



High Leverage Practices: A Framework for Effective Mathematics Instruction

[How to Use this Resource](#)

High Leverage Practice (HLP) Application to Mathematics	Professional Learning	Resources
Section 1: HLPs for Mathematics and Collaboration		
HLP 1: <u>Collaborate with professionals to increase student success</u>	The Progress Center <u>The IEP Team and Other Considerations</u> <u>TTAC HLP 1 Highlight Tool</u>	William & Mary TTAC (2016) <u>Co-Teaching Considerations Packet</u> VDOE <u>Co-Teaching Math Instructional Plans</u> Stetson & Associates (2022) <u>Quality Indicators for Delivering Specially Designed Instruction</u> <u>Stetson & Associates Educator Resources</u> <u>University of Colorado Paraeducators Collaboration Resources (paracenter.org)</u> TTAC <u>Pro-Active Paraeducators Discussions</u>

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High Leverage Practice (HLP) Application to Mathematics	Professional Learning	Resources
<p>HLP 2: Organize and facilitate effective meetings with professionals and families</p>	<p>VDOE Online Training Meaningful IEP Meetings</p> <p>TTAC HLP 2 Highlight Tool</p>	<p>TTAC HLP 2: Organize and Facilitate Effective Meetings with Professionals and Families</p> <p>TTAC HLP 2 Facilitating Collaborative IEP Meetings Checklist</p>
<p>HLP 3: Collaborate with families to support student learning and secure needed services</p>	<p>VDOE: Mathematics Resources for Families and Communities</p> <p>VDOE Special Education for Families</p> <p>Meadows Center for Preventing Educational Risk (MCPER) at the University of Texas Helping your Kid with Math [Videos]</p> <p>CEEDAR Center Practice Based Learning Opportunity Using Simulation Environments for HLP 3: Collaborate with families to support student learning and secure needed services.</p>	<p>VDOE & GMU Bridging for Math Strength Family Connections</p> <p>TTAC HLP 3 Family Communication Checklist</p> <p>Institute for Education Sciences (IES)– REL Appalachia: Engaging Families for Math Success</p> <p>Stanford University Family Math</p>

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	<p>Project for Education Research that Scales (PERTS): Growth Mindset Course for Parents</p> <p>TTAC Supports for Students with Significant Cognitive Disabilities</p> <p>IRIS Center Modules – Family Engagement. Collaborating with Families who have Students with Disabilities</p> <p>Center for Dispute Resolution (CADRES) Working Together Self-Paced Professional Learning</p> <p>TTAC HLP3 Highlight Tool</p>	
Section 2: HLPs for Assessment and Mathematics		

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<p>HLP 4: Use multiple sources of information to develop a comprehensive understanding of students' strengths and needs.</p>	<p>IRIS Center the Pre-referral Process Supporting Students with Academic and Behavioral Concerns</p> <p>IRIS Center Developing High Quality Individualized Education Programs</p> <p>Learner Variability Navigator Professional Learning Students with Learning Disabilities, Dyscalculia, ADHD, Dyslexia</p> <p>TNTP More than Right Answers: Math Instruction for Multilingual Learners</p> <p>TTAC HLP 4 Highlight Tool</p>	<p>TTAC HLP 4: Comprehensive Student Profile Graphic Organizer</p> <p>TTAC HLP 4 Comprehensive Student Profile Template</p> <p>Learner Variability Navigator</p> <ul style="list-style-type: none"> • Math Learner Factors K – 2 • Math Learner Factors 3 - 6 • Math Learner Factors 7 - 10 <p>Mathematics Instructional Strategies for Students who are Deaf or Hard of Hearing</p> <p>VDOE Virginia Guidelines for Educating Students with Learning Disabilities</p> <p>VDOE Learning Disabilities in Mathematics</p> <p>VDOE & GMU Bridging for Math Strength Resources</p>
<p>HLP 5: Interpret and communicate assessment information with stakeholders to</p>	<p>National Center on Intensive Intervention Communicating Intensive Interventions with Families</p> <p>James Madison University Reporting & Use of Assessment Results</p>	<p>VDOE Models for Developing High Quality Present Level of Academic Achievement and Functional Performance Descriptions and Goals in a Standards-Based Individualized Education Program</p>

