

Kids into Discovering Science Experimental Log

Student _____

Teacher _____

Lesson 1: California Habitats

Date_____

1. What would your team name the habitat in each photograph? Give each one a very descriptive name based on what your team sees. Be creative!

Habitat Photo #1

Name_____

Habitat Photo #2

Name_____

Habitat Photo #3

Name_____

2. Look closely at the three photos. What is different about the habitats shown in the photos? What is the same about the habitats?

3. Now let's give the soils names!

Soil Photo #1

Name_____

Soil Photo #2

Name_____

Soil Photo #3

Name_____

4. How do you think the three soils are similar? How are they different?

Lesson 1: California Habitats

Date_____

5. Follow along with the class discussion. Fill in the answers to the questions below:

a. What is different about the habitats?

b. What is different about the plants in the habitats?

c. What do you think causes the differences that you see in these habitats?

d. What is different about the soils? How can you describe them?

e. What do you think causes the differences in the soils?

f. Which soils do you think match the three habitat types? Why?

Lesson 2: You Are The Scientist!

Date_____

1. What do you observe about your soil samples? How are they the same?
How are they different?

2. What is the hypothesis for our experiment? (What do you predict will happen in this experiment? Be specific!) Why do you think this will happen?

Lesson 3: Scoring Emergence

Date _____

Use this space to record any observations you made about the seedlings. You can use a combination of words and pictures to record your observations!

