TECHNOLOGY TIMES

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News from Across the Division

Classroom Transformations

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GHS Art Portfolios

Edited by John Hendron,
Director of Innovation & Strategy

Connecting the Dots

In this edition of the *TechTimes* we return to highlighting some of the amazing things happening across our classrooms. The highlights are chosen to share the hard work of teachers and their students, but also to try to inspire others to try something new, to consider a new tool, or to make connections possible. If you see an idea you'd like to know more about, feel free to reach out to the teachers or the tech coach involved!

These examples remind me of the fact that no matter how fancy the tool, gizmo, or online service is, it's you—our teaching staff—that makes the real difference in students's lives. As we are sometimes reminded when we visit other localities, Goochland is a special place. We hope you enjoy reading about these special projects and instructional ideas! — John Hendron

Sailing Into Reading
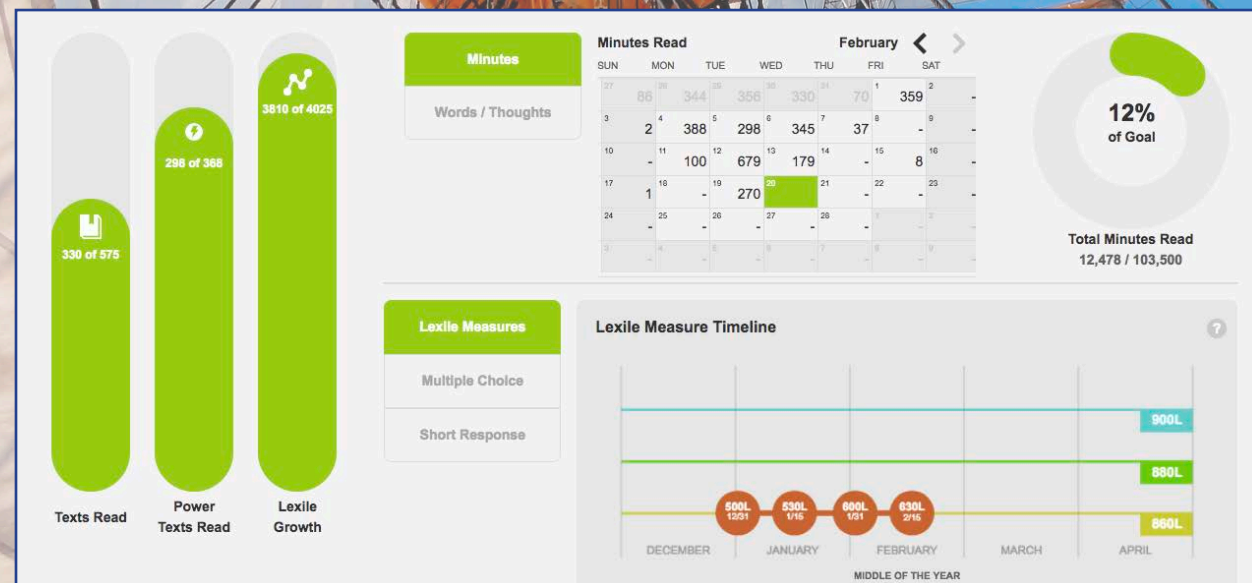
John Hendron and Krystle Demas

Introduction

One of our favorite conversations is about the future of books, which inevitably brings up the future of reading. And while I think that someday in the future we may all think of hardcover books in the same way we think today about vinyl records, the rationale for trying the Lightsail reading program had less to do with the convenience of students being able to carry multiple titles of books on their iPads.

Lightsail is a tool that helps teachers better understand student reading ability through regular updates to their Lexile scores, by allowing them to personalize reading through high quality books of interest to students at the appropriate level for each student.

Looking Deeper

Students experience Lightsail as an app that presents to students a book library, not terribly different from the interface of Netflix for movies, unique to their school. We've been working with our school librarians at choosing books recommended by teachers that augment their own library offerings. After students are done with a book (unless there are more copies purchased), the book goes back into the "library" and can then be read by another student. Each book in the Lightsail system comes with pre-embedded assessments, requiring students to complete Cloze activities, or answer comprehension questions. In addition, teachers can embed open-ended questions right into the text.

Unlike Accelerated Reader, these questions appear to students in-text. And the rate and validity of these mico-assessments help to change the student's Lexile score, which is updated every two weeks in the Lightsail system.

Nothing can replace the expert teacher in working individually or in small groups with students reading to help them toward better fluency. But Lightsail helps fill in the gap by giving teachers a wealth of information about a student's reading progress when they may be working with that small group in the classroom. But this extra support and information goes beyond classroom reading time.

