

Exhibit 15. Common U.S. and international Population 1 mathematics performance expectations. U.S. state curriculum guides and textbooks had a larger number of common performance expectations than their international counterparts. State curriculum guides included performance expectations from all major categories. U.S. textbooks included even more. [This exhibit lists topics from the TIMSS' mathematics framework intended by at least 70 percent of the countries (international) or at least 70 percent of sampled state guides (U.S.) for the upper grade of Population 1 (U.S. grade 4). Bold-face labels are more general categories that subsume more specific (non-bold-face) performance expectations. Both lists (U.S. and international) are arranged in three categories — specific expectations both curriculum guides and textbooks, and those listed only in 70 percent of the textbooks. Asterisks mark performance expectations receiving more extensive textbook attention.]

Intentions in TIMSS Countries	U.S. Intentions
CURRICULUM GUIDES (Not in Textbooks)	
<p>Investigating Problem Solving Predicting Verifying</p> <p>Mathematical Reasoning Developing notation & vocabulary Developing algorithms</p>	
CURRICULUM GUIDES (Included in Textbooks)	
<p>Knowing Representing Recognizing equivalents Recalling mathematical objects and properties</p> <p>Using Routines Procedures Using equipment Performing routine procedures* Using more complex procedures</p> <p>Investigating & Problem Solving Formulating and clarifying problems and solutions Developing strategy Solving</p>	<p>Knowing Representing</p> <p>Recalling mathematical objects and properties*</p> <p>Using Routines Procedures Using equipment Performing routine procedures* Using more complex procedures*</p> <p>Investigating & Problem Solving Formulating and clarifying problems and solutions Developing strategy Solving Predicting Verifying</p> <p>Mathematical Reasoning Generalizing Conjecturing Justifying and proving</p> <p>Communicating Using vocabulary and notation Relating representations Describing/discussing</p>
EXCLUSIVELY IN TEXTBOOKS	
	<p>Knowing Recognizing equivalents</p> <p>Mathematical Reasoning Developing notation and vocabulary Developing algorithms</p> <p>Communicating Critiquing</p>