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collaboratively design and implement educational programs.	TTAC HLP 5 Highlight Tool	National Center on Intensive Interventions Student Progress Monitoring Tool for Data Collection & Graphing
HLP 6: Use student assessment data, analyze instructional practices, make necessary adjustments that improve student outcomes	CEEDAR Center Math Interventions & MTSS Video (20:02 minutes) National Center on Intensive Interventions Intensive Interventions in Mathematics Content IRIS Center Progress Monitoring: Mathematics GMU Bridging for Math Strength Webinar Part 1 - Grades K-2 GMU Bridging for Math Strength Webinar Part 1 - Grades 3-8 Project Stair Mathematics How to Interpret Progress Monitoring K- 12 [Video] . 4:26 minutes CEEDAR Center Practice Based Learning Opportunity HLP 6 Simulation TTAC HLP 6 Highlight Tool	University of Florida CEEDAR Center MTSS in Mathematics National Center on Intensive Interventions Screening Tools - Mathematics National Center on Intensive Interventions Student Progress Monitoring Tool for Data Collection & Graphing Virginia Tech TTAC CRA Progress Monitoring Sheet VDOE & GMU Bridging for Math Strengths VDOE Just in Time Mathematics Quick Checks

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Section 3: HLPs for Social/Emotional/Behavioral Practices and Literacy		
HLP 7: Establish a consistent, organized, and respectful learning environment.	Project Stair Mathematics Procedures Routines [Video] . 2:24 minutes Project Stair Introduction to Classroom Management for Mathematics [Video] . 3:58 minutes Project Stair Class Expectations in Mathematics [Video] . 4:49 minutes NCTM Thinking About Instructional Routines in Mathematics Stanford University Math Language Routines	TTAC HLP #7 Checklist Stanford University PERTS Center teacher toolkit Youcubed Positive Norms to set up your class for growth mindset Learner Variability Project (Mathematics) Culturally Responsive Practices Henrico County Public Schools Types of Number Sense Routines Henrico County Public Schools Number Sense Routines K - Secondary

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	<p>Learner Variability Project (Mathematics) Webinar Culturally Responsive Teaching: Strategies So All Learners Are Seen and Understood</p> <p>TTAC Self-Paced Professional Learning on Virtual Virginia Setting the Stage for Learning – Establish a Consistent, Organized, and Respectful Learning Environment</p> <p>TTAC HLP 7 Highlight Tool</p>	
<p>HLP 8: Provide positive and constructive feedback to guide students' learning and behavior.</p>	<p>The IRIS Center Addressing Problem Behaviors (Part 2 Elementary School) Behavioral Strategies</p> <p>The IRIS Center Classroom Behavior Management (Part 2 Elementary)</p> <p>Project for Education Research that Scales (PERTS) Self-Paced Professional Learning Elevate Student Voice in Learning</p> <p>The IRIS Center Addressing Problem Behaviors (Part 1 Elementary School) Understanding the Acting Out Cycle</p> <p>TTAC HLP 8 Highlight Tool</p>	<p>Stanford University Youcubed</p> <p>Learner Variability Navigator Model Positive Connections to Mathematics</p>

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<p>HLP 9: Teach Social Behaviors</p>	<p>University of Texas Social & Emotional Learning in Mathematics</p> <p>University of Texas, Meadows Center Ten Key Policies & Practices of Social and Emotional Learning</p> <p>LD@Schools Supporting the Wellbeing & Mental Health of Students with Learning Disabilities Self-Paced Professional Learning</p> <p>Youcubed Growth Mindset Self-Paced Professional Learning for Educators</p> <p>HLP 9 Highlight Tool</p>	<p>Learner Variability Project (Mathematics) Emotional & Relational Engagement Strategies</p> <p>Project for Education Research that Scales (PERTS) Growth Mindset Curriculum for 9th Grade Students</p> <p>Project for Education Research that Scales (PERTS) resources</p> <p>Luminous Learning Five Teaching Strategies to Build Growth Mindset</p> <p>Khan Academy Growth Mindset Activities</p>
<p>HLP 10: Conduct functional behavioral assessments to develop individual student behavior support plans.</p>	<p>IRIS Center Functional Behavior Assessments Identifying the Reasons for Problem Behavior and Developing a Behavior Plan</p> <p>VDOE Guidelines for Conducting Functional Behavioral Assessment and Developing Behavior Intervention and Supports/Strategies</p>	<p>Intervention Central Self-Check Behavior Checklist</p>

