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Information/Action

Educator Preparation Committee

Update on the Development of the CalTPA Math Cycle Field Test

Executive Summary: This agenda item presents an update on the development of the CalTPA PK-3 Early Childhood Education (ECE), Education Specialist-Early Childhood Special Education (EdSp-ECSE), and Education Specialist-Visual Impairments (EdSp-VI) Math Cycle Field Test, including results, analysis, and next steps.

Recommended Action: That the Commission adopt the CalTPA PK-3 ECE and EdSp-ECSE and VI Math Cycle for operational administration beginning in the 2025-26 academic year.

Presenters: Julie Holmes and Heather Kennedy, Consultants, Performance Assessment

Strategic Plan Goals

Educator Preparation and Advancement

- **Goal 1:** Educator preparation programs hold candidates to high standards and adequately prepare them to support all students by using culturally and linguistically responsive and sustaining practices in equitable, inclusive, and safe environments.

  B. Develop educator performance assessments that are embedded in clinical preparation to ensure readiness to begin professional practice

Continuous Improvement

- **Goal 7:** The Commission's work is grounded in research, informed by the voices of practitioners and communities of interests, and supports continuous improvement in educator preparation and licensure.

  O. Strengthen the Commission's capacity to collect and analyze survey and assessment data related to quality in preparation of the education workforce

Update on the Development of the CalTPA Math Cycle Field Test

Introduction
This agenda item presents an update on the development of the CalTPA PK-3 Early Childhood Education (ECE), Education Specialist-Early Childhood Special Education (EdSp-ECSE), and Education Specialist-Visual Impairments (EdSp-VI) Math Cycle Field Test, including results, analysis, and next steps.

Background
Current law requires individuals seeking a California teaching credential to complete a Teaching Performance Assessment (TPA) (EC §44320.2), in addition to successfully completing coursework and clinical practice through a Commission approved program. The TPA measures candidates' proficiency on Teaching Performance Expectation (TPE) elements observable through a performance assessment prior to being recommended for a preliminary credential.

Currently there are three Commission approved TPA models for Multiple Subject (MS), Single Subject (SS), and Education Specialist (EdSp)-Mild to Moderate Support Needs (MMSN) and Extensive Support Needs (ESN) candidates: CalTPA, the Commission's TPA model; edTPA, operated by Evaluation Systems (ES); and the Fresno Assessment of Student Teachers (FAST), implemented by California State University, Fresno.

Candidates for Education Specialist Early Childhood Special Education (EdSp-ECSE), Deaf and Hard of Hearing (DHH), and Visual Impairments (VI) credentials must also successfully complete coursework, clinical practice requirements, and the RICA to be recommended for a preliminary credential. In December 2022, the Commission granted an extension on the development of and requirement for a TPA for the EdSp-ECSE, DHH, and VI credentials to allow the assessments to develop alongside the requirements for a literacy performance assessment, pursuant to SB 488.

In October 2022, the Commission approved the PK-3 Early Childhood Specialist Instruction (ECE) credential, which includes an eighth TPE Domain, Effective Mathematics Instruction in a PK-3 Setting. The regulations for the PK-3 ECE Specialist Instruction credential were approved by the Office of Administrative Law on February 7, 2024, and went into effect April 1, 2024.

In August 2024, Commission staff presented a detailed agenda item describing the development and characteristics of the CalTPA Mathematics Cycle for PK-3 ECE and EdSp-ECSE, DHH, and VI. Consistent with statute under EC §44225(m), this item requested that the Commission approve waivers for all PK-3 ECE field test participants who completed the PK-3 ECE Math Cycle and met the Commission's adopted field test passing standard. Waivers were not requested for EdSp-ECSE, DHH and VI candidates because, at this time, a performance assessment is not required for candidates in these areas to earn a preliminary credential. Initially, one EdSp-DHH program was participating in the Fall Math Cycle Field Test but withdrew prior to the submission deadline. As a result, an extended field test for EdSp-DHH is

taking place in spring 2025. Development and results will be reported at a future Commission meeting.

This agenda item is organized into four parts:

- Part I summarizes the Math Cycle Field Test development, including the bias review process.
- Part II provides the methodology of the Math Cycle Field Test.
- Part III shares the results from the Math Cycle Fall 2024 Field Test analysis, including candidate scores and overall themes from analysis of survey and focus group responses from candidates, program coordinators, cooperating teachers, and assessors.
- Part IV provides next steps, including a timeline describing how the Commission and its technical contractor Evaluation Systems group of Pearson (ES) will support PK-3 ECE and EdSp-ECSE and VI programs to prepare for the first year of operational administration for candidates enrolling in these programs starting July 1, 2025.

Part I: The Math Cycle Field Test Development Process

The PK-3 ECE Math Cycle was developed by Commission staff, with the assistance of math pedagogy specialists, to measure elements of PK-3 ECE TPE Domain 8, Effective Mathematics Instruction in a PK–3 Setting. Using the current operational version of the Multiple Subject CalTPA as the foundational structure of the Math Cycle, Cycle 1 was revised to incorporate assessment of the skills and abilities outlined in TPE Domain 8 that are measurable through a performance assessment. Appendix A provides the list of TPEs addressed within the PK-3 ECE and EdSp-ECSE and VI Math Cycle, and Appendix B provides the Evidence Table for the field test version of the Math Cycle. Appendix C provides the members of the Math Cycle expert workgroup and an overview of workgroup meetings.

PK-3 ECE Math Cycle Field Test Development Process

The CalTPA Math Cycle is informed by the California PK–3 Teaching Performance Expectations (TPEs), the California Preschool/Transitional Kindergarten Learning Foundations (PTKLF 2024), and for children in grades K to 3, the California Common Core State Standards for Math (CA CCSSM).

Math Cycle workgroup members recommended revisions to *Cycle 1: Getting to Know Students and Planning Instruction* to become the *Math Cycle: Learning about Children and Planning a Math Activity*. The group advocated for candidates to:

- Demonstrate their ability to plan and facilitate child-centered, culturally contextualized math activities.
- Avoid didactic teaching methods.
- Incorporate intentional math learning through everyday routines and play.
- Connect math learning goals to activities, focusing on active engagement, academic language development, and monitoring student learning in mathematics across Preschool/TK and K-3 settings.
- Exhibit the ability to deeply understand children's math thinking (e.g., atypical problem solving, error analysis) as a critical component of furthering math learning.

The Math Cycle workgroup also suggested several global changes and recommendations for clarity and consistency in terminology, such as referring to "students" as "children," using the term "facilitation" as opposed to "teaching," and using the term "activity" instead of "lesson." These terms are aligned with terminology commonly used in PK-3 ECE settings.

The PK-3 ECE Math Cycle reflects the structure of all CalTPA cycles and requires that candidates:

- **Step 1:** Plan one asset-based, UDL focused, play-oriented math activity for a group of children, including three focus children, that connects to their previous math learning.
- **Step 2:** Facilitate and video record their math activity and provide a commentary for what is seen and heard in the video clips.
- **Step 3:** Reflect on the effectiveness of the planning and facilitation of the math activity.
- **Step 4**: Apply what they have learned from the cycle of facilitation by identifying what they will do in future math activities to advance the math learning and language development of the children.

EdSp-ECSE and VI Math Cycle Field Test Development Process

The development of the EdSp CalTPA for ECSE and VI began with the EdSp Design Team in February of 2020. In the summer of 2021, it was determined that subgroup meetings were needed for each credential area. Appendix D provides the names of the EdSp-ECSE and VI subgroup members who contributed to the pilot study versions.

The EdSp CalTPA pilot study for ECSE and VI began in October of 2021 and concluded in June 2022. While the pilot study yielded important information, it was determined that: (a) additional field test data needed to be collected and analyzed and (b) the literacy performance assessment needed to be considered to inform the final stages of development for these TPAs.

After the Literacy Performance Assessment (LPA) pilot, EdSp-ECSE credential area experts began working. Appendix E provides the members of the EdSp-ECSE Math Cycle expert group and a summary of their meetings.

Initially, the EdSp-ECSE workgroup made recommended revisions to Cycle 1 to become the *Math Cycle: Learning about Children with IEPs and Planning a Math Activity*. The group also advocated for the assessment to align with many of the recommendations of the PK-3 ECE workgroup experts, (e.g. learning through play and planning and facilitating child-centered, culturally contextualized math activities). They also recommended for candidates to:

- Utilize the recently updated PTKLF for candidates completing clinical practice in preschool and TK settings.
- Include developmental considerations for the children being taught in the activity.
- Have focus child options specific to the ages and disabilities served by the credential area (e.g. a child with a pre-academic IEP goal, a child with a developmental delay).
- Facilitate and film the math activity with the focus children one-on-one or in a group.

EdSp-VI credential area experts made recommendations to revise Cycle 1 to become the *Math Cycle: Learning with Visual Impairments and Planning Instruction and Support*. Appendix E

provides the members of the EdSp-VI Math Cycle expert group and a summary of their meetings.

The group advocated for candidates to:

- have focus student options specific to the ages and disabilities served by the credential area (e.g. a student who requires additional support with making progress in the Expanded Core Curriculum [ECC] related to math, a student who is a braille user who requires additional support with the CA Braille Mathematics Standards);
- facilitate and film the math lesson with a single focus student due to the EdSp-VI teachers often being in itinerant placements;
- focus on selected areas of the ECC and detail why these areas allow the focus student to have meaningful access to the math lesson;
- provide instruction in the necessary prerequisite and compensatory skills and adapted materials for the focus student to access the lesson (e.g., the braille code for the addition sign); and
- determine adaptations for the focus student and anticipate concepts that may need additional instruction/support after the lesson.

Math Cycle: Field Test

To develop the field test version of the Math Cycle, the experts in each of their respective fields used *CalTPA Cycle 1: Getting to Know Students and Planning Instruction*, as the foundational document to begin their work. A comparison of the evidence a candidate submits for Cycle 1 of the CalTPA and the field test version of the Math Cycle is available in Appendix F. In addition to adjustments to the evidence candidates submit, several innovative changes were incorporated from the positive feedback received during the LPA:

- incorporated more flexibility and choice for candidates in how to provide their evidence (e.g. number of video clips and length, verbal or written commentary), recognizing the variety of teaching contexts in which candidates might be placed;
- aligned language to the CDE documents (e.g. formative and summative assessments)
- redeveloped analytic rubrics;
- expanded opportunities for candidates to explain what instructional choices they made and why, providing a more authentic representation of their practice; and
- updated glossary to include mathematics terms.

Bias Review Committee

Prior to field test materials being distributed to programs and candidates, the Math Cycle Assessment Guides were reviewed by a Bias Review Committee (BRC) facilitated by ES, which reviews and offers recommendations to Commission staff, in June of 2024. The BRC consisted of six California educators with backgrounds across MS, SS, and EdSp credential areas. The BRC identifies content, language, and/or stereotypes that might disadvantage or offend a candidate because of their gender, gender identity, race, nationality, national origin, ethnicity, religion, age, disability, or cultural, economic, or geographic background. The BRC ensures that the Math Cycle content is fair and equitable for all candidates and reflects the diversity of California schools.

Commission staff reviewed the recommendations and made the following revisions based on BRC findings:

Diversity Representation

- replaced cover photos lacking Hispanic representation with ones that depict more diversity;
- added sign languages used by Deaf students, such as LSM, LSC, BASL, etc.; and
- added references to SB 210 (Chap. 652, Stats. 2015) and included diverse examples of students with various needs.

Fairness and Content

- clarified the term "intellectual or academic advancement" and specified gifted, remediation, or intervention;
- reordered and refined descriptions of student characteristics to better align with fairness;
- included detailed guidance on monitoring and formative assessment; and
- revised language related to "inclusive" to "equitable" or "accessible" to avoid implications of exclusion.

Language and Terminology

- replaced ableist terms like "listen" with more inclusive language for Deaf students;
- replaced the term "Heritage Language Speakers/Learners" with "Heritage Language Users;"
- adjusted terminology to reflect the preferred usage, such as "Deaf and Hard of Hearing children" instead of "children who are Deaf and Hard of Hearing;" and
- included more specific guidance on supporting Deaf and Hard of Hearing students, including reference to Deaf coaches and appropriate services.

Clarify Video Documentation

- addressed issues related to video documentation for Deaf candidates, including considerations for sign language and interpreter accuracy; and
- clarified instructions about what constitutes acceptable video quality and participation.

Below is a recommendation outside of the charge to the BRC that was not incorporated into the Math Cycle:

- any recommended changes to CDE content standards

Part II: Fall 2024 Field Test Methodology

The Math Cycle Field Test process included recruiting candidates to participate from PK-3 ECE, and EdSp-ECSE and VI programs; providing support to those programs and candidates; recruiting and training assessors; conducting consensus scoring; and soliciting feedback through surveys and focus groups.

Candidate Participation: Credential Area, Pathway, Sector, and Ethnicity

Ultimately, eight preliminary preparation programs across PK-3 ECE and EdSp-ECSE and VI credential areas participated in the Math Cycle field test. From those programs, 59 candidates

submitted responses (see Appendix G), 59 of which were determined to be scorable. Pathways represented in the field test included District Intern, University Intern, Integrated Undergraduate Teacher Credentialing Programs (ITEP), and University Student Teaching. Sectors of preparation programs represented included Private, LEA/County Office of Education, and CSU. Table 1 outlines the number of candidates in each represented credential area.

Table 1: Number of Candidates by Credential Area

Credential Area	N Candidates
PK-3 ECE	17
EdSp-ECSE	39
EdSp-VI	3
Total	**59**

Table 2 outlines participation by pathway, with District Intern having the highest number of candidates participating in the Math Cycle Field Test and Residency pathways having the lowest number of candidates participating in the Math Cycle Field Test (0).

Table 2: Number of Candidates by Pathway

Pathway Type	N
University Student Teaching	12
District Intern	40
University Intern	5
Residency Program	0
Integrated Undergraduate Teacher Credentialing Program (ITEP)	2
Total	**59**

Table 3 depicts the candidates in the field test by sector. The largest number of candidates came from LEA/County Office of Education programs. As none of the UCs offer PK-3 ECE or EdSp-ECSE or VI programs, no field test participants were from a UC.

Table 3: Number of Candidates by Sector

Sector Type	N
CSU	16
Private/Independent	19
LEA/County Office of Education	24
UC	0
Total	**59**

Table 4 outlines the number of candidates by ethnicity, with Mexican American/Chicano (24), being the largest group represented, followed by White (non-Hispanic) (12) and Latino/Latin American/Puerto Rican/Other Hispanic (11). Data are self-reported by the candidates.