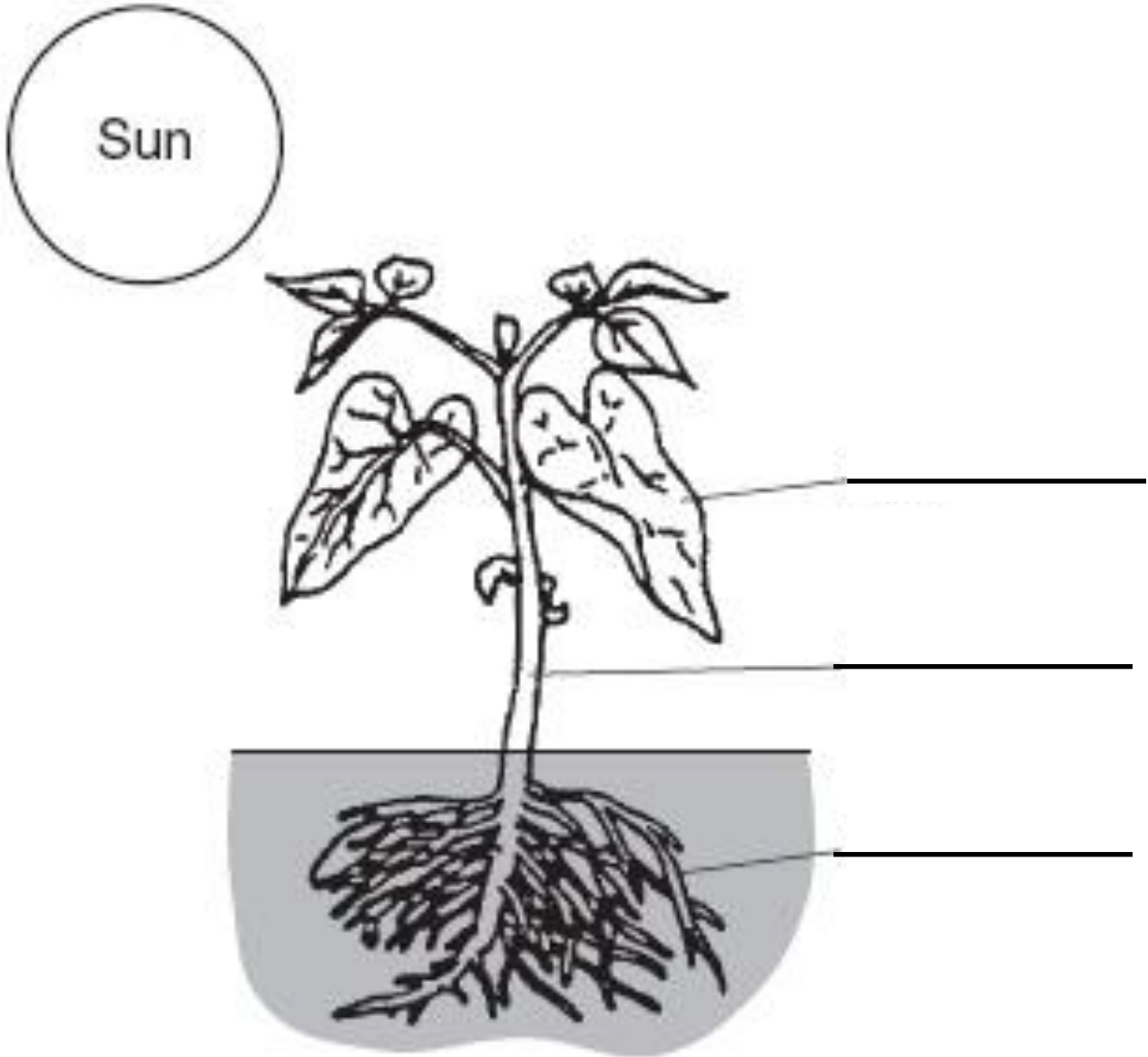
Soil Type #1: _____

Soil Type #2: _____

Lesson 4: What Do Plants Need To Grow?

Date _____

Label the plant parts in the diagram:



Lesson 4: What Do Plants Need To Grow?

Date_____

1. What do plants get from the sun and what plant parts do they use?
2. What do plants get from the air and what plant parts do they use?
3. What do plants get from the soil and what plant parts do they use?
4. What else do plants need and where do they get it?

Lesson 4: What Do Plants Need To Grow?

Date _____

1.

Photosynthesis



Ingredients



Products

2. What is photosynthesis and why is it important?

Lesson 4: What Do Plants Need To Grow?

Date_____

3. Use this space to describe your method for measuring plant height. Provide as much detail as possible, so that someone else could read your description and do exactly what you did.

4. Did all the seedlings emerge on the same day? Can you describe the pattern of emergence?

5. Did one pot have more seedlings emerge than the others? If so, what do you think caused the difference?

Lesson 4: What Do Plants Need To Grow?

Date_____

6. Do all the seedlings look the same? If not, how are they different?

7. Did any of the first 3 emergents die? If so, how should we deal with them?

8. Do you have any support for your hypothesis?

Lesson 5: Evaluating Success

Date_____

Plant growth comparison datasheet

Observe a set of bean plants from another team! Please respect the other team's work by being very gentle with the plants in the pot.

What is the name of the team whose potted plants you are borrowing today?

1. Look at the plant height data that you wrote down earlier today for your team's bean plants. Record those measurements for each plant in the column labeled "Height of our team's plant". Make sure that each measurement is written down in the correct place.

2. *Very gently* measure the height of each bean plant in the other team's serpentine pot. Write down those measurements below in the column labeled "Height of **other team's** plant"). Then, do the same for plants in the other team's loam pot.

Serpentine soil:	Height of our team's plant	Height of other team's plant
Pink toothpick		
Blue toothpick		
Yellow toothpick		
Loam soil:	Height of our team's plant	Height of other team's plant
Pink toothpick		
Blue toothpick		
Yellow toothpick		

