

Name: _____

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**Civil Engineering Discipline Project: Soil Science
Activity Part 1 Worksheet**

Question	Answer
1) What is the formal definition of soil according to the Soil Science Society of America Glossary of Soil Science Terms?	
2) What are the seven roles that soils play?	
3) What are the different soil types according to the soil texture triangle?	
4) Define soil structure.	
5) What primarily influences soil color?	

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6) List and describe the 6 different soil horizons.

7) What does CLORPT stand for? How is this acronym related to soil formation?

8) What is soli degradation?

9) How is soil added, lost and translocated?

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10) What is ion exchange?	
11) Define soil pH.	
12) How does soil pH affect plant growth?	
13) Define sorption.	
14) Define soil precipitation.	

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15) What is soil organic matter?

16) What are the four major categories of soil organic matter?

17) What happens when soils alternate between a wet and dry state?

18) Define oxidation and reduction.

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**Civil Engineering Discipline Project: Soil Science
Activity Part 2 Worksheet**

Question	Answer
1) Why do we need to test soil?	
2) What happens when you add too much nitrogen to the soil initially?	
3) What happens when you add too little nitrogen to the soil initially?	
4) How do you determine the proper amount of nitrogen to add?	
5) What is the seedling stage?	

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6) What is the flowering stage?	
7) At the second stage, what happens when you add too much nitrogen to the soil initially?	
8) At the second stage, what happens when you add too little nitrogen to the soil initially?	
9) What was the yield when the correct amount of fertilizer was added at the second stage?	
10) What is one strategy for pursuing profitable crop yields while avoiding water contamination?	
11) What effect does nitrogen have on water bodies? Hint: you will need to complete additional internet research to answer this question!	

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**Civil Engineering Discipline Project: Soil Science
Activity Part 3 Worksheet**

Question	Answer
1) What is the soil number at 10 Mill Street?	
2) List all the soil types under the "Map Unit Composition" tab and their relative percentages.	
3) Click on the soil type that makes up most of the soil at the site. Draw the soil profile.	

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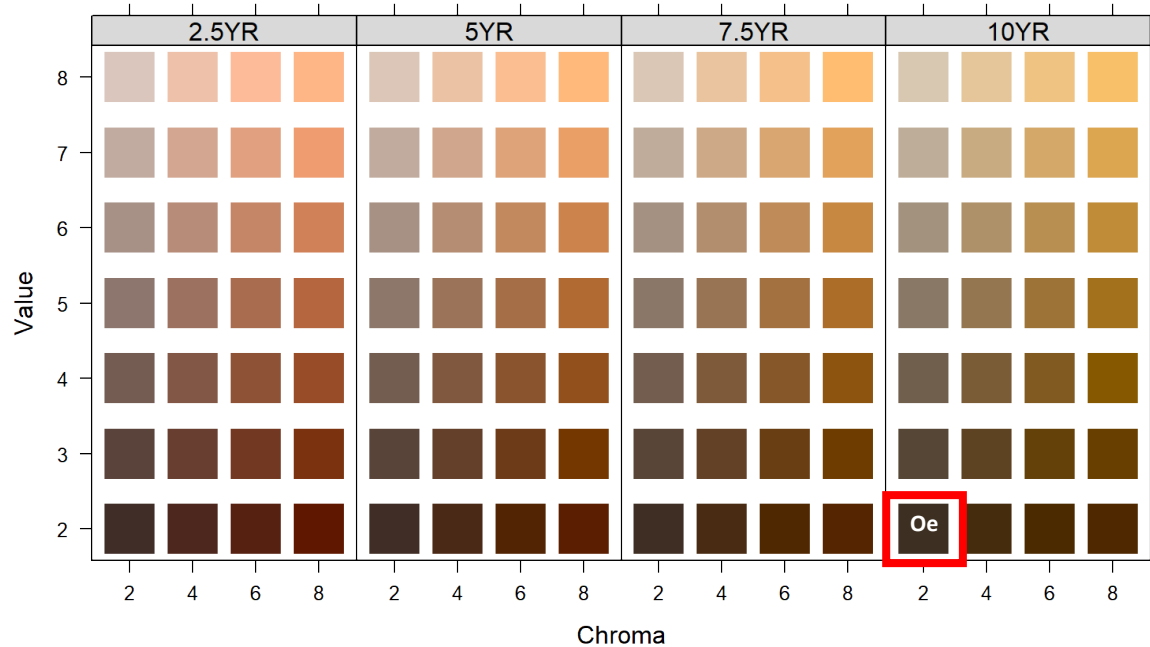
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4) Click on “Soil Data Explorer” in top left corner. What does the webpage say about the soil’s drainage and formation?

5) Under “Typical Pendon” the soil layers are listed. List and describe all the layers.

6) The number and letter combinations in parentheses next to the soil layers represent shades of color. Find the color (or next closest) on the chart for each layer by circling the boxes and labeling with the layer label. 10YR 2/1 is done for you as an example (Oe horizon). As you can see the next closest color to 10YR 2/1 is 10YR 2/2.

Common Soil Colors



7) Under “Range in Characteristics” the webpage says, “The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 6. Texture is loam, fine sandy loam, or sandy loam in the fine-earth fraction, with pockets or thin lenses of loamy sand.” What is the difference between a loamy sand and a sandy loam?