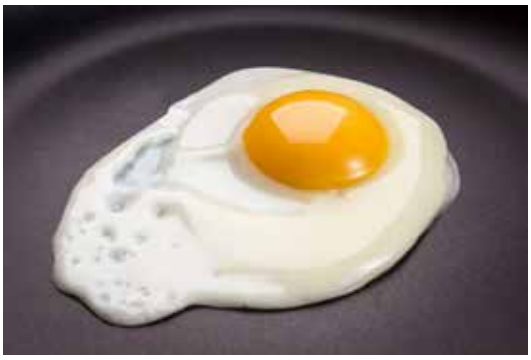
Changing Matter

Pre-field trip preparation suggestions

Terry Lee Wells Nevada Discovery Museum

Students will be asked in this lab to construct an argument using evidence that some changes caused by heating or cooling can be reversed and some cannot. They will experience four different hands on reactions during a station experiences and close be working as a whole class to sort reactions based on what they now know about reversible and irreversible changes.



During your Discovery Lab students will be expected to:

- Sit in groups of four students per table.
- Students should be prepared to give their full attention to the Lab instructors when given the quiet signal.
- Work cooperatively with one another at the table.
- Follow the hands-on procedures just as the Lab teacher or assistant explains them.
- Handle materials and equipment carefully.
- Rotate from one station to the next when given the signal. We will go over this carefully during the class but we find it can be a challenge for some students and it is very helpful to have adults in the room guide students during these transitions.

It is important that teachers and chaperones:

- Help focus the students' attention.
- Assist students with the hands-on activities and experiments when necessary.
- Engage students at a higher level by asking open-ended questions throughout the class. For example: why did you choose _____?
- Turn off cell phones and other electronic devices during the class.

Literary connection:

To get students excited about the upcoming Discovery lesson we suggest reading the following story with your students: Chemical Changes by Lynette Brent Chemical changes are more common than you might think, from rust forming on steel to a cake baking in the oven. Through exciting, familiar examples and engaging illustrations, readers will discover how chemicals react and change.

Nevada Academic Content Standards in Science (NGSS) 2-PSI -2

2-PS1-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. [Clarification statement: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]

Common Core

W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-PS1-1)
MP.2 Reason abstractly and quantitatively. (2-PS1-2)