Lesson 6: Seeds and Seedlings in Action

Date_____

1. Use adjectives to describe the DRY SEEDS in the table below:

Color	Size	Shape

2. Now, describe what you observe about SOAKED SEED

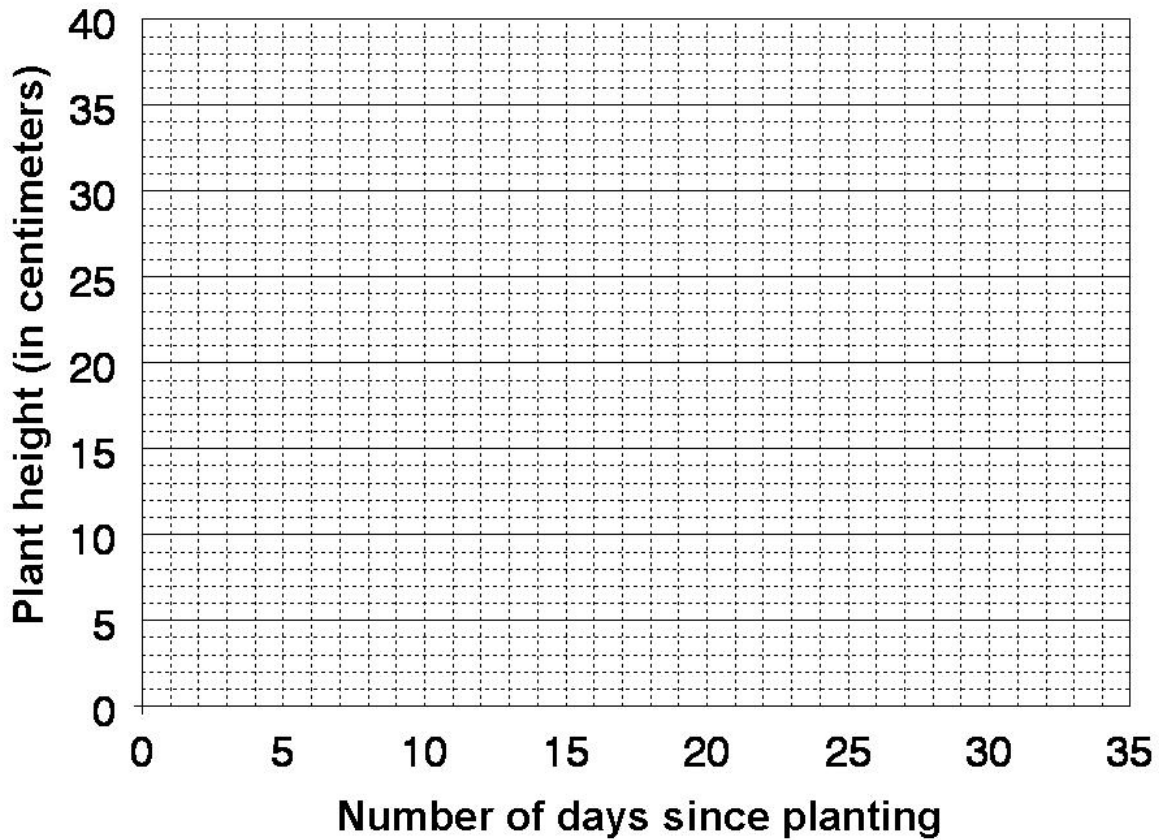
3. Describe the SPROUTS

Lesson 7: Visualizing Plant Growth With Graphs

Date _____

Use this graph paper to follow along with the graphing lesson. You will use the graph paper at the back of the log to graph your own plant data next!

Team: _____ Soil Treatment: _____ Teacher: _____



Lesson 8: Which Group is Taller, On Average?

Date _____

1. For the **whole class**, how big was the difference between the tallest and the shortest plant grown on each soil type? To find out, fill in the table below.

	Loam soil	Serpentine soil
Height of the tallest plant on this soil type (in centimeters)		
Height of the shortest plant on this soil type (in centimeters)		
Subtract the minimum height from the maximum height (this is the height range)		

2. Fill in the table below to calculate the most recent average heights you measured (in centimeters!) for **your** serpentine and loam bean plants.

	Loam soil	Serpentine soil
Height of pink bean plant		
Height of blue bean plant		
Height of yellow bean plant		
Total height (add up the height measurements above)		
Number of plants measured		
Calculate the average height on this soil type*		

Use the space below and on the next page (page 19) to show how you calculated each average:

Lesson 8: Which Group is Taller, On Average?

Date _____

3. Working with your teachers, fill in the following chart with the **whole-class average** bean height data for each soil type and each measurement day.