Table 4: Number of Candidates by Ethnicity

Ethnicity	N Submitted
Mexican American/Chicano	24
White (non-Hispanic)	12
Latino/Latin American/Puerto Rican/Other Hispanic	11
Other	3
Choose not to response	2
African American/Black	1
Asian Indian American/Asian Indian	1
Filipino American/Filipino	1
Cambodian American/Cambodian	1
Chinese American/Chinese	1
Other Southeast Asian American/Southeast Asian (e.g., Hmong, Khmer)	1
Korean American/Korean	1
Native American/American Indian/Alaskan Native	0
Japanese American/Japanese	0
Laotian American/Laotian	0
Vietnamese American/Vietnamese	0
Total	**59**

Math Cycle Support Provided by Commission Staff

Webinars were held for program coordinators and faculty supporting candidates in the Math Cycle Field Test beginning in July 2024. A separate kickoff webinar was held for the EdSp programs in August, and an additional support webinar was provided for one of the EdSp-VI programs in November. Weekly office hour sessions for program faculty were provided from September through November 2024, with individual sessions held upon request. Candidates were invited to meet directly with Commission staff and ES for two "office hour" sessions in October and November of 2024, however, no candidates attended these sessions.

Commission staff also engaged with cooperating teachers by holding a pre-recorded webinar to introduce them to the Math Cycle Field Test requirements and templates. All communities of interest had ongoing support through the CalTPA@ctc.ca.gov email inbox. For a full outline of events, see Appendix H.

Math Cycle Field Test Assessor Recruitment, Training, and Scoring

Beginning in September 2024, ES recruited individuals working in preliminary preparation programs and active practitioners to serve as field test assessors. Table 5 shows the number of assessors for the Math Cycle in each credential area that participated, along with the number of submissions scored by each group of assessors. Assessors in all areas were required to have recent experience and expertise in the age/grade levels and/or credential areas being scored. See Appendix I for the assessor qualifications. Submissions were scored from December 9-11, 2024, and January 13-15, 2025, using a consensus scoring model.

Table 5: Math Cycle Field Test Assessors

Credential Area	Assessors	Submissions Scored
PK-3 ECE	7	17
EdSp-ECSE	4	39
EdSp-VI	2	3
Total	**13**	**59**

Analytic rubrics were used to calibrate and score each step of the *Plan, Teach and Assess, Reflect,* and *Apply* sequence. Appendix J provides the PK-3 ECE Rubric Essential Questions and sample rubric. While there are five score levels per rubric, the expectation for a candidate is to provide evidence that corresponds to Level 3, which represents expected performance of a teacher candidate. Levels 4 and 5 of the rubrics require the candidate to provide additional evidence, demonstrating a more complex and/or comprehensive performance.

Assessors were provided preselected "marker papers" that displayed differing levels of responses from across the five rubric score levels. Once they demonstrated calibration through reviewing marker papers and discussion, assessors moved into pairs or triads for scoring the remaining candidate submissions using the consensus scoring process. Scoring was conducted online. As consensus on the score judgments were reached, data were entered into the computer system to track scores.

Field test scoring procedures were implemented in accordance with the CalTPA Scoring Quality Management Plan. Submissions that were at or around the passing standard were double scored (blind scored by new assessor[s]). In the event rubric scores were adjacent, the higher score was reported. If the rubric scores were exact, the score remained the same. If the rubric scores were more than 1 score point apart, the submission was sent to a new assessor for adjudication scores and a final scoring determination was made. Submissions with two or more rubric scores of "5" were backread (read again by Commission staff) for the purpose of studying high performing submissions and to determine that rubric language was appropriate.

Candidates and programs received notification of passing status at the conclusion of scoring for each credential area; they received rubric level scores in January 2025 for PK-3 ECE and February 2025 for EdSp-ECSE and VI. Aggregate scores were sent to programs in January 2025 for PK-3 ECE and February 2025 for EdSp-ECSE and VI.

Part III: Results from the Math Cycle Fall 2024 Field Test Analysis

The following points outline key findings from the field test data:

- Candidates and program coordinators generally found the Math Cycle materials and rubrics to be clear and helpful when participating in the field test and appreciated the hyperlinks and glossary.
- The use of the Standards for Mathematical Practice along with the CCSS for Mathematics or the PTKLF Strands in Mathematics to write learning goals was an area in which candidates were unfamiliar. However, once the candidates were introduced and guided through these strands/standards, they were able to grasp the concept and proceed without issues.

- Candidates and program coordinators appreciated the examples for using strand(s)/standard(s) to write math and ELD learning goals, as well as other callout boxes throughout the assessment guide with examples. To continue this support, providing mid-range examples (candidate submissions that score mostly 3s and 2s) would be beneficial to candidates and programs, particularly related to leveraging students' cultural and/or linguistic assets in activities/lessons.
- While the ability of candidates to leverage students' cultural and/or linguistic assets was identified as a challenge in the Math Cycle, coordinators found that the Math Cycle materials provided a teaching opportunity in this area and candidates realized the importance and value of cultural and linguistic assets.
- Providing candidates with choices to fulfill the submission requirements in the Math Cycle was appreciated by candidates and program coordinators. The flexibility and inclusivity allowed candidates to choose the commentary format that best suited their strengths and preferences. Providing options was seen as an empowering and positive psychological factor.
- Both candidates and program coordinators found the instructions for Step 3: Reflect clear and helpful but noted that some candidates felt the prompts were repetitive and made them unsure if they were interpreting the questions correctly.
- Program coordinators and assessors suggested more clearly defining "play-based learning" and providing examples to help candidates understand these approaches.

Findings from Scoring

Of the 66 candidates who registered for the Math Cycle Field Test, 89% (N=59) submitted assessments. All submissions were determined to be scorable. At the conclusion of scoring, 58 of the 59 Math Cycle Field Test candidates passed (98% pass rate), with an overall mean score of 20.9 (passing standard set at 14 points). Additional score data related to pass rates by pathway, sector, gender, and ethnicity are available in Appendix K.

Commission staff were in communication with programs regarding the seven EdSp-ECSE and VI candidates who did not submit. Their reasons for not submitting included the Math Cycle not currently being required to earn a credential, technical difficulties, change in clinical practice placement, personal issues, and already holding a preliminary credential that required passage of a TPA.

Overall Pass Rate

The overall pass rate for the Math Cycle field test was high, ranging from 96-100% across pathways. District Interns passed at a rate of 96%, with all other represented pathways passing at 100% (ITEP, University Interns, University Student Teaching Program).

Pass Rate by Racial/Ethnic Group

Table 6 identifies pass rates by different racial and ethnic sub-groups. All subgroups passed at a rate of 100%, with the exception of one candidate in the White (non-Hispanic) subgroup, who did not meet the passing standard.

Table 6: Pass Rate by Ethnicity

Ethnicity	N Submitted	N Passed	N Not Passed
African American/Black	1	1	0
Asian Indian American/Asian Indian	1	1	0
Cambodian American/Cambodian	1	1	0
Chinese American/Chinese	1	1	0
Choose not to response	2	2	0
Filipino American/Filipino	1	1	0
Japanese American/Japanese	0	0	0
Korean American/Korean	1	1	0
Laotian American/Laotian	0	0	0
Latino/Latin American/Puerto Rican/Other Hispanic	11	11	0
Mexican American/Chicano	24	24	0
Native American/American Indian/Alaskan Native	0	0	0
Other	3	3	0
Other Southeast Asian American/Southeast Asian (e.g., Hmong, Khmer)	1	1	0
Vietnamese American/Vietnamese	0	0	0
White (non-Hispanic)	12	11	1
Total	**59**	**58**	**1**

Pass Rates by Credential Area

Table 7 outlines the scoring data by credential area (pass rates, mean scores, standard deviation, minimum score assigned, and maximum score assigned). The EdSp-VI candidates had the highest mean score (22.7) while the PK-3 ECE candidates had the lowest mean score (20.7). EdSp-VI had the highest observed score (35), while EdSp-ECSE had the lowest observed score (13). Due to the limited number of candidates in the EdSp-VI sample (N=3), and the variability in the observed EdSp-VI scores (16, 17, and 35) as evidenced by the large standard deviation (10.69), the data for this group is not generalizable to the larger EdSp-VI population and should be interpreted with caution.

Table 7: Mean Scores by Credential Area

Credential Area	N Candidates	Pass Rate	Overall Mean Score	S.D.	Min	Max
PK-3 ECE	17	100%	20.7	3.89	15	28
EdSp-ECSE	39	97%	20.8	4.92	13	33
EdSp-VI	3	100%	22.7	10.69	16	35
Total	**59**	**98%**	**20.9**	**4.91**	**13**	**35**

Score Distribution Across Rubric Levels

Total scores for all submissions ranged from 13 to 35 (out of a possible 40 points) across the eight rubrics.

The distribution of scores for all submissions is presented below in Graph 1. With a total of 40 points possible, the highest observed score was 35, the lowest observed score was 13, and the most frequently observed score was 20. For reference, the green arrow indicates the passing

cut score (14), and the yellow oval is the mean (21). Only one score was below the passing standard, and most scores were well above the passing cut score, indicating that a score of 14 is a very supportive passing standard for candidates participating in the math cycle field test.

Graph 1: Total Distribution of Scores

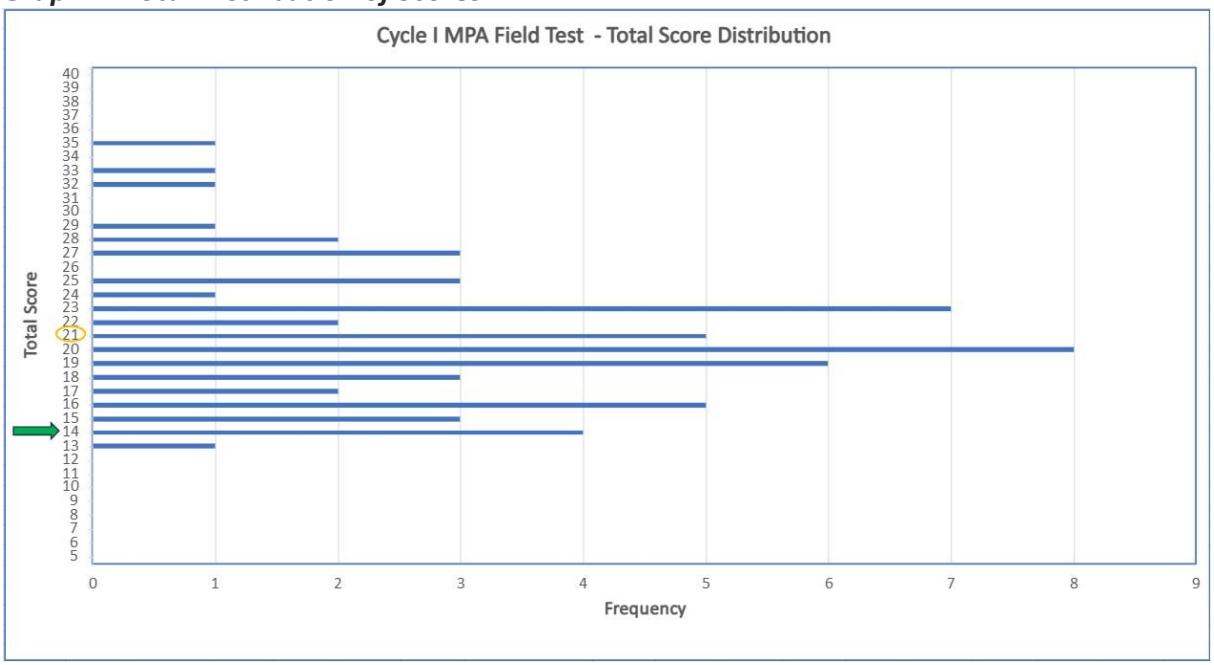

Table 8 outlines the distribution of scores for each Step and Rubric. Scores were observed across the full range of rubric levels (1-5) for Rubrics 1, 3, 4, 5, and 8. No scores of Level 5 were observed on Rubrics 2 and 7, and no scores of Level 1 were observed on Rubric 6. While all rubrics will be revised based on the results of the field test, Rubrics 2, 6, and 7 will be closely studied going into the operational administration of the assessment.

Table 8: Score Distributions by Rubric

	Rubric Level 1 (N)	Rubric Level 2 (N)	Rubric Level 3 (N)	Rubric Level 4 (N)	Rubric Level 5 (N)
Step 1: Plan					
Rubric 1	5	27	19	7	1
Rubric 2	1	23	29	6	0
Rubric 3	3	23	22	8	3
Rubric 4	7	30	15	5	2
Step 2: Teach and Assess					
Rubric 5	13	18	21	5	2
Rubric 6	0	21	27	10	1
Step 3: Reflect					
Rubric 7	3	24	24	8	0
Step 4: Apply					

	Rubric Level 1 (N)	Rubric Level 2 (N)	Rubric Level 3 (N)	Rubric Level 4 (N)	Rubric Level 5 (N)
Rubric 8	2	28	22	4	3

In Step 1: Plan. Candidates scored primarily at Levels 2 and 3 across all rubrics in Step 1 (Rubrics 1, 2, 3 and 4). After completing an analysis related to the number of Level 1 and Level 2 scores in Rubrics 1 and 4, staff observed that candidates require more support with leveraging students' assets (cultural and/or linguistic) and/or interests in their planning and would benefit from a shared definition of "play-oriented." Additionally, observed scores suggested that EdSp -ECSE candidates could benefit from ways in which to collaborate with instructional support personnel to support students' access to and meaningful participation in the math activity. Commission staff will address these areas through callout boxes and glossary additions within the guides.

In Step 2: Teach and Assess, Rubrics 5 and 6 had scores of 2 and 3 assigned the most. Rubric 5 saw a high number of 1s assigned in scoring. Staff conducted an analysis as to why candidates were assigned Level 1 and discovered that many candidates leveraged students' interests in facilitating the activity/lesson, while the rubric called for leveraging cultural and/or linguistic assets. This was misaligned to Step 1: Plan, which asked candidates to leverage the students' assets (cultural and/or linguistic) and/or interests in their planning. The rubric has subsequently been revised to align with Step 1 and will be closely monitored in the revisions.

Step 3: Reflect has only one rubric, Rubric 7. Levels 2 and 3 were the most frequently observed scores, and no candidates scored at Level 5. In reviewing the scoring data, candidates were assigned 2s due to providing a summary of their activity/lesson rather than engaging in reflection or provided a vague analysis of the effectiveness of the adaptations for the focus students. Revisions will address the differences in summarizing versus reflection. Because no Level 5 responses were observed in Rubric 7, Levels 4 and 5 constructs have also been revised.