In an analysis of students using Lightsail at Randolph and Goochland Elementary Schools recently, we discovered that up to 40% of the reading time in Lightsail is taking place at home. And the feedback conveyed to teachers through the Lightsail dashboard adds to the picture told by data that help us all see the growth students are making as readers.

New Books

Over 2,000 new titles from Rosen Publishing are being added soon to the Lightsail library as part of our subscription. First the company will be loading higher-lexile non-fiction titles to better serve our more advanced readers. Combined with our fiction titles, the Lightsail library also offers news articles from multiple sources as another non-fiction text source.

If you'd like to know more about tracking student reading growth with Lightsail, make an appointment with your elementary IRC or school librarian to see how we can help more students sail into success with reading.
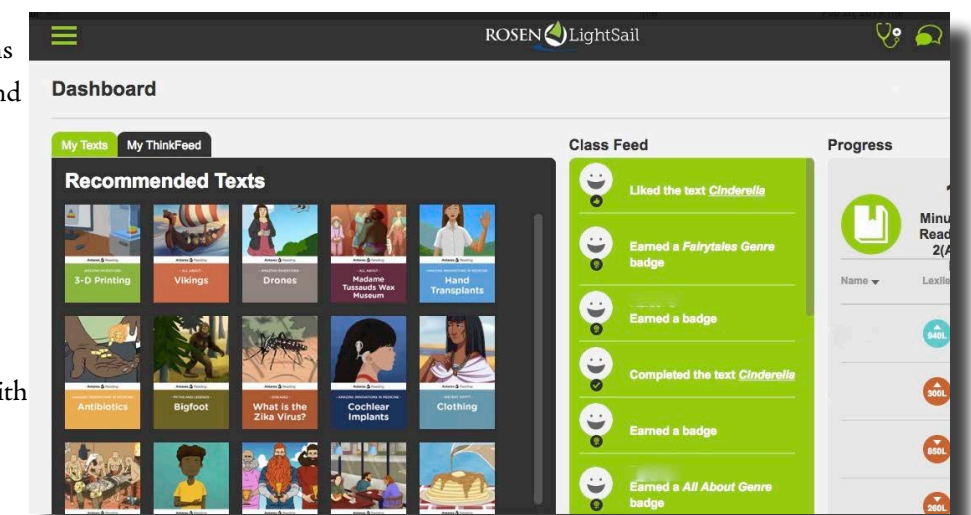
Transforming Teaching and Learning through Thoughtful Design   Krystle Demas

What does engagement look like in your classroom? How do you ensure that your students are learning?

Marzano (2010) states in *The Highly Engaged Classroom* that in order to foster student engagement, classroom instruction decisions are based on four questions.

> *How do I feel?*
> *Am I interested?*
> *Is this important?*
> *Can I do this?*

Consider the third question for a moment. All the content we need to teach may not be important to students, but the tasks we ask students to complete can be *designed* to be important. And making student work matter can make or break the effectiveness of your instruction. Marzano says "if the information is not deemed important, the working memory will not maintain it for long. If students do not believe they can perform the tasks, the brain will eventually reject it."

Striving for student engagement can be a tough feat with many uncontrollable factors.

However, what if we could provide students with such an engaging experience that school becomes the outlet for life?

This past winter, I worked with Randolph teacher **Jennifer Gates,** who has been an advocate for using *classroom transformations*. Together, we embarked on a project that would encompass all of the required SOL content and then added a healthy dose of creativity!

Students collaborated to **design a video game** that would teach others about a biome through the animal's' perspective. Project criteria was clearly defined in a rubric and students researched their topics thoroughly. Feedback was given to students and they made **iterations** to their game in preparation of sharing with a larger audience. On the day of presentations, students arrived to see their classroom had been transformed into Mario World.

Their faces beamed with pride as parents, community members, teachers, and students explored the games they created, the transformation just added to this experience!

As Hattie (2013) says in *Visible Learning and the Science of How We Learn*, we want our students to retain meaningful information. "Allowing sufficient time to work on thoughtful and enriching activities, which promote knowledge, building, and consolidation, will pay dividends."

This project was a two week project-based lesson that taught students the 4th grade science standards related to ecosystems. Redesigning this lesson paid dividends in allowing all learners access to information at their level and taught them many life skills in the process. **Teamwork, creativity, design thinking, synthesizing, iteration, problem solving, and communication** led to the creation of some of these amazing games featured below.

Redefining this unit led to higher student engagement and a deeper learning experience that these students will remember forever!