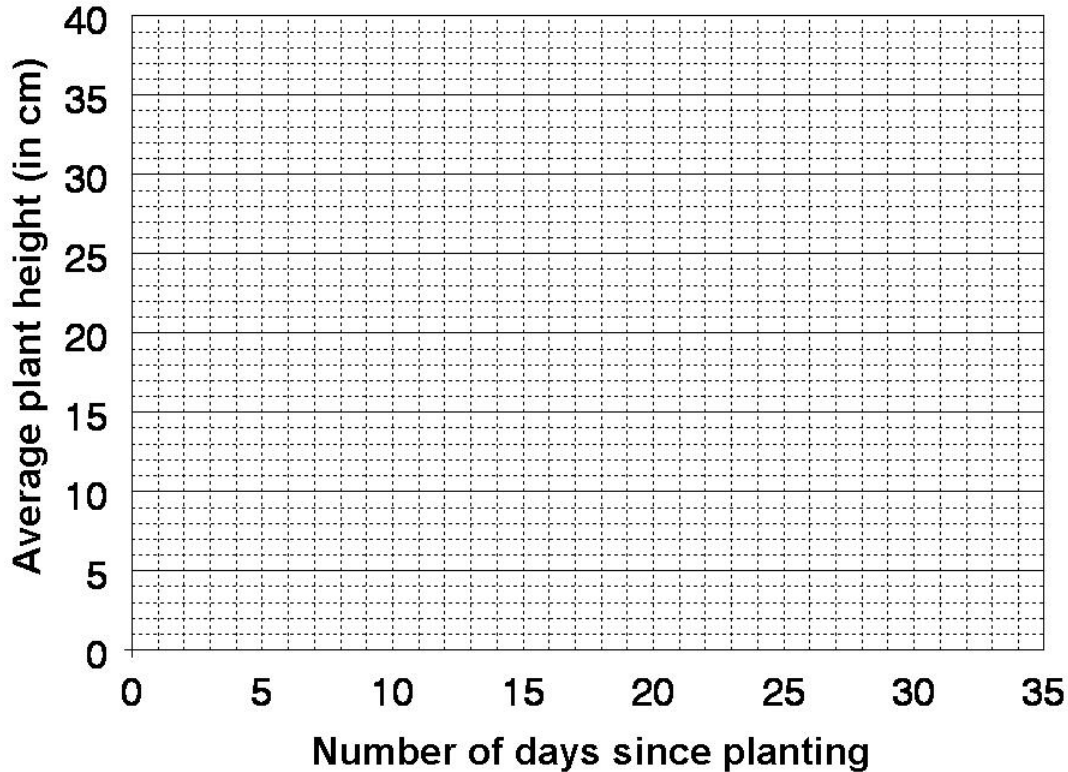
Measurement Day Number (Days after seeds were planted)	Average height on loam soil (in centimeters)	Average height on serpentine soil (in centimeters)
0		

Lesson 8: Which Group is Taller, On Average?

Date _____

4. Following the examples shown by your teachers, plot the average bean plant heights for the **whole class**. Plot the serpentine and loam treatment averages for each day you all measured your bean plants. IN PENCIL, show the means for the serpentine treatment as filled-in circles (●), and those for the loam treatment as an X mark (X). Draw lines connecting the averages for each treatment to show how an “average” bean plant grew on each soil type.

Symbols: ● = serpentine treatment x = loam treatment



Lesson 9: Experiment Summary

Date_____

1. Summarize your bean height results in 1 sentence. What was the overall effect of soil type on bean height?
2. Did your results support your hypothesis? How?
3. Use this space to make observations about how the heights of **your** bean plants differed from the heights of the **other team's** bean plants.
4. Write a 3-4 sentence conclusion that you will share with the rest of your class.

