



Science Unit: *Fossils and the Changing Earth*

Lesson #7: *Decomposition Lab, Part 2: Results*

School Year: 2016/2017

Developed for: Sir Sandford Fleming, Vancouver School District

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Grade level: Presented to grade 6-7; appropriate for grades 4 - 7 with age appropriate modifications

Duration of lesson: 1 hour

Notes: This results lesson should be delivered 2 - 3 weeks after starting the bread mold experiment. If you are short on time, have students do their last data collection before this lesson.

Objectives for students:

1. To practice observing, measuring and recording data
2. To practice plotting data on a graph
3. To practice communicating scientific findings to others
4. To analyze patterns in data and make interpretations
5. To design a follow-up experiment

Materials:

- clear, square-centimetre grids
- markers, red, blue, and black (or brown/dark blue)
- graph paper, tape or magnets for posting graphs
- [Lab reports](#)

In the Classroom

Introduction

- Go over plan for the day: graph results, then compare results with other groups
- Show students how to graph their data on an x,y plot

Student Activity: Last Data Collection and Graphing

- Last data collection: students record the number of moldy squares on their CONTROL and TEST samples using their [results table](#)
- Using [graph paper](#), have students graph their CONTROL and TEST data on an x,y graph (day of experiment) vs. (# of moldy squares). They should plot their CONTROL bread data using a dark coloured marker (brown, black, dark blue). Groups 1-3 should plot their TEST bread using light or medium blue marker, and groups 4-7 should plot their TEST bread using red marker. This will make it easier to visually compare results later.



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Student Activity: Comparison of Results

- After students have finished their graphs, have each group meet with the other group that conducted the same experiment (i.e. both group 1s should meet), and compare their results. Did they see similar results or not?
- Students should complete parts 1-2 of their [Lab report](#), either individually or in groups

Student Activity: Mini Science Fair

- Students post their completed graphs on the blackboard; organize them by number. Have 1 student from each treatment (1-7) briefly explain their results to the class.
- Give students 5 minutes to examine other groups' graphs and complete section 3 of their [lab report](#).

Wrap-up Discussion

- What treatments made mold grow more quickly? more slowly?
- Do students think a piece of bread in Vancouver or Cairo would mold more quickly?
- What insight do these results give students into the process of fossilization? What environments are more likely to preserve fossils (dry, no oxygen, very cold)?

Extension

Now that students have experience with running an experiment and collecting data, they could be challenged to design an experiment to investigate either a question you provide or their own question. Results could be presented in a science fair.

References

1. <<http://www.k5geosource.org/2activities/1invest/fossils/pg2.html>> Why do some things become fossils, but others do not? American Geosciences Institute. [Fruit decay lab]. Accessed February, 2017
2. <<http://www.ingridscience.ca/node/660>> Decomposing Foods. Ingrid Science. [Bread decomposition lab]. Accessed May, 2017.
3. <https://www.teachengineering.org/lessons/view/duk_decomposers_mary_less> Dirty Decomposers. Teach Engineering [Decomposition Lab]. Accessed February, 2017.