Schlechty (2011) provides a framework for what it means to be genuinely engaged in learning. He focused on attention and commitment to the task as described in the graphic below.
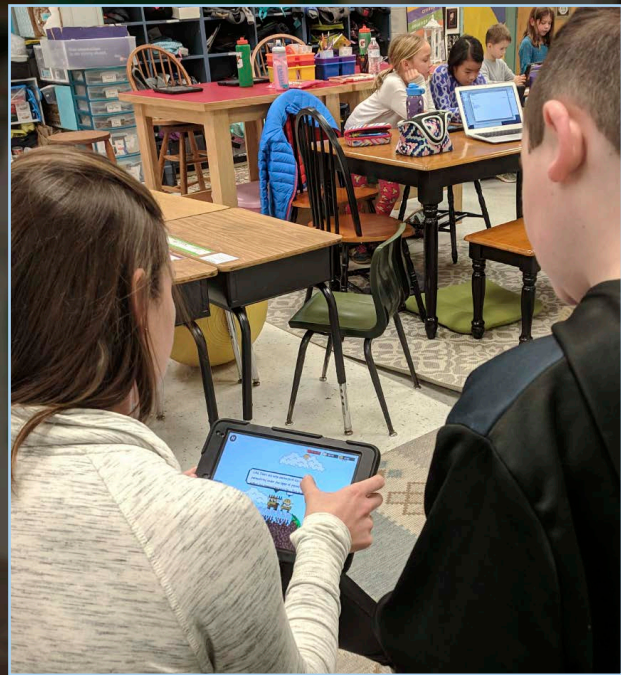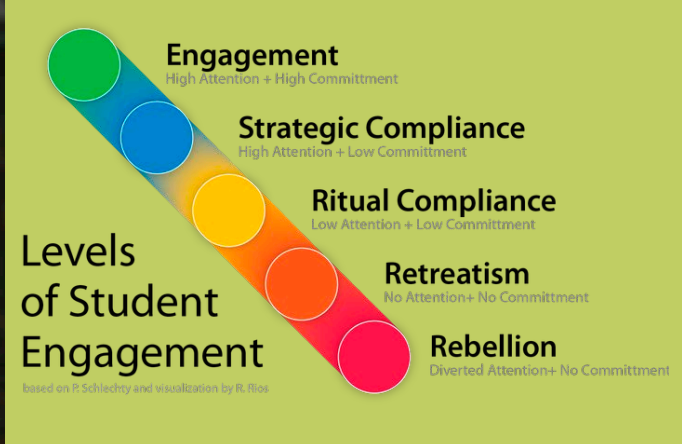
These students were committed to learning and were genuinely engaged in their learning experience. One student from her class realized the power of learning through this project and now enjoys coming to school to see where learning can take him.

Engagement can take many forms but when we refer back to that third question once again, we must remember to make learning important for our students by engaging them through thoughtfully designed lessons and experiences.

Are you interested in transforming your classroom to set the stage for engagement?

Here are some resources created by Jennifer Gates to get you started!

You can also see the student games! Example 1 & Example 2

Levels of Student Engagement

- **Engagement** — High Attention + High Commitment
- **Strategic Compliance** — High Attention + Low Commitment
- **Ritual Compliance** — Low Attention + Low Commitment
- **Retreatism** — No Attention + No Commitment
- **Rebellion** — Diverted Attention + No Commitment

based on P. Schlechty and visualization by R. Rios

Re-thinking Feedback Using Bloxels and Scratch, Jr. (at GMS or a school near you!)
by Andrea Burton and John Hendron

Feedback is one of the most powerful influences on learning and achievement, but this impact may not always be positive. Grant Higgins (2012) wrote: "feedback is information about how we are doing in our efforts to reach a goal." And there isn't agreement, necessarily, about what this looks like among teachers and students. We might think telling a student an answer is right or wrong counts as feedback, but quality feedback is so much more. In *Know Thy Impact* (2012), John Hattie focused on three questions teachers should consider when providing feedback to students:

(1) Where is the student going? *What does student success look like and how do we communicate that picture of success?*
(2) How is the student going? *What are the student's gaps, strengths, and current achievement?*
(3) Where to next? *Students value feedback that helps them know where they're supposed to go.*

When we create learning pursuits in the classroom that require students to think creatively and to design solutions to interesting problems, we open ourselves to stepping back and engaging students with deeper learning. And the feedback that is exchanged keeps students focused on the goal. We can ask probing questions to understand a student's thinking process and offer "what's next" feedback on moving closer to the goal.

