

Color-coded Georgia Standards of Excellence

Each standard in K-12 science courses begin with “Obtain, evaluate, and communicate...” The common language was intended by writers to provide consistency throughout courses, highlight the science practices, and incorporate scientific literacy. Simply put, it is what scientists do.

Science and engineering practices:

- Asking questions (science) and defining problems (engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics, information and computer technology, and computational thinking
- Constructing explanations (science) and designing solutions (engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

The color-coded standards are a visual of how the specific elements of science standards engage *students* in obtaining, evaluating, and communicating information.

	Obtain	• Obtain Information • Ask Questions/Define Problems • Plan & Carry Out Investigations • Use Models to Gather Data • Use Mathematics and Computational Thinking
	Evaluate	• Evaluate Information • Analyze Data • Use Mathematics and Computational Thinking • Construct Explanations/Solve Problems • Developing Arguments from Evidence • Use Models to Predict & Develop Evidence
	Communicate	• Communicate Information • Using Argue from Evidence (written/oral) • Use Models to Communicate

Various practices require students to obtain, evaluate, and communicate information simultaneously; see the following example of 7th grade life science:

S7L4c. Analyze and interpret data to provide evidence for how resource availability, disease, climate, and human activity affect individual organisms, populations, communities, and ecosystems.

The first part of the science practice involves *evaluating* information as students analyze and interpret data; in addition, since they are providing evidence, this practice also requires students to *communicate* their findings and analysis.

Earth and Space Science

SKE1. Obtain, evaluate, and communicate observations about time patterns (day to night and night to day) and objects (sun, moon, stars) in the day and night sky.

- a. **Ask questions** to classify objects according to those seen in the day sky, the night sky, and both.
- b. **Develop a model** to communicate the changes that occur in the sky during the day, as day turns into night, during the night, and as night turns into day using pictures and words.
(*Clarification statement:* Students are not expected to understand tilt of the Earth, rotation, or revolution.)

SKE2. Obtain, evaluate, and communicate information to describe the physical attributes of earth materials (soil, rocks, water, and air).

- a. **Ask questions** to identify and describe earth materials—soil, rocks, water, and air.
- b. **Construct an argument** supported by evidence for how rocks can be grouped by physical attributes (size, weight, texture, color).
- c. **Use tools to observe and record** physical attributes of soil such as texture and color.

Physical Science

SKP1. Obtain, evaluate, and communicate information to describe objects in terms of the materials they are made of and their physical attributes.

- a. **Ask questions** to compare and sort objects made of different materials. (Common materials include clay, cloth, plastic, wood, paper, and metal.)
- b. **Use senses and science tools** to classify common objects, such as buttons or swatches of cloth, according to their physical attributes (color, size, shape, weight, and texture).
- c. **Plan and carry out an investigation** to predict and observe whether objects, based on their physical attributes, will sink or float.

SKP2. Obtain, evaluate, and communicate information to compare and describe different types of motion.

- a. **Plan and carry out an investigation** to determine the relationship between an object's physical attributes and its resulting motion (straight, circular, back and forth, fast and slow, and motionless) when a force is applied. (Examples could include toss, drop, push, and pull.)
- b. **Construct an argument** as to the best way to move an object based on its physical attributes.

Life Science

SKL1. Obtain, evaluate, and communicate information about how organisms (alive and not alive) and non-living objects are grouped.

- a. **Construct an explanation** based on observations to recognize the differences between organisms and nonliving objects.
- b. **Develop a model** to represent how a set of organisms and nonliving objects are sorted into groups based on their attributes.

SKL2. Obtain, evaluate, and communicate information to compare the similarities and differences in groups of organisms.

- a. **Construct an argument** supported by evidence for how animals can be grouped according to their features.
- b. **Construct an argument** supported by evidence for how plants can be grouped according to their features.
- c. **Ask questions** and make observations to identify the similarities and differences of offspring to their parents and to other members of the same species.