# READING GUIDE*

## Soil Classification

*see Buol et al. (2011), Chapter 6, p. 181-182 and Chapter 7, p. 207-210*

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**OBJECTIVE**: *To understand the nature and importance of soil classification systems and the principles that are used in their creation, and to know the characteristics and categories associated with* Soil Taxonomy.

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## Understanding Classification

1. What three key aspects of classification and categorization are derived from the use of the principles of logic?

2. What two general principles guide the formation and arrangement of categories in a classification system? <u>Explain</u> the significance of each.

3. How do the "expertise effect," the "cultural and environmental effect," and the "prototype effect" influence the development of a classification system?

## U.S. *Soil Taxonomy*

4. Why was a new soil classification system developed in the United States?

5. **What is a *taxon*? What are *taxa*?**

6. What were the eight desired attributes considered when constructing *Soil Taxonomy*? **Why is each of these attributes deemed important (i.e., what is the purpose of each)?**

7. What characteristics are used to differentiate among classes in *Soil Taxonomy*? **Why are pedogenic interpretations not explicitly part of the classification system?** Why are particular methods of laboratory analysis specified for determining soil properties?

8. Why was a completely new nomenclature considered essential when *Soil Taxonomy* was being developed? **What are some advantages to the new nomenclature?**

9. What are the six categories in *Soil Taxonomy* (from highest to lowest level of generalization)? What specific characteristics are used to differentiate among taxa within each categorical level?

10. Why are all differentiating characteristics not applied uniformly (to all taxa or at the same categorical level)? **How does this accommodate the purpose of *Soil Taxonomy*?**

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SYNTHESIS:

11. Why is an understanding and appreciation of the differences among the soil taxa valuable? How does the classification of a soil within *Soil Taxonomy* provide information about the potential use and management of soils? Be specific.

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* *Questions in plain type represent basic facts and concepts. Questions in **bold** type are those that are answered in the text but require more careful consideration. The Synthesis questions at the end help you apply the facts and concepts to a relevant issue.*