

Kaposia Education Center Practice Profile

Instructional Strategy/Practice: Math Instruction in a PYP Primary Classroom

Date Began: February 2015

Purpose/Rationale for using this instructional strategy or practice: By using this document, teacher will engage students in effective math learning that supports students in becoming independent, deep, mathematical thinkers.

Desired Outcome: To help students to become independent, deep, mathematical thinkers

Citation of Research Used: [MTPYPH. figure 6 on p. 14 and Math Annex p. 81-89](#)

Critical Component (non-negotiable)	Description of educator behavior		
	Expected/Proficient	Developmental	Needs Improvement
Real-World Connections/ Authentic Learning Environment	<p>Teacher asks questions to make “real-world” connections.</p> <ul style="list-style-type: none"> ● How can we use this? ● Why do we need to know this? ● When do you need to know this? <p>Teacher allows students the opportunity to explore at their own pace.</p> <p>Teacher provides students relevant problems to explore.</p> <p>Concept-based</p> <p>VTS graphic organizers</p>	<p>theme-based lessons</p> <p>related (differentiated) handouts</p> <p>partial teacher-led/directed</p> <p>some conversations about topic</p>	<p>skill-based worksheets</p> <p>move on ready or not</p> <p>quantity vs quality</p> <p>skill based</p> <p>all teacher-directed-no student input</p>
Differentiation	<p>Teacher uses multiple tools and strategies to address learning styles.</p> <p>Teachers meets the needs of all learners through:</p> <ul style="list-style-type: none"> ● small group instruction. ● varying degrees of difficulty in materials. ● experiences that address critical learning phases for math. 	<p>Teacher uses some tools and strategies to address multiple learning styles.</p> <p>Teacher uses some small group instruction.</p> <p>Teacher sometimes adjusts the degree of difficult to address students’ needs.</p> <p>Teacher provides some opportunities for students to develop critical learning phases.</p>	<p>Teacher uses one tool and strategy and does not address multiple learning styles.</p> <p>Teacher does not use small group instruction.</p> <p>Teacher does not vary degrees of difficulty to address students’ needs.</p> <p>Teacher does not provide opportunities to develop critical learning phases</p>

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Critical Component (non-negotiable)	Description of educator behavior		
	Expected/Proficient	Developmental	Needs Improvement
Balance of Concepts, Knowledge, and Skills	<p>Teacher provides multiple opportunities for students to:</p> <ul style="list-style-type: none"> learn specific knowledge (facts) and skills. develop understanding of concepts. <p>Teacher provides multiple opportunities to learn math throughout the day (inside and out of the units of inquiry).</p> <p>Teacher always identifies C, K, & S from grade-level state standards.</p>	<p>Teacher occasionally provides opportunities for students to:</p> <ul style="list-style-type: none"> learn specific knowledge (facts) and/or skills develop understanding of concepts <p>Teacher occasionally provides opportunities to learn math throughout the day (inside and out of units of inquiry)</p> <p>Teacher occasionally identifies C, K, & S from grade-level state standards.</p>	<p>Teacher rarely or never provides opportunities for students to:</p> <ul style="list-style-type: none"> learn specific knowledge (facts) and skills. develop understanding of concepts <p>Teacher rarely or never provides opportunities for students to learn math throughout the day (inside and out of the units of inquiry)</p> <p>Teacher rarely or never identifies C, K, & S from grade-level state standards.</p>
Constructing Meaning	<p>Teacher prompts students to solve without telling them how.</p> <p>Teacher asks questions that prompt discussion: "What do you notice?"</p> <p>Teacher makes use of play, manipulatives, games, tools.</p> <p>Teacher encourages students to make thinking visible by</p> <ul style="list-style-type: none"> explaining their thinking reflecting on their process justifying their solutions using other strategies collaborating with peers <p>Teacher connects to the PYP Key concepts and related math concepts.</p>	<p>Teacher sometimes prompts students to solve without telling them how.</p> <p>Teacher sometimes asks questions that prompt discussion: "What do you notice?"</p> <p>Teacher sometimes makes use of play, manipulatives, games, tools.</p> <p>Teacher sometimes encourages students to make thinking visible by</p> <ul style="list-style-type: none"> explaining their thinking reflecting on their process justifying their solutions using other strategies collaborating with peers <p>Teacher sometimes connects to the PYP Key concepts and related math concepts.</p>	<p>Teacher tells students how to solve problems.</p> <p>Teacher does not ask questions that prompt discussion: "What do you notice?"</p> <p>Teacher rarely makes use of play, manipulatives, games, tools.</p> <p>Teacher does not usually encourage students to make thinking visible by</p> <ul style="list-style-type: none"> explaining their thinking reflecting on their process justifying their solutions using other strategies collaborating with peers <p>Teacher does not connect to the PYP Key concepts and related math concepts.</p>

