

WCUUSD Levels of Mathematical Proficiency (Version 2.0)*

Level 1	<p><u>Intuitive</u></p> <p>Looks like: The student shows knowledge of the key prerequisite skills and language (and/or notation) necessary to access the concept.</p> <p>Teaching strategies:</p> <ul style="list-style-type: none">• Use relevant real-world problems that are accessible and extendable (low floor, high ceiling) with both the prior knowledge and new concept embedded.• Address common misconceptions (that could block learning).• Leverage prior knowledge and explicitly make connections to the new concept.• Peer-coaching where the student is mentored by another student further along in their conceptual growth.
Level 2	<p><u>Concrete & Pictorial</u></p> <p>Looks like: All of level 1 and: The student shows they can visualize the concept (using concrete models and/or diagrams) to find and justify solutions.</p> <p>Teaching strategies:</p> <ul style="list-style-type: none">• Use relevant real-world problems that are accessible and extendable (low floor, high ceiling) with the new concept embedded.• Ask students to develop conceptual questions and use visual models (concrete materials and diagrams) to develop and communicate their thinking.• Highlight visual models that connect with models and materials from prior learning and make the connection explicit.• Peer-coaching where the student is mentored by another student further along in their conceptual growth.

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Level 3	<p><u>Abstraction, Application & Communication</u></p> <p>Looks like: The student can use multiple representations (including visual and symbolic models) flexibly to solve real-world problems and communicate theoretical understanding of the concept (addressing <i>why</i> rather than simply, <i>how</i>).</p> <p>Teaching strategies:</p> <ul style="list-style-type: none"> • Use relevant real-world problems that are accessible and extendable (low floor, high ceiling) with the new concept embedded. • Use patterning and repeated reasoning (both visually and symbolically). • Make explicit connections between and among representations (words, concrete, visual, symbolic). • Offer students opportunities to connect the concept to prior learning and extend to future learning. • Offer students opportunities to explain the concept to others.
Level 4	<p><u>Transfer & Connection</u></p> <p>Looks like: The student has a deep understanding of the concept that they can explain to others using multiple representations (visually, symbolically and in words) and is able to apply the concept flexibly in a myriad of mathematical and complex and/or unfamiliar real world contexts.</p> <p>Teaching strategies:</p> <ul style="list-style-type: none"> • Use relevant real-world problems that are accessible and extendable (low floor, high ceiling) with the new concept embedded. • Provide individualized and group opportunities for: <ul style="list-style-type: none"> ○ Peer-coaching where the student can mentor another student in their conceptual growth. ○ Generalizing or connecting ideas using supporting evidence. ○ Making and justifying conjectures. ○ Formulating a problem or model given a complex or unfamiliar situation. ○ Conducting a project that specifies a problem, identifies and analyzes solution paths, solves the problem, and reports results.

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