

MATH

I. Numbers & Operations in Base Ten

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems
- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates

A.

Students may have Difficulty in the Following Areas

- Demonstrating slow or inaccurate recall of basic arithmetic facts
- Answering problems impulsively, without inhibition
- Representing mathematical concepts mentally
- Poorly developed number sense
- Keeping information in their working memory

B.

Assessment Tools

1. Use **Formative Assessment Strategies** that focuses on accuracy, efficiency, flexibility, and appropriate strategy selection:
 - **Interviews** – Students explain what they know about a topic (e.g. How did you figure this out?)
 - **Observations** – Tracking the strategies the students use (e.g. Students tell their peers both the answer to a math fact and how they solved it.)
 - **Journaling** – The students explain what they know about a topic through writing prompts (e.g. If your friend did not know the answer to $4 + 5$, how could he figure it out?)
 - **Quizzes** – Questions are used to see if students know foundational facts. (e.g. Solve these problems and tell how you solved them.)
2. **Error Analysis:** Determine whether errors in a student's computation are based on systematic misunderstanding of processes or procedures
3. **Computation Fluency** using Curriculum Based Measurement tools from Interventional Central: www.jimwrightonline.com/mixed.../5_CBA_Math_Computation_Directions.pdf

C.

Progress Monitoring Tools

	<ul style="list-style-type: none"> • Mastery Connect • Jordan School District grade level Benchmark Assessments • How To: Assess Mastery of Math Facts With CBM: Computation Fluency www.jimwrightonline.com/mixed.../5_CBA_Math_Computation_Directions.pdf
D.	Research-Based Interventions
	<ol style="list-style-type: none"> 1. Cover-Copy-Compare 2. Errorless Learning Worksheets 3. Boost Fluency Through Explicit Time-Drills 4. Student Self-Monitoring to Increase Fluency 5. Increasing Accuracy and Productivity Rates 6. Intermixing Easy and Challenging Computation Problems 7. Self-Correction Checklist 8. Number Operations: Strategic Number Counting 9. Incremental Rehearsal of Math Facts 10. Folding-In 11. Sequenced Count-By for Basic Multiplication 12. Time-Delay for Multiplication Facts 13. Taped Problems
E.	Research Based Teaching Strategies
	<ol style="list-style-type: none"> 1. Linking CRA: Concrete, Representational, Abstract 1. Fluency: Have Students Write Every Day 2. Fluency: Self-Monitor and Graph Results
F.	Additional Intervention Materials

	<p>1. Interventional Central: http://www.interventioncentral.org/</p>
G.	Readings and Reference Materials
	<ul style="list-style-type: none"> • Required Fluencies in K-6 • Jordan School District Elementary Math website: http://elemmath.jordandistrict.org/ • Jordan School District Secondary Math website: http://secondarymath.jordandistrict.org/
H.	EL Resources
	<p>PD Bites - A Buffet of Learning (WIDA, SIOP, Engagement, Culturally Responsive Teaching)</p> <p>"On Demand" Professional Development Modules designed to help you help all of your students, including your culturally and linguistically diverse students, find academic success in your classroom.</p> <p>These modules are located in Canvas and can be accessed by following the links below.</p> <p>Modules can be completed at your own pace and on your own time.</p> <p>Topics include: WIDA, SIOP, Academic Language, Culturally Responsive Teaching, Engagement, etc.</p> <p><i>To get started click on the appropriate link below:</i></p> <ul style="list-style-type: none"> • <i>Already have a JordanPD Canvas account?</i> Click here to enroll: PD Bites on Canvas • <i>Need to create a JordanPD Canvas account?</i> Request an invitation - Put "PD Bites" in the subject line. (Once you receive the invitation, you will need to create an account.)