Better yet, we can teach students how to provide feedback toward one another. And putting students into small groups can be an effective way to encourage students to think about their own contributions and those of others in working toward a common goal.
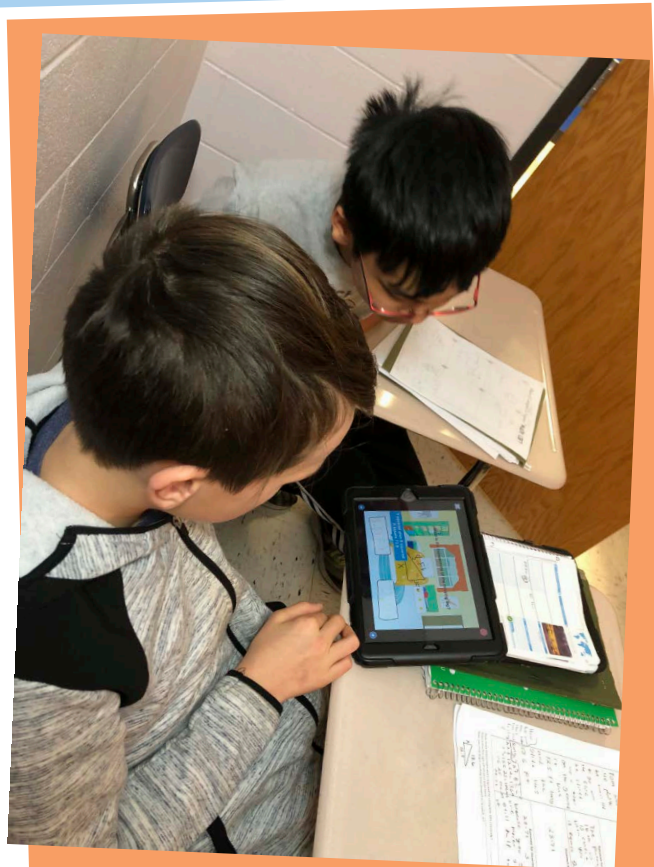
Students using Scratch, Jr. to code animated math problems in groups builds a design challenge with the intent for students to exchange feedback in working toward a common goal.
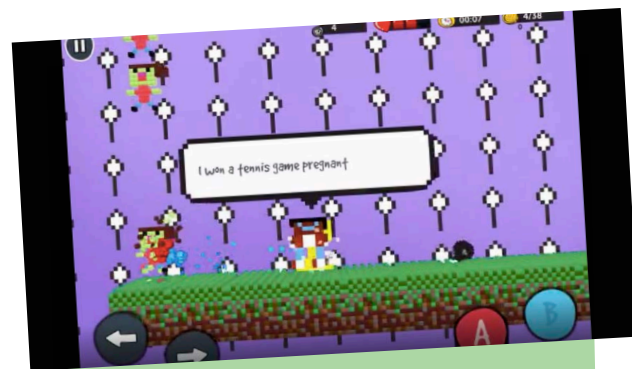
Bloxels, the video game creation app, is flexible enough to incorporate multiple content areas, including math. Challenging students to create a game to demonstrate their understanding became an excellent platform for better understanding their achievement of academic standards.

Scratch Jr. Games in Math Class

In Ashley Sigrest & Alexis Lewis' math classes there is normally a lot of variety as students rotate through three 20-minute stations each class—small group instruction, partner/group practice, and individual remediation using ST Math. As mentioned in the November *Tech Times* Article, **Apple Classroom** assists with a lot of management of this.

During January they added another component to the mix—coding! Coding is a passion of Ashley's and she decided to have the students create games with questions on either the Pythagorean Theorem (Pre-Algebra) or Classifying Quadrilaterals (Math 7). Students created these with a partner, splitting up the questions & slides and taking their turns coding on Scratch Jr. Uploading the Scratch Jr projects to Google Drive allowed the students to "pass" their projects back and forth to their partner as well as keep a "back up" of the project in case an iPad was forgotten at home or there was a technical difficulty. This layer of structure in the project saved the day a few times!

Benefit of Feedback Another aspect of the project was playing the role of "creator" and "tester." The intention was for one student to create the slide, and the other student to test it to see if they had the intended experience. Partners who did this found aspects where the player was confused, not by the content, but with what button to push, or how to start the action, or what to do next.

Black History Month Bloxel Video Games

To remember, honor, and celebrate the important contributions and achievements of African Americans, Brett Alvis' Interdisciplinary Art 6 Class made video games using **Bloxels**. Choices ranged across decades and included Harriet Tubman, Ruby Bridges, Jackie Robinson, Michelle Obama, Barack Obama, Serena Williams and more.

