

Exhibit 18. Common U.S. and international Population 2 science performance expectations. For Population 2 science, the U.S. has fewer common performance expectations compared to those common internationally. State curriculum guides include performance expectations from several major categories. U.S. textbooks include even more. The only emphasized expectation is the least demanding. [This exhibit lists topics from the TIMSS' science 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 2 (U.S. grade 8). Bold-face labels are more general categories that subsume specific (non-bold-face) performance expectations. Both lists (U.S. and international) are arranged in three categories — specific expectations listed only in 70 percent of curriculum guides, those listed in 70 percent of 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)	
Theorizing, analyzing, and solving problems Making decisions	
Investigating the natural world Identifying questions to investigate Designing investigations Formulating conclusions from investigational data	Investigating the natural world Interpreting investigational data
Communicating Sharing information	
CURRICULUM GUIDES (Included in Textbooks)	
Understanding Simple information* Complex information* Thematic information	Understanding Simple information*
Theorizing, analyzing, and solving problems Abstracting & deducing scientific principles Applying scientific principles to solve quantitative science problems Applying scientific principles to develop explanations Constructing, interpreting, and applying models	Theorizing, analyzing, and solving problems Constructing, interpreting, and applying models
Using tools, routine procedures, and science processes Using apparatus, equipment, computers Conducting routine experimental operations Gathering data Organizing and representing data Interpreting data	Using tools, routine procedures, and science processes Using apparatus, equipment, computers Gathering data Organizing and representing data Interpreting data
Investigating the natural world Conducting investigations Interpreting investigational data	
Communicating Accessing & processing information	
EXCLUSIVELY IN TEXTBOOKS	
	Understanding Complex information
	Theorizing, analyzing, and solving problems Applying scientific principles to solve quantitative problems Applying scientific principles to develop explanations Making decisions
	Investigating the natural world Designing investigations Conducting investigations
	Communicating Accessing and processing information