



# Shrewsbury Public Schools

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Brian L'Heureux  
Director of Information Technology

## **Recommendation for Continuing 1:1 Device Access for K-4 Students**

To: School Committee  
From: Brian L'Heureux  
Re: Recommendation for Continuing 1:1 Device Access for K-4 Students  
Date: December 10, 2020

In response to the COVID-19 pandemic, the district expanded its existing grade 5-12 1:1 iPad program to all students in kindergarten through grade 4 in order to allow for equitable and reliable technology access for students to facilitate remote and hybrid learning. This was done using a combination of federal COVID grant funding and the reuse of existing older devices that were either turned in by graduating seniors and rising freshmen or were reallocated from devices that had previously been assigned to elementary classrooms and shared iPad carts.

Our administrative team is recommending that the district continue to provide iPads to students in kindergarten through grade 4 in future years, in addition to continuing the grade 5 through 12 program.

### **Background**

The use of 1:1 technology in our middle and high schools has allowed students to easily access information, create content for authentic audiences, and collaborate more easily with teachers and peers.

Prior to the start of the pandemic, students in kindergarten through grade 2 had access to a limited quantity of shared classroom iPads or shared iPad carts. In grades 3 and 4, students had access to iPads on a 1:2 basis in classrooms, where two students shared one iPad. When asked, teachers named limited access to devices as a barrier to more frequent use. No iPads were taken home by the students at the K-4 level.

During the course of the pandemic, SPS teachers have reported increased levels of comfort with the use of technology due to the need to rapidly adopt its use for remote learning. Elementary teachers surveyed indicated a number of benefits to the use of 1:1 technology in lower grades, including:

- Additional ability for students to practice work at home using web-based reading and math programs such as Freckle and ST Math
- Ability for teachers to more easily customize lessons for individual students
- Additional technology supports are more easily available to students with special needs

- Ability for students to document their work with manipulatives using photos
- Equitable access to digital books for students who many not have access to books at home
- Less time spent on logging in and out of resources due to iPads not being shared
- More flexibility with groupings; no need to wait to use shared iPads

The presence of 1:1 technology in all elementary grades has greatly increased the efficiency with which students can take part in formative assessments such as the Star assessment. This has resulted in less class time needing to be devoted to administering these assessments.

Additionally, research has shown the potential for increased ELA test performance for students who were provided with access to 1:1 technology at the elementary level<sup>1</sup>.

Teachers did mention screen time for younger students as a concern. As we move out of the pandemic, we will need to be sure that iPads are considered to be one of the many tools (both technological and non-technological) that are used in the classroom.

### **Recommendation**

Our recommendation is to continue the provision of 1:1 iPads for all students in kindergarten through grade 4. To accomplish this, we would leverage a combination of existing iPads, new iPads purchased as part of the appropriated budget, and new iPads purchased as part of the Beal School building project.

We are recommending keeping the elementary and middle/high school iPad programs using separate sets of devices, as we would issue lower capacity iPad models at the elementary level. Students would continue to receive new iPads in grades 5 and 9 for use during their four years at each level.

For FY 2022, we recommend purchasing new iPads for grades 1 and 3, which they would use for the remainder of their time at the elementary level. The iPads that were purchased for this year's grade 4 using COVID funding would be reallocated to grade 2, and those students would keep those for the remainder of their elementary time. Kindergarten iPads would be reallocated from current kindergarten students to next year's kindergarten students.

For FY 2023, we recommend purchasing new iPads for kindergarten and grade 1, which they would use for the remainder of their time at the elementary level. All other elementary students would continue to use their existing iPads from the previous school year. iPads that were in use for less than four years would be reallocated to non-1:1 uses such as staff and special education.

For FY 2024 and future years, we recommend purchasing new iPads for kindergarten students, which they would keep and use for their five years at the elementary level.

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<sup>1</sup> Bebell, Damian, and Laura M. O'Dwyer. "Educational Outcomes and Research from 1:1 Computing Settings." *The Journal of Technology, Learning, and Assessment*, vol. 9, no. 1, 2010. <https://files.eric.ed.gov/fulltext/EJ873675.pdf>. Accessed December 20, 2020.

Table 1 below illustrates our current plan with respect to reuse and purchase of iPads for the next four years.

**Table 1:** iPad purchase/reuse planning through FY 2025

Key: The first number is that cohort's grade level that year, the second item is the iPad model, the third number is the iPad storage capacity in GB. Green-shaded cells denote new iPad purchases.

