



Rio Grande Educational Collaborative

Before and After School Program Lesson Plan

TITLE OF LESSON: Egg Geodes

DATE:

SITE NAME:

CLASS SIZE:

NAME(S) OF INSTRUCTOR:

DURATION OF LESSON:

CREDIT (website used/name of author): <https://www.marthastewart.com/343344/crystal-egg-geodes>

COMMON CORE STANDARDS: SL.1.1.C, SL.3.1.D, 5.MD.C.4

LEARNING OBJECTIVES:

Students will understand the following:

- Discover how the crystallization process works

ACTIVITY:

Instructional Sequence:

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

1. Start by blowing out a large white chicken egg and splitting it in half, lengthwise. The egg can be cracked by striking it against a surface or cut with a small pair of scissors. Make sure the inside of the eggshell is clean and dry.
2. With a small paintbrush, apply white glue to the inside and cracked edges of each half of the eggshell and sprinkle with alum powder until completely coated. Set eggshell halves aside to dry overnight.
3. The next day, prepare your growing solution in a glass or plastic container by using a craft stick or spoon to mix 2 cups of very hot water (almost boiling) with an entire packet of powdered egg dye. Be sure to wear latex gloves to protect your hands from the dye. Tip: Liquid food coloring can also be used to dye the geode -- 30 to 40 drops will adequately saturate the solution.
4. Add 3/4 cup of alum powder to the hot dye bath and stir until completely dissolved. If there are remaining crystals in the bottom of the container, place the solution in the microwave for a few minutes to dissolve them. This will prevent alum from being drawn away from the geode.
5. Once the alum is completely dissolved, let the solution cool slightly (for about 30 minutes) and then submerge one of the dried, alum-coated eggshells in the growing solution, allowing it to rest on the bottom of the container with the inside of the shell facing up.
6. Set the container aside in a safe place overnight to allow the crystals to grow undisturbed. The longer the eggshell is in the solution, the larger the crystals in the geode will be. Twelve to 15 hours will usually result in a perfect geode.
7. The next day, remove the geode from the growing solution very carefully (as wet crystals are quite fragile), being sure to wear latex gloves to prevent the dye from staining your hands. If you are not satisfied with the size of your geode crystals, return the geode to the growing solution and wait a day or two. As water evaporates from the solution, more alum will be deposited in your geode, increasing the size of the crystals.

8. Place your geode on a drying rack or newspaper and allow it to dry completely before handling.
9. To grow a second geode in the other half of the eggshell, simply re-dissolve the crystals remaining at the bottom of the growing solution in the microwave and follow the instructions above starting at step 5.

MATERIALS:

The following materials or equipment needed for this lesson:

(Include special equipment request)

- Blown-out eggshell
- Alum Powder
- White Glue
- Small paintbrush
- Plastic or glass container
- Egg dye (or food coloring)
- Hot water
- Craft stick or spoon
- Latex gloves

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: _____

VISUAL REFERENCE:

