

Exhibit 22. The five topics emphasized most in Population 1 science textbooks. At Population 1, U.S. science books were comparatively unfocused. On average the five most emphasized topics accounted for just over 25 percent of U.S. science textbooks compared to 70 to 75 percent internationally and for Japan. [Data collection partitioned each textbook into "blocks" — small segments used as units of analysis. Each bar shows the cumulative percentage of textbook "blocks" for the five topics with the largest percentages of blocks devoted to them. These data are country or multi-country averages for science textbooks at the upper grade of Population 1 (U.S. grade 4). Bars are for the average over all TIMSS countries, for Japan, and for the U.S. German textbook data were not available at this level. For the U.S. and Japan, each segment's specific TIMSS framework topic (e.g., 'whole number operations') could be determined and is shown. Internationally, the five topics varied among countries. We show them only as most emphasized (highest percentage of blocks), second most emphasized, etc.]