In Step 4: Apply, Rubric 8 had the most scores assigned in Level 2, while Level 1 score was the least assigned. Observation from scoring indicates that Level 2 was frequently assigned due to vague responses regarding how the next steps for learning would reinforce, strengthen, and/or extend the student's math learning and ELD/math academic language development. EdSp-ECSE candidates frequently received Level 2 scores due to lack of clarity in how they will work with instructional support personnel in future instruction to support access and meaningful participation. Prompt revisions will address these areas to elicit clearer candidate responses. Information about each credential area's rubric scores are available in Appendix L.

Findings from Candidate, Program Coordinator, Cooperating Teacher, and Assessor Feedback
Candidates, program coordinators, cooperating teachers, and assessors had the opportunity to provide feedback on the Math Cycle through surveys and focus groups. Selected survey responses that reflect themes found in the full set are available in Appendix M, and focus group excerpts are available in Appendix N.

Survey Administration

Candidates, program coordinators, cooperating teachers, and assessors were surveyed based on their field test participation to gather their feedback. Candidate, program coordinator, and cooperating teacher surveys had items clustered in three areas: Opportunity to Demonstrate Knowledge, Skills, and Abilities; Clarity and Ease of Use; and Field Test Information and Support. The assessor had items clustered in two areas: Clarity and Ease of Use and Field Test Assessor Training.

Across all areas, respondents were asked to indicate their level of agreement with statements using the scale: Strongly Agree, Agree, Disagree, Strongly Disagree, Don't Know/Does Not Apply. Typically, the survey window closes prior to the rubric-level scores being released to candidates, however, due to the low response rate, the window was extended, which coincided with the release of the scores and may have impacted some candidates' responses.

In total, 25% (N=15) of candidates who participated in the Field Test responded, representing the PK-3 ECE (N=8), EdSp-ECSE (N=5) and EdSp-VI (N=2) credential areas. 40% (N=4) of the participating program coordinators responded, with PK-3 ECE and EdSp-ECSE coordinators represented. Additionally, six cooperating teachers, representing all credential areas, responded. The total number of cooperating teachers who received the survey is unknown as the programs distributed the survey to the cooperating teachers. Of the six who responded, 83% indicated they had completed a TPA as a part of their own teacher preparation program. 62% (N=8) of the assessors responded to the assessor survey, with the PK-3 ECE and EdSp-ECSE credential areas represented.

Focus Group Administration.

Following their submission of their Math Cycle Performance Assessments, 23 candidates (PK-3 ECE=8, EdSp-ECSE= 14, EdSp-VI= 1) participated in focus group discussions to share their experiences. Nine program coordinators (PK-3 ECE= 3, EdSp-ECSE= 5, EdSp-VI= 1) also participated in focus group discussions after their candidates had submitted. Finally, assessors participated in focus group discussions following the completion of consensus scoring to share their experiences. Extended excerpts from the focus groups discussions can be found in Appendix N.

Key Findings from Candidates

Opportunity to Demonstrate Knowledge, Skills, and Abilities

Overall, candidates indicated that the Math Cycle allowed them to demonstrate their math instruction in an authentic way. In their survey responses, the majority strongly agreed or agreed (87%) that the Math Cycle allowed them to demonstrate their math instruction in an authentic way, while 93% of candidates strongly agreed or agreed that the tasks associated with completing the Math Cycle aligned with what they had been learning in their educator preparation coursework. Three candidates (20%) disagreed or strongly disagreed that the Math Cycle was a fair measure of their ability to teach math.

As one candidate stated:

> *I felt the scorer did not score my TPA correctly… I was scored very low and I'm concerned for future candidates.*

Additionally, focus group candidates shared that completing the Math Cycle was a significant accomplishment, despite its difficulty. They noted that reviewing videos of their teaching provided insights and supported their growth as educators. Candidates also highlighted that their participation in the Math Cycle led to their realization of the importance and value of using students' cultural and linguistic assets in their activities/lessons and instruction, their understanding of the need to provide actionable and specific feedback to students, and of the advantages of play-based learning and allowing students to guide the activity.

Finally, candidates expressed gratitude for the opportunity to participate in the field test. One candidate specifically thanked the Commission for approving the PK-3 ECE credential and conveyed enthusiasm for educators interested in pursuing it.

As one candidate focus group participant stated:

> *When teaching we're constantly adapting, we're modifying, but it goes really fast so a bonus for me was being able to sit down and really see what happened and learning from it. It was helpful seeing how great the students were doing and how they were connecting their knowledge and how well the activities were working. Even though we're always observing, it was nice to take a deeper look and to see all that they're pulling from, you know, everything that we're doing to try to meet their needs and help them. That was a win.*

Clarity of Assessment Materials and Ease of Use

All candidates (100%) strongly agreed or agreed that having the choice to provide written, verbal, or ASL commentary in Steps 2 and 4 was helpful. This was echoed in the qualitative responses, where candidates reported the flexibility allowed them to choose the format that best suited their strengths and preferences, such as written or verbal commentary.

Candidates also strongly agreed or agreed (100%) that, based on their students' understanding of the math and ELD goals, they felt confident in determining future steps for their math learning and language development.

Candidates indicated that the essential questions for the rubrics are an area in which the Math Cycle could have more clarity (20% disagreed or strongly disagreed). Commission staff will focus on this area for revisions for the operational versions of the Math Cycle.

In the focus group discussions, candidates highlighted that having a well-developed assessment guide was valuable. Similarly, in the survey, 93% of candidates indicated that they strongly agreed or agreed that the directions were clear for how to use math content and math practice strands/standards to create learning goals and for how to leverage students' cultural and/or linguistic assets and/or interests when planning their activity/lesson. As highlighted in Part III, these responses did not align with what was observed in candidate submissions. This discrepancy suggests that, while candidates believed they understood what the tasks asked of them, in fact, they had some difficulty using math content and math practice strands/standards

to create learning goals and leveraging students' cultural and/or linguistic assets during planning and instruction. These areas will be addressed in the operational revisions.

Math Cycle Field Test Information and Support
In their survey responses, 100% of candidates strongly agreed or agreed that their program faculty encouraged them to self-assess their submissions using the Math Cycle rubrics and that their program provided guidance with registration and uploading their submission. In their focus group comments, candidates again highlighted the importance of faculty support, which support the implementation of the CalTPA Acceptable Supports.

An area in which candidates reported needing more support was in being prepared to plan for both math content and practice strands/standards in their learning goals, with 13% disagreeing or strongly disagreeing that they received sufficient support from their program in this area. In candidate submissions, candidates were able to use the math content strands/standards but would leave out Math Practice Standards or confuse other strands/standards for the Math Practice Standards when creating their learning goal. To address this, Commission staff are working to revise instructions and strengthen examples related to using Math Practice Standards prior to the operational materials being released to programs. Additionally, Commission staff plan to host a "Digging Deeper" session focused on this topic in Fall/Winter of 2025.

Another area of note is that 20% of candidates disagreed that they were prepared by their program to write ELD learning goals. While the Math Cycle is shifting toward academic language development and goals (with ELD moving to the Literacy Cycle), this is an area that Commission staff will continue to monitor, especially as the Literacy Field Test concludes.

Areas for Consideration
Candidates also reported challenges with

- balancing the Math Cycle requirements with their specific teaching contexts, such as working with very young children or students with special needs;
- understanding and incorporating cultural and linguistic assets into their math activities/lessons;
- finding some prompts repetitive, which caused confusion (e.g., unsure if they were interpreting the prompts correctly since they had already answered it elsewhere); and
- experiencing technical issues with video uploads.

Other candidates encountered challenges with the registration process, reporting issues with the MPA during registration and that using the voucher code was confusing. Although this issue was resolved by ES, it was a challenge at the time of registering.

Key Findings from Program Coordinators
Opportunity to Demonstrate Knowledge, Skills, and Abilities
Like the program candidates, 100% of the coordinators who responded to the survey strongly agreed or agreed that the Math Cycle allowed candidates to authentically demonstrate their knowledge, skills, and abilities. They also indicated the assessment was a fair measure of candidates' abilities to teach math and that the Math Cycle tasks aligned with what candidates have been learning in their educator preparation coursework.

When asked "Do you feel candidates learned something of value about their instructional practice by completing the Math Cycle field test? Please explain," one Program Coordinator shared:

> *Yes, absolutely! Some candidates are currently teaching, and it helped them to "unlearn" certain things -- got them to think about their teaching. I felt the whole process put them in that place of having to think about what am I doing, why am I doing this, what's my evidence, and how can I talk about this and write about it? The process provided an opportunity for good "meaty" discussion and an easy way to talk about teaching. What are you doing and why are you doing it?*

Clarity of Assessment Materials and Ease of Use

Program coordinators who were surveyed found the Math Cycle to be clear and easy to use overall. 100% strongly agreed or agreed with statements related to the clarity, ease of use, and organization of the Math Cycle Assessment Guide. All program coordinators indicated that they strongly agreed or agreed that the directions were clear for how to use math content and math practice strands/standards to create learning goals and for how to leverage students' cultural and/or linguistic assets and/or interests when planning their activity/lesson. Finally, all agreed or strongly agreed that the different levels of performance in each rubric were clear.

All responding program coordinators also strongly agreed or agreed with statements about candidates having enough information about their focus student's assets, interests and/or learning needs to plan adaptations and the clarity of directions to candidates to use the PTKLF or CCSS for Mathematics to plan the math activity/lesson, incorporate the math content and practice strands/standards to write a math learning goal, write an ELD goal.

While there were high ratings for the overall clarity and ease of use, of the program coordinators who responded to the survey, half disagreed (25%) or didn't know (25%) that the candidate choice to provide written, verbal, or ASL commentary was helpful. But according to those who participated in the focus group, candidates liked having the choice between verbal and written commentary, a flexibility coordinators note was particularly beneficial for candidates whose primary language was not English. Still, many candidates chose written commentary over verbal, likely due to technical difficulties with video uploads and the candidates' comfort level with writing. Providing options was seen as an empowering and positive psychological factor, even if most candidates ended up choosing the written commentary option.

Additionally, 25% of program coordinators disagreed that the essential questions were clear and that candidates understood how to leverage students' cultural and/or linguistic assets and/or interests to plan the math activity/lesson, a finding that was echoed in an open-ended response and in the LPA pilot. Commission staff will be adding specific definitions and examples to the assessment and faculty guide for the operational version. Support for the field will also be provided, beginning with a Digging Deeper session that was held in February 2025.

Math Cycle Field Test Information and Support

100% of program coordinators strongly agreed or agreed that program support webinars and office hours were valuable to them as they prepared for their field test responsibilities. They also agreed that the webinar provided for cooperating teachers helped with communicating

candidate expectations for the Math Cycle field test. Most program coordinators (75%) strongly agreed or agreed that cooperating teachers provided candidates with sufficient support; the remaining 25% of respondents indicated "don't know/does not apply."

Coordinators also reported that their programs' prior experience with other TPAs helped them to build-on existing structures. The use of the backwards mapping resource provided by Commission staff to break down tasks weekly improved candidates' understanding of what was being asked. Similarly, coordinators reported the templates were easy to follow and provided good teaching opportunities, especially regarding cultural assets.

Areas for Consideration

While, overall, program coordinators believed that the Math Cycle field test provided valuable insights and learning opportunities for candidates, they did express areas for Commission staff to consider. Some items, such as the compressed timeline from receiving the field test materials to the due date and changing the course sequence to get candidates to complete the Math Cycle in the first semester, will be rectified when the assessment is operational. Other challenges will require additional support for programs embedding the TPA into coursework, finding focus children with disabilities in a PK-TK setting, obtaining permission to record students, and clarifying the required age of the children for EdSp-ECSE placements when completing a performance assessment.

Relative to the challenge of finding focus children with disabilities in a PK-TK setting and receiving materials in a timely manner, one program coordinator noted during a focus group that:

> *A challenge for my students was being in a PreK-TK setting where children may not yet be formally diagnosed with disabilities and needing to find focus children with disabilities. Another challenge was not getting the templates sooner.*

Program coordinators also expressed that some candidates faced issues with uploading verbal commentary due to file size and length restrictions, an area that Commission staff will explore with ES. Additionally, program coordinators requested sample responses or submissions, which Commission staff will work to provide in the first year of operational administration.

Key Findings from Cooperating Teachers

Opportunity to Demonstrate Knowledge, Skills, and Abilities

All responding cooperating teachers indicated they strongly agree (N=1) or agree (N=5) that the Math Cycle is an authentic way for candidates to demonstrate their knowledge, skills, and abilities. The majority found that the tasks aligned to typical classroom instruction (strongly agree N=1, agree N=3); though one respondent disagreed and another selected "Don't Know/Does Not Apply." This variation suggests that while the Math Cycle is generally aligned to real-world instruction, there may be some variation in how well it fits different classroom settings.

Clarity and Ease of Use

Cooperating teachers also found the Math Cycle materials to be well-organized, clear, and easy to use, and the majority (strongly agree N=2, agree N=3) responded that candidates understood how to leverage students' cultural and/linguistic assets and/or interests, though one disagreed.

Cooperating teachers indicated that the assessment guide was well organized, with all six respondents indicating they either strongly agreed (N=3) or agreed (N=3) that information was easy to find so that they could support their candidate. They considered the rubric essential questions clear, with two strongly agreeing and four agreeing. These findings indicate that the clarity and ease of use of the materials supported cooperating teachers and candidates.

Math Cycle Field Test Materials and Support

100% of cooperating teachers found the different levels of performance for each rubric clear (3 strongly agree, 3 agree). However, cooperating teachers had a mixed perception (2 strongly agree, 3 agree, 1 disagree) of candidates' understanding of how to leverage students' cultural and/or linguistic assets and/or interests in planning math activities/lessons. This suggests that some candidates may need additional guidance or resources to effectively leverage students' assets (cultural and/or linguistic) and/or interests into their math planning and instruction.

Key Findings from Assessors

Clarity and Ease of Use

As shown in the survey results (Appendix M), overall, assessors found the Math Cycle materials to be clear. All assessors indicated they agreed or strongly agreed that the assessment guide directions, templates, and constructs were clear and that the different levels of performance were clearly stated in the Math Cycle rubrics. Focus group participants also agreed, reporting that the rubric language was generally clear enough to make scoring judgements, though some terms—such as "detailed feedback" in Rubric 1.6 and "leverage" related to "cultural and/or linguistic assets"—needed clarification to ensure consistency in candidate understanding. Assessors also drew attention to ambiguity in the concept of "play-oriented learning," suggesting a more explicit definition be provided.

Focus group responses from assessors highlighted the need for better alignment between prompts and rubrics to ensure that candidates understand what is expected. Assessors recommended using consistent language and bullet points to highlight key elements and further align prompts and rubrics. One assessor specifically recommended revising the wording in Level 4 of rubrics 1.2, 1.3, and 1.4 to ensure that the language reflects the candidate's thought process and math activity/lesson focus. Finally, they noted that more specific and detailed descriptions in the rubrics would help candidates better understand the requirements for higher scores.

