**Vernon’s (K – 5 )Math Bottom Lines 2014-15**

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| **Elements of a Balanced Math Program** |
| **Conceptual Understanding:**  I build students’ mathematical knowledge by focusing on conceptual understanding and reasoning (as opposed to focusing on the answer or procedural shortcuts).  I provide daily opportunity for students to practice the lesson objective in cooperative or independent settings. |
| **Procedural Skill & Fluency:**  I practice math fluency daily to develop students’ counting and computational competence. I teach strategies that are flexible, accurate, and efficient. |
| **Application:**  I make math meaningful by giving math problems that have a real-world context.  I use math tasks to guide, assess, and track students’ use of the Standards of Math Practice. (K-2 may use these and/or Eureka Math application problems, 3-5 uses tasks) |
| **Environment/ Routines/ Independence** |
| I act as facilitator to help students make sense of math and build problem solving skills, so that they can internalize concepts and transfer knowledge to other situations. |
| I explicitly teach perseverance during math by modeling and valuing students’ efforts. |
| I have a math center with appropriate tools (e.g. base ten blocks, counters, rulers, etc). It is accessible to students and they understand how to use and care for the materials. |
| I have a word wall to support student talk and concept development. When possible words are accompanied with visuals. |
| I create a safe environment where students feel comfortable sharing ideas and answers. The students talk, listen, and work together in a respectful manner. |
| **Professional Practice** |
| I participate in district offered professional development and self-reflect to identify and initiate personal opportunities for growth. |
| I access the VPS Faculty Portal to obtain the latest district documents. |
| I review unit assessments prior to planning instruction. |
| I share and discuss ideas, materials, and resources with my colleagues. |

**Note**: These bottom lines draw extensively on the Standards of Mathematical Practice. Professional development and resources are available from the Curriculum office to support teachers in these areas.

**Self-Reflection Checklist**

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|  | **Elements of Balanced Math Instruction** | **Environment/Routines/independence** | **Professional Practice:** |
| **Teacher** | **I plan for fluency practice daily by…**  🞏 including time in my daily lesson plans and choosing purposeful activities  🞏 including writing prompts to explain strategies  **I teach for conceptual understanding by…**  🞏 questioning, listening, & guiding  🞏 providing inquiry opportunities for experiential, hands-on learning  🞏 promoting problem solving  🞏 focusing on the process not the answer  🞏 clearly stating/posting the daily math objective prior to student practice  🞏 planning activities for cooperative and/or independent practice  🞏 providing counter examples  **I have students apply their learning by…**  🞏 giving real-world problems/situations daily  🞏 valuing multiple solutions to one problem  🞏 modeling how to contextualize (add a story or meaning to math) and decontextualize (pull the math out of a word problem)  🞏 giving the answer & asking students to work backwards  🞏 having students write to explain their thinking  **I use math tasks to…**  🞏 provide modeled, guided, and independent problem solving experiences  🞏 promote multiple ways to solve a single problem | **I have a math center…**  🞏 which includes: base ten blocks, counters, linking/unifex cubes, games, playing cards, coins, ten frames, rekenreks, rulers, tape measures, etc.  **I teach…**  🞏 use & purpose of manipulatives explicitly  🞏 procedures to take & put away materials  **My Word Wall…**  🞏 contains words related to the current unit  🞏 contains visuals  🞏 is referred to when I teach  **I promote a safe environment by…**  🞏 valuing student thinking & work  🞏 acknowledging the importance of mistakes as opportunities to improve learning  **I facilitate learning by…**  🞏 creating anchor charts that explain math concepts and provide talk stems  🞏 guiding students through questioning (Does it make sense?, How can we check?)  🞏 teaching students how to make a plan  🞏 using math journals, so students can take & refer to notes and keep a record of their thinking | **I participate in…**  🞏 staff meetings 🞏 grade-level meetings  🞏 PD sessions 🞏 book studies  **I contribute by…**  🞏 coming prepared  🞏 adding to the discussion  🞏 sharing ideas & resources  🞏 following the group norms  🞏 taking ownership of my own learning  🞏 seeking answers in books, articles, websites, and by communicating with the curriculum office  **I view and use the VPS Faculty Portal…**  🞏 unit documents 🞏 assessments  🞏 coaching resources |
| **Student** | **Students…**  🞏 practice fluency in a variety of ways (counting up/back, skip counting, computation, writing)  🞏 know daily math objective  🞏 practice concepts cooperatively & independently  🞏 say, “I know this, I know that, here’s where I get stuck…” (not: “I don’t know how.”)  🞏 talk & listen to deepen understanding  🞏 estimate and check for reasonableness of answers  🞏 use manipulatives and show work with words, drawings, and numbers | **Students…**  🞏 frequently use tools in math center  🞏 use materials appropriately (with purpose & care)  🞏 have open access to choose materials  🞏 refer to word wall & use precise language orally & in writing  🞏 share ideas  🞏 agree & disagree with ideas  🞏 repeat & add on to the ideas of others  🞏 make mistakes and fix them  🞏 monitor and evaluate their thinking as they work | I/my team would like to learn more about…  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Curriculum** | **I review district documents prior to teaching:**  🞏 unit documents 🞏 unit assessments  🞏 answer keys 🞏 common core standards  🞏 Eureka Math, Everyday Math, Rocket Math, Number Talks |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |