy variable available for FY 2009 was from the 2000 Census: the proportion of adults age 25 and older in the locality who had received a college degree or higher. t makes a substantial contribution in predicting average English test scores—for every percentage point it adds about .32 points to the predicted English scores, and it ranges from about 2 to 64 percentage points. At first examination its negative coefficient for predicting the average math score appears counterintuitive. But the coefficient is so small

that in most cases it made close to zero difference in predicting a school's average math score.

There was a choice between including the percentage of LEP students and the percentage of Hispanic students in the regression models. The two variables were highly correlated, and having both in the regression models at the same time produced counterintuitive results. Because a regression model with percentage of LEP students accounted for a slightly higher amount of variability in SOL scores (that is, a slightly higher R-square) compared to one with percentage of Hispanic students, and because LEP was used as an independent variable in the school-level regression models of the previous *Third Grade Reading Proficiency* study, percentage of LEP students was chosen as the independent variable.

Similar regression models were constructed to predict the average SOL scores of subgroups of students as well.

Longitudinal Analysis

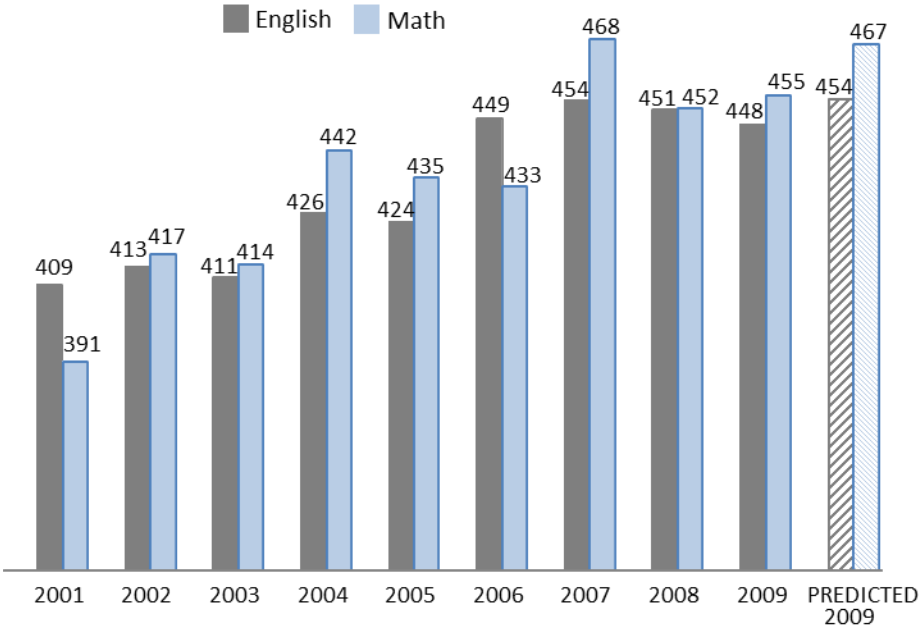
Examining absolute levels of average SOL scores at one snapshot in time is part of the picture. Examining how these scores may have been changing over time, especially over the years when year-round schedules were in effect, is another part.

One way to see how the average SOL test scores at a year-round school are changing when the year-round schedule was in effect is to plot them over time. For example, Figure E-1 shows the average test scores of all students at Wythe Elementary in Hampton. Wythe was last on a traditional schedule in FY 2001 (when the State School Board first approved Hampton's application to allow Wythe to move to a year-round schedule). Compared to itself in previous years, Wythe appears to have been steadily improving its SOL scores during the years it was on a year-round schedule (although in FY 2009 its test scores were still below the levels that were predicted by the regression model).

However, this effect extends to all of Hampton. As shown in Figure E-2, SOL scores were improving over those years on average across all elementary schools in Hampton that were still on a traditional schedule as well. So now the key question becomes: on average, did the students at Wythe improve their test scores over the years at a faster rate than students in Hampton at elementary schools on a traditional schedule?

