



Jefferson Township Public Schools Science Department

How can you help your child find success with the Next Generation Science Standards?



Overview

Science education is one of the most fun and interesting parts of school. Where else can students learn firsthand how circuits work, figure out why cells remain so small, or explore why they have blue eyes instead of brown? In short, science allows us to understand the natural world that we experience on a daily basis. With the adoption of new science standards, the State of New Jersey has taken the next step and renewed its commitment toward creating scientifically literate citizens.



“The National Research Council’s (NRC) Framework describes a vision of what it means to be proficient in science; it rests on a view of science as both a body of knowledge and an evidence-based, model and theory building enterprise that continually extends, refines, and revises knowledge” (www.nextgenscience.org). That framework was the basis for the Next Generation Science Standards (NGSS) and will help guide science instruction into the near future.

Below , please find some simple ways for you to help your little Einstein succeed with NGSS:

1. Work on science assignments together.

- Don’t give answers; help guide thinking and reasoning.
- Use Google and other web tools to find information and tutorials. It is perfectly normal to look things up!
- Ensure answers are justified using evidence not opinion.

2. Read about scientific phenomena.

- Scientists read all of the time when they research problems. So should you and your little scientist!
- Look for resources at your local library as well as Scholastic science magazines, Popular Science, and news articles.

3. Encourage your child to ask questions and look for evidence.

- Go explore! Look around the house, go to museums and even the zoo to see various phenomena.
- Ask questions such as: What do you see? How do you think it works? Why do you think that?

4. Provide opportunities to build and experiment at home.

- Inquiry begins at home as children play and build. Encourage this type of behavior by asking them to describe their ideas.
- Work on more structured learning by using Google to find safe and easy experiments to do at home.

5. Communicate with your child’s teacher.

- Reach out to the teacher and ask for specific ways to improve performance.
- Teachers are often available for help within the school day, during “flex” (MS) and during Academic Support Center (HS).

Please feel free to contact the K-12 Supervisor of Science for all inquiries:
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How will the Next Generation Science Standards affect science education in Jefferson Township?

Overview

Traditional science instruction placed great emphasis on the teacher as the sole purveyor of knowledge, and exploration of science content as a prescribed experience. The result of this was primarily the memorization of large amounts of factual information, and little development of science practices. The NGSS however, require a three dimensional approach that emphasizes the following:

1. Disciplinary Core Ideas –conceptual understanding i.e. content;
2. Science and Engineering Practices –arguing from evidence, analyzing data, asking questions, planning investigations, etc.; and
3. Cross Cutting Concepts—themes that permeate all disciplines such as patterns, cause and effect and energy.

This three dimensional approach requires that students become the center of learning and explore phenomena through observation and experimentation. Teachers immerse their pupils in the practices and cross cutting concepts so the content becomes authentic and the level of understanding deepens. To view the standards and learn more about the writing process please visit www.nextgenscience.org.

When will the NGSS be implemented?

The Next Generation Science Standards will be implemented in grades 6-12 starting September 2016. Grades K-5 have a start date of September 2017. It is important to note that changes in instruction have already begun and will continue to be made in preparation for the implementation dates outlined above.

What can I expect in science class?

Students will be asked to actively participate in experimentation, present their findings and generate explanations for various phenomena. They will be expected to argue from evidence and design their own investigations from kindergarten through grade twelve with expectations increasing with age. Lessons where students sit through lectures will become less common as teaching faculty are trained and become more well versed in the NGSS. Like any major shift in education, it will take time to fully prepare educators and students.

How will this change the way my child is graded?

State assessments such as the NJSLA-S (Science Grade 5, 8, 11) will be revised to align with the new standards. Within district, greater emphasis will be placed on performance tasks, writing samples, laboratory procedures and other practices as they relate to the content being studied. Initially, students may struggle as the emphasis is shifted away from assessing memorization of facts alone. Parents are encouraged to send their child for extra help, and work with their child at home.

Why new standards? Why now?

“Science—and therefore science education—is central to the lives of all Americans, preparing them to be informed citizens in a democracy and knowledgeable consumers. If the nation is to compete and lead in the global economy and if American students are to be able to pursue expanding employment opportunities in science-related fields, all students must have a solid K–12 science education that prepares them for college and careers” (www.nextgenscience.org). Around 15 years have gone by since prior standards were made and “major advances have since taken place in the world of science and in our understanding of how students learn science effectively” (www.nextgenscience.org).

Are the NGSS part of Common Core?

The Next Generation Science Standards are not part of the Common Core State Standards (CCSS). They are not tied to federal funding and were not mandated by the federal government. While the CCSS contain specific skills that should be addressed in science class, they lack any science content. It is important to note however, that the NGSS have built in connections with the CCSS and are designed to compliment the skills contained therein.

**The answers to other frequently asked questions about the NGSS can be found at <http://www.nextgenscience.org/frequently-asked-questions#1.1>