



New Hampshire

# Department of Education

2024 Spring ESEA Title Programs Conference

## Academics - Mathematics

NH Department of Education  
Office of ESEA Programs  
Bureau of Instructional Support

*Complete office details at [Office of ESEA Title Programs | Department of Education \(nh.gov\)](#)*



New Hampshire

Department of Education

Academics - Mathematics

# *Agenda* | Academics - Mathematics

*Part 1* | **Welcome and Introductions**

*Part 2* | **Title I, Part A: An Equitable and High-Quality Education for All Students**

*Part 3* | **Title II, Part A: Developing and Increasing Content, Pedagogical Knowledge, and Effectiveness of Educators**

*Part 4* | **Title III, Part A: Supporting English-Language Acquisition**

*Part 5* | **Title IV, Part A: Supporting Students and Enrichment**

*Part 6* | **Summary and Questions**

*Part 7* | **Resources**



# *Part 1* | Welcome and Introductions

## Welcome to Academics – Mathematics and STEM

### **Anne Wallace**

NH Dept of Education Mathematics/STEM  
Content Specialist

### **Eric Regnell**

NH Dept of Education Administrator CS/STEM



## *Part 2* | Title I, Part A: An Equitable and High Education for All Students

- Quality

### ***Statement of Purpose:***

“To provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close the achievement gaps.”

**Title I, Part A** Formula grants to school districts through provide opportunities for children to acquire the knowledge and skills to meet the State proficiency standards.

[NHED](#)



## *Part 2* | Title I, Part A: An Equitable and High Education for All Students

- Quality

### ***What does this mean for Mathematics/STEM?***

- Supplemental instruction for eligible learners
  - Personnel, materials, assessments and technology
- Extended School Day/Extended Year Programs
- Professional learning related to Title I programming
- Parent and Family Engagement activities



### ***Title I Math Program Goals and Description***

The goal of a Title I Math program is to accelerate the learning of students who are achieving below grade level in mathematics.

- These students are identified for services based on multi-criteria by the LEA.

The LEA works to determine students' current understanding in mathematics. The assessments administered are utilized to inform the teachers' instruction.

The Title I teachers incorporate knowledge about their students' current understandings into their planning and teaching.



# Part 2 | Title I, Part A: An Equitable and High Education for All Students

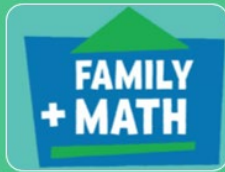
- Quality

## Allowable costs related to Mathematics/ STEM



### Instructional/ Professional and Support Staff

- Title I Teacher – Math Specialist • Instructional Coach
- Summer out-of-school time staff/before-after school/tutoring in mathematics
- Title I instructional paraprofessionals
- Professional development and/or course reimbursement to advance Title 1 activities/initiatives
- Educational memberships/subscriptions



### Parent and Family Engagement

- Parent and Family Engagement Coordinator
- Parent and Family Engagement liaisons
- Parent and Family Engagement activities - including materials and refreshments for Title I Parent and Family Engagement activities/meetings
- Training for school staff to increase collaboration with parents or support family engagement strategies



### Other Services related to Title 1A Mathematics/STEM

- Professional development providers/presenters
- Consultants to enhance and support mathematics curriculum, instruction, and student services
- Dual or concurrent enrollment programs in mathematics/STEM
- Supplies and materials to carry out Title I activities
- Academic assessments to gauge impact of Title I initiatives

<https://oese.ed.gov/offices/office-of-formula-grants/school-support-and-accountability/essa-legislation-table-contents/title-i-part-a/#TITLE-I-PART-A>