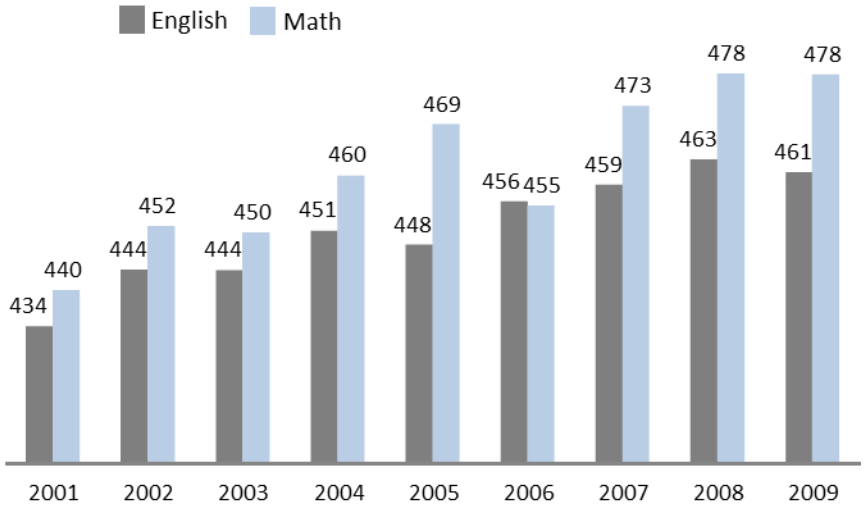
A way to address this question is to observe the difference between the average test scores of students at the elementary schools in Hampton on a traditional schedule and those of their counterparts at Wythe, and see how these differences change over the year. For

Figure E-1: Wythe Elementary School in Hampton: Average English and Math SOL Scores of All Students (Waiver for year-round schedule approved in FY 2001)



Source: JLARC staff analysis of DOE SOL data.

Figure E-2: Average SOL Scores of All Students in Elementary Schools in Hampton on Traditional Calendar Schedules



Source: JLARC staff analysis of DOE SOL data.

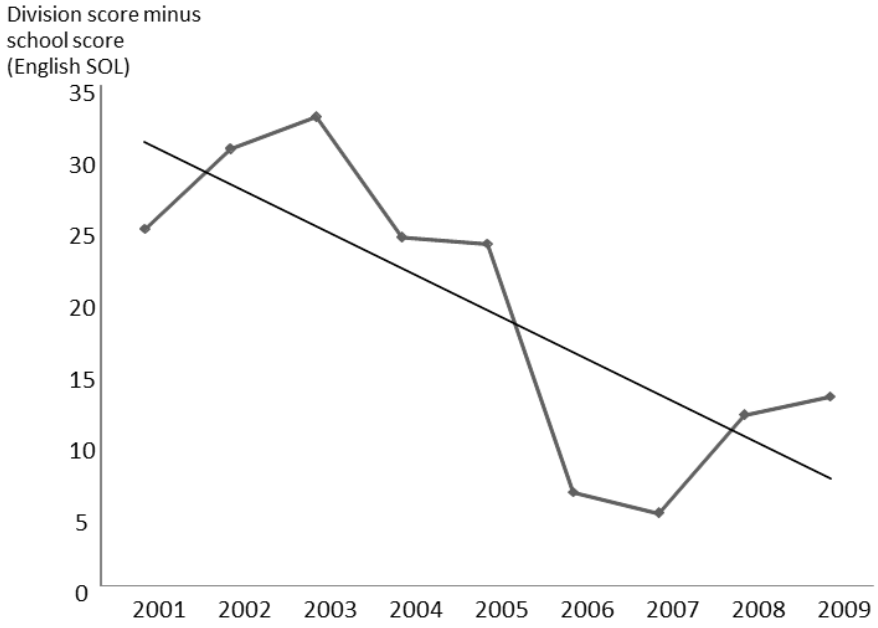
example, in FY 2001 the students at Wythe had English test scores that were lower by 25 points and math scores lower by 49 points in FY 2001 (the year before Wythe adopted a year-round schedule). Observing whether these differences have grown or shrunk over subsequent years would indicate whether students at Wythe have on average tended to improve at a slower or faster rate than other students in Hampton.