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	TTAC HLP 10 Highlight Tool	
Section 4: HLPs for Literacy Instruction		
HLP 11: Identify and prioritize long- and short-term goals	VDOE Standards Based IEP Goal Training Progress Center The What and Why of Academic and Functional Performance (PLAAFP) Progress Center The What and Why of Annual Measurable Goals VDOE Quality Present Level of Academic Achievement and Functional Performance Descriptions and Goals in a Standards-Based Individualized Education Program TTAC HLP 11 Highlight Tool	TTAC HLP 11 Checklist: Identify Short- & Long-Term Learning Goals VDOE Skills Worksheets - Mathematics Bridging for Math Strength Learning Trajectory Resources
HLP 12: Systematically design instruction toward a specific learning goal.	National Center on Intensive Interventions Intensive Interventions in Mathematics Content The IRIS Center High Quality Math Instruction: What Every Teacher Should Know VDOE Evidence Based Instruction in Mathematics Webinar	VDOE Evidence Based Specially Designed Instruction in Mathematics Evidence Based Intervention Network at the University of Missouri Math Interventions and Strategies

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	<p>LD@School Concrete Representational Abstract Method Self-Paced Professional Learning</p> <p>Project Stair T eaching Math with Multiple Representations (5:45 minutes)</p> <p>TTAC HLP 12 Highlight Tool</p>	<p>Virginia Tech TTAC Number Sense & Counting Principles</p> <p>Evidence Based Intervention Network at the University of Missouri Concrete Representational Abstract (CRA)</p> <p>Virtual Manipulatives</p> <ul style="list-style-type: none"> • Didax Virtual Manipulatives • EquatIO Activities Database • Math Playground • Math Learning Center • National Library of Virtual Manipulatives • Toy Theatre <p>National Center on Intensive Interventions Planning Standards Aligned within a Multi-Tiered System of Supports</p> <p>Virginia Tech TTAC Specially Designed Instruction (SDI) in Math</p>
<p>HLP 13: Adapt curriculum tasks and materials for specific learning goals.</p>	<p>The IRIS Center Universal Design for Learning: Creating a Learning Environment that Engages All Students</p> <p>IRIS Center Differentiated Instruction: Maximizing the Learning of All Students</p>	<p>VDOE Virginia Alternate Assessment Program</p> <p>TTAC Virginia Essentialized Standards of Learning Resources</p>

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	<p>The IRIS Center Accommodations: Instructional and Testing Supports for Students with Disabilities</p> <p>TTAC HLP 13 Highlight Tool</p>	<p>Virginia Tech TTAC Virginia Essentialized Standards of Learning Documents & Resources</p> <p>Perkins School for the Blind Digitally Accessible Worksheets</p> <p>VDOE & GMU Bridging for Math Strengths</p>
<p>HLP 14: Teach cognitive and metacognitive strategies to support learning and independence.</p>	<p>VDOE Schema Based Instruction Webinar</p> <p>IRIS Center SRSD Using Learning Strategies to Enhance Student Learning</p> <p>IRIS Center High Quality Math Instruction: What Every Teacher Should Know</p> <p>TTAC Word Problem, No Problem! Webinar with UVA professor, Dr. Stephanie Morano (23 minutes)</p> <p>TTAC HLP 14 Highlight Tool</p>	<p>VDOE Evidence Based Specially Designed Instruction in Mathematics</p> <p>Evidence Based Intervention Network at the University of Missouri Schema Based Instruction</p> <p>Virginia Tech TTAC Schema Based Instruction for Problem Solving</p> <p>Instructional Technology Mathshare (Multi-Step)</p>
<p>HLP 15: Provide scaffolding support.</p>	<p>IRIS Center Providing Instructional Supports: Facilitating the Mastery of New Skills</p> <p>Project Stair Mathematics Examining Task Difficulties [Video]. 3:17 minutes</p>	<p>VDOE Mathematics Word Wall Cards</p> <p>VDOE Mathematics Instructional Enhancements for Diverse Learners Infographic</p> <p>VDOE Mathematics Vertical Articulation Tool</p>