In survey responses, 38% (N=3) of assessors strongly agreed and 62% (N=5) agreed that the amount of evidence required from candidates at each step was sufficient to score the submission and that the organization of the Math Cycle guide made it easy to find the information (e.g., rubrics embedded with step instructions, glossary, links to resources). In focus groups, assessors agreed that they were able to reach consensus quickly when scoring, though they faced challenges with Rubric 1.1 due to its complexity. Additionally, the inclusion of Universal Design for Learning (UDL) and cultural assets in scoring discussions occasionally led to differing interpretations. However, assessors noted that facilitation and evidence-based discussions helped their understanding in scoring.

Field Test Assessor Training
All assessors strongly agreed (N=6) or agreed (N=2) that the implicit bias training effectively prepared them for scoring. Consensus scoring training was also well-received, with all assessors strongly agreeing (N=6) and agreeing (N=2) that it helped them understand scoring judgments. All assessors strongly agreed or agreed (strongly agree N=6, agree N=2) in their confidence to apply the rubrics consistently to score candidates' evidence for each of the four Math Cycle steps. These results suggest that the assessor training provided a solid foundation in which to apply the rubrics fairly and reliably throughout the Math Cycle scoring process.

Areas for Consideration
Assessors acknowledged that while candidates were generally able to write learning goals, there was room for improvement. Some candidates presented broad goals and then narrowed them as the lesson/activity unfolded, while other candidates' learning goals were clear but not always measurable.

One Assessor observed:

> *Candidates often started with broad goals but narrowed them as the lesson unfolded.*

Overall, assessors found the math cycle effective in eliciting authentic evidence of candidates' instructional practices but noted that differentiation strategies for focus students remain a challenge for candidates. Assessors also noted that beginning teachers struggled in reaching a Level 4 in differentiation strategies.

Assessors provided many recommendations to teacher preparation programs in how they could support their candidates, such as focusing on UDL training, play-based learning, leveraging students' assets, clarifying math practices, and embedding the Math Cycle within the program rather than treating it as an additional task.

Part IV: Next Steps for Math Cycle Development

Changes for Operational Administration
Based on the results of the field test surveys, focus groups, and candidate scores, Commission staff are finalizing the following adjustments to the Math Cycle assessment guides, templates, and rubrics.

Step 1: Plan

- In all versions, work will be done to provide clarity around what it means to leverage students' cultural and/or linguistic assets and/or interests, and play-based learning will be defined. Candidates will also be asked to include math content and practices and math academic language development (ALD) in their learning goals.
- In EdSp-VI, candidates will also integrate the area(s) of the Expanded Core Curriculum (ECC) relevant to math to support the learning goals.
- In PK-3 ECE, the focus children will be aligned with what the field and programs are familiar with from the operational versions of CalTPA with Focus Child 1 being a child who is an English Learner or who has a language need and Focus Child 2 being a child with a math learning need. Focus Child 3 will remain the same.

- EdSp-ECSE will move to one Focus Child with the option to include additional children who require similar support to progress toward meeting the learning goals.
- EdSp-ECSE and VI candidates will be asked to include the Focus Child's/Student's IEP goal(s) related to the math content, practices and/or math academic language that will be addressed in the activity/lesson or to well-being or behavior (e.g., attention, engaging with activities) that would impact their access to the math activity/lesson.

Step 2: Teach and Assess

- Revisions will be made to address the shift from ELD to the focus on math ALD.
- EdSp-ECSE candidates will be able to facilitate the activity with the Focus Child or with the Focus Child and additional children who require similar support to progress toward meeting the learning goals.
- EdSp-VI candidates will have the opportunity to demonstrate how they integrate the area(s) of the ECC relevant to math to support the Focus Student in the math lesson.

Step 3: Reflect

- Step 3 prompts will be revised to elicit more reflection from candidates rather than a summary of the previous steps. A callout box will also be added to support candidates with reflective writing.

Step 4: Apply

- Candidates will be asked to explain what they would do differently if they taught this activity/lesson again and to address how they would advance the students' math academic language development in future activities/lessons.

All rubrics will be reviewed and revised as needed to align with the above changes. Commission staff will continue to work with candidates, program coordinators, cooperating teachers, and assessors to determine the most effective supports for all groups as teacher preparation programs prepare for the operational assessment in the 2025-26 academic year.

Timeline for Operational Administration

As a result of the data from the field test, staff maintains that the development timeline for the Commission is on track to begin a 2025-26 operational administration for the Math Cycle for PK-3 ECE, and EdSp-ECSE and VI programs. Results of the extended field test for PK-3 ECE and EdSp-DHH will be brought to the Commission in June.

Scheduled supports for programs and for candidates as they engage in the Math Cycle in the first operational year are detailed in Table 9 below. Assessor training dates will be added once determined.

Table 9: 2025-26 Math Cycle Supports for Programs and Candidates

Type of Support	Date(s)
Program Office Hours	PK-3 ECE-First and Third Thursday of each month 10-10:30 EdSp- First and Third Friday of each month 10:00-10:30
CalTPA Transition Webinars	PK-3 ECE- June 5, 2025, 10:00-12:00 EdSp-ECSE, and VI- June 4, 2024, 10:00-12:00
CalTPA Operational Materials Orientation	PK-3 ECE- August 13, 2025, 1:00-3:00 EdSp-ECSE and VI- August 21, 2025, 1:00-3:00
Meredith Fellows Implementation Conference	Spring 2026
CalTPA Kickoff Webinars	PK-3 ECE- October 2025 EdSp-ECSE and VI- October 2025
ListServs	PK-3 ECE- CalTPA Email List EdSp- Education Specialist CalTPA Email List
Digging Deeper Series for CalTPA, EdSp CalTPA, and CalAPA	Fall 2025 Winter 2026 Spring 2026
Faculty Workshops	PK-3 ECE- Spring/Summer 2026 EdSp- Spring/Summer 2026

Staff Recommendation

Staff recommends that the Commission adopt the CalTPA PK-3 ECE and EdSp-ECSE and VI Math Cycle for operational administration, beginning in the 2025-26 academic year.

Next Steps

Based on the Math Cycle field test results, surveys, and focus group findings, Commission and ES staff will finalize the Math Cycle tasks, rubrics, and program guides. Next steps for development of the Math Cycle include the following:

- complete the extended Math Cycle Field test (PK-3 ECE and EdSp-DHH) in April 2025;
- finalize operational Math Cycle Tasks, Rubrics, Program Guides, and Support Materials; and
- align CalTPA Cycle 1 (MS/SS/WL) and EdSp CalTPA Cycle 1 (MMSN and ESN) with Math Cycle revision as is appropriate for the credential area and/or content area for the 2025-26 academic year.

Staff will provide an analysis of the full Math Cycle field test (fall and extended) at the June Commission meeting and propose a passing standard for 2025-26. The Commission and ES will convene an additional group of educators for a standard setting study in 2026 with staff bringing forward a recommended passing standard for Commission adoption at the conclusion of the study.

Appendix A

Teaching Performance Expectations (TPEs) Map

PK-3 ECE Teaching Performance Expectations (TPE) Elements Addressed in PK-3 ECE Math Cycle

TPE 1	TPE 2	TPE 3	TPE 4	TPE 5	TPE 6	TPE 7	TPE 8
Element 1	Element 1	Element 1	Element 1	Element 2	Element 1	Element 3	Element 1
Element 2	Element 2	Element 2	Element 2	Element 3	Element 3	Element 7	Element 2
Element 3	Element 4	Element 5	Element 3	Element 5	Element 5	Element 8	Element 3
Element 4	Element 5	Element 5	Element 4			Element 10	Element 4
Element 6	Element 6	Element 6	Element 7				Element 5
Element 7	Element 7		Element 8				Element 6
Element 8							Element 7
							Element 8

EdSp-ECSE Teaching Performance Expectations (TPEs) Elements Addressed in EdSp-ECSE Math Cycle

TPE 1	TPE 2	TPE 3	TPE 4	TPE 5	TPE 6	TPE 7
Element 1	Element 3	Element 1	Element 1	Element 1	Element 7	Element 9
Element 2	Element 4	Element 2	Element 2	Element 4	Element 9	Element 11
Element 3	Element 5	Element 3	Element 3	Element 6	Element 11	
Element 4	Element 6	Element 4	Element 4	Element 7	Element 12	
Element 5		Element 5	Element 5		Element 13	
Element 6		Element 6	Element 6		Element 18	
Element 7		Element 8	Element 7			
Element 9		Element 9	Element 8			
Element 10			Element 9			
			Element 10			
			Element 12			

EdSp-VI Teaching Performance Expectations (TPEs) Elements Addressed in EdSp-VI Math Cycle

TPE 1	TPE 2	TPE 3	TPE 4	TPE 5	TPE 6	TPE 7
Element 1	Element 1	Element 2 1	Element 1	Element 2	Element 2	Element 9
Element 2	Element 2	Element 4	Element 2	Element 3	Element 3	Element 11
Element 4	Element 4	Element 5	Element 3	Element 4	Element 4	
Element 5	Element 5	Element 6	Element 5	Element 5	Element 6	
Element 6	Element 6	Element 7	Element 6	Element 12		
Element 7	Element 7	Element 8	Element 9	Element 13		
Element 8	Element 8	Element 9	Element 10	Element 16		
Element 9	Element 9	Element 10	Element 11	Element 18		
	Element 10	Element 12	Element 12			
	Element 11	Element 13	Element 13			
	Element 12		Element 14			
			Element 15			
			Element 16			

TPE 1	TPE 2	TPE 3	TPE 4	TPE 5	TPE 6	TPE 7
			Element 17			
			Element 18			
			Element 19			
			Element 20			
			Element 22			
			Element 23			
			Element 26			

Appendix B

Evidence Tables

PK-3 ECE Evidence Table

Cycle Step	What You Need to Do	Evidence to Be Submitted
Step 1: Plan	• With guidance from your cooperating teacher and/or faculty supervisor, review contextual information about the children. • Select three (3) focus children. • Develop one asset-based, UDL-focused, play-oriented math activity that includes one math learning goal and one ELD learning goal. • Provide a rationale for the activity plan. • Provide key math activity resources and/or materials.	• **Part A:** Written Narrative: Contextual Information • **Part B:** PK/TK or K 3 Math Activity Plan • **Part C:** Written Narrative: Math Activity Plan Rationale • **Part D:** Math Activity Resources and/or Materials
Step 2: Teach and Assess	• Facilitate and video record the entire math activity. • Select 1 to 3 video clip(s). • Provide commentary for each video clip.	• **Part E:** Video Clip(s) (up to 15 minutes) • **Part F:** Commentary (written or verbal [or ASL] response)
Step 3: Reflect	• Reflect on the effectiveness of the math activity plan and facilitation. What did the children learn? What did you learn about facilitating a math activity?	• **Part G:** Written Narrative: Reflection on What You Learned
Step 4: Apply	• Based on what you learned through completing Steps 1, 2 and 3, describe what you will do in future activities to advance the children's math learning and language development, including FC1, FC2, and FC3.	• **Part H:** Narrative: Application of What You Learned (written or verbal [or ASL] response)

EdSp-ECSE Evidence Table

Cycle Step	What You Need to Do	Evidence to Be Submitted
Step 1: Plan	• With guidance from your cooperating teacher and/or faculty supervisor, review contextual information about the children. • Select three focus children. • Develop one asset-based, UDL-focused, play-oriented math activity that includes one math learning goal and one ELD learning goal. • Provide a rationale for the activity plan. • Provide key math activity resources and/or materials.	• **Part A:** Written Narrative: Contextual Information • **Part B:** PK/TK or K Math Activity Plan • **Part C:** Written Narrative: Math Activity Plan Rationale • **Part D:** Math Activity Resources and/or Materials
Step 2: Teach and Assess	• Facilitate and video record the entire math activity. • The video clip(s) can be of the focus child(ren) working with you individually OR the focus child(ren) working together with you (with or without additional children). • Select 1 to 3 video clip(s). • Provide commentary for each video clip.	• **Part E:** Video Clip(s) (1 to 3 video clips, totaling no more than 15 minutes) • **Part F:** Commentary (written or verbal [or ASL] response)
Step 3: Reflect	• Reflect on the effectiveness of your math activity plan and facilitation. What did the children learn? What did you learn about facilitating a math activity?	• **Part G:** Written Narrative: Reflection on What You Learned
Step 4: Apply	• Based on what you learned through completing Steps 1, 2, and 3, describe what you will do in future activities to advance the children's math learning and language development, including FC1, FC2, and FC3.	• **Part H:** Narrative: Application of What You Learned (written or verbal [or ASL] response)

EdSp-VI Evidence Table

Cycle Step	What You Need to Do	Evidence to Be Submitted
Step 1: Plan	• With guidance from your cooperating teacher and/or faculty supervisor, gather contextual information about your caseload. • Select one focus student. • Plan, co-plan, or adapt one asset-based, multimodal and/or multisensory, UDL-focused math lesson that includes one math learning goal based on the ECC and age-/grade-level strand(s) or standard(s). If the FS is an English Learner, provide at least one ELD learning goal. • Provide a rationale for the lesson plan. • Provide key math lesson resources and/or materials.	• **Part A:** Written Narrative: Contextual Information • **Part B:** PK/TK or K–ATP Math Lesson Plan • **Part C:** Written Narrative: Math Lesson Plan Rationale • **Part D:** Math Lesson Resources and/or Materials
Step 2: Teach and Assess	• Facilitate and video record the entire math lesson. • Select 1 to 3 video clip(s). • The video clips can be of the FS working with you individually OR the FS working with additional students with you. • Provide commentary for each video clip.	• **Part E:** Video Clip(s) (1 to 3 video clips, totaling no more than 15 minutes) • **Part F:** Commentary (written or verbal [or ASL] response)
Step 3: Reflect	• Reflect on the effectiveness of your math lesson plan and instruction. What did the focus student learn? What did you learn about teaching a math lesson?	• **Part G:** Written Narrative: Reflection on What You Learned
Step 4: Apply	• Based on what you learned through completing Steps 1, 2, and 3, describe what you will do in future lessons to advance the focus of student's ECC and math learning.	• **Part H:** Narrative: Application of What You Learned (written or verbal [or ASL] response)

Appendix C

Summary of Math Cycle Work Group Meetings & Members Involved

Meeting Date(s)	Meeting Description
March 28, 2024	Math Performance Assessment Work Group Meeting #1
June 5-6, 2024	PK-3 ECE Math Cycle Bias Review Committee
June 17, 2024	Math Performance Assessment Work Group Meeting #2
July 1, 2024	Math Performance Assessment Work Group Meeting #3

