

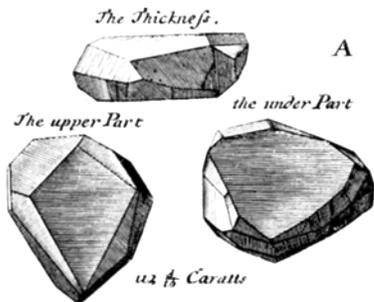


“Youngest to Oldest”

LAB CRAWL ONE 2008

HALF-LIFE ACTIVITY #3

Summer 2008



Field drawings of minerals
©Jean Baptiste Tavernier
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This is the shortest activity of the series, and is designed to be completed directly before activity #3.

“Youngest to Oldest”: Half-Life Activity #3

This is a short step in helping students draw connections between the M&M activity and activity #3.

As you circulate, stress the WHY for their bag order over the actual order itself. Groups that are stuck should be challenged to remember the results from the M&M activity.

Additionally, the following analogy can be

helpful in explaining how decay results in differing ratios between original and new material: a brand new loaf of bread is 100% bread (100% parent material).

As the bread sits on the countertop, it begins to ‘change’ into mold. As time progresses forward, there is less and less bread, as it is changed into more and more mold.

MATERIALS

- PRE-MADE ROCK SAMPLE BAGS
- WORKSHEETS

Activity Directions

Directions are simple and straightforward...simply put the bags into a logical order, based on the bag of all WHITE beads being the newly formed parent sample.

Student groups are to be given 5 plastic bags, each containing a certain ratio of white beads to orange beads. Each bag represents a DIFFERENT rock sample, containing the same elements. Glowing beads represent parent material, while orange beads

represent daughter material. Students are to simply put them into order, showing the logical order of from NEWEST FORMED material (parent) through rocks that have been through, up to four half lives.

While student groups are working, circulate and challenge groups to explain their reasoning to you.

Have each group share their order with the class for “peer re-

view”. Peer review usually shows all groups arriving at the same conclusion.

Teacher notes:

- bags should be made as follows:
 - 16 white beads (bag C)
 - 8 white/8 orange (bag E)
 - 4 white/12 orange (bag A)
 - 2 white/14 orange (bag D)
 - 1 white/15 orange (bag B)
- student explanations for the bag order should include the logical decrease of WHITE (parent) beads, and the increase of ORANGE (daughter) beads.

S.S.S. Science Addressed:

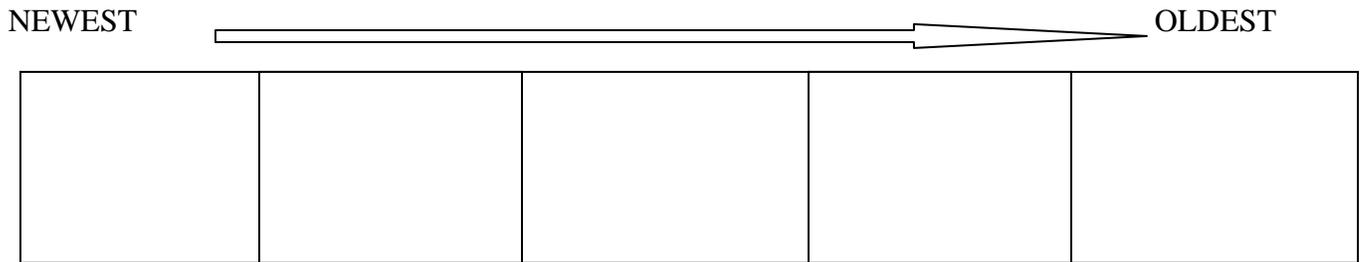
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- SC.D.1.3
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- SC.E.1.3
- SC.G.1.3
- SC.H.1.3
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STUDENT ACTIVITY

LAB CRAWL ONE 2008 HALF-LIFE ACTIVITY # 3

Plastic Bags Activity:

Place the bags labeled A – E in order to show the logical progress of decay from parent material into daughter material.



Why did you choose the arrangement that you did?

Did your arrangement pass PEER REVIEW?

If you were given a bag containing 6 white beads and 10 orange beads, what can you determine about that mysterious sample?