Exhibit 13. Common U.S. and international topics for Population 1 science. Looking only at the common topics in state curriculum guides (not those in textbooks) the U.S. composite science curriculum in state curriculum guides includes fewer topics at this grade level than the international composite. While state curriculum guides commonly plan for around 30 science topics, they are not the same science topics in each state so the list of specific common topics is smaller. Since each state still plans for a comparatively large number of topics, the state science curricula at this level still remain unfocused. [This exhibit lists topics from the TIMMS' 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 1 (U.S. grade 4). Bold-face labels are more general categories that subsume more specific (non-bold-face) topics. Both lists (U.S. and international) are arranged in three categories. These are topics listed only in 70 percent of curriculum guides, topics listed in 70 percent of both curriculum guides and textbooks, and topics listed only in 70 percent of the textbooks. Asterisks mark topics receiving more extensive textbook attention.]

International	U.S.
CURRICULUM GUIDES (Not In Textbooks)	
Earth Sciences	
Earth Features	
Bodies of Water	
Life Sciences	
Human Biology & Health	
Environmental and Resource Issues Related to Science	
Pollution	
Conservation of Material & Energy Resources	
World Population	
Food Production, Storage	
CURRICULUM GUIDES (Included in Textbooks)	
Earth Sciences	
Earth Processes	
Weather & Climate	
Earth in the Universe	
Earth In The Solar System	
Life Sciences	**Life Sciences**
Diversity, Organization, Structure of Living Things	Diversity, Organization, Structure of Living Things
Plants, Fungi*	Plants, Fungi*
Animals*	Animals*
Organs, Tissues	Organs, Tissues
Interactions of Living Things	Interactions of Living Things
	Biomes and Ecosystems
Interdependence of Life	Interdependence of Life
Physical Sciences	**Physical Sciences**
Matter	Matter
Physical Properties of Matter	Physical Properties of Matter
Energy and Physical Processes	Energy and Physical Processes
Energy Types, Sources, Conversions	Energy Types, Sources, Conversions
	Light
	Electricity
Environmental and Resource Issues	
Conservation of Land, Water, and Sea Resources	

EXCLUSIVELY IN TEXTBOOKS	
	Earth Science Earth Features Landforms Bodies of Water Earth Processes Weather & Climate Physical Cycles Earth In The Universe Earth in the Solar System* Planets in the Solar System **Life Sciences** Diversity, Organization, Structure of Living Things Other Organisms Cells Life Processes and Systems Enabling Life Functions Energy Handling Sensing, Responding Life Spirals, Genetic Continuity, Diversity Life Cycles Reproduction Evolution, Speciation, Diversity Interaction of Living Things Habitats & Niches Animal Behavior Human Biology and Health Nutrition **Physical Sciences** Matter Classification of Matter Chemical Properties Structure of Matter Atoms, Molecules, Ions Energy and Physical Processes Sound and Vibration Forces and Motion Types of Forces **Science, Technology, and Mathematics** Interactions of Science, Mathematics, and Technology Applications of Science in Mathematics, Technology Interactions of Science, Technology, and Society Influence of Science, Technology on Society **History of Science & Technology** **Environmental and Resources Issues Related to Science** Conservation of Land, Water, and Sea Resources Conservation of Material & Energy Resources Food production, Storage **Nature of Science** Nature of Scientific Knowledge The Scientific Enterprise Science and Other Disciplines Science and Mathematics Science and Other Disciplines