Kaposia Education Center Practice Profile

Instructional Strategy/Practice: Math Instruction in a PYP Intermediate Classroom

Date Began: February 2015

Purpose/Rationale for using this instructional strategy or practice: By using this document, teacher will engage students in effective math learning that supports students in becoming independent, deep, mathematical thinkers.

Desired Outcome: To help students to become independent, deep, mathematical thinkers

Citation of Research Used: [MTPYPH, figure 6 on p. 14 and Math Annex p. 81-89](#)

Critical Component (non-negotiable)	Description of educator behavior		
	Expected/Proficient	Developmental	Needs Improvement
State Standards (p. 82)	Teachers use grade-level standards for instruction of all math strands.	Teacher consults grade-level standards when planning math topics. Some math lessons taught are not tied to grade-level standards.	Teacher teaches math topics that aren't based on grade-level standards.
Key and Related Concepts guide instruction (p.87-89)	Teacher sets up instruction that allows students to move from concrete to abstract. Teacher offers questions based on big ideas and open-ended questions. Teacher makes connections to units of inquiry and other disciplines. Teacher encourages students in justification of their thinking.	-Teacher gives space for thinking if it happens naturally. -Provides limited opportunities for open-ended questions. -Few connections are made with no application to skill. -At times, students are able to justify answers with limited follow through on justification.	-Teaches only concrete <u>or</u> abstract concepts. -No balance -Only yes or no, right or wrong questions. Only one way reaches the answer. -No connections are made, everything is taught in isolation. -No student justification is allowed or given time for justification. (i.e. Yes or NO)
Use a variety of strategies	Teacher presents various strategies and encourages/allows students to choose . Teacher encourages students to collaborate and discuss strategies used to solve problems that require GRIT/Growth Mindset. Teacher urges students to justify their strategy.	Teacher presents minimal strategies and students are allowed to choose. Teacher occasionally encourages students to collaborate and discuss strategies used to solve problems. Teacher sometimes encourages students to justify their strategy.	Teacher presents only one strategy and students are not allowed choice in their strategy. Teacher doesn't encourage collaboration or discussion. Instruction is completely teacher-led. Students are not expected to justify their answers.

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Critical Component (non-negotiable)	Description of educator behavior		
	Expected/Proficient	Developmental	Needs Improvement
Constructing Meaning (p. 82)	<p>Teacher provides real-life contexts for math.</p> <p>Teacher makes use of play, manipulatives, games, tools.</p> <p>Teacher gives students opportunities to collaborate.</p> <p>Teacher urges students to explain their thinking and justify their solutions.</p>	<p>Teacher provides periodic use of real life context.</p> <p>Teacher makes use of some use of play, manipulatives, games, tools.</p> <p>Teacher provides little opportunities to collaborate.</p> <p>Teacher provides little opportunities to explain the thinking and solutions.</p>	<p>Teacher provides non-real life context (Drill and Kill).</p> <p>Teacher provides only abstract opportunities in math.</p> <p>Teacher provides only individual opportunities.</p> <p>Teacher checks for right or wrong answers.</p>
Professional Reflection (p.83)	<p>Teacher reflects, discusses and collaborates with colleagues.</p>	<p>Teacher occasionally (once in a great moon) reflects, discusses and collaborates with colleagues.</p>	<p>Teacher does not meet and reflect on their own teaching with other grade levels, or with their own level.</p> <p>Teacher does not discuss or collaborate with colleagues.</p>