

SCIENCE – GRADE 6**Grade:** 6**Academic Standard:** 6.1**Academic Standard Indicator:** --**Core Standard:** No

Standard Description (Academic or Indicator): Students design investigations. They use computers and other technology to collect and analyze data; they explain findings and can relate how they conduct investigations to how the scientific enterprise functions as a whole. Students understand that technology has allowed humans to do many things, yet it cannot always provide solutions to our needs.

Suggestion for Integrating International

Content: After discussing the history of Charles Darwin's findings, have students break up into small groups and come up with hypotheses about the strength of sea turtles (how much weight a turtle can pull) or compare the different foods they eat, their ability to swim in various amounts of water, or activity levels at different times of the day. Then have students investigate real data on the behavior of sea turtles to test their hypotheses.

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Suggestion for Integrating International

Content: Have students discuss the technologies with which people are trying to solve global problems. Discuss technology's opportunities and limitations. *Examples:* LifeStraws for clean water; solar energy for power.

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Suggestion for Integrating International

Content: The teacher should research a variety of local and global examples to describe how the needs, attitudes, resources, and values of a time period influence direction of technological development in a variety of cultures and societies. *Example:* Some underdeveloped countries have progressed from having only a single land line telephone for a whole village straight to many villagers having their own pay-per-minute cell phones. The stage of individual land line telephones was skipped over entirely.

Grade: 6**Academic Standard:** 6.1**Academic Standard Indicator:** 6.1.8**Core Standard:** Yes

Standard Description (Academic or Indicator): Describe instances showing that technology cannot always provide successful solutions for problems or fulfill every human need.

Suggestion for Integrating International

Content: Have students consider the cane toad problem in Australia where giant toads from Central and South America were imported as a natural pest control for sugar cane. Explain how the toads later became a nuisance because they had no natural predators to control their population growth. Have students map the migration of the cane toad over the years using online sources for guidance. They can also create a timeline of the after effects, as well as make a

Venn diagram comparing the similarities and differences of a native Australian toad and a Latin American cane toad. **Suggested resource:** *Toad Overload* by Patricia Seibert (Millbrook Press, 1996).

Grade: 6

Academic Standard: 6.2

Academic Standard Indicator: 6.2.9

Core Standard: No

Standard Description (Academic or Indicator): Compare consumer products, such as generic and brand-name products, and consider reasonable personal trade-offs among them on the basis of features, performance, durability, and costs.

Suggestion for Integrating International

Content: Team up with a school in Europe and have students from both schools take an inventory of items in their classrooms such as school supplies, clothing, and equipment, charting each item's country of origin. Have students in both schools compare their items, as well as the perceived quality of different items. **Extension:** Have students price selected items and convert currencies to determine relative prices. **Suggested resource:** <http://www.epals.com/>.

Grade: 6

Academic Standard: 6.3

Academic Standard Indicator: 6.3.8

Core Standard: No

Standard Description (Academic or Indicator): Explain that fresh water, limited in supply and uneven in distribution, is essential for life and also for most industrial processes. Understand that this resource can be depleted or polluted, making it unavailable or unsuitable for life.

Suggestion for Integrating International

Content: Have students consider global water issues in light of contemporary books which complement each other and will generate discussion about global warming, water supply and demand, and the latest scientific research. *A Cool Drink of Water* by Barbara Kerley (National Geographic Children's Books, 2006) is a somewhat contemplative introduction to water

issues and is illustrated with large-scale photos from the National Geographic. *One Well: The Story of Water on Earth* by Rochelle Strauss and Rosemary Woods (Kids Can Press, 2007) reflects global interconnectedness by using the metaphor of one solitary well that all must share and provides thought-provoking facts, such as "It takes about 45 gallons of water to produce one gallon of milk" or "China and India make up about 1/3 of the world's population."

Grade: 6

Academic Standard: 6.3

Academic Standard Indicator: 6.3.12

Core Standard: No

Standard Description (Academic or Indicator): Describe ways human beings protect themselves from adverse weather conditions.

Suggestion for Integrating International

Content: Assign students to research various types of shelters from around the globe. Then, using a Venn diagram, have students compare their assigned type of shelter to their own home. **Examples:** Tipis; adobe houses; peat houses; yurts; igloos.

Grade: 6

Academic Standard: 6.3

Academic Standard Indicator: 6.3.13

Core Standard: No

Standard Description (Academic or Indicator): Identify, explain and discuss some effects human activities, such as the creation of pollution, have on weather and atmosphere.

Suggestion for Integrating International

Content: Have students work as individuals or in groups to calculate personal carbon footprints using online tools. Then have students follow up by comparing the relative carbon footprints of various international cities and countries to similar U.S. locations. **Suggested resources:** Earthday Network at <http://earthday.net>; Global Footprint Network at <http://www.footprintnetwork.org>.

Grade: 6**Academic Standard:** 6.4**Academic Standard Indicator:** --**Core Standard:** No

Standard Description (Academic or Indicator): Students recognize that plants and animals obtain energy in different ways, and they can describe some of the internal structures of organisms related to this function. They examine the similarities and differences between humans and other species. They use microscopes to observe cells and recognize cells as the building blocks of all life.

Suggestion for Integrating International Content: With students, discuss and model specific traits, such as the variety of human eye color, explaining the interrelationship between ancestors and parents. Then have students compare these traits amongst cultures.

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Suggestion for Integrating International Content: To address the structures and functions of living systems and matter and energy transformation, have students in pairs track and compare the one-way path that energy takes through producers, consumers, and decomposers, both locally and in another world region.

Grade: 6**Academic Standard:** 6.4**Academic Standard Indicator:** 6.4.8**Core Standard:** Yes

Standard Description (Academic or Indicator): Explain that in all environments, such as freshwater, marine, forest, desert, grassland, mountain, and others, organisms with similar needs may compete with one another for resources, including food, space, water, air and shelter. Note that in any environment, the growth and survival of organisms depend on the physical conditions.

Suggestion for Integrating International Content: Instead of addressing the general topic of biomes, have students consider specific examples from around the world. *Example:* The grasslands group could have one student researching the Latin American pampas, another the Eurasian steppes, and another the South African veldt or East African savannah. Have students in biome groups compare issues in their specific locations, such as climate, erosion, pollution, natural or manmade disasters, and species diversity.
