

GLASS•ROOTS

Glassblowing Investigation & Inquiry

Standards Addressed:

New Jersey Curriculum Science Content Standards:

Strands:	5.1	5.4	5.10
Progress Indicator:	4A.1; 8B.1	6C.2;8B.1; 12B.1	4A.1; 4B.2; 12B.2

National Science Education Standards:

Strands:	A, B, C, F
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Grade Level: Intermediate

Activity Overview:

Students will use scientific curiosity to determine **The Affect of temperature on glass?** After discussing the focus question, students will make predictions and generate hypotheses. Partner-based problem solving will be used while working in the hot shop and flameworking studio to record observations and report results. Students will work in tandem with the glassworking artist to guide their learning while giving the students the ability to find out results on their own.

Key Concepts:

- Collection, analysis and presenting of real data
- Hands-on experimentation which utilizes all eight intelligences
- Social Skills
- 21st Century learning
- Reasoning -essential in all glass blowing activities
- Glassblowing can be used to develop an inclination to formulate, represent, conceptualize and generalize in situations within and outside of the classroom

Things to Think About:

As a scientific experiment glass working doesn't allow for many exact measurements for data collection. How do you plan to collect data? How will you record your data? How will you report your findings? What about colored glass? Is the melting point the same? Will all colors blow out the same? The heating and cooling patterns of a ball of glass vary, why would cracking occur? How can you apply the results of this experiment to the everyday life? How might the results of this experiment apply to other aspects of your life?

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Procedure

- 1.** Artists will facilitate a discussion on temperature / and how its effects glass
- 2.** Before picking a question to investigate students list three or four ideas in their journal. These may be questions, issues, or topics of interest regarding glass.
- 3.** Students should pick one topic or question they've come up with to investigate in addition to the focus question. Students will ponder their questions as they work through their investigation.
- 4.** Now it's time to make an investigation plan. In the plan, students will list all things they need to do in order to carry out the investigation and a timeline to completion
- 5.** As investigation continues students will keep a journal on findings and conclusions. On the reflections page of their journal, students record the processes they've used during their investigation.
- 6.** The next step is communicating their findings to others or publishing their research. (This plan might include video journaling or drawing sketches of visuals or a PowerPoint presentation or posting a video on YouTube).

Assessment: Student assessment is ongoing throughout the investigation. Students are assessed in content knowledge, skill development and ability to discuss the focus question and their hypotheses. The tools available for teacher information include individual conferencing with artists, observational notes, and their investigation journal.