Figures E-3 and E-4 show that the differences in English and math SOL test scores between students at Wythe and other schools in Hampton on traditional calendars have tended to become smaller from FY 2001 to FY 2009. To summarize the trends, a trend line was drawn, using the line that minimizes to sum of squared errors from the last year before the school was on a year-round schedule up to FY 2009. (Some schools in Hampton were on a year-round schedule before FY 2001; however, because SOL test score data before FY 2001 was not available from DOE, the longest trends that could be examined were nine years in length—from FY 2001 to FY 2009). If the trend line had a negative slope, that indicated that students at a given year-round school tended to improve SOL test scores on average at a faster rate compared to their counterparts in the same division at schools following a traditional schedule. At the same time, schools with a trend line with a positive slope on average tended to have differences growing over time—other schools in the division on average tended to have faster improvement in SOL scores than the school on a year-round schedule.

Therefore, the more complete story of Wythe Elementary and academic achievement is two-fold: the regression analysis from FY 2009, and the longitudinal analysis. According to the regression analysis snapshot from FY 2009 SOL test scores, academic performance at Wythe on average was about six to 12 points, or about one to three percent, below expectations. But when examining test scores longitudinally, average test scores when Wythe was on a year-round schedule improved faster than at other schools in Hampton on traditional schedules.

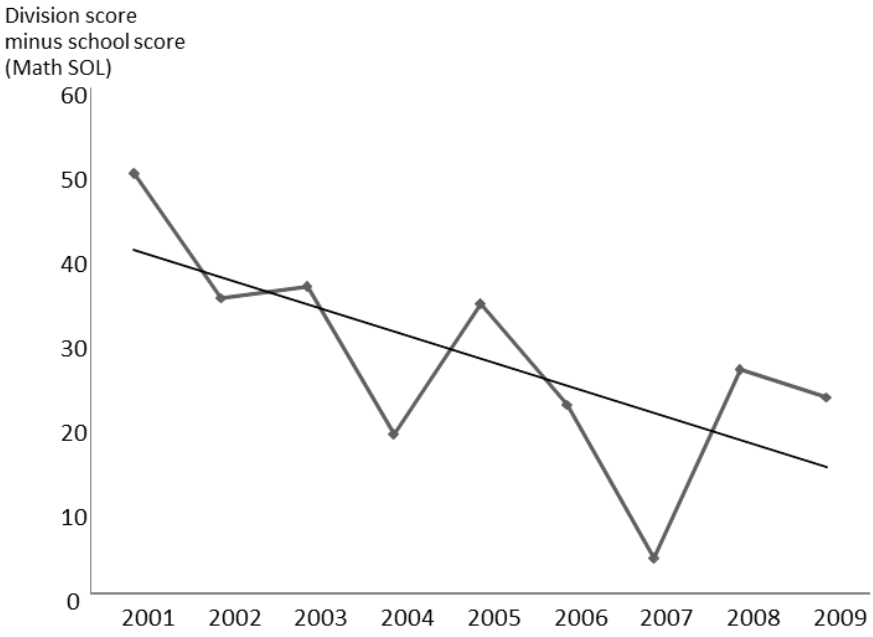
Calculations comparable to those made for Wythe Elementary in Figures E-1 to E-4 were made for all other schools on a year-round schedule in FY 2009. Similarly, calculations were made not only for all students, but for all sizable subgroups at each school as well. (A "sizable subgroup" has more than three percent of the student population at a given school, so that the average test scores would be reflecting more than the test scores of an identifiable small number of individuals.)

Figure E-3: Average English SOL Test Scores: Wythe Elementary Versus Traditional Calendar Elementary Schools in Hampton



Source: JLARC staff analysis of DOE SOL data.

Figure E4: Average SOL Math Test Scores: Wythe Elementary Versus Traditional Calendar Elementary Schools in Hampton



Source: JLARC staff analysis of DOE SOL data.

Table E-3 summarizes the findings to the question: Have average SOL English and math test scores at year-round schools improved at a faster rate than the other schools in the division that were on traditional schedules? Schools that had a trend line with a negative slope received a "yes," and those whose trend lines did not have a negative slope received a "no."

