

What are the NGSS?

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The NGSS is the Next Generation Science Standards. The NGSS are a set of goals to use in the classroom. “The standards show what the students are going to learn, how the students are going to learn, and how the students should be thinking.” (Bozemen Science, 2019) NGSS was created by the National Research Council (NRC). NRC is the “working arm” of the National Academy of Sciences and engineering. The book that NRC has written for the NGSS is called “K-12 Science Framework”. The framework is separated into three different concepts: Ideas, concepts, and practices. In the K-12 Science Framework, there are 44 disciplinary core ideas, 7 Crosscutting Concepts, and 8 Science and Engineering Practices. (Bozeman Science, 2013)

The 44 disciplinary core ideas have the areas of physical science, life science, earth science, and engineering. These core ideas are the concepts that the students will learn and earache grade’s progression in learning the concepts of the core ideas. Mr. Anderson in the video explains that progression has an elementary level of difficulty in learning about the five senses and a more difficult level of understanding in learning about the five senses when the students are in middle and high school, calling this information processing. (Bozeman Science, 2013)

The 7 crosscutting Concepts will be fundamental and bridge the gap between core ideas through life, earth, physical science, and engineering. The 7 crosscutting concepts are Patterns, Cause and effect, Scale/Proportion/Quantity, Systems and System Models, Energy and Matter, Structure and Function, and Stability and Change. Each concept helps provide an organizational framework on its own behavior and function. (Vingeant, 2022)

The third and last part of the framework is the 8 science and engineering practices. The 8 practices are- asking questions (for science) and defining problems (for engineering); developing and using models; planning and carrying out investigations; analyzing and interpreting data;

using mathematics and computational thinking; constructing explanations (for science) and designing solutions (for engineering); engaging in argument from evidence; obtaining, evaluating, and communicating information (Vingean, 2022). Mr. Anderson says that engineering is the application of science. He continues to say that the practices are a combination of knowledge and skills. This means that practices are the doing and taking on of action, creating a result from the core ideas and crosscutting concepts (Bozeman, 2013).

References

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