

Attention K-5 Teachers:

# HOW TO TAKE THE SCARY OUT OF THE NGSS SCIENCE STANDARDS



**YOUR SCIENCE LESSONS ARE FILLED WITH HANDS-ON ACTIVITIES AND EXPERIMENTS. YOU'RE ALREADY ON YOUR WAY. START WITH WHAT YOU KNOW WORKS AND THEN ALIGN WITH THE NGSS. HERE'S HOW:**

## YOU'RE ALREADY PLANNING LESSONS ... NOW TRY PLANNING INVESTIGATIONS

It's not about what facts students know or can report on a test (think, how many planets are there, or the names of different types of clouds) but in what students can do. Start planning investigations that challenge your students to use the language and processes that scientists use. Need inspiration? Check out the [interactive activities](#) from the Concord Consortium.

## YOU'RE ALREADY ASSESSING STUDENTS ... NOW CREATE PERFORMANCE TASKS

The performance tasks outlined in the NGSS aren't presented in any particular order, so you'll be able to find places in your current curriculum to add them in. Check out the [PALS databank](#) of performance assessments and this [fourth-grade performance task example](#) from Smarter Balanced for examples.

## YOU'RE ALREADY PLANNING UNITS ... NOW TAKE DEEPER DIVES

One NGSS focus is for students to dive deeper into a fewer number of concepts. This is based on the philosophy and the pedagogical approach that you learn science by delving deeply into one area. So rather than teaching the entire curriculum unit on weather that covers everything from drizzle to hurricanes, choose one type of weather event (e.g., tornadoes) and focus in.

## YOU ALREADY TEACH THE SCIENTIFIC METHOD ... NOW FOCUS ON ANALYTIC PROBLEM SOLVING

For years we've taught the scientific method, but that's only one way to approach research. Expand your students' problem solving by entering scientific problems at various points in the scientific method. For example, start with the data or the solution and work toward the problem and hypothesis.

## YOU ALREADY ASK QUESTIONS ... NOW PUSH YOUR STUDENTS TO ASK MORE

The NGSS builds on the notion that "students are not a repository of stuff," says Michael Padilla, director of the Eugene T. Moore School of Education at Clemson University. "Rather, we want them to think and put together ideas to make decisions, more like what we would see in the workplace." Start by devoting time in each lesson to ask and answer student questions. Check out the [Responsive Teaching method](#) and use it to plan various types of inquiry.

## YOU ALREADY SEEK OUT LESSON IDEAS ... START SEEKING OUT DEEPER CONTENT

For elementary school teachers, shifting to the NGSS will demand an increase in content knowledge, says Zipporah Miller, Anne Arundel County Public Schools K-12 Coordinator for Science. Once you know the standards for your grade, identify the areas that you'd like to know more about and seek out information on those topics. A great place to start is the [NSTA site](#) with areas that focus on various science disciplines.

## YOU ALREADY CO-PLAN ... START COLLABORATING ACROSS GRADE LEVELS

Vertical alignment in the NGSS will ensure that kids aren't learning the same content every year (life cycle of a frog, anyone?). Take time to talk with colleagues in your school about what they're teaching and how you can build on it in your classroom. Or connect online through the [Pearson Online Learning Exchange](#) or by creating your own Google or Facebook group.

## YOU ALREADY PLAN LESSONS ... START INCORPORATING ENGINEERING PRACTICES

As you familiarize yourself with the NGSS, you can start incorporating the Science and Engineering practices. In any study, says Miller, students can analyze data, develop an investigation, perfect arguments based on evidence, and communicate and debate ideas. Read more about the [Scientific and Engineering Practices](#). Then check out this [article](#) with ideas for incorporating engineering practices into your classroom.

## YOU ALREADY WORK WITH THEMES ... START IDENTIFYING THEMES ACROSS DISCIPLINES

The Cross Cutting Concepts, says Miller, "are themes or ideas that you see across the core disciplines." So rather than just focusing on one example at a time, collect examples that apply to the same concept. For example, in kindergarten, observe patterns in the sky that occur again and again. In third grade, study the cause and effect between electric and magnetic forces. For more ideas, check out this [overview](#) from the NGSS.

## YOU ALREADY WORK WITH THE COMMON CORE ... START MERGING NGSS AND CCSS

The NGSS are aligned with the Common Core Standards so closely that each science standard includes co-existing Common Core Standards. As you plan lessons, keep both sets of standards close by to see where you can incorporate informational text and data analysis into science lessons, or science articles into your reading block.

**"THE NEW STANDARDS REALLY ARE A COMBINATION OF OUR BEST PRACTICES IN SCIENCE AND EDUCATION."**

—MICHAEL WYSESSION, ASSOCIATE PROFESSOR  
AT WASHINGTON UNIVERSITY IN ST. LOUIS

