Because learning changes everything.®

Integration of ALEKS in the Virtual Learning Environment

Allegany County (Md) Public Schools

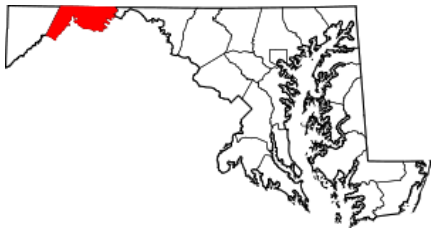
The ALEKS Effect: Mission Accomplished

I think that the ALEKS program is a great program for kids of all ages. As a person that needs repetition when learning things; this really helps me understand math. I really like that ALEKS goes over new and old topics. That means that I can go over things I may have forgotten in previous grades but also go over new things and expand my knowledge!

ACPS Student A.R.

About ACPS

Allegany County (Md) is located in the western panhandle of the state, roughly 120 miles from Pittsburgh, Baltimore, and Washington D.C. Our 70,000 residents reside in the poorest county in the state of Maryland as measured by median household income.



Allegany County Public Schools serve approximately 8,000 K-12 students. Our students come from small city, small town, and rural environments. Our student population is nearly 90% white and more than 55% qualify for free or reduced meals.

ACPS
ALLEGANY COUNTY PUBLIC SCHOOLS

Before ALEKS

ACPS had never subscribed to a digital learning platform for high school mathematics

One reason for this is that ACPS was not a 1:1 district

Another reason is that many students had little or no reliable connectivity at home.

Some students did not have a computer to use at home

Labs and carts are not always available in the schools

Several teachers used digital learning platforms such as Khan Academy, School21, and Prodigy as part of their instruction.

Numerous teachers were reluctant to use digital learning platforms with students.

Finding High Quality Standards Aligned Materials

ACPS had been searching since the Common Core Standards came out for aligned texts and digital resources

High School products well aligned to the new standards seemed to be the last to appear on the market.

Maryland requires state vetting of curriculum for math in grades 3-8 and Algebra 1

We were scheduled to be vetted in 2023 and without having aligned primary curricular resources, we had to find a high quality product quickly

How we ended up with McGraw Hill and ALEKS

During the 2019-2020 school year, we piloted McGraw Hill Reveal AGA w/ALEKS and Big Ideas Math AGA

Pilot teachers soon began to share their impressions of ALEKS.

Word began to spread and several other teachers wanted to try ALEKS.

And then COVID…….

This limited the teachers ability to further pilot the resources

But, we had seen enough that when teachers voted on which vendor to go with for the next 6 years, it was McGraw Hill by a 2 to 1 margin with the deciding factor being that ALEKS was part of the package.

Signing on the Dotted Line

ACPS purchased the McGraw Hill Reveal AGA w/ALEKS package for 6 years.

After the purchase, we discovered that we still had some available funding, so we purchased 6-year ALEKS subscriptions to cover our other high school math courses up through Pre-Calculus

Through 2026, ACPS students will be using ALEKS in all high school mathematics courses except for AP and Early College classes.

Starting from…….

We knew early on that the 2020-2021 school year would begin 100% virtually. Thanks to CARES funding, ACPS was able to become 1:1 with chromebooks and through the use of hotspots, we were able to improve the connectivity for our students.

Training was provided by McGraw Hill and ALEKS staff to help us get up and running

Getting teachers and students set up in ALEKS was relatively smooth

Let the Initial Knowledge Checks begin!

Promoting ALEKS in the ACPS Math Classroom

Maryland asked for diagnostic data early in the school year to help identify the % of students on the below grade level - on grade level - above grade level spectrum.

ACPS used the ALEKS Initial Knowledge Check for acquiring this diagnostic data. With the help of ALEKS support staff, we were able to identify appropriate student performance levels based on their IKC mastery.

Having used for many years the HMH Math Inventory for middle school progress monitoring, we had a good idea where our students should fall on the diagnostic spectrum. The results from the ALEKS IKC were consistent with our expectations.

Selling ALEKS in the ACPS Classroom

ACPS took the stance that teachers should allow ALEKS to do what they would not have the time to do:

- **Remediate student deficiencies**
- **Learn concepts that were missed due to COVID**
- **Reinforce previously learned skills**
- **Support and build upon their in class learning for 2020-2021**

A *REALISTIC* way to Differentiate Math Instruction and ….