A trend line can be considered as showing the average rate of change in the individual years' differences in SOL test scores. A trend line was determined by identifying the line that minimized the sum of squared errors – that is, the line with the least distance between it and the actual individual years' differences. f a trend line had a negative slope, it meant that a given year-round school's average test scores tended to increase faster than those of schools in the division on traditional schedules. Conversely, if a trend line had a positive slope, it meant that the average test scores from other schools in the division on traditional schedules tended over the years to increase faster than those of the given year-round school.

Table E-3: ARE TEST SCORES AT YEAR-ROUND SCHOOLS IMPROVING AT A FASTER RATE THAN AT SCHOOLS IN THE SAME DIVISION ON TRADITIONAL SCHEDULES?

				Subgroups:					
Division	**School**	**Test**	**All Students**	**Econ Disadv.**	**LEP**	**Black**	**Hispanic**	**White**	**Asian**
	Elementary Schools								
Arlington County	Barcroft	Eng	no	no	no	yes	no	no	yes
Arlington County	Barcroft	Math	no	no	no	no	no	no	no
Fairfax County	Dogwood	Eng	no*	no	yes	no	yes	yes	no
Fairfax County	Dogwood	Math	yes	yes	yes	yes	yes	yes	yes
Fairfax County	Franconia	Eng	no	yes	yes	no	yes	no	no
Fairfax County	Franconia	Math	no	no	yes	yes	yes*	no	no
Fairfax County	Graham Road	Eng	yes	yes	yes	yes	yes	yes	yes
Fairfax County	Graham Road	Math	yes	yes	yes	yes	yes	yes	yes
Fairfax County	Timber Lane	Eng	no	no	yes	no	yes	no	no
Fairfax County	Timber Lane	Math	no	no	yes	no	yes	no	no
Fairfax County	Glen Forest	Eng	no	yes	yes	yes	yes	no	yes*
Fairfax County	Glen Forest	Math	yes	yes	yes	yes	yes	no*	no
Fairfax County	Parklawn	Eng	no	yes	yes	yes	yes	no	no
Fairfax County	Parklawn	Math	yes	yes	yes	yes	yes	no*	yes
Fairfax County	Annandale Terrace	Eng	yes	yes	yes	yes	yes	yes	yes
Fairfax County	Annandale Terrace	Math	yes	yes	yes	yes	yes	yes	yes
Alexandria City	Mount Vernon	Eng	yes	no	yes	yes	yes	yes	no
Alexandria City	Mount Vernon	Math	no	no	no	no	no	no	no
Alexandria City	Samuel W. Tucker	Eng	no	no	yes*	yes	yes	no	no
Alexandria City	Samuel W. Tucker	Math	no	no	no	no*	no	no	no
Danville City	Schoolfield	Eng	no	no		no		no	
Danville City	Schoolfield	Math	no	no		no		no	
Danville City	Irvin W. Taylor	Eng	yes	yes		yes		no	
Danville City	Irvin W. Taylor	Math	no	no		yes		yes	
Danville City	Glenwood	Eng	yes	no		yes		no	
Danville City	Glenwood	Math	no	yes*		yes		no	
Danville City	Woodrow Wilson	Eng	yes	yes		yes		yes*	
Danville City	Woodrow Wilson	Math	yes	no		yes		no	
Hampton City	William Mason Cooper	Eng	no	yes		yes		no	
Hampton City	William Mason Cooper	Math	yes	yes		yes		yes	
Hampton City	Wythe	Eng	yes	yes		yes		yes	
Hampton City	Wythe	Math	yes	yes		yes		yes	
Hampton City	Aberdeen	Eng	no	yes		yes		no	
Hampton City	Aberdeen	Math	yes	yes		yes		no	
Hampton City	Merrimack	Eng	no	yes		yes*		no	
Hampton City	Merrimack	Math	yes	yes		yes		no	
Hampton City	Robert E. Lee	Eng	no	yes		no		yes	