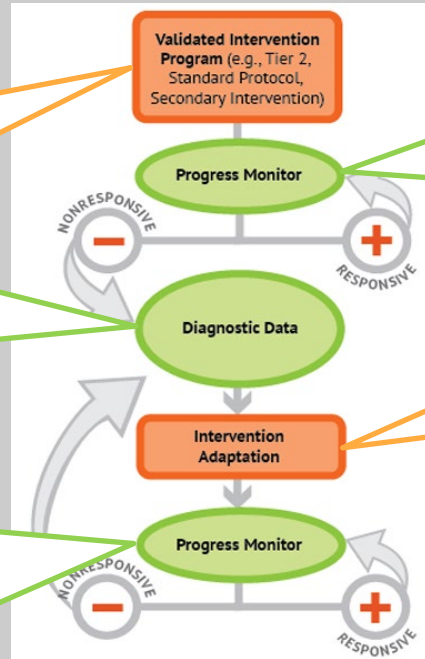


## Resources for Selecting Evidence-Based Interventions in Mathematics for all Tiers

The validated intervention program (Tier 2) is a standardized, evidence-based program or instructional practice that provides targeted instruction in a specific skill or set of skills

Progress monitoring data also may be reviewed along with other diagnostic data to assist teams in developing a hypothesis about why the student may not be responding

These may include standardized tools available through publishers; more informal approaches, such as error analysis of frequent progress monitoring data; or review of class assessments and work samples.



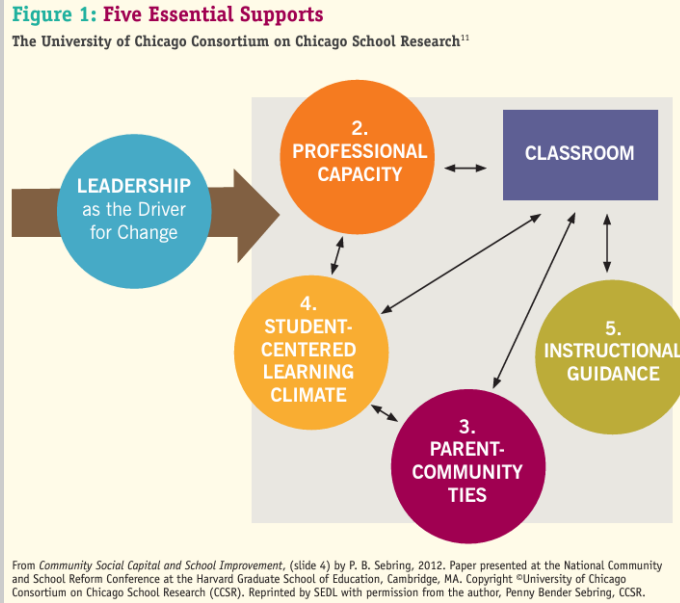
Interventionists should utilize the growth tools provided by the school's universal screener, i.e., iReady, STAR etc., to progress monitor (typically every six weeks) and for measuring months of growth

Using multiple data sources, the teacher or team decides to adapt the intervention program to better meet the student's individual needs.

<https://intensiveintervention.org/data-based-individualization>



## Parent & Family Engagement in Supporting Mathematics/STEM learning



***In Mathematics and related STEM areas engagement of parents can include:***

- Communicate about the math/STEM curriculums and learning expectations for each grade level
- Develop family engagement initiatives connecting to student learning and development
- Provide information times, trainings, and resources

### SEC. 1116. PARENT AND FAMILY ENGAGEMENT

[Partners in Education in A Dual Capacity-Building Framework for Family-School Partnerships \(US Dept of Ed\)](#)



## *Part 2* | Title I, Part A: An Equitable and High Quality Education for All Students - Quality

### ***Resources for Selecting Evidence-Based Interventions in Mathematics for all Tiers***

LEAs should look for interventions supported by strong evidence or moderate evidence in a similar setting and/or population to the ones being served.

The goal of Tier 2 and Tier 3 intervention groups is to utilize carefully selected interventions for targeting specific skills, using frequent assessment and reassignments to appropriate skill groups to maximize student growth and achievement—while minimizing time away from classroom instruction (*Parrett and Budge, Turning High-Poverty Schools into High-Performing Schools 2020*).