Each year, ACPS teachers comment on how difficult it is to differentiate learning experiences in the mathematics classroom.

Despite our best efforts, students do not bring equal skill sets into your class.

The IKC results confirm the wide variation in foundational skills commonly found within any given class.

The individual learning pathway that students get from ALEKS allows for the differentiation in learning experiences that helps to equalize student skills as the year progresses.

…. Let us meet you where you are now

There is no shame in being underprepared for your next mathematics class.

We needed students to experience success early in the school year. Any student growth that will lead to later success in the course is desirable.

Sometimes this growth is with foundational skills. We celebrate this!

As students work through their individual learning pathway, they can see the ALEKS pie fill in; they can see their mastery % increase; they begin to connect the dots that effort leads to growth.

One Student's ALEKS Journey

[redacted] Last Login: 02/16/2021 12:48 PM	*17h 8m*	Start: 02/01/2021 Finish: 02/01/2021 Time: **52**m **29**s	C	Comprehensive Scheduled Knowledge Check 1 Assigned Knowledge Check	33 +4 %	**30**	**2h 0m**	**15**
		Start: 01/22/2021 Finish: 01/22/2021 Time: **30**m **26**s	P	2nd Quarter ALEKS TEST Assigned Knowledge Check	29 +1 %	**10**	**1h 27m**	**6.9**
		Start: 01/09/2021 Finish: 01/09/2021 Time: **12**m **23**s		Periodic Knowledge Check	26 +2 %	**20**	**1h 5m**	**18.3**
		Start: 11/10/2020 Finish: 11/10/2020 Time: **35**m **33**s	P	Scheduled Knowledge Check 1 Assigned Knowledge Check	18 +8 %	**61**	**2h 42m**	**22.6**
		Start: 11/05/2020 Finish: 11/05/2020 Time: **26**m **27**s		Progress Knowledge Check	16 +1 %	**9**	**1h 14m**	**7.3**
		Start: 09/14/2020 Finish: 09/14/2020 Time: **55**m **45**s		Initial Knowledge Check	9 +5 %	**41**	**5h 3m**	**8.1**

So, did ACPS dictate how teachers were to use ALEKS?

No, 100% no

Teachers were given the freedom to use ALEKS as they chose. Some made work done in ALEKS a separate gradebook category, some made regular assignments in ALEKS, some gave topic or time goals. Some are making extensive use of ALEKS and some are not using it as much as they could.

But, this is our first year with ALEKS. We have already learned how to streamline the use of ALEKS and make it a tighter fit to our curriculum.

How are our Teachers using ALEKS with Virtual Instruction?

Synchronous

- Warm-up / Entrance slips
- Embed into focused instruction
- Use with students during guided instruction

Asynchronous

- Time assignments
- Topic assignments
- Knowledge checks
- Pie assignments

How ALEKS helps build student confidence

ACPS made it clear from the beginning that it doesn't matter what mastery level the student starts the year with. We knew they would be behind. That much was a given.

What matters is that regardless of where the student is, they can make progress. They can build confidence. They can demonstrate growth. They can do math!

Perhaps they don't get to where we want them to be, but they will have made progress on that journey. ALEKS will show the student what they have achieved and the learning they are ready to explore.

The Initial Knowledge Check (i.e. Diagnostic)

All students in Algebra 1, Geometry, and Algebra 2 were required to complete an IKC. This data was aggregated at the class, school, and district level. Other high school courses also completed an IKC.

Here is a sample of the Algebra 1 IKC data from one middle school

Fall	Count	%
Significantly Below Expectation	2	3.28%
Below Expectation	11	18.03%
At Expectation	32	52.46%
Above Expectation	16	26.23%
Total	61	100.00%

Fall Key	<10%
	10% to 20%
	20% to 35%
	> 35%

The four categories are the language provided by Maryland State Dept. of Education

The Comprehensive Knowledge Check (i.e. Mid-Year Progress)

At the conclusion of the first semester, ACPS asked the teachers to schedule a mid-year progress report. This was to comply with a state request to provide mid-year progress data. A Comprehensive Knowledge Check was taken in each class.