|                      | 2020-2021          | 2021-2022          | 2022-2023          | 2023-2024          | 2024-2025           |
|----------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| <b>Class of 2021</b> | 12/Keep iPad 5/128 |                    |                    |                    |                     |
| <b>Class of 2022</b> | 11/Keep iPad 6/128 | 12/Keep iPad 6/128 |                    |                    |                     |
| <b>Class of 2023</b> | 10/Keep iPad 6/128 | 11/Keep iPad 6/128 | 12/Keep iPad 6/128 |                    |                     |
| <b>Class of 2024</b> | 9/New iPad 7/128   | 10/Keep iPad 7/128 | 11/Keep iPad 7/128 | 12/Keep iPad 7/128 |                     |
| <b>Class of 2025</b> | 8/Keep iPad 5/128  | 9/New iPad 8/128   | 10/Keep iPad 8/128 | 11/Keep iPad 8/128 | 12/Keep iPad 8/128  |
| <b>Class of 2026</b> | 7/Keep iPad 6/128  | 8/Keep iPad 6/128  | 9/New iPad 9/128   | 10/Keep iPad 9/128 | 11/Keep iPad 9/128  |
| <b>Class of 2027</b> | 6/Keep iPad 6/128  | 7/Keep iPad 6/128  | 8/Keep iPad 6/128  | 9/New iPad 10/128  | 10/Keep iPad 10/128 |
| <b>Class of 2028</b> | 5/New iPad 7/128   | 6/Keep iPad 7/128  | 7/Keep iPad 7/128  | 8/Keep iPad 7/128  | 9/New iPad 11/128   |
| <b>Class of 2029</b> | 4/New iPad 7/32    | 5/New iPad 8/128   | 6/Keep iPad 8/128  | 7/Keep iPad 8/128  | 8/Keep iPad 8/128   |
| <b>Class of 2030</b> | 3/New iPad 7/32    | 4/Keep iPad 7/32   | 5/New iPad 9/128   | 6/Keep iPad 9/128  | 7/Keep iPad 9/128   |
| <b>Class of 2031</b> | 2/Reuse Air 2/64   | 3/New iPad 8/32    | 4/Keep iPad 8/32   | 5/New iPad 10/128  | 6/Keep iPad 10/128  |
| <b>Class of 2032</b> | 1/Reuse Air 2/64   | 2/Reuse iPad 7/32  | 3/Keep iPad 7/32   | 4/Keep iPad 7/32   | 5/New iPad 11/128   |
| <b>Class of 2033</b> | K/Reuse 5/6/32     | 1/New iPad 8/32    | 2/Keep iPad 8/32   | 3/Keep iPad 8/32   | 4/Keep iPad 8/32    |
| <b>Class of 2034</b> |                    | K/Reuse 5/6/32     | 1/New iPad 9/32    | 2/Keep iPad 9/32   | 3/Keep iPad 9/32    |
| <b>Class of 2035</b> |                    |                    | K/New iPad 9/32    | 1/Keep iPad 9/32   | 2/Keep iPad 9/32    |
| <b>Class of 2036</b> |                    |                    |                    | K/New iPad 10/32   | 1/Keep iPad 10/32   |
| <b>Class of 2037</b> |                    |                    |                    |                    | K/New iPad 11/32    |

Due to the timing of the Beal School building project, we have a unique opportunity to leverage building project funding for the purchase of iPads for Beal students. Our recommendation is to purchase iPads for all Beal students for the 2021-2022 school year as part of the FF&E portion of the project. This will reduce the number of iPads that will need to be purchased using the appropriated budget considerably, as Beal will be our largest elementary school.

### Financial Impact

Our recommendation is to continue our practice of purchasing 1:1 iPads on a four-year lease. Table 2 shows the estimated budget impact of shifting to a 1:1 technology model at the elementary level. For FY 2022 and FY 2023, we would be adding two additional 4-year iPad leases. After that, we would be adding one additional elementary lease per year. After the initial leases executed in FY

2022 and FY 2023 have run their course, the “steady state” at the elementary level will be to have four concurrent lease payments with an approximate total of \$132,000 per year.

Continuing with 1:1 at the elementary level will, in the short term, eliminate the need for a lease to maintain a 5-year replacement cycle of non-1:1 iPads. This is reflected in the “Offset due to elimination of need for larger non-1:1 5 year replacement cycle” line in Table 2.

**Table 2:** Financial impact of continuing with K-4 1:1

|  | 2021-2022        | 2022-2023        | 2023-2024         | 2024-2025         |
|--|------------------|------------------|-------------------|-------------------|
| <b>Class of 2031</b>   | \$ 26,335        | \$ 26,335        |                   |                   |
| <b>Class of 2032</b>   |                  |                  |                   |                   |
| <b>Class of 2033</b>   | \$ 23,878        | \$ 23,878        | \$ 23,878         | \$ 23,878         |
| <b>Class of 2034</b>   |                  | \$ 25,107        | \$ 25,107         | \$ 25,107         |
| <b>Class of 2035</b>   |                  | \$ 32,017        | \$ 32,017         | \$ 32,017         |
| <b>Class of 2036</b>   |                  |                  | \$ 33,092         | \$ 33,092         |
| <b>Class of 2037</b>   |                  |                  |                   | \$ 33,169         |
| <b>Non-1:1 Reuse</b>   |                  |                  | \$ 26,335         | \$ 26,335         |
| <b>Offset due to elimination of need for larger non-1:1 5 year replacement cycle</b> | \$ (22,952)      | \$ (22,952)      | \$ (22,952)       | \$ (22,952)       |
| <b>Net Impact of K-4 1:1</b>   | <b>\$ 27,262</b> | <b>\$ 84,386</b> | <b>\$ 117,477</b> | <b>\$ 150,646</b> |