

**ISPS Science K-12
Standards and Benchmarks**

Kindergarten

(revised Jan. 2009)

Strands

1. Earth and Space Sciences
2. Life Sciences
3. Materials and their Properties (not covered at this grade level)
4. Physical Processes
5. The Nature of Science

Strand 1 – Earth and Space Sciences

Standard 3 - Students will understand the composition and structure of the universe and the Earth's place in it.

Benchmarks - By the end of Kindergarten, students will:

- 3 – 1 Know basic patterns of the Sun and Moon (e.g., the Sun appears every day and the Moon appears sometimes at night and sometimes during the day; the Sun and Moon appear to move from east to west across the sky; the Moon appears to change shape over the course of a month; the Sun's position in the sky changes through the seasons)

Strand 2 – Life Sciences

Standard 5 - Students will understand the structure and function of cells and organisms.

Benchmarks - By the end of Kindergarten, students will:

- 5 – 1 Know the basic needs of plants and animals (e.g., air, water, nutrients, light or food, shelter)

Standard 6 - Students will understand relationships among organisms and their physical environment.

Benchmarks - By the end of Kindergarten, students will:

- 6 – 1 Know that plants and animals need certain resources for energy and growth (e.g., food, water, light, air)

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Strand 4 – Physical Processes

Standard 12 - Students will understand forces and motion.

Benchmarks - By the end of Kindergarten, students will:

- 12 – 1 Know that things near the Earth fall to the ground unless something holds them up
- 12 – 2 Know that the position of an object can be described by locating it relative to another object or the background
- 12 – 3 Know that the position and motion of an object can be changed by pushing or pulling
- 12 -4 Know that things move in many ways (e.g. straight line, zigzag, circular motion)
- 12 -5 Know that when a force is applied to an object, the object either speeds up, slows down, or goes in a different direction

Strand 5: The Nature of Science

Standard 15: Ideas and Evidence in Science.

By the end of the course students will understand:

- 15 – 1 that it is important to collect evidence by making observations and measurements when trying to answer a question.

Standard 16: Investigative Skills

PLANNING

Students will be able to:

- 16 – 1 ask questions [for example, 'How?', 'Why?', 'What will happen if ... ?'] and decide how they might find answers to them.
- 16 – 2 use first-hand experience and simple information sources to answer questions.
- 16 – 3 think about what might happen before deciding what to do.
- 16 – 4 recognise when a test or comparison is unfair.

OBTAINING AND PRESENTING EVIDENCE

Students will be able to:

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16 – 5 follow simple instructions to control the risks to themselves and to others

16 – 6 explore, using the senses of sight, hearing, smell, touch and taste as appropriate, and make and record observations and measurements.

16 – 7 communicate what happened in a variety of ways, including using ICT [for example, in speech and writing, by drawings, diagrams, tables, block graphs and pictograms].

CONSIDERING EVIDENCE AND EVALUATING

Students will be able to:

16 – 8 make simple comparisons [for example, hand span, shoe size, prepared non-standard measurements] and identify simple patterns or associations

16 – 9 compare what happened with what they expected would happen, and try to explain it, drawing on their knowledge and understanding.

16 – 10 use observations, measurements or other data to draw conclusions.

16 – 11 review their work and explain what they did to others.