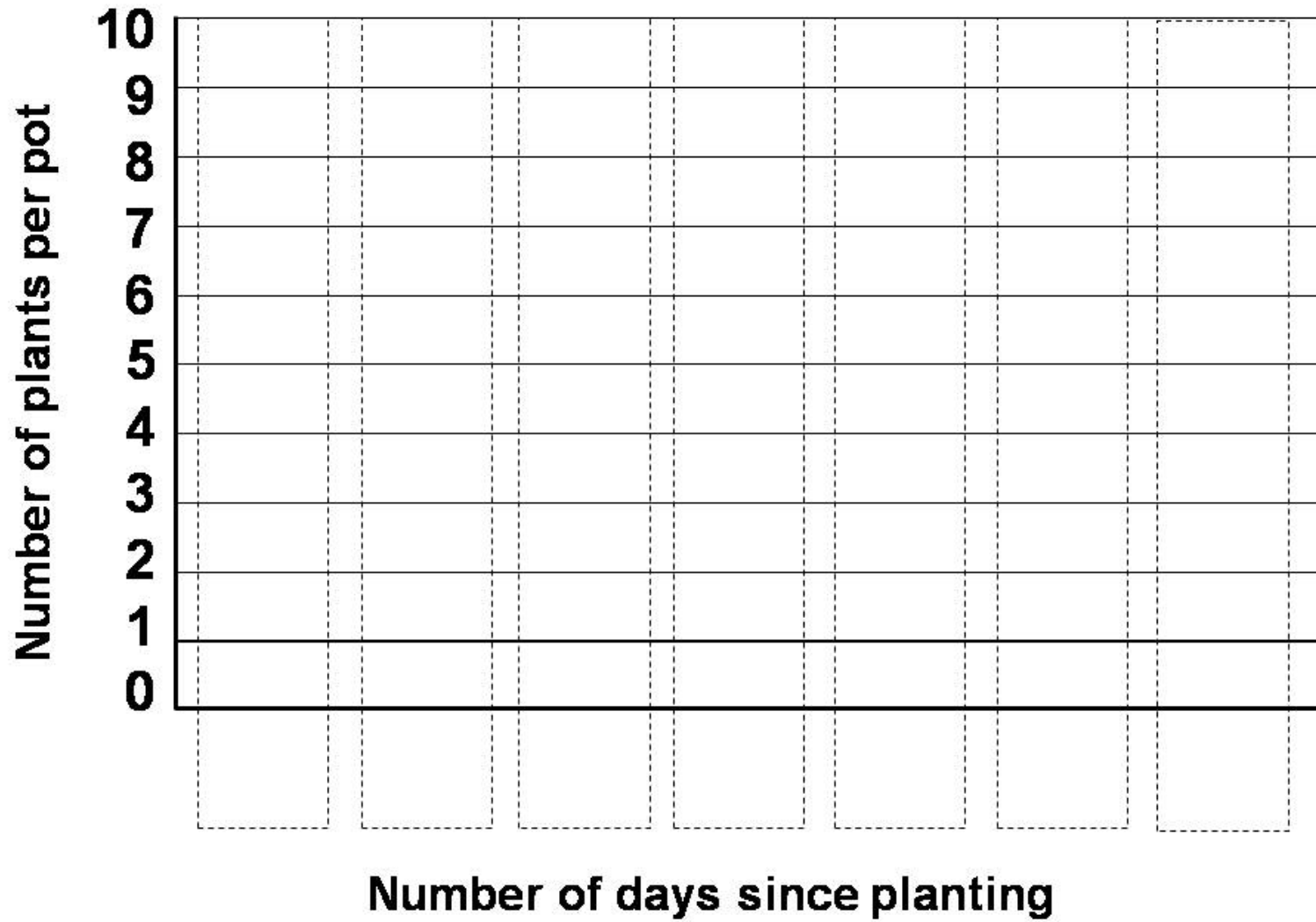
Plant Emergence Datasheet

Date	Days since planting	Number of plants		Observations
		Serpentine	Loam	

Plant Emergence Chart #1

PLANT NAME =

