Central Connecticut State University | SCIENCE | K

WHAT TO LOOK FOR

A quick guide for observing classroom content and practice

In **Kindergarten**, instructional time should focus on six core ideas:

ESS
2. Earth's Systems
3. Earth and Human Activity

LS
1. From Molecules to Organisms: Structures and Processes

PS
1. Matter and its Interactions
2. Motion and Stability
3. Energy

In a **Kindergarten classroom** science content may be integrated in a variety of ways. Science and engineering practices may also be incorporated throughout a number of centers, themes, and experiences. When observing science in a Kindergarten classroom, you should see students engaged with at least one science concept and one practice:

Science and Engineering Practices

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

Science Concepts

Earth and Space Science (ESS2, ESS3)

- •Using and sharing quantitative observations of weather to describe patterns.
- •Constructing an argument supported by evidence for how plants and animals can change the environment.
- •Obtaining and using information about weather forecasting to prepare for, and respond to, different types of local weather.
- •Communicating solutions to reduce the amount of natural resources an individual uses.

Life Science (LS1)

- •Observing and communicating that animals and plants have needs to survive.
- •Recognizing that all plants and animals grow and change over time.

Physical Science (PS1, PS2, PS3)

- •Investigating and communicating the idea that different kinds of materials can be a solid or liquid depending on temperature.
- •Comparing the effects of different strengths or directions of pushes and pulls on the motion of an object.
- •Making observations to determine that sunlight warms materials on the Earth's surface.
- •Using tools and materials to design and build a model of a structure that will reduce the warming effect of sunlight on an area.

NOTES

Comments on the Science and Engineering Practices:

- For a list of specific skills, see the *Science and Engineering Practices Progression Matrix* (www.doe.mass.edu/stem/review.html).
- Practices are skills **students** are expected to learn and do; standards focus on some but not all skills associated with a practice.

WHAT TO LOOK FOR | Structured Observation Guide

Science | K

Science What to Look For The example below features three Indicators from the CT Common Core of Teaching. These Indicators are just a sampling from the full set of Standards and were chosen because they create a sequence: the educator plans a lesson that sets clear and high **expectations**, the educator then delivers high quality **instruction**, and finally the educator uses a variety of **assessments** to see if students understand the material or if re-teaching is necessary. This example highlights teacher and student behaviors aligned to the three Indicators that you can expect to see in a rigorous kindergarten classroom.

Domain 1 — Classroom Environment, Student Engagement and Commitment to Learning

What is the teacher doing?

- Clearly communicating the learning objectives for the lesson orally and visually in student-friendly terms
- Creating culturally responsive lessons that engage and sustain student attention
- Focusing attention on newly learned scientific language (e.g. linguistic complexity, conventions, and vocabulary)

What are the students doing?

- Persisting when engaging with meaningful scientific tasks
- Using scientific language precisely to convey meaning and understanding of concepts
- Understanding what they will learn in a lesson and how it connects to prior learning

Domain 2 — Planning for Active Learning

What is the teacher doing?

- Providing opportunities for students to communicate ideas and ask questions to inform their thinking
- Designing lessons that support successful cooperation in culturally sensitive ways
- Eliciting student observations that build upon their prior knowledge

What are the students doing?

- Asking questions that can be answered by observations
- Identifying common features and differences between a model and the real object
- Using counting and numbers to identify and describe patterns

Domain 3 — Instruction for Active Learning

What is the teacher doing?

- Using multiple formative approaches to assess student learning (e.g., classroom conversation, completion of investigation)
- Conducting frequent checks for student understanding and adjusting instruction accordingly

What are the students doing?

- Demonstrating learning in multiple ways (e.g., classroom conversation, completion of investigation)
- Engaging in challenging learning tasks regardless of learning needs (e.g., linguistic background, disability, academic gifts)
- Working cooperatively on a shared activity

Connections to Theory and/ or Research

*This document is based on the CT Core Standards Classroom "Look Fors" and the MA Curriculum Guide