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	<p>Thoughtco Frayer Model for Math</p> <p>TTAC HLP 15 Highlight Tool</p>	<p>VDOE Mathematics Bridging Standards</p> <p>Understood.org Graphic Organizers for Mathematics</p> <p>Fostering Math Practices Connecting Representations</p> <p>New York State Department of Education (NYSDE) Supporting All Students Resource Guides for Scaffolding Instruction of English Language Arts and Mathematics</p> <p>Kentucky Center for Mathematics Math Tools</p> <p>Free Frayer Model Template in Google docs</p> <p>WATI Math Desk Helper Scaffolds</p> <p>Learner Variability Project Worked Solutions</p>
<p>HLP 16: Use explicit instruction.</p>	<p>VDOE Evidence Based Specially Designed Instruction in Mathematics Webinar</p> <p>National Center on Intensive Interventions Features of Explicit Instruction</p>	<p>Research & Evidence Based Practices</p> <ul style="list-style-type: none"> VDOE Evidence Based Specially Designed Instruction in Mathematics

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	<p>Project Stair Mathematics How to Adjust Scope and Sequence – K- 12 [Video]. 3:47 minutes</p> <p>LD Online Thinking Aloud in Mathematics</p> <p>VDOE #GoOpenVA Information Videos</p> <p>University of Texas, Meadows Center Ten Key Math Practices for All Elementary Schools</p> <p>University of Texas, Meadows Center Ten Key Math Practices for All Middle and High Schools</p> <p>Department of Education Resources</p> <ul style="list-style-type: none"> • Department of Education Institutes for Education Sciences Preparing Young Children for School • Department of Education Institutes for Education Sciences Five Evidence-Based Recommendations for Teaching Mathematics to Young Children • Department of Education Institutes for Education Sciences Assisting Students Struggling with Mathematics: Intervention in the Elementary Grades 	<p>Strategic Instructional Planning</p> <ul style="list-style-type: none"> • VDOE Co-Teaching Math Instructional Plans • VDOE Repository of Lesson Plans and Resources #GoOpenVA • VDOE Mathematics Word Wall Cards • VDOE & GMU Bridging for Math Strengths • VDOE Just in Time Quick Checks • Henrico County Public Schools Mathematics Website with Lesson Plans, Activities and Resources <p>Intervention Central Cover Copy Compare</p> <p>CEC HLP 16 Checklist: Explicit Instruction</p>

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	<ul style="list-style-type: none"> Department of Education Institutes for Education Sciences Improving Mathematical Problem Solving in Grades 4 – 8. Department of Education Institutes for Education Sciences Teaching Strategies for Improving Algebra Knowledge of Middle and High School Students <p>National Center on Intensive Interventions Teaching Counting</p> <p>Kansas Technical Assistance Network Dr. Brad Witzel – Rational Number Acquisition (8:48 minutes)</p> <p>Kansas Technical Assistance Network Dr. Brad Witzel – Building Computational Fluency Webinar (61 minutes)</p> <p>Dr. Brad Witzel CRA with Explicit Instruction in Fractions (4:25 minutes)</p> <p>Evidence Based Intervention Network at the University of Missouri Fluency Building: (Small Group) Cover Copy Compare</p> <p>IRIS Center Explicit Instruction and Think Aloud in Mathematics (with elementary and video examples)</p>	

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	TTAC HLP 16 Highlight Tool	
HLP 17: Use flexible grouping.	Project Stair Mathematics How to Group Students K-12 [Video] . 2:56 minutes Project Stair Mathematics Activity Sequencing & Offering Choice [Video] . 2:29 minutes Edutopia Group Work that Works Henrico County Public Schools (Mathematics) Planning Stations Evidence Based Intervention Network at the University of Missouri Mathematics Peer Assisted Learning Strategies (PALS) TTAC Self-Paced Professional Learning on Virtual Virginia HLP 17 Differentiate with Flexible Grouping TTAC HLP 17 Highlight Tool	TTAC Types of Flexible Groups TTAC Flexible Group Lesson Plan Template – Mathematics Henrico County Public Schools Math Workshop Wisconsin Department of Public Institute: Flexible Groups Learner Variability Navigator Flexible Grouping Learner Variability Navigator Group Activities: <ul style="list-style-type: none"> • Think Pair Share - Mathematics • Reciprocal Teaching • Jigsaw (Mathematics) • Gallery Walk • Collaborative Problem Solving • Student Choice - Mathematics NCTM Illuminations Website with pre-created games
HLP 18: Use strategies to	Project Stair Mathematics How to Ask the Right Questions in Mathematics [Video] . 5:26 minutes	TNTP Student Engagement Survey & Scoring