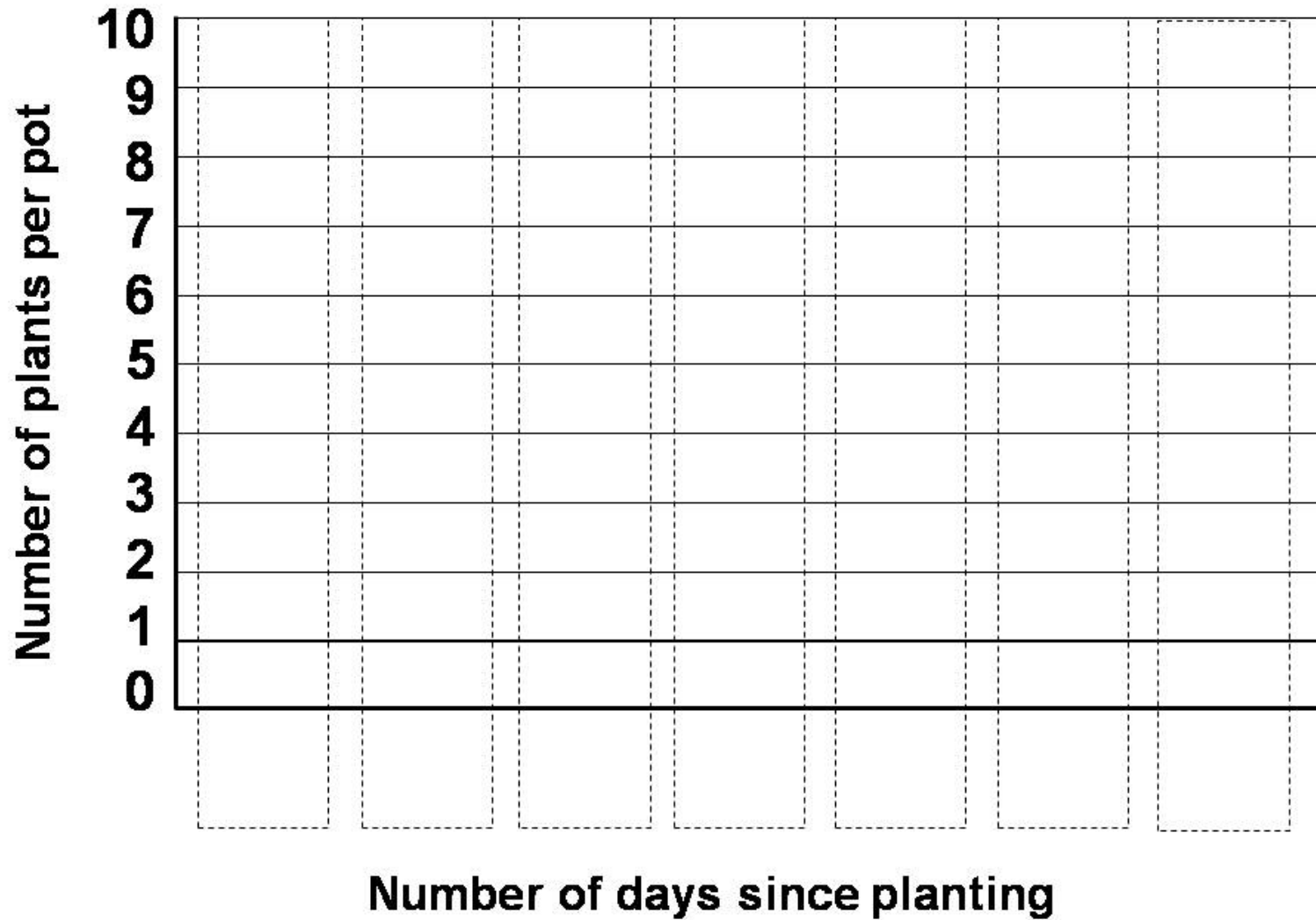
SOIL =



Plant Emergence Chart #2

PLANT NAME =

SOIL =

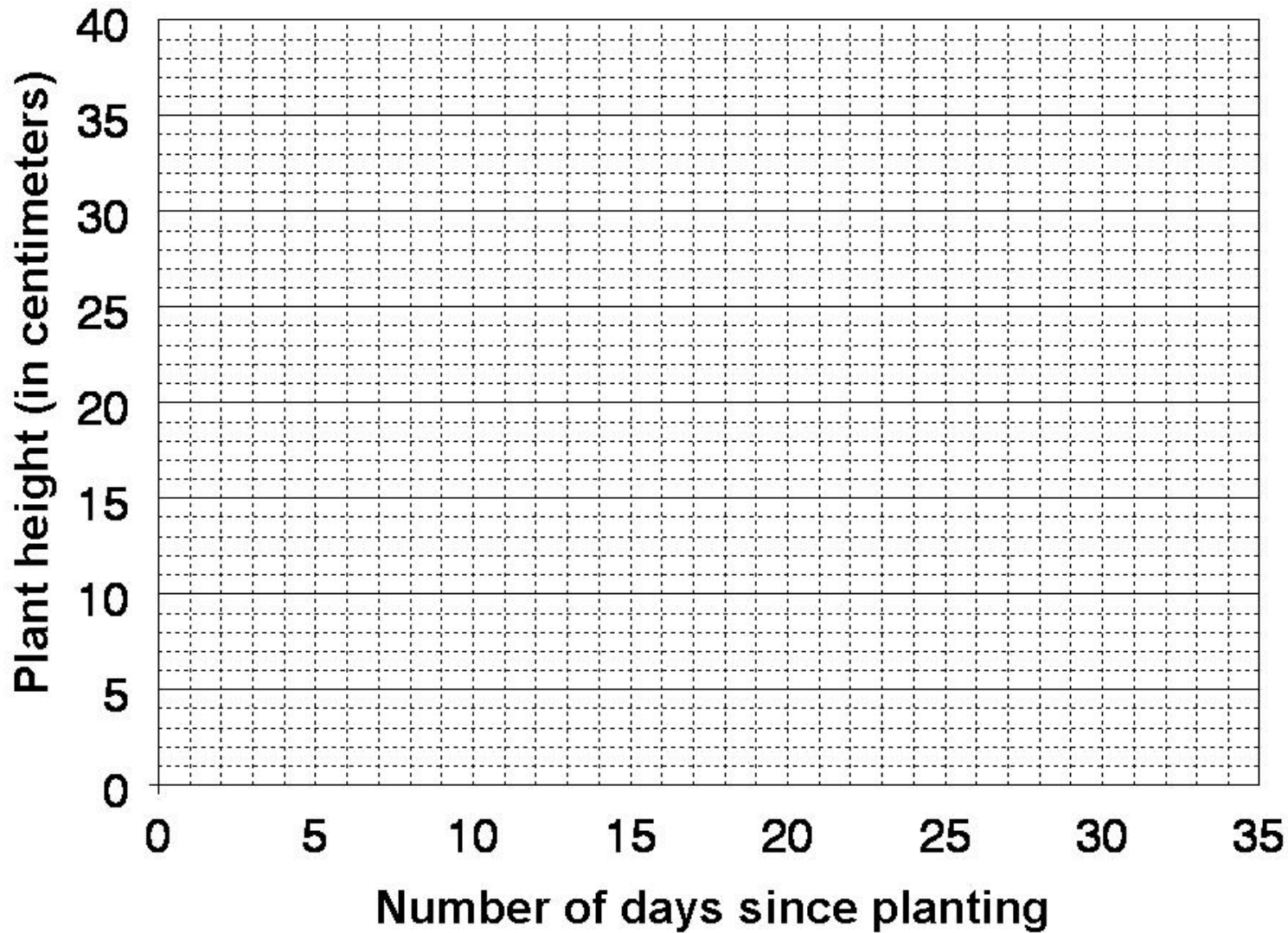


Plant Growth Datasheet

Date	Days since planting	Height			Other Observations
		Marker Color	Serpentine	Loam	
		Pink			
		Blue			
		Yellow			
		Pink			
		Blue			
		Yellow			
		Pink			
		Blue			
		Yellow			
		Pink			
		Blue			
		Yellow			

