

# How Does Science on Seneca meet New York State Science Standards?

In this section you will find selected state standards that are addressed most directly through participation in the Science on Seneca program. Please note that these do not include all of the content standards that may be addressed during your class' investigation. Lesson plans and units presented on the Science on Seneca Website will also include the specific standards and portions of the New York State Science Core Curricula they address. Many of the content standards will be specific to the curriculum that you choose to use.

## **New York State Academic Standards: Science (Grades 6-8)**

### ***The Scientific View of the World***

6.1.1 ...scientific knowledge is never exempt from review and criticism.

7.1.1 ...when similar investigations give different results, the scientific challenge is to judge whether the differences are trivial or significant, which often takes further studies to decide.

### ***Scientific Inquiry***

6.1.2 Give examples of different ways scientists investigate natural phenomena and identify processes all scientists use, such as collection of relevant evidence, the use of logical reasoning, and the application of imagination in devising hypotheses and explanations in order to make sense of the evidence.

6.1.3 Recognize and explain that hypotheses are valuable, even if they turn out not to be true, if they lead to fruitful investigations.

7.1.3. Explain why it is important in science to keep honest, clear, accurate records.

7.1.4 Describe that different explanations can be given for the same evidence, and it is not always possible to tell which one is correct without further inquiry.

### ***The Scientific Enterprise***

6.1.5 Identify places where scientists work, including offices, classrooms, laboratories, farms, factories, and natural field settings ranging from space to the ocean floor.

6.1.6 Explain that computers have become invaluable in science because they speed up and extend people's ability to collect, store, compile, and analyze data, prepare research reports, and share data and ideas with investigators all over the world.

8.1.4 Explain why accurate record keeping, openness, and replication are essential for maintaining an investigator's credibility with other scientists and society.

### ***Technology and Science***

6.1.7 Explain that technology is essential to science for such purposes as...data collection and storage... and communication of information.

### ***Communication***

6.2.5 Organize information in simple tables and graphs and identify relationships they reveal. Use tables and graphs as examples of evidence for explanations when writing essays or writing about lab work, fieldwork, etc.

6.2.6 Read simple tables and graphs produced by others and describe in words what they show.

6.2.8 Analyze and interpret a given set of findings, demonstrating there may be more than one good way to do so.

7.2.7 Incorporate circle charts, bar and line graphs, diagrams, scatter plots, and symbols into writing, such as lab or research reports, to serve as evidence for claims and/or conclusions.

8.2.6 Write clear, step-by-step instructions (procedural summaries) for conducting investigations.....

8.2.7 Participate in group discussions on scientific topics by restating or summarizing accurately what others have said, asking for clarification or elaboration, and expressing alternative positions.

8.2.8 Use tables, charts, and graphs in making arguments and claims in, for example, oral and written presentations about lab or fieldwork.

### ***Critical Response Skills***

8.2.9 Explain why arguments are invalid if based on very small samples of data, biased samples, or samples for which there was no control sample.

8.2.10 Identify and criticize the reasoning in arguments in which fact and opinion are intermingled or the conclusions do not follow logically from the evidence given, an analogy is not apt, no mention is made of whether the control group is very much like the experimental group, or all members of a group are implied to have nearly identical characteristics that differ from those of other groups.