Division	School	Test	All Students	Econ Disadv.	LEP	Black	Hispanic	White	Asian
Hampton City	Robert E. Lee	Math	yes	no		no		yes	
Hampton City	Captain John Smith	Eng	no	no		no		no	
Hampton City	Captain John Smith	Math	no	no		no		no	
Hampton City	A.W.E. Bassette	Eng	yes	yes		yes		yes	
Hampton City	A.W.E. Bassette	Math	yes	yes		no		yes	
Lynchburg	Bass	Eng	yes	yes		yes		yes	
Lynchburg	Bass	Math	yes	yes		no		yes	
Va. Beach City	Seatack	Eng	no	no		yes	no	no	
Va. Beach City	Seatack	Math	yes	no		yes	no	no	
Va. Beach City	Plaza	Eng	yes	yes		yes	yes	no	
Va. Beach City	Plaza	Math	no	no		yes	yes	no	
Va. Beach City	Point O' View	Eng	yes*	yes		yes	no	no	
Va. Beach City	Point O' View	Math	no	no		yes	yes	yes	
Va. Beach City	Corporate Landing	Math	no	yes*		yes	no	no	
	Middle Schools								
Fairfax County	Ellen Glasgow	Eng	no	yes	no*	yes	yes	no	yes
Fairfax County	Ellen Glasgow	Math	no	no	no	yes	no	no	yes
Danville City	Edwin A. Gibson	Eng	no	no		no		yes	
Danville City	Edwin A. Gibson	Math	yes	no		yes		yes	
Hampton City	C. Vernon Spratley e	Eng	yes	yes		yes		yes	
Hampton City	C. Vernon Spratley	Math	no	no		no		no	
	High Schools								
Fairfax County	J.E.B. Stuart	Eng	no	no	no	no	no	no	no
Fairfax County	J.E.B. Stuart	Math	yes*	no	no	no	no	no	no
Fairfax County	Falls Church	Eng	no	no	no	yes	yes	no	no
Fairfax County	Falls Church	Math	yes	no	no	yes	yes	no	yes
TOTAL Eng			31	31	13	31	17	31	13
TOTAL Math			31	31	13	31	17	31	13
TOTAL YESES (Eng)			13	19	9	23	13	11	5
TOTAL YESES (Math)			17	13	7	20	9	10	6
PERCENT YESES (Eng)			42%	61%	69%	74%	76%	35%	38%
PERCENT YESES (Math)			55%	42%	54%	65%	53%	32%	46%
PERCENT YESES (Eng. and Math)			48%	52%	62%	69%	65%	34%	42%

Note: **"*"** means that slope is nearly zero.

Source: JLARC staff analysis of DOE data.

Appendix F

School Start-Date Laws in Virginia and Other States

Virginia Is One of 14 States With State-Level Restrictions on School Start Dates

Of the 14 states that regulate the beginning or end of local school calendars, Virginia is one of only three states that require schools to begin after Labor Day. However, Virginia has many more waiver exceptions than other states with regulations allowing schools or school divisions to begin academic instruction before Labor Day. Most states regulating the beginning of the academic year allow student instruction to begin in the weeks leading up to the first week of September, with a plurality allowing school starts one or more weeks before the Labor Day holiday. Only one state currently regulates when the academic calendar must end.

Virginia Schools Without Waiver Begin and End Later Than Schools in Other Southeastern States, While Starts of Schools With Waivers Are Similar

Virginia schools without pre-Labor Day waivers appear to begin and end the academic year at later dates than schools in other southeastern states. However, Virginia schools that have pre-Labor Day waivers begin and end the school year at similar dates as schools in other states within the region, even those in which the state regulates the beginning and/or end of the school year.

Table F-1 provides a brief sample of school start dates in states with and without state laws governing school starts. For example, Greensville County (South Carolina) and Lynchburg City schools have identical start and end dates, and both are in states that regulate school starting dates. Whereas Lynchburg City is allowed to start because of the inclement weather waiver it has received, South Carolina schools are by law allowed to begin academic instruction in the third week of August. In contrast, Fairfax County schools begin instruction more than two weeks later, and end the school year a week later, than either Greensville County or Lynchburg City.