PK-3 ECE Math Cycle Performance Assessment Workgroup

Name	Title and Institution
Alexis Hyde	Education Programs Consultant, Standards and Curricular Guidance Unit, California Department of Education (CDE)
Christine Roberts	Math Specialist, Teacher on Special Assignment
Deborah Stipek	Emeritus Judy Koch Professor of Early Childhood Education and former Dean of the Graduate School of Education at Stanford
Duane Habecker	Senior Mathematics Coordinator, Merced County Office of Education
Robyn Stone	Coordinator, Educator Preparation Programs, Santa Clara County Office of Education

Appendix D

Education Specialist Design Team: ECSE, VI Subgroup Members

ECSE Subgroup Member Names	Affiliation
Janice Myck-Wayne	California State University, Fullerton
Nina Potter	San Diego State University
Jaci Urbani	Northeastern University
Elizabeth Jara	Teacher's College at San Joaquin

VI Subgroup Member Names	Affiliation
Cheryl Kamei-Hannan	California State University, Los Angeles
Sharon Sacks	San Francisco State University

Appendix E

Summary of Education Specialist Expert Meetings and Members Involved

EdSp-ECSE Expert Meetings

Meeting Date(s)	Meeting Description
March 27, 2024	ECSE Expert Meeting #1 • Overview of ECSE Performance Assessment development • Review of ECSE TPEs (Teaching Performance Expectations) • Review of draft ECSE Math Cycle, Steps and Rubrics • Next steps for providing feedback
April 12, 2024	ECSE Expert Meeting #2 • Review of updated draft of ECSE Math Cycle, Steps and Rubrics
June 5-6, 2024	Math Cycle Bias Review Committee
June 14-19, 2024	ECSE Expert Independent Review of updated draft of ECSE Math Cycle, Steps and Rubrics
July 2, 2024	ECSE Expert Meeting #3 • Review of updated draft of ECSE Math Cycle, Steps and Rubrics

EdSp-ECSE Credential Area Experts- Math Cycle

Name	Title and Institution
Janice Myck Wayne	Professor and Program Coordinator, Early Childhood Special Education, California State University, Fullerton
Nicoli Ueda	Teacher Advisor, Added Authorization Program(iCAAP)- Los Angeles Unified School District

EdSp-VI Expert Meetings

Meeting Date(s)	Meeting Description
March 25, 2024	VI Expert Meeting #1 • Overview of VI Performance Assessment development • Review of VI TPEs (Teaching Performance Expectations) • Review of draft VI Math Cycle, Steps and Rubrics • Next steps for providing feedback
April 26-May 15, 2024	VI Expert Independent Review of updated draft of VI Math Cycle, Steps and Rubrics
May 23, 2024	VI Expert Meeting #2 Review of updated draft of VI Math Cycle, Steps and Rubrics
June 5-6, 2024	Math Cycle Bias Review Committee
June 14-19, 2024	VI Expert Independent Review of updated draft of VI Math Cycle, Steps and Rubrics
July 3, 2024	VI Expert Meeting #3 • Review of updated draft of VI Math Cycle, Steps and Rubrics

EdSp-VI Credential Area Experts- Math Cycle

Name	Title and Institution
Kim Blackwell	Teacher for the Visually Impaired, Escondido Union School District
Vanessa Herndon	Teacher for the Visually Impaired and AT Specialist, California School for the Blind
Cheryl Kamei Hannan	Professor, Program Coordinator, Visual Impairment and Blindness, California State University, Los Angeles
Sharon Sacks	Interim Program Coordinator, Programs in Visual Impairment, San Francisco State University

Appendix F

Comparison of CalTPA Cycle 1 and Field Test Version of the PK-3 ECE Math Cycle

Step	CalTPA Cycle 1- Evidence to Be Submitted	Math Cycle - Evidence to Be Submitted
Step 1: Plan	• **Part A:** Written Narrative: Getting to Know Your Students (no more than 9 pages) • **Part B:** Lesson Plan (include content-specific learning goal[s] and ELD goal[s]) (no more than 10 pages) • **Part C:** Written Narrative: Lesson Plan Rationale (no more than 7 pages) • **Part D:** Related Instructional Resources and Materials (no more than 8 pages)	• **Part A:** Written Narrative: Contextual Information • **Part B:** Math Activity Plan • **Part C:** Written Narrative: Math Activity Plan Rationale • **Part D:** Math Activity Resources and/or Materials
Step 2: Teach and Assess	• **Part E:** 3 Annotated Video Clips (no more than 5 minutes each)	• **Part E:** Video Clip(s) (up to 15 minutes) • **Part F:** Commentary (written or verbal)
Step 3: Reflect	• **Part F:** Written Narrative: Reflection on What You Learned (no more than 4 pages)	• **Part G:** Written Narrative: Reflection on What You Learned
Step 4: Apply	• **Part G:** Narrative: Application of What You Learned (no more than 4 pages of written or no more than 6 minutes of video explanation)	• **Part H:** Narrative: Application of What You Learned (written or verbal)

Appendix G

Math Cycle Field Test Submissions

PK-3 ECE Submissions

Program	Pathway(s)	N
Riverside County Office of Education	District Intern	14
Vanguard University	University Student Teaching, Integrated Undergraduate Teacher Credentialing Program (ITEP)	3
	Total	**17**

EdSp-ECSE Submissions

Program	Pathway(s)	N
California State University, Fullerton	District Intern, University Intern, University Student Teaching	8
California State University, Northridge	University Intern, University Student Teaching	5
Intern, Credentialing, and Added Authorization Program (iCAAP)- Los Angeles Unified School District	District Intern	10
Teachers College of San Joaquin	District Intern, Integrated Undergraduate Teacher Credentialing Program (ITEP)	16
	Total	**39**

EdSp-VI Submissions

Program	Pathway(s)	N
California State University, Los Angeles	University Student Teaching	2
San Francisco State University	University Student Teaching	1
	Total	**3**

Appendix H

Math Cycle Development Timeline August 2024-February 2025

Timeframe	Activity
July 31, 2024	Math Cycle Webinar #1 – PK-3 ECE
August 8, 2024	Math Cycle Webinar #1- EdSp-ECSE and VI
August 29-30, 2024	*August Commission Meeting* Item 5D: Participant Waiver Requests for the Literacy Performance Assessment and the CalTPA Mathematics Cycle Field Test
September 10, 2024	Math Cycle Webinar #2
October 4–November 22, 2024	Math Cycle Program Office Hours- Weekly Fridays 9-9:30 am
October 11, 2024	Math Cycle Webinar #3
October 17, 2024	*October Commission Meeting* Item 1C: Participant Waiver Requests for the CalTPA Math Cycle Field Test (PK-3 ECE)
October 28, 2024	Math Cycle Candidate Office Hours #1 (4-4:45 pm)
October 30, 2024	Math Cycle Webinar #4
November 7, 2024	Math Cycle Field Test Cooperating Teacher Webinar
November 19, 2024	Math Cycle Candidate Office Hours #2 (4-4:45 pm)
December 2, 2024	PK-3 ECE and EdSp- ECSE Math Cycle Field Test Submission Deadline
December 12, 2024	*December Commission Meeting* Item 1C: Additional Participant Waiver Request for the CalTPA Math Cycle Field Test (PK-3 ECE)
November-December 2024	PK-3 ECE Assessor Training • Implicit Bias Training • Watch the PTKLF Video or review pages 28-34 of the PTKLF At-A-Glance • Review the full PTKLF Mathematics • Review pages 1–27 of the CA CCSS- Math • Review pages 40-41 of the TPE Domain 8: Effective Mathematics Instruction in a PK-3 Setting • Review the Math Cycle assessment guide, rubrics, and score process flow for their designated credential area
December 2024	Math Cycle Marker Selection • PK-3 ECE- December 2-3, 2024 • EdSp-ECSE- December 18-19, 2024

Timeframe	Activity
December-January 2024	EdSp-ECSE and VI-Assessor Training • Implicit Bias Training • Watch the PTKLF Video • Review pages 1–8 of the CA CCSS- Math • Review the Core Content Connectors for Math • VI only: Review pages iv- xvii of the Braille Mathematics Standards • Review pages credential area TPEs • Review the Math Cycle assessment guide, rubrics, and score process flow for their designated credential area • EdSp-ECSE only- Read a pre-selected candidate submission used for assessor training
December 6-17, 2024	Math Cycle Focus Group Dates: Candidates: • December 6, 2024 • December 9, 2024 • December 10, 2024 • December 11, 2024 • December 12, 2024 • December 13, 2024 Coordinators: • December 6, 2024 • December 17, 2024
December 16, 2024	EdSp- VI Math Cycle Field Test Submission Deadline
December 18, 2024	PK-3 ECE Math Cycle Field Test programs and candidates notified of pass/no pass status
December 2024-January 2025	Math Cycle Field Test Scoring • PK-3 ECE- December 9-11, 2024 • EdSp-ECSE- January 13-14, 2025 • EdSp-VI- January 15, 2025
January 16, 2025	PK-3 ECE Math Cycle Field official scores released to programs and candidates
January 31, 2024	PK-3 ECE Math Cycle Field Test resubmission deadline
February 4, 2025	EdSp ECSE and VI Math Cycle Field Test programs and candidates notified of pass/no pass status
February 13, 2025	Math Cycle Field Test official scores released to programs and candidates

Appendix I

Math Cycle Field Test Assessor Qualifications

To be eligible to score the California Teaching Performance Assessment (CalTPA), an applicant MUST meet the following requirements:

PK-3 ECE Assessor Qualifications

To be eligible to score the PK-3 ECE CalTPA Math Cycle Field Test, an applicant MUST meet the following requirements:

Requirement #1: Reside in the state of California

Requirement #2 Professional Experience*:* Be a current (or retired within the last 3 years) California education professional in one (1) or more of the following capacities:

College, University, and/or LEA:

- District/University/program educator providing instruction to PK-3 ECE teacher candidates within a Multiple Subject and/or PK-3 ECE CTC-accredited teacher preparation program
- Early Childhood Education faculty member (e.g., Child Development, Child and Adolescent Development, Human Development, Early Education, Child and Family Studies, Early Childhood Studies, Early Childhood Education, Human Development and Family Science, Family Science, or Child, Adolescent, and Family Studies)
- Field supervisor in PK-3 ECE setting
- Mentor or Cooperating Teacher in PK-3 ECE setting

Preschool Setting:

- Preschool Teacher (Master Teacher Permit)
- Preschool Administrator (e.g., Site Supervisor Permit, Program Director Permit)

TK-3 Setting:

- MS and/or PK-3 ECE Teacher (TK-3)
- Administrator (TK-3) (e.g., principal, assistant principal)
- National Board-Certified Teacher (NBCT) in Early Childhood
- Instructional Coach or Teacher on Special Assignment (TOSA) in TK-3

Requirement #3 Expertise in Content: Have expertise in the content area assigned to score in one (1) or more of the following ways:

- Hold a degree in the content area of Math
- Hold a degree in the content area of Liberal Arts, Liberal Studies, Elementary Education with a concentration or a minor in math
- Hold a degree in one of the following (e.g., Child Development, Child and Adolescent Development, Human Development, Early Education, Child and Family Studies, Early Childhood Studies, Early Childhood Education, Human Development and Family Science, Family Science, or Child, Adolescent, and Family Studies)
- Hold a current California Clear Multiple Subject Teaching Credential
- Hold a current California Clear Multiple Subject Teaching Credential with an added authorization in one or more of the following areas: Introductory or Supplementary

authorization in Mathematics, Mathematics Instructional Leadership Specialist Credential (MILS) *(Formerly Mathematics Specialist Instruction Credential), and/or* Mathematics Instructional Added Authorization (MIAA)

Requirement #4 Adhere to the following confidentiality requirements:

- Maintain the confidentiality of the assessment materials and knowledge gained as a result of participating in scoring the assessment, and will not share information with anyone (e.g., candidates, colleagues, etc.) without direct permission from the Commission and Pearson.
- Agree not to participate in any professional activity, beyond employment in a TK–12 school/district/county office or institution that requires candidates to use a CA-approved performance assessment, that results in payment for services related to supporting candidates in completing any CA-approved performance assessment. For example, TPA independent tutoring or consulting positions.

EdSp-ECSE and VI Assessor Qualifications

To be eligible to score the EdSp CalTPA Math Cycle Field Test, an applicant MUST meet the following requirements

Requirement #1: Reside in the state of California

Requirement #2 Professional Experience*:* Be a current (or retired within the last 3 years) California education professional in one (1) or more of the following capacities:

College, University, and/or LEA:

- District/University/program educator providing instruction to EdSp candidates within an ECSE or VI CTC-accredited teacher preparation program
- Field supervisor in ECSE or VI setting
- Mentor or Cooperating Teacher in ECSE or VI setting

Preschool Setting:

- Preschool Teacher (ECSE or VI)
- Preschool Administrator (ECSE or VI)

TK-22 Setting:

- ECSE or VI Teacher (TK-22)
- ECSE or VI Administrator (TK-22) (e.g., principal, assistant principal)
- National Board-Certified Teacher (NBCT) in ECSE or VI
- Instructional Coach or Teacher on Special Assignment (TOSA) in ECSE or VI

Requirement #3 Expertise in Content: Have expertise in the content area assigned to score in one (1) or more of the following ways:

- Hold a degree in the content area of Math
- Hold a degree in the content area of Liberal Arts, Liberal Studies, Elementary Education with a concentration or a minor in math
- Hold a degree in one of the following: Child Development, Child and Adolescent Development, Human Development, Early Education, Child and Family Studies, Early Childhood Studies, Early Childhood Education, Human Development and Family Science, Family Science, or Child, Adolescent, and Family Studies)

- Hold a current California Clear EdSp-Early Childhood Special Education Credential
- Hold a current California Clear EdSp Credential with an added authorization in Early Childhood Special Education
- Hold a current California Clear EdSp-Visual Impairments Credential
- Hold a current California Clear EdSp-ECSE or VI Teaching Credential with an added authorization in one or more of the following areas: Introductory or Supplementary authorization in Mathematics, Mathematics Instructional Leadership Specialist Credential (MILS) (Formerly Mathematics Specialist Instruction Credential), and/or Mathematics Instructional Added Authorization (MIAA)

Requirement #4: Adhere to the following confidentiality requirements:

- Maintain the confidentiality of the assessment materials and knowledge gained as a result of participating in scoring the assessment, and will not share information with anyone (e.g., candidates, colleagues, etc.) without direct permission from the Commission and Pearson.
- Agree not to participate in any professional activity, beyond employment in a TK–12 school/district/county office or institution that requires candidates to use a CA-approved performance assessment, that results in payment for services related to supporting candidates in completing any CA-approved performance assessment. For example, TPA independent tutoring or consulting positions.