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<p>promote active student engagement.</p>	<p>Project Stair Mathematics How to Ask Higher Level Mathematics Questions Part 2 [Video] 4:26 minutes</p> <p>Project Stair Mathematics Teacher Questions and Opportunities to Respond [Video]. 2:07 minutes</p> <p>We are Teachers Eight Ways to Pose Better Questions in Math Classes</p> <p>Illustrative Mathematics Mathematical Language Routines</p> <p>Avid Ten Engagement Strategies for Every Math Classroom</p> <p>Stanford University Promoting Language & Content Development</p> <p>TTAC Self-Paced Professional Learning on Virtual Virginia HLP 18 Active Engagement Strategies</p> <p>TTAC HLP 18 Highlight Tool</p>	<p>Learner Variability Project (Mathematics) Fostering Student Engagement</p> <p>Learner Variability Navigator Math Talks</p> <p>VDOE Rich Mathematical Tasks</p> <p>Teacher Education by Design Contemplate then Calculate.</p> <p>Kentucky Center for Mathematics Number Talks Resources</p> <p>Learner Variability Navigator Guided Inquiry</p> <p>Learner Variability Navigator Student-generated Problems</p> <p>Learner Variability Navigator Music & Dance – Mathematics Engagement</p> <p>VDOE & GMU Bridging for Math Strengths</p> <p>VDOE Mathematics Word Wall Cards</p> <p>VDOE Desmos Activities Log</p>

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<p>HLP 19: Use assistive and instructional technologies.</p>	<p>VDOE Putting the “AT” in mATh: Making Math More Accessible with Assistive Technology</p> <p>VDOE Mathematics Desmos Webinars</p> <p>The IRIS Center Assistive Technology: An Overview</p> <p>Virginia Assistive Technology, Tools, and Strategies: Consideration and Assessment Guidance Document</p> <p>TTAC HLP 19 Highlight Tool</p>	<p>Georgia Department of Education Assistive Technology Devices for Students Struggling in Mathematics</p> <p>National Center on Educational Accessible Materials - Mathematics</p> <p>Learner Variability Project Audio & Braille</p> <p>UDL Math Tools</p> <p>Tapping Into Low-Tech Ideas: Literacy & Math</p> <p>Math Technologies</p> <ul style="list-style-type: none"> • Desmos Online Calculator • EquatIO: Make Math Digital • Graspable Math • GeoGebra Geometry • Mathshare (Multi-Step) <p>Virtual Manipulatives</p> <ul style="list-style-type: none"> • Didax Virtual Manipulatives

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		<ul style="list-style-type: none"> • EquatIO Activities Database • Math Playground • Math Learning Center • National Library of Virtual Manipulatives • Toy Theatre
HLP 20: Provide intensive instruction.	National Center on Intensive Intervention Intensive Intervention in Mathematics The IRIS Center Intensive Intervention (Part 1) The IRIS Center Intensive Intervention (Part 2) Progress Center Intensifying Instruction: What Teachers Need to Know Project Stair Mathematics Intervention Intensification Guide HLP 20 Highlight Tool	National Center on Intensive Interventions Sample Lessons for Intensifying Interventions National Center on Intensive Interventions Student Progress Monitoring Tool for Data Collection & Graphing Virginia Tech TTAC CRA Progress Monitoring Sheet
HLP 21: Teach students to maintain and generalize new	Dr. Michael Kennedy HLP 21 Video TTAC HLP 21 Highlight Tool	Evidence Based Intervention Network at the University of Missouri Math Generalizations Fostering Math Practices Recognizing Repetitions

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learning across time and settings.		Learner Variability Navigator Real World Math
HLP 22: Provide positive and constructive feedback to guide students' learning and behavior.	Project Stair Positive Feedback – Mathematics [Video] . 4:39 minutes IRIS Center Page 7: Error Analysis for Mathematics TTAC HLP 22 Highlight Tool	IRIS Center Mathematics: Identifying & Addressing Student Errors Learner Variability Navigator Error Analysis MathVIDS Error Pattern Analysis VDOE Just in Time Mathematics Quick Checks Teacher Notes

Additional Resources to Support HLP Implementation:

- TTAC [Virginia Professional Teaching Standards HLP Crosswalk](#) & TTAC [HLP Rubrics](#)
- Stetson & Associates [Quality Indicators of Specially Designed Instruction](#)
- CEEDAR Center [HLP Self-Reflection Tool](#) & CEEDAR Center [HighLeveragePractices.org](#)

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