Here is the Algebra 1 CKC from the same middle school in the prior slide

Winter	Count	%
Significantly Below Expectation	0	0.00%
Below Expectation	6	10.17%
At Expectation	29	49.15%
Above Expectation	24	40.68%
Total	59	100.00%

Winter Key	<20%
	20% to 30%
	31% to 45%
	> 45%

If you notice, we boosted the % of mastery needed for each level by 10%

Ok, So what does the data tell us?

Well, it tells a nice story

Performance Level	Fall 2020 N = 61	Winter 2021 N = 59	Difference
Significantly Below Expectations	2	0	-2
Below Expectations	11	6	-5
At Expectations	32	29	-3
Above Expectations	16	24	+8

Again, these are the results <u>after</u> raising the mastery % for each performance level

How Much Work Within ALEKS Was Needed to Get These Results?

Students at this school averaged 10 hours and 51 topics learned in ALEKS during the first semester.

While this may seem low, it spreads out to approximately 30 minutes and 3 topics learned per week.

Knowing that all of the student's schoolwork is online, we deliberately did not place excessive time or topic requirements on our students

Most teachers used weekly goals of 30-60 minutes and/or 5-10 topics learned.

Reasonable Expectations

ACPS used the default settings for each ALEKS course

The ALEKS courses we are using are more robust than our local curriculum in both the amount of topics covered and depth of coverage.

As an example, ALEKS Algebra 1 addresses 494 topics. There is an additional 673 topics that can be added if needed.

Knowing that a students' Mastery % is based on the total topics available to them, we brainstormed on what would be a realistic expectation for ALEKS mastery at mid-year and end-of-year for ACPS students.

A Covid Friendly Target

We determined that an end-of-year target of 70-80% mastery would be a realistic goal for students to work towards. At mid-year, 35-40% mastery would be the appropriate progress check towards the end-of-year target.

Given the nature of the 2020-2021 school year in which our students have been 100% virtual and are receiving approximately 50% of the live instruction that a normal school year would provide, our selected targets were deemed to be fair.

Winter Key	<20%	Significantly Below Expectation
	20% to 30%	Below Expectation
	31% to 45%	At Expectation
	> 45%	Above Expectation

So, how are our students performing relative to these targets?

Making Strides

At the end of the first semester, 358 of our 574 Algebra 1 students have achieved 35% or higher mastery in ALEKS Algebra 1.

122 of these students are at 50% or higher mastery.

We are especially pleased with the progress of our non-Algebra 1 ready high school students. Using ALEKS Essentials for Algebra, 73 out of 151 students in this course are at 35% or higher mastery, with 41 of those at 50% mastery or higher. It is with these students that we have seen our greatest gains since September.

Continuing to June

ALEKS will continue to be used as a supplementary instructional tool through the remainder of the school year.

As teachers and students continue to see the positive progress being made, we know that ALEKS usage will increase

For those students who will need to participate in credit recovery during the summer, we will be using the students' ALEKS progress from the 2020-2021 school year to continue their learning in the course until a satisfactory level of mastery has been achieved.

What We Know Now That We Didn't Know Then

Even with the successes we have seen with ALEKS this year, we have identified areas to work on for the future

1. **How do we re-capture those students who will not engage in ALEKS?**
2. **What is the optimal approach to incorporating ALEKS into the students' mathematics learning?**
3. **What will be a reasonable mastery % for students to attain once learning and instruction approach normalcy?**
4. **How will student mastery in ALEKS correlate to student performance on state assessments?**

Testimonials

The Aleks program has helped me get caught up on the things that I was struggling with before. It gives us videos and tips to help us remember what we are doing. I also like that we can work at our own pace and not feel rushed to learn. ACPS Student A. J.

I like ALEKS because I was terrible at algebra until we started using it. It breaks down the problem for you so you can see where you went wrong if you didn't get the correct answer the first time. ACPS Student A. C.

ALEKS is a very good tool to use when you want to learn and revisit your math skills. ALEKS is very helpful, and also good test prep. I am able to learn how to do a certain problem, while getting further instruction if I get an answer incorrect. This helps me improve and find different ways to solve difficult math problems. I also relearn topics I might have forgotten from the past years. Doing extra topics, and having a limit helps me stay on task, and I will continuously be practicing each week, which sharpens my math skills. ACPS Student E. K.

Because learning changes everything.®

Thank You!

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