Table F-1: Virginia Schools Without Pre-Labor Day Waivers Start and End Academic Instruction at Later Times Than Schools in Other Southeastern States

State	School division	School start date (2011-2012)	School end date (2011-2012)	State regulation of school start (see Table F-2)
South Carolina	Greensville County	August 22nd	June 6th	Yes
Florida	Broward County	August 22nd	June 7th	Yes
Maryland	Montgomery County	August 27th	June 14th	No
Georgia	Gwinnet County	August 7th	May 23rd	No
North Carolina	Charlotte-Mecklenburg	August 25th	June 8th	Yes (division received inclement weather waiver)
Virginia	Lynchburg City	August 22nd	June 6th	Yes (division received inclement weather waiver)
Virginia	Fairfax County	September 6th	June 15th	Yes

Source: JLARC staff analysis.

Table F-2: State-Level Statutes Regarding School Start Dates

State	Start date regulation	Exceptions to start date requirements
Alabama	School may not start before August 20th and must end by May 24th.	None.
Arkansas	School must not start before August 19th and must begin no later than August 26th. Labor Day must be observed as a holiday.	None.
Florida	Instruction may not begin more than 14 days prior to Labor Day.	None.
Iowa	School may not begin earlier than the week in which September 1st falls, but may start no later than first Monday in December.	None.
Michigan	School may begin any time after Labor Day.	None.
Minnesota	School may begin any time after Labor Day.	Department of Education may grant earlier start to districts.
Mississippi	School may begin on or after the 3rd Monday in August (effective for 2014-15 school year).	None.
Missouri	School may begin no more than 10 calendar days prior to the first Monday in September.	School may begin earlier if local school board gives notice of a public meeting to discuss an earlier opening, and majority of the local school board votes in favor. This procedure must be followed each year the schools begin more than 10 days before first Monday in September.
North Carolina	School may begin any time after September 1st.	Waiver exceptions exist to allow earlier starts based upon a history of school missed due to inclement weather.
South Carolina	Schools may not begin before the third week in August.	None.
Texas	School may not begin until fourth week of August.	None.
Virginia	School year may begin after Labor Day.	Waiver exceptions exist to earlier starts for reasons of inclement weather, coordination with surrounding school divisions with a pre-Labor Day waiver, and for experimental or innovative education programs.
West Virginia	School year may not start before August 26th and must end by June 28th.	None.
Wisconsin	School year may begin after September 1st.	None.

Source: JLARC staff

Appendix G

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Appendix H

Agency Response

As part of an extensive validation process, State agencies and other entities involved in a JLARC assessment are given the opportunity to comment on an exposure draft of the report. JLARC staff provided an exposure draft of this report to the Department of Education. Appropriate technical corrections resulting from their comments have been made in this version of the report.

COMMONWEALTH of VIRGINIA

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October 4, 2012

Mr. Glen S. Tittermary
Director
Joint Legislative Audit and Review Commission
General Assembly Building, Suite 1100
Richmond, Virginia 23219

Dear Mr. Tittermary:

Thank you for giving us the opportunity to review the exposure draft report, *Review of Year-Round Schools*, and for incorporating our technical comment into the final report. We have no further comments.

If you have questions or need any additional information, please contact Anne Wescott, assistant superintendent for policy and communications, at (804) 225-2403 or by e-mail at Anne.Wescott@doe.virginia.gov.

Sincerely,

Patricia I. Wright

ADW/kfg

C: The Honorable Laura Fornash
Secretary of Education

OCT 09 2012

COMMONWEALTH of VIRGINIA

Office of the Governor

Laura W. Fornash
Secretary of Education

October 9, 2012

Glen Tittermary
Director, JLARC

Dear Glen Tittermary,

Thank you for the invitation to participate in the JLARC meeting on October 9, 2012. Unfortunately, I am unable to join you due to a previously scheduled commitment out of town. I would like to commend you and your entire team for the comprehensive findings around the impact of year round schools. I look forward to learning more about your work and the types of conversations this report generates from legislators.

Sincerely,

Laura W. Fornash

Laura W. Fornash

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