The impact of intervention groups is greater when it is connected to Tier 1 classroom content.



## *Part 2* | Title I, Part A: An Equitable and High Quality Education for All Students - Quality

### ***Parent & Family Engagement in Supporting Mathematics/STEM learning***

Helping parents and families increase their knowledge and understanding of what their children are learning and provide resources and activities that they can use to enhance their children's learning.

[Partners in Education in A Dual Capacity-Building Framework for Family-School Partnerships \(US Dept of Ed\)](#) p.26



# Part 2 | Title I, Part A: An Equitable and High Education for All Students

## - Quality

### Information nights and brochures introducing strategies and tools used

#### Math Night: Introducing games to support learning

Play can help with deep thinking and to develop fact fluency; it can motivate and inspire students, and invite parents and guardians into a collaborative role with the teachers...

Games are a natural way to practice fluency and develop automaticity, while also motivating students to think more deeply and strategically.

(An Invitation to Play, Finkel, D. 2024, p. 242, *Mathematics Teacher: Learning and Teaching PK-12. NCTM.*)

Multiplication Tic Tac Toe

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

1 2 3 4 5 6 7 8 9

Source: *Middle with Numbers* by Leigh Clark and Loren Cleave (Clear Source Publications 1995).

Ex: Multiplication tic-tac-toe

Count On Strategy

How It Works: To add, we can break apart an addend and count on from the other addend in chunks.

1. Choose which addend to break apart and which to count on from.
2. Break apart the addend into easy chunks.
3. Count on using the chunks you choose.

The left example shows that you can break apart 58 and count on from 76.

The right example shows that you can also break apart 76 and count on from 58.

When It's Useful: Count On is useful when you can easily break apart one of the addends into convenient chunks. These addends are typically small (two, three, or four digits).

Addend    Addend

$$\begin{array}{r} 58 + 76 \\ \swarrow \downarrow \searrow \\ 30 \quad 20 \quad 8 \end{array}$$

$76 + 30 = 106$   
 $106 + 20 = 126$   
 $126 + 8 = 134$

Addend    Addend

$$\begin{array}{r} 58 + 76 \\ \swarrow \downarrow \searrow \\ 50 \quad 20 \quad 6 \end{array}$$

$58 + 50 = 108$   
 $108 + 20 = 128$   
 $128 + 6 = 134$

Figuring Out Fluency in Mathematics series by J. Bay-Williams and J. SanGiovanni. Corwin.

*Part 3* | Title II, Part A: Developing and Improving Content,  
Pedagogical Knowledge, and Effectiveness of Educators

***Preparing, Training, and Recruiting High-Quality Paraprofessionals,  
Teachers, Principals, or other School Leaders***

Title II, Part A provides LEAs with the flexibility to use these funds creatively to increase student achievement consistent with challenging academic standards; improve the quality and effectiveness of teachers, principals, and other schools leaders; increase the number of teachers, principals, and other school leaders who are effective in improving student academic achievement in schools; and provide low-income and minority students greater access to effective teachers, principals, and other school leaders.

[\(20 United States Code \[USC\] Section 6601\)](#)



*Part 3* | Title II, Part A: Developing and Improving Content,  
Pedagogical Knowledge, and Effectiveness of Educators

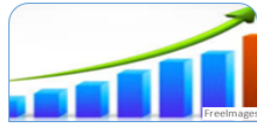
***Preparing, Training, and Recruiting High-Quality Paraprofessionals,  
Teachers, Principals, or other School Leaders***

1. To improve the quality and effectiveness of teachers, principals, and other school leaders
2. To increase student achievement consistent with challenging State academic standards
3. To increase the number of teachers, principals, and other school leaders who are effective in improving student academic achievement in school
4. To provide, low-income and minority students greater access to effective educators and teaching

<https://oese.ed.gov/offices/office-of-formula-grants/school-support-and-accountability/essa-legislation-table-contents/>