Appendix J

PK-3 ECE Math Cycle Field Test Rubric Essential Questions

Step 1: Plan
Rubric 1.1 How does the candidate apply findings from recent math information (e.g., formative, summative, state testing) to plan one asset-based, UDL-focused, play-oriented math activity in a safe, positive environment?
Rubric 1.2 How does the candidate apply prior information* to plan adaptation(s) for FC1 based on their assets, interests, and/or learning needs in the math activity?
Rubric 1.3 How does the candidate apply prior information* to plan adaptation(s) for FC2 based on their assets, interests, and/or learning needs in the math activity?
Rubric 1.4 How does the candidate apply prior information* to plan adaptation(s) for FC3 based on their assets, interests, and/or learning needs in the math activity?
Step 2: Teach and Assess
Rubric 1.5 How does the candidate's facilitation lead to children's active engagement in an asset-based, UDL-focused, play-oriented math activity in a safe and positive environment?
Rubric 1.6 How do the candidate's interactions with the children support their progress toward meeting the math and ELD learning goals?
Step 3: Reflect
Rubric 1.7 How does the candidate reflect on the effectiveness of their asset-based math activity planning, teaching, and monitoring of the children's learning and analyze the effectiveness of supporting the three focus children in meeting the math and ELD learning goals (referring to evidence from Steps 1 and/or 2)?
Step 4: Apply
Rubric 1.8 How will the candidate apply what they have learned about the children's understanding of the math and ELD learning goals and determine future steps for math learning (referring to evidence from Steps 1, 2, and/or 3)?

PK-3 ECE Rubric 1.1 — Step 1: Plan

Essential Question: How does the candidate apply findings from recent math information (e.g., formative, summative, state testing) to plan one asset based, UDL-focused, play-oriented math activity in a safe, positive environment?

Level 1	Level 2	Level 3	Level 4	Level 5
Candidate's activity planning does not use appropriate age/grade level math and ELD strand(s)/standard(s) to develop learning goals, including math academic language development, and does not build on the children's prior learning. **OR** Candidate does not leverage the children's cultural and/or linguistic assets and/or interests in planning the math activity. **OR** Candidate's use of UDL strategy(ies) is not appropriate or provided. **OR** Candidate's activity planning is not play oriented. **OR** Candidate does not plan for a safe, positive learning environment for children to engage in math learning. **OR** Candidate's math activity contains inaccuracies in content.	Candidate's activity planning attempts to use appropriate age/grade level math and ELD strand(s)/standard(s) to develop learning goals, including math academic language development, that vaguely build on the children's prior learning. Candidate minimally leverages the children's cultural and/or linguistic assets and/or interests in planning the math activity. Candidate's use of UDL strategy(ies) is minimally appropriate. Candidate's activity planning attempts to engage children in play-oriented math learning. Candidate's activity planning to create a safe, positive learning environment for children to engage in math learning is vague or unclear.	Candidate's activity planning uses appropriate age/grade level math and ELD strand(s)/standard(s) to develop learning goals, including math academic language development, that clearly build on the children's prior learning. Candidate purposefully leverages the children's cultural and/or linguistic assets and/or interests in planning the math activity. Candidate's activity planning includes appropriate UDL strategy(ies). Candidate's activity planning clearly engages children in play-oriented math learning. Candidate describes how they will provide a safe, positive learning environment for children to engage in math learning.	**All of Level 3, plus:** Candidate plans for intentional differentiation and/or adaptations that are developmentally appropriate to the learning needs of the children to provide equitable access to the math and ELD learning goals.	**All of Levels 3 & 4, plus:** Candidate's planning clearly demonstrates that all children have equal access to math content and practices by engaging in a challenging learning activity that develops higher-order thinking.

Appendix K

Math Cycle Field Test Pass Rate by Demographic

Pathway Type	N	Pass Rate
University Student Teaching	12	100%
District Intern	40	98%
University Intern	5	100%
Residency Program	0	100%
Integrated Undergraduate Teacher Credentialing Program (ITEP)	2	100%
Total	**59**	**98%**

Sector Type	N	Pass Rate
CSU	15	100%
Private/Independent	20	95%
LEA/County Office of Education	24	100%
UC	0	100%
Total	**59**	**98%**

Gender	N	Pass Rate
Decline to State	1	100%
Female	54	100%
Male	4	75%
Non-Binary	0	100%
Total	**59**	**98%**

Ethnicity	N Submitted	Pass Rate
African American/Black	1	100%
Asian Indian American/Asian Indian	1	100%
Cambodian American/Cambodian	1	100%
Chinese American/Chinese	1	100%
Choose not to response	2	100%
Filipino American/Filipino	1	100%
Korean American/Korean	1	100%
Latino/Latin American/Puerto Rican/Other Hispanic	11	100%
Mexican American/Chicano	24	100%
Other	3	100%
Other Southeast Asian American/Southeast Asian (e.g., Hmong, Khmer)	1	100%
White (non-Hispanic)	12	92%
Total	**59**	**98%**

Appendix L

Math Cycle Field Test Summary of Candidate Performance

Credential Area	N Candidates	Pass Rate	Overall Mean Score	S.D.	Min	Max
PK-3 ECE	17	100%	20.7	3.89	15	28
EdSp-ECSE	39	97%	20.8	4.92	13	33
EdSp-VI	3	100%	22.7	10.69	16	35
Total	**59**	**98%**	**20.9**	**4.91**	**13**	**35**

Summary of Candidate Performance: PK-3 ECE; N= 17

Rubric	Mean	Min	Max
Rubric 1	2.2	1	3
Rubric 2	2.8	2	4
Rubric 3	2.7	1	4
Rubric 4	2.7	2	4
Rubric 5	2.4	1	4
Rubric 6	2.7	2	4
Rubric 7	2.8	2	4
Rubric 8	2.7	1	4

Summary of Candidate Performance: EdSp-ECSE; N= 39

Rubric	Mean	Min	Max
Rubric 1	2.7	1	5
Rubric 2	2.6	1	4
Rubric 3	2.7	1	5
Rubric 4	2.2	1	5
Rubric 5	2.4	1	5
Rubric 6	2.9	2	4
Rubric 7	2.6	1	4
Rubric 8	2.6	1	5

Summary of Candidate Performance: EdSp-VI; N=3

Rubric	Mean	Min	Max
Rubric 1	2.7	2	4
Rubric 2	2.7	2	4
Rubric 3	4	2	5
Rubric 4	3	2	5
Rubric 5	2.7	1	5
Rubric 6	3	2	5
Rubric 7	2.3	1	4
Rubric 8	2.3	2	3

Appendix M

Candidate, Program Coordinator, Cooperating Teacher, and Assessor Responses to Selected Survey Items

Candidate Survey Responses (N=15)

Opportunity to Demonstrate Knowledge, Skills, and Abilities	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/ Does Not Apply
The Math Cycle allowed me to demonstrate my math instruction in an authentic way	4	9	1	0	1
The tasks associated with completing the Math Cycle align with what I have been learning in my educator preparation coursework	6	8	1	0	0
The Math Cycle was a fair measure of my ability to teach math	3	9	1	2	0
Clarity and Ease of Use	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Don't Know/ Does Not Apply**
Having a choice to provide either a written or verbal response (or ASL) to commentary prompts in Step 2 was helpful	6	9	0	0	0
Based on my students' understanding of the math and ELD goals, I felt confident in determining future steps for their math learning and language development	6	9	0	0	0
The Math Cycle essential questions for each of the 8 rubrics were clear	3	9	2	1	0
The directions on how to incorporate both a math content and math practice strand(s)/standard(s) were clear to write a math learning goal	6	8	1	0	0
I understood how to leverage student's cultural and/or linguistic assets and/or interests to plan the math activity	2	12	0	1	0
Math Cycle Field Test Information and Support	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Don't Know/ Does Not Apply**
My program encouraged me to self-assess using the rubrics	7	8	0	0	0
My program provided guidance on how to register and upload my submission (e.g., video, templates).	8	7	0	0	0
My program prepared me to be able to plan math (content and practice) learning goals	7	6	1	0	1
My program prepared me to be able to plan ELD learning goals	6	7	1	0	1

Program Coordinator Survey Responses (N=4)

Opportunity to Demonstrate Knowledge, Skills, and Abilities	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/ Does Not Apply
The Math Cycle allowed candidates to demonstrate their mathematics knowledge, skills, and abilities in an authentic way	2	2	0	0	0
The Math Cycle was a fair measure of candidates' abilities to teach math	0	4	0	0	0
The tasks associated with completing the Math Cycle aligned with what candidates have been learning in their educator preparation coursework	1	3	0	0	0
Clarity and Ease of Use	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Don't Know/ Does Not Apply**
Overall, the directions in the Math Cycle Guide were clear	3	1	0	0	0
The way the Math Cycle assessment guide was organized made it easy to find the information I needed (e.g., rubrics embedded with step instructions, glossary, links to resources)	3	1	0	0	0
Candidates had enough information about their focus students' assets, interests and/or learning needs to plan adaptations for their math activity	2	2	0	0	0
The directions for how to use the California Preschool/Transitional Kindergarten Learning Foundations (PTKLF) or California Common Core State Standards for Mathematics (CCSSM) to plan the math activity/lesson were clear	2	2	0	0	0
The directions on how to incorporate both a math content and math practice strand(s)/standard(s) were clear to write a math learning goal	2	2	0	0	0
Clarity and Ease of Use	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Don't Know/ Does Not Apply**
The directions on how to write an ELD learning goal were clear	2	2	0	0	0
The different levels of performance for each rubric were clear	2	2	0	0	0
Having the choice to provide either a written or verbal (or ASL) response to commentary in Step 4 was helpful for candidates	2	0	1	0	0
The Math Cycle essential questions for each of the 8 rubrics were clear	2	1	1	0	0
Candidates understood how to leverage student's cultural and/or linguistic assets and/or interests to plan the math activity	0	3	1	0	0

Math Cycle Field Test Information and Support	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/ Does Not Apply
The program support webinars were valuable to me as I prepared for my field test responsibilities	2	2	0	0	0
The CTC-hosted webinar for cooperating teachers helped communicate expectations for candidates participating in the Math Cycle field test	2	2	0	0	0
The coordinator office hours hosted by the Commission were a helpful resource for me during the Math Cycle field test	2	2	0	0	0
Cooperating teachers provided candidates with sufficient support during the Math Cycle field test	1	2	0	0	1

Cooperating Teacher Survey Responses (N=6)

Opportunity to Demonstrate Knowledge, Skills, and Abilities	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/ Does Not Apply
The Math Cycle allowed my candidate to demonstrate their mathematics knowledge, skills, and abilities in an authentic way	1	5	0	0	0
The tasks associated with completing the Math Cycle aligned with what typically occurs when planning and implementing mathematics instruction in my classroom.	1	3	1	0	1
Clarity and Ease of Use	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Don't Know/ Does Not Apply**
The way the Math Cycle assessment guide was organized made it easy to find the information I needed to support my candidate (e.g., rubrics, embedded with step instructions, glossary, links to resources	3	3	0	0	0
Candidates understood how to leverage student's cultural and/or linguistic assets and/or interests to plan the math activity.	2	3	1	0	0
The Math Cycle essential questions for each of the 8 rubrics were clear.	2	4	0	0	0
The different levels of performance for each rubric were clear.	3	3	0	0	0

Assessor Survey Responses (N=8)

Clarity and Ease of Use	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know/ Does Not Apply
The assessment guide directions provided for the Math Cycle were clear.	5	3	0	0	0
The Math Cycle templates were clear.	4	4	0	0	0
The constructs in the Math Cycle rubrics were clear.	2	6	0	0	0
The different levels of performance were clearly stated in the Math Cycle rubrics.	2	6	0	0	0
Overall, the amount of evidence required from candidates at each step was sufficient to score the submission.	3	5	0	0	0
The organization of the Math Cycle guide made it easy to find the information I needed (e.g., rubrics embedded with step instructions, glossary, links to resources).	3	5	0	0	0
Math Cycle Field Test Assessor Training	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Don't Know/ Does Not Apply**
The Implicit Bias training I completed for assessor prework prepared me to assess candidate submissions.	6	2	0	0	0
The consensus scoring training I received helped me clearly understand how to make scoring judgements for the Math Cycle.	6	2	0	0	0
I am confident that I applied the rubrics to consistently to score candidates' evidence for each of the four Math Cycle steps.	6	2	0	0	0

Appendix N

Math Cycle Field Test Study Qualitative Data

The following is additional information gathered from the surveys and focus groups that will inform operational revisions. Statements provided below are a selection of successes and challenges from candidates, program coordinators, cooperating teachers, and assessors.

Successes:

Candidates

- "One of the good things was that our coordinator, Dr. XXXX, was able to provide us with the assessment guide and helped us understand the information in each section. We looked at the rubrics to figure out what we had to do."
- "As a whole process, I had growth within myself as an educator. It was a valuable experience. For example, watching videos of myself and being able to reflect. It allowed me to see what I could do differently."
- "This is a good opportunity for me to think about teaching math through the lens of VI. We don't teach math. We use our skills to support the child in reaching the Gen Ed teacher's learning goals."
- "Finishing was a success…I feel confident about my videos because I do that all the time."

Program Coordinators

- "One thing that went well for us as a college is that we have experience with the other TPAs so being able to build on those structures was helpful."
- "The success we had was using the backwards mapping resource that was supplied by the CTC to break things down weekly and we were able to meet with the candidates for 9 weeks, going through each part bit by bit and breaking it down which helped their understanding."
- "…A success was that the templates were very easy to follow for me and the students. The cultural assets part was a good teaching opportunity for both me as a coordinator and for my students. I appreciate the thoughtful prompts in the templates."
- "A success was that the prompts were 'meaty' enough for candidates to refer back to and self-assess. Lots of good teaching opportunities such as 'what is culture and linguistics?'"

Challenges:

Candidates

- "Understanding the cultural and linguistic assets and making my math assignment culturally relevant were challenges for me."
- "A challenge was that our students have very special needs and it's challenging to get parents to allow video recording."

- "I went through all the forms, a lot of the questions were very repetitive. I had already answered in many different ways and couldn't come up with more ways. What if I'm answering it wrong?"
- "A challenge was the time. I needed more time to learn about the standards, TPEs, etc. I'm a pre-school teacher, so everything was new for me, but I had a lot of support from the program. We started Sep 12, and we started preparing for the test in October… It would have been better if the TPA was in the second semester."

