

MSDE - MCAP Mathematics General Information Session

Transcript – presented by Michael Turlik

Hello and welcome to the Maryland State Department of Education's virtual professional development session. The focus of this presentation is a high level introduction of the new mathematics assessments under the Maryland Comprehensive assessment program or MCAP.

My name is Michael Turlik and I am a mathematics assessment specialist at the state department. I will be presenting the information in this professional development session however the presentation was put together with the effort of our entire mathematics team at MSDE including Debby Ward our coordinator of mathematics, Nina Riggs our secondary mathematics specialist, Linda Schoenbrodt (shane-brat) our elementary mathematics specialist and Esin Caglayan-Guner a fellow mathematics assessment specialist.

The outcomes of this presentation are as follows. You will understand the similarities and differences between the retired PARCC assessment and our new MCAP mathematics assessments and become familiar with the features of the MCAP mathematics assessment at a high level.

So first the question that needs to be answered is why states administer high stake summative assessments in the first place? The simple answer to this is because it is the law. ESSA or the Every Student Succeeds Act is a law that requires states to adopt challenging academic content standards and use the same academic assessment to measure student attainment of those standards every year for students in grades 3-8 and once in high school for mathematics and English Language Arts.

Another reason we as the state of Maryland administer high stakes summative assessments is because it helps us as a state department gain an understanding of how schools are performing and where assistance can be directed to support student growth and achievement.

So as we are transitioning to a new state assessment, a big piece of the puzzle has not changed in the slightest. The Maryland College and Career Ready Standards are still the same. The curricular materials that have been developed by our local school systems are still valid as long as they align to our state standards! One of the biggest messages that we want you to take away from this presentation is that the MCCR standards are still the golden standard to reach for!

If we haven't changed our standards in the transition from PARCC to MCAP a logical question might be why did we change our assessment? There was a demand for change from the education field in Maryland and our lawmakers listened. The Maryland Legislators required a change in the state level assessment to accomplish the following: Shorter testing times and less time to administer, shorter turn around for scores and a gradual change from a fixed linear assessment to a computer adaptive test or a CAT. The PARCC test was developed by a consortium of states and Maryland did not have the only say in the future of that assessment so we broke away and began to develop our own assessment.

To address first concern of our law makers, namely that the tests need to be shorter and take less time to administer, we drastically reduced the time needed to complete our state assessment. Under PARCC, a state assessment took anywhere from 240 to 270 minutes to complete and was broken up into 3 or 4 sessions that took upwards of 80 minutes per session to administer. Under MCAP we reduced the time needed to complete each of our sessions or units to 40 minutes and the entire assessment now takes 160 minutes to administer across all of the grade levels. This is a significant reduction in the time it takes to administer the assessment. The reduced time also means a reduction of questions that students are asked to complete, which in turn helps us as a state deliver results more quickly as we continue to develop our assessment program.

The goal of our MCAP mathematics assessments, also referred to as our master claim is to ensure students are on-track to being college and career ready in mathematics.

When developing our MCAP assessments we use evidence centered designs. Namely we make claims about what students can do with mathematics, decide what evidence students need to elicit to showcase those claims and then finally the construction of items that demonstrate the evidence needed to make our claims. This process was also used in the development of the PARCC assessment.

Within evidence centered design we start with making claims about our students. These claims are broadly what students must achieve in order to be considered college and career ready in mathematics.

The MCAP has three subclaims that help us to showcase our master claim. Those three claims are content, reasoning and modeling. In the content claim we assess if students can solve problems related to the standards for mathematical practice as well as all major and supporting content. Our reasoning Subclaim asks students to express grade or course level appropriate mathematical reasoning and finally our modeling Subclaim asks students to solve real-world problems with a degree of difficulty appropriate to their grade level or course.

The subclaims from PARCC's mathematics assessment were generally the same as the MCAP's however under PARCC an additional Subclaim was included. That of additional and supporting content. Under MCAP that Subclaim was eliminated and incorporated into our content subcategory. Due to the MCAP being a shorter assessment, there were not enough items on a single assessment to accurately distinguish between these two claims and because of that we combined them into one.

