

# POST-SITE ACTIVITY

## GRAPHING TRENDS AND STEWARDSHIP



**Grade Level:** Eighth Grade

**Subject Area:** Science

**Activity time:** 60 minutes

**Setting:** Classroom

**Skills:** Graphing, Analyzing, Applying, Assessing, Calculating, Charting, Evaluating, Formulating questions, Hypothesizing, Inferring, Interpreting, Predicting, Summarizing

**Vocabulary:**

•Stewardship: Our responsibility to care for our natural resources - land, air, wildlife and water - sustainably, so future generations can enjoy them.

**Materials:**

- “Graphing Salamander Trends” Worksheets found on pages 2-4
- Pen/pencil
- Computer with Internet connection

**Objectives:**

- 1) demonstrate the ability to graph scatter-plot data
- 2) determine through inference a predictor of salamander behavior,
- 3) understand what the term “Stewardship” means
- 4) how the students can become a steward in their school and their community

**Background:**

When students visited the Smokies on their field trip they participated in the Salamander study. They may not have participated in the tree cookie study but was made aware of the study during their time in the Smokies. This lesson will allow students to graph using the previously collected data from the Hands on the Land website. After graphing the data, the students will make inferences in determining a predictor of salamander behavior.

**Procedure:**

Have the students complete the “Graphing Salamanders Trends” worksheets (pages 2-4) individually, in pairs, or in small groups. A teacher answer key is provided on pages 5-6.

To view the Stewardship podcast video go to <http://www.thegreatsmokymountains.org/eft/10modules.html> Turn the microscope knob that appears on the computer screen to Section 7, Backyard Stewardship. Click “Watch Video” and view video. Ask students how they can become stewards within their own school and community.





# GRAPHING SALAMANDER TRENDS

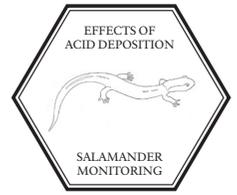
Graph the following sets of data from Rows A, B, and C of Number of Salamanders found to Distance from Stream (m). The number of Salamanders found is placed on the Y-axis.

Wood Cookie Identification	Distance from Stream (m)	Number of Salamanders
A1	0	11
A2	10	5
A3	20	5
A4	30	8
A5	40	6
A6	50	4
A7	60	1
A8	70	1
A9	80	7
A10	90	2

Wood Cookie Identification	Distance from Stream (m)	Number of Salamanders
B1	0	10
B2	10	2
B3	20	3
B4	30	4
B5	40	6
B6	50	3
B7	60	3
B8	70	2
B9	80	3
B10	90	1

Wood Cookie Identification	Distance from Stream (m)	Number of Salamanders
C1	0	16
C2	10	10
C3	20	12
C4	30	7
C5	40	4
C6	50	3
C7	60	2
C8	70	3
C9	80	4
C10	90	0





# GRAPHING SALAMANDER TRENDS

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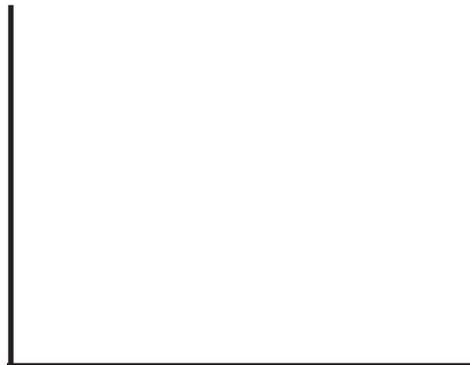
1. Graph the distance from Stream (m) to Number of Salamanders found in Row A. Remember to label your axes.

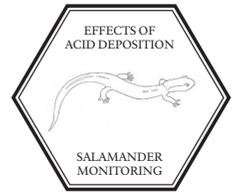


2. Graph the distance from Stream (m) to Number of Salamanders found in Row B. Remember to label your axes.



3. Graph the distance from Stream (m) to Number of Salamanders found in Row C. Remember to label your axes.





# GRAPHING SALAMANDER TRENDS

4. Are you seeing a trend? If so, what is the trend?
5. What is the best way to know that the graphed results are dependable or just a one-time occurrence?
6. Combine all three replicate trials (A1+B1+C1, etc) of number of salamanders found and average the three to more clearly show the trend. Round to whole salamanders (5.8=6). Place information below..

Wood Cookie Number	Average number of salamanders found
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

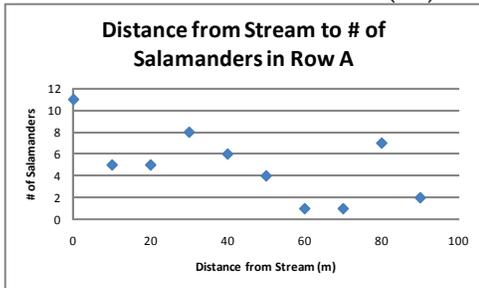
7. Graph the average number of salamanders found to distance from stream (m). Remember to label your axes.



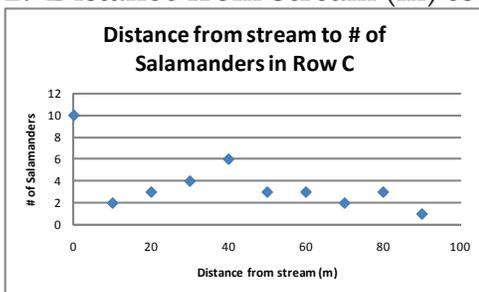
# GRAPHING SALAMANDER TRENDS

## ANSWER KEY

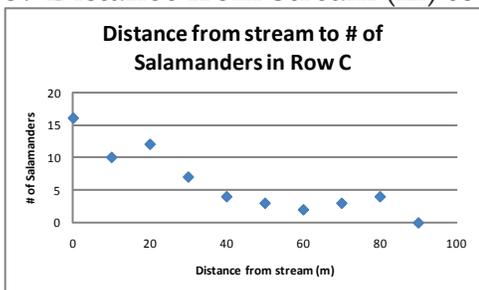
### 1. Distance from Stream (m) to Number of Salamanders found in Row A



### 2. Distance from Stream (m) to Number of Salamanders found in Row B



### 3. Distance from Stream (m) to Number of Salamanders found in Row C



### 4. Are you seeing a trend, if so, what is the trend?

*The clearest trend is a correlation between distance from stream to number of salamanders found.*

### 5. What is the best way to know that the graphed results are dependable or just a one-time occurrence?

*Replication is important. Replication in science helps make science a self-correcting system. One might go back on different days to determine if the new data has the same trends or combine the data from the three sets of cookies.*

# GRAPHING SALAMANDER TRENDS

## ANSWER KEY



6. Combine all three replicate trials (wood cookie A plus B, etc.) of number of salamanders found and average the three to more clearly show the trend. Place information below.

Wood Cookie Number	Average number of salamanders found
1	12
2	6
3	7
4	6
5	5
6	3
7	2
8	2
9	5
10	1

7. Graph the average number of salamanders found to distance from stream (m).

Distance from stream	Average number of salamanders found
0	12
10	6
20	7
30	6
40	5
50	3
60	2
70	2
80	5
90	1