Program Coordinators

- "One of the greatest challenges was the turn around time for us from the time from getting the field test materials to actually having it due. And our coursework was not designed initially to support a TPA. So we were kind of shoehorning things in."
- "A challenge was having to change our course sequence to get candidates to do math in the first semester. This was more of an internal challenge instead of for the candidates."
- "A challenge for my students was being in a PreK-TK setting where children may not yet be formally diagnosed with disabilities and needing to find focus children with disabilities. Another challenge was not getting the templates sooner."
- "I think the most significant challenge for the student who participated in the field test was finding a student that could be recorded, and obtaining permission from the family members to be able to record. It delayed the process for that student in terms of completing the assessment and all of the steps."

Based on your recent experience completing the Math Cycle, describe one discovery (e.g., aha moment, learning, surprise) about your math instruction that will impact your practice.

Candidates

- "I loved seeing the video and the progress my students were making. I wanted to show off my work."
- "My ah ha moment was why do they want me to do 22 pages, but then I realized I learned a lot by going through the process."
- "I feel like we're always working so hard to support the children, that it allowed me to give myself some credit ... to see how much we do every day. It's working what we're doing. I realized I need more cultural supplies. It helped me look at linguistic needs. It pushed me to use my Smartboard ... new technologies ... new ways of learning. I told my practicum supervisor I was able to apply what I was learning in my classroom ... the light bulb went on."
- "I can say that overall this whole process has taught me a lot of important details of what we do in the classroom. It's a lot. In a day we probably only have 40 minutes of actual instruction and they're retaining it. They're learning a lot in such a short period of time. It made me feel like I'm doing a good job."

Do you feel candidates learned something of value about their instructional practice by completing the Math Cycle field test? Please explain.

Program Coordinators

- "I do feel that most students saw something of value, especially reviewing their videos."
- "The interns in our program felt that they learned about their teaching practice and found the reflection meaningful."
- "Yes, it provided a good learning experience and chance for them to demonstrate what they know and did."
- "Yes, absolutely! Some candidates are currently teaching, and it helped them to 'unlearn' certain things -- got them to think about their teaching. I felt the whole process put them in that place of having to think about what am I doing, why am I doing this, what's my evidence, and how can I talk about this and write about it? The process provided an opportunity for good "meaty" discussion and an easy way to talk about teaching. What are you doing and why are you doing it?"

The Math Cycle was designed to provide candidates with options to fulfill submission requirements. For example, the Math Cycle provides a choice of written or verbal commentary as well as options for the number and length of video clips submitted. Did including these elements of candidate choice within the Math Cycle seem helpful or challenging for you? Please explain.

Candidates

- "I enjoyed the options. Being able to write out my commentary was easier for me because I could sit and think."
- "For me I felt like I needed more information. I think I would have done well with that (video), but I got nervous so I didn't try it. I ended up using Google Voice to help express myself better. But I thought it was great that you offered options for different learners as adults."
- "I thought it was very helpful. Coming from a teacher stance, we always want to be inclusive and I think that was a very inclusive piece of the math cycle."
- "It was helpful to have a choice. I did the written because I felt more confident. I wasn't sure how to do it on a video."

Program Coordinators

- "We heard back from our candidates that they really appreciated the options. One of the concerns for us was just getting familiar with it ourselves, because this is new to us as coordinators. So anytime that they might need help on doing the verbal, it takes a little a little extra effort. But in the end, I think it's really worth it and that they appreciated having the options. "
- "I think they appreciated the opportunity to do verbal and I believe a couple of mine tried to do the verbal commentary. I think what they said though, that when they went to go upload the verbal commentary, that it was too long or they had to edit it because

it was taking too long to upload. Their file size was too big and so they had a lot of issues with that. And to the point where they were like, oh I wish I just wrote it out then."

- "Providing options was a plus. Psychologically you're saying I got a choice. They basically all chose the same option, but I think giving them options and letting them choose which one was most comfortable for them was a good thing."
- "I think our candidate appreciated having options. For example, because our candidate's primary language wasn't English, being able to submit written commentary was really helpful because they were not as confident in their oral English skills, so I think they appreciated that having that option."

Tell us more about how the Math Cycle allowed you to authentically demonstrate math instruction. If it did not feel authentic, then what recommendations do you have for improvement? Please be specific.

Candidates

- "It was align[ed] with what I teach inside the classroom."
- "I was able to chose the activity and teach it to my students how I would normally do. I feel like it wasn't something new to them so it felt natural."
- "I felt the scorer did not score my TPA correctly. I question if the scorer has ever been in a preschool classroom and I don't believe they connected the reasoning, intentional teaching, or reasoning for the teaching and the lesson plan. I was scored very low and I'm concerned for future candidates. I feel that a scorer should have experience in the classroom setting of all levels they are scoring."
- "Because of my lengthy career in preschool and teaching young children math related content, this cycle allowed me to really prove my knowledge in the content area."

Program Coordinators

- "I think that having a bit more time on this task would have been beneficial to the interns. It was difficult adding this to the courseload of new interns without having more time for them to complete the tasks."
- "The importance of the cycle is to capture the planning, instruction, assessment, and reflective process. I think the most important piece is the actual cycle in terms of mirroring the authenticity of teaching practice. I also liked that the focus children and number in the video(s) were flexible for teacher candidates."
- "The process allow[s] candidates to demonstrate KSA as they completed each portion of the Assessment. The process encouraged continuous focus on analysis of response to the prompts based on rubrics."
- "Candidates were allowed to authentically demonstrate their math instruction in the 4-year old TK setting. They were able to use the Learning Foundations as their standards which aligns with their curriculum."

Does this cycle elicit authentic evidence of what teachers should know and be able to do related to effective Math instruction for PK-3 ECE/ECSE/VI settings?

Assessors

- "Appreciated the focus on play-oriented learning."
- "While the goal of differentiated learning was present, many candidates struggled to achieve it, particularly at the Level 4 differentiation strategies."
- "Candidates are novice teachers, and they might not yet fully master differentiation strategies, which require time and practice."
- "Not all IEPs for younger children include math-related goals."
- "It was refreshing to see how teachers could use the ECC and adaptations to teach math concepts without focusing solely on math itself."

Step 1: Plan: Were the Step 1 Math Cycle instructions clear about how to use the California Preschool/Transitional Kindergarten Learning Foundations or the California Common Core State Standards for Mathematics to plan your math activity?

Candidates

- "I felt confused because originally we were given preschool standards by our program. Then we were given PTKLF."
- "I feel the information provided in the guide is very clear."
- "It was clear. Appreciate how it broke it down, for ELD go here, for this age group go here."
- "The instructions were clear. We have an amazing teacher. She gave us explanation of the questions, what they mean. I was able to read and understand. Another thing she did was create a sample lesson plan with questions to guide us. The only thing I needed more help with was the standards because in my preschool we use the preschool foundations."

Program Coordinators

- "We heard from our candidates that they found the instructions for the strands and standards to be very clear."
- "I thought it was clear. The example was helpful and appreciated.
- "The call out boxes throughout the part about planning were helpful and really good references for the candidates to look at while they were going through."
- "I thought the instructions were clear and our candidate did not have any struggles."

Step 1: Plan: Were the Math Cycle instructions clear about how to use both math content and math practice standard(s) to write your learning goal(s)?

Candidates

- "Yes, very clear for me."
- "I would say yes. I didn't have any trouble with this area."
- "With the foundations part I like how you guided us through lesson plans and learning goals"

- “I didn’t really see how the instructions were clear for that. Dr. XXXX helped and I figured it out. I struggled with that. That I needed to use the learning goals, missed out practice standards. I don’t know it was 100% clear in first reading, at least for me. I probably would have done strands for my learning goals.”

Program Coordinators

- “I had a few candidates that didn't understand what the math practice standards were, but once I introduced and guided them through what they were, the candidates were good to go.”
- “What we were hearing from the candidates was that they largely said it wasn't so much the instructions, they just weren't familiar with the math practices. Once they got it, they're like, oh, I got this.”
- “They learned how to write learning goals in their course, so there weren’t any issues.”
- “I thought the instructions were very clear for this, there was a lot of detail, and the students were not asking me a lot of questions, so I think it was clear for them.”

Step 1: Plan: Were the directions clear in how to plan a goal for English Language Development (ELD)?

Candidates

- “The math and ELD goals give us a very good example and provide us the opportunity to learn how to create goals.”
- “My kids are so young and not yet diagnosed with an ELD. Not currently but will be diagnosed some day. [This] confused me – pick an ELD kid that will be someday or all kids who are non verbal. We were confused with that.”
- "It was clear to find an ELD goal for my students. I always set up goals for my English language developmental students.”
- “That was easy."

Program Coordinators

- “The PTKLF just came out, and that played a role in how well candidates understood how to address English language development.”
- “Yes, the call out boxes gave a good example so that made it easier for the candidates.”
- “Candidates were not clear whether it meant math-specific English academic language or just English in general.”
- “I thought the directions were clear and the students didn't seem to be confused about it, so it didn't seem to be a challenge.

Step 1: Plan: Given your experience with consensus scoring, were candidates able to write clear learning goals?

Assessors

- "ELD goals were generally weaker compared to other goals.”
- "Candidates often started with broad goals covering multiple standards but narrowed down as the lesson progressed. Simplify the goals to make them easier to measure.”

- "Most candidates eventually clarified their goals by the time they reached the teaching and reflection stages, although initially, they might have included too many standards and practices."
- "Provide more support for candidates to achieve clarity in their learning goals."

Step 1: Plan: Were the directions for how to identify your focus children/students clear?

Candidates

- "In my own class I didn't have a child with a 504 plan. I did have a child showing signs of ADHD, but he hadn't been tested yet. In PK-3, a lot of the children haven't been classified yet. "
- "Yes. The choice of students was good."
- "Directions were very clear and how it was broken down by FC 1, 2 and 3."
- "It was clear as well. The difficult part for me was putting everything in writing. Just putting my thoughts in on a paper that was a difficult part, but it was clear to understand."

Step 1: Plan: Did you have enough information about your focus children/students' learning needs, assets, and/or interests to plan adaptations for your math activity?

Candidates

- "Yes, we had just finished our first DRDPs so I did have that information."
- "I had enough information because I was able to use their existing IEPs and goals."
- "For me I felt like the information was gathered throughout the 6 week placement, not just in the beginning. I found I needed to go back and update my notes."
- "Yes, I used the DRDP data, which are aligned with the Foundations. Also ASQ scores, info from paraeducators, and IEP data."

Program Coordinators

- "We're an intern program. Some of them were in a birth to three or very young setting, so that created some issues. In particular learning about assets and needs when we're dealing with infants."
- "I think our candidates had enough information on those, but that's because our candidates were spending the whole semester in their placement."
- "Looking at the cultural linguistic assets and then relating that back to math was difficult for them to do, because not only were they trying to determine what those cultural and linguistic assets really were, but then how did they relate back to math, so that was a point of confusion."
- "Our candidate felt more comfortable in this area because it aligns with what they're used to doing as a VI teacher."

Step 1: Plan: What did you think of Step 1: Plan? Were the instructions provided in the Math Cycle guide clear and helpful? If not, tell us what was confusing or could be improved.

Candidates

- "It was clear. It was just opening the first part and seeing all the questions and feeling, oh, when am I gonna finish? And then it's not just that one part. So you then you have to do B and then C and it was just overwhelming. But once you started getting in your groove, then you would just answer the question and it would flow nicely."
- "Yes, the guide was clear and I found answers to most of my questions. I liked that there were links I could also go to read more if I needed more information."
- "The guide is very clear, but there was a lot of information."
- "Instructions were clear and helpful."

Program Coordinators

- "Some candidates did not understand that they had to leave the brackets in when providing their narrative."
- "I think that the instructions for Step 1 were pretty clear. I appreciate that the some of the work from the LPA TPA was included, in the way of making it more explicit like the call outs, better definitions of some of the terms, and a better job with who the support personnel were."

Step 2: Teach and Assess: What insights did you gain from reviewing your video recorded teaching practice?

Candidates

- "I thought my lesson was the greatest ever, but when I saw the video I felt it didn't go well. However, I realized the kids have their own plan and that is OK, I can't plan for everything. I liked seeing what I'm good at and not good at so that I can learn."
- "My first thought was I am never wearing that outfit again! But I appreciated being able to see how much attention I am giving to each student, my level of energy, and it just made me reflect on my teaching and gave me really good information on the way I present lessons and what I need to work on."
- "I did all of my focus students at one time, and I had planned for them all to do the same activity. However, it didn't go as planned and at first I thought the lesson didn't go well, but when I watched my video I noticed that I made adjustments to meet their needs and in the end was still able to meet the goals of the lesson, so I felt like, wait a minute, it did turn out fine!"
- "When teaching we're constantly adapting, we're modifying, but it goes really fast so a bonus for me was being able to sit down and really see what happened and learning from it. It was helpful seeing how great the students were doing and how they were connecting their knowledge and how well the activities were working. Even though we're always observing, it was nice to take a deeper look and to see all that they're pulling from, you know, everything that we're doing to try to meet their needs and help them. That was a win."

Step 2: Teach and Assess: Did you understand how to leverage children/students' cultural and/or linguistic assets and/or interests for your math activity?

Candidates

- “Most of my students speak English so this was tricky.”
- “I didn’t understand what cultural assets were until my mentor explained what CTC was looking for. I had to completely rewrite that section.”
- “Something I recognized was one of my students speaks Arabic and I could add more Arabic aids. Something that helped me with this one was my parent conferences to get a better insight on their cultural background. I think it’s important to include this because anyone who is thinking about stepping into a classroom needs to know how to connect to families.”
- “Yes, I'm very fortunate. I'm currently take the ELD course from San Francisco State. That helped me to much better to understand the English language in general. I have a foster student from China which is the same country I was born. This student loves to collect different countries in the currency and he love Chinese currency. I bring Chinese bills to help him to solve real life problems using math skills.”

Program Coordinators

- "Sometimes I think we use language that we all use in education, but brand new teachers don't know what we're asking. For example, when we talk about leveraging their assets and cultural needs, I don't think candidates are really understanding what that means because they don't have experiences yet to hook that onto. We've found more success when we try and say how can you connect what they already know to what you're doing and just kind of put it in more simplistic terms or what they're already able to do with what you're doing and we breakdown the cultural and linguistic assets.”
- “I don't think that they did. That really was an area that was quite difficult for candidates to understand and a question that kept coming up over and over again.”
- “I think this was the most challenging part for our candidates. We spent a lot of time having to explain what culture is and what leveraging means. I gave them many specific examples of what it means to ‘leverage’ their students’ cultural and linguistic backgrounds.”
- “They needed help with understanding what culture and leverage are. And we also had to talk through ‘and/or,’ but it was fine. We weren’t expecting them to do this on their own. They're in class and this is an opportunity for them to learn the terms and make changes that were appropriate and academically correct.”