As we move through the evidence centered design, we come to the evidence section of the design. In order to support our subclaims of content, reasoning and modeling we must gather evidence. Basically what do students need to do and show in order to reach the claims and show that they are on track to being college and career ready?

As a state we have developed documents called evidence statements. Each MCAP mathematics assessment has its own evidence statement document and they can all be found on our website listed in blue here. These are public facing documents and give educators and stakeholders insight on how the standards for each course or grade level are assessed.

While similar documents existed in PARCC, the MCAP evidence statements have built upon those documents and tweaked them to fit our assessment program. Things that have not changed is that the MCAP evidence statements are organized by claims starting with content, including major, additional and supporting standards in one section. Following content is our reasoning evidence statements which are then followed by our modeling evidence statements. The MCAP evidence statements have changed in ways to make them more accessible and useable for educators. We have revised the structure to organize them by standards for each grade level. We have reduced the number of reasoning and modeling evidence statements and we have eliminated all instances of integrated items to focus exclusively on grade level content.

Let's take a brief look at the layout of one of our evidence statements for fifth grade. All grades and courses are generally laid out the same. From left to right we list our MCCR code, this helps us in classifying the items on our assessment. Following the code is the language of the standard and finally our evidence statement and clarifications, or how we can assess that the students demonstrate the content of the standard including any restrictions in what items can ask students to do. In this screen shot of our document, we are looking at 5.OA.A.1 the 5 tells us that this is an evidence statement for 5th grade. The OA stands for the domain for Operations and Algebraic thinking, the A stands for the cluster inside of the domain and the 1 refers to a specific standard in that cluster. For 5.OA.A.1 the standard states to use parentheses, brackets or braces in numerical expressions and evaluate expressions with these symbols. The evidence statement for this standard provides clarity on how this standard is assessed. For 5.OA.A.1 the evidence statement states that the language of the standard provides the focus this evidence statement and additional clarifications state that expressions have depth no greater than two. In these examples the evidence statement applies to the whole standard.

A feature in some of the MCAP elementary and middle school evidence statements is the break own of a single standard into multiple parts. These sections are highlighted as indicated below. For example 5.NBT.B.7 is broken up into 4

different standards. 5.NBT.B.7-1 Adding decimals, 5.NBT.B.7-2 Subtracting decimals, 5.NBT.B.7-3 Multiplying decimals, 5.NBT.B.7-4 Dividing decimals. This is purposeful to ensure that students can showcase their mastery to the entire standard. When this occurs in the evidence statement document, the portion of the standard that applies to the evidence statement code will be bolded.

In the evidence statements for the high school end of course assessments, there are two unique markings. A star in the high school evidence statements indicates that the indicated standard is a modeling standard. If a standard is included in multiple EOCs it will be indicated at the bottom of the given standard.

The reasoning evidence statements are set up similarly to the content evidence statements but the code on the left hand side is simpler than they were in the PARCC evidence statements. In the example shown the code A1.R.2, A1 stands for algebra I, R stands for reasoning and the 2 indicates that it is the second evidence statement. Each grade level or course will be the start of code. For example in 5th grade, the reasoning statements with all start with 5.R.

Modeling evidence statements follow the same naming convention with the only change being that the R is now replaced with an M to indicate it is a modeling evidence statement. Every grade and course will have their own unique modeling and reasoning evidence statements that will pertain to the expectations of students at each of their respective grade levels.

Finally the last piece of the evidence centered design is the development of items. Items are designed to elicit specific evidence from students in support of claims!

There are essentially three types of items that are developed for the MCAP assessment. Type I items that all 1 point and can measure all three of our subclaims of content, reasoning and modeling. Type I items are machine scored items and include our standard multiple choice items through any of our technology enhanced items. Type II items are human scored items that directly assess the reasoning Subclaim. These items can be 3 to 4 points depending on the grade level and are scored using a holistic rubric. Type III items are human scored items that directly assess the modeling Subclaim. These items are also 3 to 4 points depending on the grade level and scored using a holistic rubric.

