Rio Grande Educational Collaborative
Before and After School Program Lesson Plan

TITLE OF LESSON: Invisible Ink
DATE:
SITE NAME:
CLASS SIZE:
NAME(S) OF INSTRUCTOR:
DURATION OF LESSON:
CREDIT (website used): https://tinyurl.com/2p9e87tn
COMMON CORE STANDARDS: CCSS.ELA-Literacy.SL.3.1.b, CCSS.ELA-Literacy.RST.6-8.9

LEARNING OBJECTIVES:

Students will understand the following:

- How heat and other substances interact to change states

ACTIVITY:

Instructional Sequence:
(Step by step instructions, should another instructor pick up and teach the lesson successfully)

1. Squeeze the lemon juice from the lemon into a bowl. Don't worry about getting pips in the juice.
2. Dip the thin paintbrush into the lemon juice and write a message on a piece of paper. The more lemon juice you use the darker the message will appear!
3. Leave the paper to the side and wait 15-20 minutes for the juice to dry. Try not to move the paper or put anything on top of the paper while the juice dries.
4. When students are ready to read their message place their paper somewhere safe for the iron.
5. On high heat, iron the paper until the message is revealed (sunlight can also be used to lesser effect).

Explanation:The science behind why heat reveals your secret message is really neat! Lemon juice is organic, which means it's made out of carbon compounds. When you heat the lemon juice the carbon compounds break down, releasing the carbon. The released carbon reacts to oxygen in the air which makes the lemon juice turn a darker color.

MATERIALS:

The following materials or equipment needed for this lesson:
(Include special equipment request)

- Lemon halves
- Iron and ironing board
- Thin paintbrush
- Paper
- Small bowl

SIGNATURE: _____ **DATE:** _____
SITE SUPERVISOR'S SIGNATURE: _____ **DATE:** _____

INSTRUCTOR'S REFLECTION:

Reflection on the lesson given:

1. How many students participated in the lesson given? _____
2. Name(s) of instructors participated. _____
3. How long did your lesson take? (Amount of time) _____
4. How did the students feel about the lesson? _____
5. Did the students like the lesson? _____
6. What part of the lesson did the students like? _____
   _____
   _____
7. What part of the lesson did the students not like? _____
   _____
   _____
8. Were the students interested in the topic of the lesson? _____
9. Was the content of the lesson difficult for the students? _____
10. What could you have changed to make the lesson interesting? _____
    _____
    _____
11. Did you have any trouble getting your lesson together? (Idea & Materials) _____
    _____
    _____
12. How do you rate your lesson? (1-10) Why? _____
    _____

SITE SUPERVISOR'S REFLECTION:

Reflection on the instructor's lesson:

1. How many students participated in lesson? _____
2. How many instructors participated in lesson? _____
3. Did the students enjoy the lesson? _____
4. What part did the students enjoy? _____
   _____
5. What part did the students NOT enjoy? _____
   _____
6. What could have been changed to make the lesson interesting? _____
   _____
   _____
7. Was the content of this lesson difficult for students to understand? Why? _____
   _____
8. What part of STEAM or literacy was used? (Science, Technology, Engineering, Art, Mathematics or Literacy)
   _____
   _____
9. Comments: _____
   _____
   _____