Step 2: Teach and Assess: What did you think of Step 2: Teach and Assess? Were the instructions provided in the Math Cycle guide clear and helpful? If not, tell us what was confusing or could be improved.

Candidates

- “I think an example of how to leverage a student’s cultural or linguistic assets would be helpful rather than just suggestions. I was expecting more examples in the guide.”

- “I thought it was clear and helpful. I appreciated the guide being clear.”
- “Yes, the instructions were clear”
- “It was clear. When I had questions I always went back to my instructors. I do informal and formal assessments on a daily basis. We do DRDPs.”

Program Coordinators

- "Maybe it's a program support piece, but having the ability to do the commentary on video. It's not super clear in the instructions. What that looks like, is it another video of just the student commenting separate from the video of the students? Is it supposed to be an overlay like? I think that is a bit confusing.”
- “Some candidates were confused about whether the three focus children had to be seen in their video clips. "
- "Letting candidates do one big long video was not a beneficial suggestion to make to them. I don't know if at one time they could get the active math learning, math language development, and math thinking and interaction all in there at one time. I thought it was better to break it up into separate videos in case they made a mistake in one area or realize they didn't like what they saw in one area, they could just rerecord that as opposed to the entire big chunk of the videos. I think almost all of my candidates did three separate videos because I talked about the pros and cons of having one big long video as opposed to the three separate videos. I was really nervous for them and I don't know if anyone did the verbal instead of written commentary.”
- “I think the instructions were clear in terms of teaching and assessment but there could be more guidance in the VI guide on being able to use a tool (assessment) to monitor a student’s progress in the subject area rather than the student’s progress in ability to access the content in general.”

Step 2: Teach and Assess: Is there anything in Step 2 that you would recommend changing to support future candidates taking the Math Cycle?

Program Coordinators

- “I would like some feedback on the rationale why we are writing about 3 focus students, but we're only required to video one of them. I know we're trying to look at the way they can address all different kinds of areas, but it just seems sort of inconsistent and it caused some confusion.”
- “Be more responsive to the needs and realities of the classroom experience for VI students in the content and expectations that are in the VI guide. For example, being aware that doing a math assessment is not something that a person in a VI program is going to have a whole lot of practice in.”

Step 3: Reflect: What did you think of Step 3: Reflect? Were the instructions provided in the Math Cycle guide clear and helpful? If not, tell us what was confusing or could be improved.

Candidates

- “Yes, it was all clear. I felt that Step 3 was the easiest step.”

- “The instructions were clear. I didn’t find anything too confusing, but some things felt repetitive.”
- “All the repetitiveness really started hitting at Step 3. I just answered that in Step 1 and 2 and again. I was confused on whether we just provide the same answer or paraphrase it.”
- “It was new for me to watch myself teaching and making a reflection of myself and what my students did was very helpful. You don’t see everything, so getting to see it on the video was helpful. I think that was the easiest part.”

Program Coordinators

- “I'm looking at the questions in Step 3 reflect and it's a combination of reiterating what they've done, but then also talking about the effectiveness and I think what we heard from our candidates was they felt like step three was super repetitive and I think some of the questions really are answered in other sections.”
- “Reflection is probably one of the bigger parts of this in terms of beginning teachers to sort of understand how something went and be able to look back on it. We spent a lot of time discussing.”
- “It was clear. I didn’t find myself asking ‘what do they mean by this?’ What I found myself having to do was explain it to candidates and it was a good teaching opportunity about reflection.”
- “I thought the instructions about reflection were pretty straightforward.”

Step 3: Reflect: Is there anything in Step 3 that you would recommend changing to support future candidates taking the Math Cycle?

Program Coordinators

- “Some of our students are in placements with children with more significant needs, and they were really worried that the video would show the child running or not doing what they were asking. And I think we need to be more explicit about it being ok that things didn't go as planned and to use that as a point of reflection and discussion about what they could change.”

Step 4: Apply: What information or evidence from Steps 1, 2, and 3 did you use to determine the next steps for your children/students' math learning and language development?

Candidates

- “I used the goal to compare the children’s progress against. This is what I want them to learn. This is what I want to happen. Then in the video we could see which children met the goal and which didn’t.”
- “When I watched my video I thought I needed to reteach the whole lesson. They memorized what I taught, but I didn’t feel like there was any retention.”
- “It was nice having a goal to compare the children’s progress against.”
- “I liked this step the most, reflective and helped make the lesson better the next time.”

Step 4: Apply: Do you feel that candidates understood how to determine future steps for their students' math learning and language development based on their students' progress on the math and ELD goals?

Program Coordinators

- "I feel that when the students viewed their videos in the conversations I had, they were able to see what they could have done differently to extend for some of the students and maybe modify for some of the others who maybe weren't getting the concepts the ELD. Tying it into the ELD was a little more difficult."
- "When we discussed it, I think they kind of understood it."
- "Yes. One of the things I did was I kept directing them back to the assessment guide so they could see what it said about what to do since the language in the guide was clear."

Step 4: Apply: What did you think of Step 4: Apply? Were the instructions provided in the Math Cycle guide clear and helpful? If not, tell us what was confusing or could be improved.

Candidates

- "I think I misunderstood Step 4. Should I be creating more activities, build on the current activity, or what?"
- "I understood it as what could you do to help them improve or meet their goals. One of my kiddos didn't meet the goals so I assumed I needed to plan new activities to help him meet the goal."
- "It was clear and helpful. I printed it out and highlighted it. You guys did such a good job with the guide. I mean, if someone really takes the time and goes through it and it's not rushing and really takes the time, I don't see how they won't get it unless they don't have great comprehension. The guide is really good."
- "I think everything was clear. All the instructions provided were very helpful."

Program Coordinators

- "Generally Step 4 instructions were clear."
- "Yes, Step 4 directions were clear."
- "I think there needs to be more clarification on Part H Prompt 2 regarding reteach versus extension."

Step 4: Apply: Is there anything in Step 4 that you would recommend changing to support future candidates taking the Math Cycle?

Program Coordinators

- No responses

Rubrics: How did your program support you in understanding the rubrics of the Math Cycle?

Candidates

- "For me it felt like I was told here is the rubric for Step 1 and what can you do to meet a Level 3. I don't think we really dived into the rubrics."

- “My instructor, XXXX, is amazing. She had 4 mandatory sessions and additional optional sessions. I attended all. She would go through the rubrics and ask us questions about our understanding of things like UDL. She wouldn’t tell us the answer, but she would strongly encourage us to go back to the rubrics. Previous program work had prepared me for the templates.”
- “They were always mindful of the rubrics and helping us understand the rubrics. If we were confused, they helped us understand.”
- “We had certain days to do the TPAs. She went over the rubrics ... this is where you want to be ... go back to it and ask yourself am I doing that? We had office hours on Tue, class on Wed, and TPA on Thu. At the beginning she made sure we had everything and understood everything.”

Program Coordinators

- “I had them start with Level 3 and looking at what constructs were and what happens if they didn't answer one of them. For example, I said, if you did constructs 1-2, but for you missed the third one how we would have to go down to the Level 2, etc. I just had to encourage them to look at the Level threes right now - this is what you need to pass and to see if you're covering it.”
- “We focused on the Level 3 for the rubrics and we just went over them really quickly because we had very limited time to be able to devote to it, but it seemed pretty straightforward.”
- “We went over each of the rubrics and talked about how to just start with Level 3, just as the assessors would and what they were looking for.”
- “We spent a lot of time going over each rubric construct-by-construct with our candidates and had them self-assess.”

Rubrics: Were there any aspects of the rubrics that were unclear? What recommendations do you have to clarify the rubrics?

Candidates

- “No, they were clear.”
- “No, everything was clear. Sometimes I had to go back and read to make sure I had what I needed, but it wasn’t because I didn’t understand ... just it was a lot of information.”

Program Coordinators

- “The rubric updates flipping Level 3 and 4 constructs were good.”

Assessors

- “Provide a clear definition of play-based learning in the glossary to help candidates understand what is expected.”
- "Check for alignment between constructs in different levels of the rubric, particularly Rubric 1.4 between Level 2 and Level 3, construct 1.”
- "Ensure rubrics clearly call out math practices to avoid inaccuracies or missing information in candidate submissions.”
- "Cultural and linguistic assets needs to be made clearer.”

- "Candidates should address their caseloads, as there was inconsistency in how candidates discussed their caseloads."
- "Clarifying that Level 1 means a very low standard."

Rubrics: Did you use the rubrics to self-assess before you submitted the Math Cycle? If yes, how helpful was this process?

Candidates

- "I didn't. By the time I got to the end I didn't have time and was tired. It was just so much information."
- "No, I didn't. I met with my instructor and she went over some things with me related to the rubrics and what I wrote but I did not directly self assess."
- "I did in the beginning, but by the time I got to the later parts, I didn't have enough time."
- "I did self-assess and work with a peer. A lot of peer conversation."

Program Coordinators

- "I created a time for my candidates to get together in small groups to review each other's videos and other materials with the rubric as a guide."
- "They used the rubrics to self assess and to peer assess. In the class I gave them class time to work in groups depending on where they were in terms of writing up their cycles."

Rubrics: Was the language in the rubrics clear enough to make score judgements about the evidence the candidate provided?

Assessors

- "Revisiting the wording of Level 4 in Rubric 1.2, 1.3, and 1.4 to ensure it accurately reflects the grounding of the candidate's thought process and activity focus."
- "The language in Rubric 1.6, Level 3, specifically the term "detailed feedback," (construct 4) was confusing."
- "Rubric 1.1 was unclear whether "children's prior learning" referred to prior opportunities to learn the same concept or prior knowledge from other sources. This ambiguity made it difficult to make scoring decisions."
- "The term "leverage" in the context of cultural and linguistic assets was also discussed, with some assessors finding it clear, but noting that candidates did not seem to understand it well, as it was not strongly reflected in their responses."
- "Clarification was needed around the term "play-oriented math learning,"...define it better in the glossary."
- "Some candidates struggled with identifying and using math practices accurately."

Prompts: What recommendations do you have to clarify the prompts?

Assessors

- “Include a prompt for candidates to restate the learning goals in Step 2 to ensure continuity and clarity between steps.”
- “The prompt for Rubric 1.8 should explicitly ask candidates to explain how their next activities are based on what they learned from the current activity. This would help candidates connect their future plans to their recent experiences more clearly.”
- "Flip the commentary items and video identification sections to make it easier for assessors to follow.”
- **"**Include a prompt for candidates to restate the learning goals in Step 2 to ensure continuity and clarity between steps.”

Rubrics: Were you able to come to consensus quickly? If not, why? Be specific (rubric number, template)

Assessors

- “Rubric 1.1 was identified as particularly challenging due to its complexity, involving multiple constructs and parts. This made it difficult for some groups to come to a consensus quickly.”
- “Discussions around UDL (Universal Design for Learning) and cultural assets also led to differing opinions and required more time to reach consensus.”
- “Facilitators requesting evidence sped up consensus when assessors disagreed.”

Program Support: If you were unclear about any of the Math Cycle instructions or requirements, did you seek help from any of the following: your program, candidate office hours, your cooperating teacher, contacting customer support? If yes, please indicate which one(s) and if they were helpful.

Candidates

- “I went to my advisor's office hours regularly. The help button on the Pearson site was helpful too. One thing that would be helpful is being allowed to video record over more than one day.”
- “I utilized our professors. They responded quickly and were eager to help us outside of class time.”
- “I didn’t contact customer support, but our admin did. After I submitted, I had a panic attack whether I had uploaded the latest version. It would be nice to have some kind of list (of the files) showing exactly what we submitted. The preview did help me catch and switch out an outdated version. A little more direction on how many materials (Part D) to submit would be helpful.”
- “We had made a group of classmates, get together every weekend.”

Program Coordinators

- “I did go to office hours once and it was helpful for me as a coordinator. I really appreciate CTC and Pearson offering us office hours. "

- "We used some of the YouTube, but again there were not with very young children with disabilities. I did seek support from CTC on any areas that were unclear."
- "Office hours were helpful. The You Tube video was great to share with Supervisors. I sought help from CTC about the Part D template and it was answered."
- "Yes, the webinars I was able to attend were helpful. They helped me understand what we were supposed to be focusing on."

Program Support: What additional support(s) could have improved your experience with the field test?

Candidates

- "More time."
- "If CTC could provide some video examples it would help candidates understand better."
- "Be able to talk to your classmate and to your teacher one-on-one. A zoom class is not helpful. Don't know my peers, even through Zoom."
- "Having more visual resources and examples."
- "Optional support offered weekly."

Program Coordinators

- "Specific supports/examples of how candidates can respond to the cultural and linguistic background prompt."
- "Cooperating teachers need more details about the preparation for this Assessment."

Cooperating Teachers

- "Real examples of completed work."
- "All support that was available were Great help to complete the Math cycle."

Additional Feedback

Candidates

- "I ran into trouble with the MPA during registration."
- "I am thankful this credential was approved by the CTC. I'm really excited for all educators that are interested in this doing this credential and I think you all have done a great job. I'm very grateful."
- "It was a great experience to not feel so lost and have the program help us with this. I feel honored we were the first ones to do this. I feel honored to be invited to participate in this focus group. Thank you for allowing us this opportunity and for hearing our voices."

Program Coordinators

- "It impacts our programs significantly to change the program structure related to appropriate settings for ECSE."
- "More information on what evaluators are looking for in the videos would be helpful."

- “In general, for itinerant positions like VI, I think it’s going to be hard to adapt to the requirements of this assessment. They don't spend as much time with the students in the classroom on individual subjects as the classroom teachers who are generalists.”

Assessors

- “Provide additional support and training on math practices, as this concept is new to many teachers, including veterans. This will help candidates better understand and apply math practices in their teaching.”
- “Encourage faculty to support candidates throughout the process, including providing feedback on their responses and helping them understand the assessment requirements.”
- “Teacher candidates need to learn how to leverage the differences among their students, such as IEPs, 504 plans, and English language learners, to benefit the entire class rather than seeing these differences as obstacles.”
- "More work is needed around Universal Design for Learning (UDL), including what it is, what it looks like, and what it is not.”
- “Emphasize the importance of understanding what constitutes play-based learning...manipulatives like cubes or bears does not necessarily make an activity play-based.”

Cooperating Teachers

- “The MaAth cycle was a great experience to be able to create a lesson and then reflect on what did work and what did not work. This helped me reflect on my teaching on what I can do better as a teacher for students to grasp the lesson.”
- “Some sections felt very repetitive, it was difficult to differentiate answers when several questions asked the same thing.”
- “For TVI candidates, our students and/or their parents are often very sensitive about video recording. Finding a student who is willing to be recorded can be a challenge for us.”
- “In my opinion, there should be some emphasis on the math practice standards so we develop mathematical thinking and reasoning in students at all grade levels.”