In our change from PARCC to MCAP somethings have changed but many things have also stayed the same. Our item types are generally the same including multiple choice items, technology enhanced items and constructed response items. However what has changed is that all CR items across all grade levels will have the draw tool available. There are fewer reasoning and modeling items on the assessment and those items are worth fewer points. In grades 3 and 4 the CR items are all worth 3 points. In grades 5 through 8 there are blend of 3 and 4 point items and in high school EOC assessments all the CR items are worth 4 points. In addition to the shortened CR items, reasoning and modeling are assessed at all grade levels using 1 point machine scored items.

There are many benefits of 1-point reasoning and modeling items. Less time is needed for a student to provide a response. They are machine scored, thus reducing the time needed for human scoring and finally 1-point Reasoning and Modeling items provide a means of scaffolding. Allows for an entry point into a problem that is not typically included in the multi-point constructed response items.

Another new feature of the MCAP mathematic assessment is that all CR items will be scored using a holistic rubric. A Holistic rubric allows our scorers to focus on what the student is able to do, grants them more flexibility in scoring student responses and allows for more solution methods.

Our holistic rubrics as well as separate recorded webinars that discuss how these can be used to score items can be found on our website.

There are a few other additional difference that occurred in our transition to the MCAP assessment including minor content adjustments, calculator policies, unit structures, tools policies and our reference sheets.

The calculator policy dictates the calculator and devices available to students on some sections of the assessment. It is important to note that every mathematics assessment contains sections where a calculator is not permitted unless a

student has an accommodation. In grades 3 through 7, a four-function calculator with square root and percentage functions and a desmos equivalent will be offered to students. In grade 8 a scientific calculator and a Desmos equivalent is offered and in the high school assessments a TI-84 graphing calculator and a Desmos equivalent will be available for students.

Until such time when the MCAP transitions to a CAT assessment The unit structure for the elementary assessments is as follows: Unit 1 and unit 3 a non-calculator units that contains only type I content items. Units 2 and 4 are calculator units which contain type I reasoning and modeling items as well as Type II reasoning CR items and Type III modeling CR items. All units will contain field test questions.

Likewise until the MCAP transitions to a CAT assessment, the unit structure for the middle and high school assessments will follow the following structure. Unit 1 will be non-calculator and will contain type I content items only. Units 2, 3 and 4 will all be calculator active and contain type I, content, modeling and reasoning items and Type II and Type III reasoning and modeling CR items.

The reference sheets available to students start at grade 5 and flow throughout our high school assessments. All of our reference sheets can be found on our website.

In terms of changes to our tools policy, which can be found on our website, online rulers and protractors will now be included for all appropriate grades and courses.

A rather significant change that impacts all of our CR items throughout our mathematics assessment program is the addition of the drawing tool. This tool available at all levels and can give students another means to express their content knowledge. This tool will require some practice and teachers are encouraged to visit support.mdassessments.com and use our practice tests with students so that can become familiar with this technology.

Additional differences in the MCAP assessment is some slight adjustment in the content assessed at the high school level. **NCTM Catalyzing Change in High School Mathematics** "... most high school teachers find it difficult to teach at the desired level of rigor, given the sheer amount of content that the standards expect them to teach and their students to learn."

Content changes only impact the high school assessments. Removed from algebra I are the standards S.ID.1, 2, 3 and 5. Removed from algebra II are the standards S.ID.4, S.IC.1, 2, 3, 4, 5 & 6 and S.CP.1, 2, 3, 4, 5, 6, and 7. These standards will be included in a new statistics course and will allow algebra I and II to have better focus and coherence. Additionally G.GPE.2 is not assessed as well as systems of 3 equations.

There are many other recorded MCAP mathematics webinars available through our website including presentations on modeling and reasoning for each grade level as well as explorations on the implementation of the holistic rubrics in reasoning and modeling items.

We want to thank you for taking the time to learn more about the MCAP mathematics assessment feel free to e-mail anyone on the mathematics team for clarification on any of the content shared in this presentation! Thanks again!