## Part 3 | Title II, Part A: Developing and Improving Content, Pedagogical Knowledge, and Effectiveness of Educators



### Personalized Professional Development

- **Instructional Coaching**
- **Professional Learning Communities**
- **Teacher or Principal Leadership**
- **Mentoring**
- **National Board Certification**
- **Other Professional development** (based on strong, moderate, promising, or demonstrating a rational (includes citations or completed logic model))



### Other Allowable Expenses

- **Rigorous Academic Content**
- **Recruiting and Retaining Effective Teachers**
- **Recruiting from Other Fields**
- **Evaluation/Support Systems**
- **Effective Teaching of ELL/MLL Students and Students with Disabilities**
- **Increased Knowledge/Ability to Teach Early Childhood**
- **High Quality of Instruction of STEM**
- **Implementation of Formative Assessments**

[NY ED Dept. Allowable & Unallowable expenses](#)



## Part 3 | Title II, Part A: Developing and Improving Content, Pedagogical Knowledge, and Effectiveness of Educators

### ***Professional Development that has Shown an Impact on Student Achievement in a Content Area***

Often job embedded and ideally aligned with school and district priorities and incorporates most, or all, of the following elements:

- Is content focused
- Incorporates active learning
- Supports collaboration
- Uses models of effective practice
- Provides coaching and expert support
- Offers feedback and reflection
- Is of sustained duration

**Example:** Implementing PLCs looking at student work as learned through learnings via OGAP or Carnegie Learning Patterns courses and/or providing an Elementary Mathematics Specialist or instructional coach to provide professional support to teachers (and housed within a school)

[Effective Teacher Development\(2017\). Darling-Hammond et al. Learning Policy Institute](#)





## Part 4 | Title III, Part A: Supporting English Acquisition

### ***ESSA Title III, Part A Language Instruction for English Learners and Immigrant Students, K-12***

The funding is used to enhance local programs for English Learners and immigrant students, to analyze data and share reports, and to support trainings for teachers, administrators, and community stakeholders about the linguistic and cultural abilities and needs of our English Learners and families.

## - Language

ESSA Title III, Part A  
Language Instruction for  
English Learners and  
Immigrant Students, K-12

 New Hampshire  
Department of Education



101 Pleasant Street  
Concord, NH 03301

[NHED](https://www.nh.gov/education)

## ***How may the funding be used to support mathematics learning***

### ***Services for Multilingual Learners***

Title III funds are designed to support the district language instructional education program to assist multilingual learners in attaining English proficiency and high levels of academic achievement. Districts and schools may use the funds for:

- Professional learning (required use of funds)
- Family engagement (required use of funds)
- Supplemental instructional materials
- Coaches and professional development specialists
- Extended-day or extended-year instructional supports



## *How may the funding be used to support mathematics learning*

Professional development is a mandated activity under Title III-A and can be used for all educators to better serve English Language Learners.

### *Some possible resources:*

- [TODOS: Mathematics for All](#) is an international professional organization that advocates for equity and excellence in mathematics education for all. Provides resources for parents also. Affiliate of [NCTM](#) (also provides resources & PD). [NCSM](#) and TODOS have a joint position statement, [Positioning Multilingual Learners for Success in Mathematics](#) with links to further information.
- [WIDA](#) supports students, families, educators and administrators with high-quality, research-based tools and resources, dedicated to language development for multilingual learners. Also has resources for [family engagement](#) for multilingual learners.



## *Part 5* | Title IV, Part A: Supporting Students and Enrichment

### ***Title IV, Part A Purpose***

The purpose of the Title IV-A Program is to improve students' academic achievement by increasing the capacity of the LEA schools, and local communities to provide all students with access to a well-rounded education, improve school conditions for student learning and improve the use of technology in order to improve the academic achievement and digital literacy of all students.