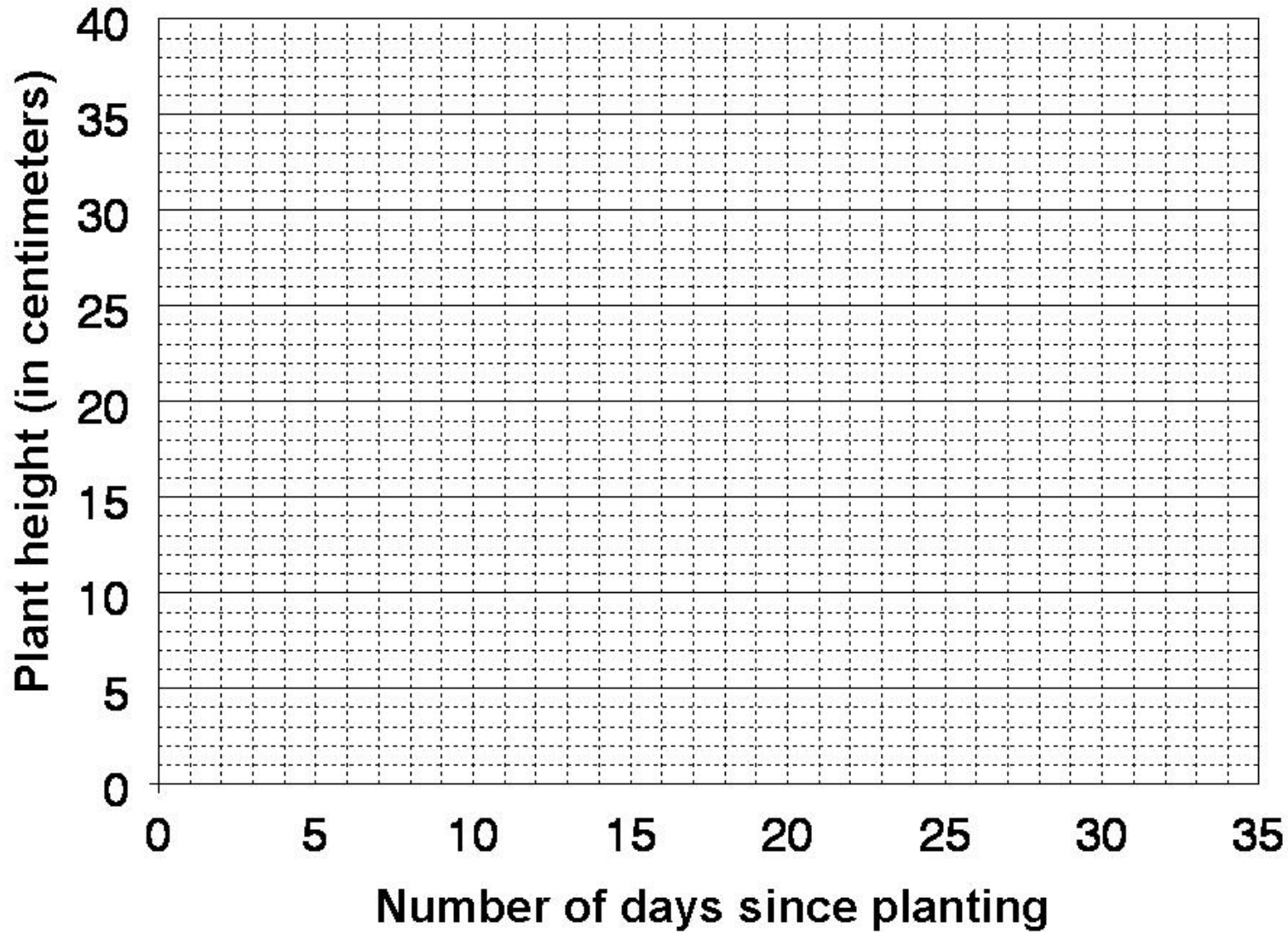
Plant Growth Graph #1

Student _____ Soil Treatment: _____ Teacher: _____



Plant Growth Graph #2

Student _____ Soil Treatment: _____ Teacher: _____



Sense of Place Journal

Use this space to make observations, draw pictures, and write about your sense of place

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