Web Appendix for:

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"The Impact of Year-Round Schooling on Academic Achievement: Evidence from Mandatory School Calendar Conversions"

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In this appendix we show some results referred to in the paper without accompanying tables. The first robustness check we show here shows the main results from the paper when "modified" school calendars are excluded from the sample. The results are very similar to those we report.

Robustness Check 1. Estimates of Year-Round Schooling on Math and Reading Test Scores without Modified Calendar Schools

	Test Score Levels			Test Score Growth		
	(1)	(2)	(3)	(4)	(5)	(6)
A. Math Scores						
Year-Round	0.072 **	0.047 **	-0.006	0.026	0.023	-0.010
	(0.035)	(0.017)	(0.028)	(0.016)	(0.024)	(0.051)
B. Reading Scores						
Year-Round	0.040	0.036 **	0.014	0.013	0.013	-0.017
	(0.027)	(0.012)	(0.023)	(0.010)	(0.014)	(0.033)
Student Fixed Effects	No	Yes	Yes	No	Yes	Yes
School Fixed Effects	No	No	Yes	No	No	Yes

Notes:

a. All models include grade/year fixed effects and time-varying school characteristics.

b. Models without individual fixed effects include controls for gender, race, and parents' education. All models include school controls (crowding, student-to-teacher ratio, elementary, middle, class size, number of students, % teachers fully licensed, % teachers with 0-3 yrs experience, % teachers with 4-10 yrs experience, and % teacher turnover).

c. Robust standard errors, clustered at the school level, are in parenthesis. * and ** denote statistical significance at the 10 and 5 percent levels, respectively.

The second set of results we show are estimates of the impact of year-round schooling leaving out the 22 schools that switch from a traditional calendar to the year-round calendar in the timeframe that we observe. These estimates rely on between school and within student variation, since they include student fixed effects, and thus they ignore the natural experiment in Wake County. The estimates very similar to those we report in the paper, which are shown in columns (1) and (3).

Robustness Check 2. Estimates of Year-Round Schooling on Math and Reading Test Scores without 22 Converted Schools

	Test Score Levels		Test Score Growth	
	(1)	(2)	(3)	(4)
A. Math Scores				
Year-Round	0.046 **	0.045 **	0.026	0.026
	(0.016)	(0.019)	(0.024)	(0.028)
B. Reading Scores				
Year-Round	0.036 **	0.036 **	0.017	0.031 *
	(0.012)	(0.011)	(0.015)	(0.018)
22 Converted Schools	Yes	No	Yes	No
Number of Observations	159,955	131,906	133,372	111,453
Number of Students	50,656	45,615	50,656	45,080
Number of students in both YR & Trad	10,835	3,497	7,186	2,493

Notes:

a. All models include student fixed effects, grade/year fixed effects and time-varying school characteristics.

b. Models without individual fixed effects include controls for gender, race, and parents' education.
All models include school controls (crowding, student-to-teacher ratio, elementary, middle, class size, number of students, % teachers fully licensed, % teachers with 0-3 yrs experience, % teachers with 4-10 yrs experience, and % teacher turnover).

c. Robust standard errors, clustered at the school level, are in parenthesis. * and ** denote statistical significance at the 10 and 5 percent levels, respectively.

The third set of results we show uses a couple of alternate measures of school crowding. First, the original estimates are shown in the first row, which use the districts formula for comparing crowding levels across different calendar types. The second row shows the same results without any crowding control, and the third row shows results which apply a pre-policy measure of crowding for all time periods. The variation in results across these specifications is small.

Robustness Check 3. Estimates from fully saturated model (student and school fixed effects) with alternative measures of crowding

	Math		Reading	
	Levels	Growth	Levels	Growth
A. Original Estimates	-0.002	-0.003	0.016	-0.012
	(0.028)	(0.052)	(0.023)	(0.032)
Number of observations	*159,955*	*133,372*	*159,955*	*133,372*
B. No control for crowding	0.004	0.008	0.010	-0.003
	(0.022)	(0.050)	(0.021)	(0.026)
Number of observations	*159,955*	*133,372*	*159,955*	*133,372*
C. Pre-Policy Measure of Crowding	0.011	-0.001	0.017	0.008
	(0.023)	(0.054)	(0.021)	(0.027)
Number of observations	*130,928*	*108,218*	*130,928*	*108,218*

The last set of results we illustrate here includes our main estimates with an included lagged test score. The results are somewhat higher in some cases, but still within the range that we report in the paper.

Robustness Check 4. Estimates from fully saturated model (student and school fixed effects) with lagged test score included as a control

	Math		Reading	
	Levels	Growth	Levels	Growth
A. Original Estimates	-0.002	-0.003	0.016	-0.012
	(0.028)	(0.052)	(0.023)	(0.032)
B. Lagged Test Score Included	0.014	0.015	0.013	0.013
	(0.031)	(0.031)	(0.030)	(0.030)