## *Part 5* | Title IV, Part A: Supporting Students and Enrichment

### ***Activities to Support Well-Rounded Educational Opportunities***

- College and career guidance and counseling programs
- Science, technology, engineering, and mathematics (STEM)
- Accelerated learning and Multidisciplinary programs
- Developing or using effective or innovative strategies for the delivery of academic content through the use of technology

[OESE.ed.gov](https://oese.ed.gov) – T4PA



## *Part 5* | Title IV, Part A: Supporting Students and Enrichment

### ***Supporting Students and Enrichment in Mathematics***

Course and/or enrichment developments around mathematics/stem can be funded, but:

- The course is supplemental (not an additional course of math instruction),
- The activity must include delivery of the course to students',
- Overall objectives of the activity should be student-centered, and
- After taking the supplemental course the students will increase their scores by x-amount (Objective)

Defining the Objective:

- Start with need for supplemental support,
- Then determine what objectives would like to achieve,
- And then design the activity that will allow the students the experiences and practices to meet those objectives.

The intent is about the need for use to provide supplemental support, not regular educational support.

NHED Canvas course -- [Understanding Title IV-A](#)

## Part 6 | Summary and Questions

***Title monies are an essential source of funding in supporting student learning in mathematics and STEM:***

- Title 1-A supports Helping disadvantaged children meet high standards and school improvement
- Title II-A supports Preparing, Training, and Recruiting High Quality Teachers and Principals
- Title III-A supports Language Instruction for English Learners
- Title IV-A supports Student Support and Academic Enrichment

***When determining which Title program fits the activity you would like to implement, look at:***

- What is the purpose and who is it serving
- Ensure that you supplementing, not supplanting

<https://www.education.nh.gov/who-we-are/division-of-learner-support/bureau-of-instructional-support/office-esea-title-programs>



# Part 6 | Summary and Questions

*Questions?*





# Part 7 | Resources

- [What Works Clearinghouse – Mathematics](#) uses rigorous standards to review evidence of effectiveness on a wide range of interventions and summarizes the settings and populations in the studies.
- [Regional Educational Laboratories](#) Math (RELS) provide summaries of the evidence on various interventions and guidance on how existing research aligns to the ESEA evidence levels.
- [National Center on Intensive Intervention](#) Math (NCII)—this website shares resources on intensive intervention helping students with severe and persistent learning and behavioral needs, including students with disabilities.
- [Evidence for ESSA](#) Provides clear and authoritative information on programs that meet the ESSA evidence standards; allowing for selection of effective educational tools to improve student success. [Mathematics](#) - Science coming soon.



# Part 7 | Resources

- [Visible Learning Meta-Study](#) A meta-meta-study that collects, compares, and analyses the findings of many previous studies in education. (Books available for math by grade-bands)
- [National Council of Teachers of Mathematics](#) (NCTM)—Founded in 1920, NCTM is the world's largest mathematics education organization. Their strategic framework centers on providing guidance and resources for the implementation of research-informed and high-quality teaching that supports the learning of each and every student in equitable environments through teaching and learning.
- [IRIS Center](#) (evidence-based practice summaries) The research summaries covering instructional strategies and interventions offer information that includes level of effectiveness as well as the age groups for which a given strategy or intervention is designed. Also – Module on [High Quality Mathematics Instruction](#)



## Part 7 | Resources

- [EdReports – Mathematics](#) provides free reviews of K-12 instructional materials. Reports provide evidence-rich comprehensive information about a program’s alignment to the standards along with other indicators of quality.
- [National Council of Supervisors of Mathematics](#) (NCSM) – is a leadership organization in mathematics education that supports, sustains, and inspires high quality mathematics teaching and learning for every learner.
- [Dana Center – Univ. of TX @ Austin](#) – Advancing Mathematical Success in an Increasingly Complex World. Hosts the [Dana Center Math Pathways](#) which develops strategies, collaborations, and tools to guide successful math pathways implementation and [Inside Mathematics](#), a professional resource for K-12 educators for improving students’ mathematics learning and performance.