Students created their game to teach others about the contributions of these important people and were very creative in how they personalized the game. Barack Obama earned coins from icons that resembled a paper document, representing speeches, as that was a strength of his. For Michelle Obama, coins were fruits & vegetables and cake represented the enemy. Harriet Tubman held a blinking lantern as she traveled on the Underground Railroad and Serena Williams was dressed in a "cat suit" that she had been banned from wearing in a tournament. Mean comments were enemies from Ruby Bridges as she traveled to a bus and then ended up in a school.

Benefit of Feedback *A lot of this creativity was fostered through conversations with students* as they worked. This project allowed Brett to work individually with students and support them as they learned the app so they stayed on task and remained engaged. As students finished their game, they showed their game to a classmate who offered necessary feedback. Often times the game was unbeatable for the tester, so the creator learned what changes they needed to make so that the player got to see and enjoy everything that was intended.

"Similar to a real world art career, video game making is a huge field for artists now. It shows that art can be more than painting and drawing. For those that didn't feel they could draw on paper, they could still be creative with this." — Brett Alvis

Maker Mondays Turns 2!

Morgan McMullin, Byrd Elementary School

In the fall of 2017, a team of Byrd teachers had the idea of creating a monthly family STEAM night to encourage family engagement. This team applied for and received a generous **Strategic Innovation Grant** which funded *Maker Monday*. This is Byrd's second year of having a monthly family STEAM night, Maker Monday. This year's planning team consists of **Lisa Brown, Cheryl Johnston, Abby Jones, Candice Labott, Holly Swift and myself**. We were fortunate enough to share our Maker Monday experiences at the **Virginia Children's Engineering Conference** in early February.

Typically, each Maker Monday is themed around upcoming events that month in the area or school. For example, September's challenge was to build amusement park rides as the State Fair was coming later that month. Many Reading Olympic books are also used to encourage 4th and 5th grade students to come.

At a Maker Monday, a selection from a book is read aloud to families and then the design brief is explained. Families are encouraged to collaborate with other families on designs. Families bring in recyclable materials and are always willing to bring in any other additional supplies that may be needed. Families have about 45 minutes to design, build, and test. At the end of our event, we have families share out what worked and what didn't work or needed adjusting. Modeling this time for reflection is such a valuable and important part of the design process.

At February's Maker Monday, the challenge (based from *If I Built A Car* by Chris Van Dusen) was to design and build an automobile to travel through a maze while being powered by the Sphero. While we encourage family building, it is not uncommon to find parents, particularly dads, completing the challenge. Parents have even started requesting Parent STEAM nights because they enjoy this time of tinkering and building.

Come see what all the STEAM is about! We invite you to experience a **Maker Monday** and see how easy it is to incorporate STEAM into your school and build relationships with the community. **Our last two Maker Monday dates are March 4th and April 8th from 5-6:30pm in the Byrd Library Media Center. Get a glimpse of the fun through this video**!

The Profile of an Art Graduate

Bea Leiderman, Goochland High School

This past year we have heard a lot about the *Profile of a Virginia Graduate* initiative. The goal is to devote time and effort during high school to teach more than academic subjects and give students the skills they need after graduation. In Goochland, we have taken this very seriously and given the profile our own twist.

In the spirit of that initiative, Amanda Tolson, Neil Burch, and Cindy Shelton-Eide have undertaken the task of ensuring all students in their **advanced Fine Arts classes** get the chance to build a **portfolio** showcasing their work. This portfolio, created using **WordPress**, allows students to show more than just their grades and standardized tests to people in their field.

In Ms. Tolson's and Ms. Shelton-Eide's classes, students have focused on thinking about the process of creating their art, and expressing what defines their art. They have learned to give and receive feedback that is focused and constructive. The students have also had the opportunity to learn how to photograph their creations to showcase them in the best possible way.

In Mr. Burch's class, students have focused on their technique, on being conscious of what they do to get into character, how the movement of their bodies can enhance the words contained in the lines of the characters they play. Using video and photography, students can observe their own work, reflect, and grow.

Throughout this process, the teachers and the technology team have taken every opportunity to teach students how to craft a positive online image while still protecting their privacy. From discussing what kind of information to make public, to helping students decide how to connect the portfolio to their existing social media accounts, the goal is to help students transition to a "real, adult" life online.

In at least one case, these portfolios that students created opened doors. **Devin Lane**, a senior, used his portfolio in interviews with prestigious art schools. He has already been accepted to one university, and he also received a very generous scholarship. Hear what Devin himself has to say about his portfolio and how it has helped him by watching this video.