

Chapter 4 Learning Objectives	Section	Related Example on Page(s)	Relevant Chapter Review Exercise(s)	Can I do this?
Identify the population and sample in a statistical study.	4.1	210	R4.1	
Identify voluntary response samples and convenience samples. Explain how these sampling methods can lead to bias.	4.1	213	R4.2	
Describe how to obtain a random sample using slips of paper, technology, or a table of random digits.	4.1	214, 217	R4.3	
Distinguish a simple random sample from a stratified random sample or cluster sample. Give the advantages and disadvantages of each sampling method.	4.1	221	R4.4	
Explain how undercoverage, nonresponse, question wording, and other aspects of a sample survey can lead to bias.	4.1	226, 227	R4.5	
Distinguish between an observational study and an experiment.	4.2	235	R4.6	
Explain the concept of confounding and how it limits the ability to make cause-and-effect conclusions.	4.2	235	R4.6	
Identify the experimental units, explanatory and response variables, and treatments in an experiment.	4.2	237, 239	R4.7	
Explain the purpose of comparison, random assignment, control, and replication in an experiment.	4.2	243	R4.9	
Describe a completely randomized design for an experiment, including how to randomly assign treatments using slips of paper, technology, or a table of random digits.	4.2	246	R4.7, R4.10	
Describe the placebo effect and the purpose of blinding in an experiment.	4.2	247	R4.9	
Interpret the meaning of statistically significant in the context of an experiment.	4.2	249 (Activity)	R4.9	
Explain the purpose of blocking in an experiment. Describe a randomized block design or a matched pairs design for an experiment.	4.2	251, 254	R4.7, R4.10	
Describe the scope of inference that is appropriate in a statistical study.	4.3	267	R4.8	
*Evaluate whether a statistical study has been carried out in an ethical manner.	4.3	Discussion on 270	R4.11	

*This is an important topic, but it is not required for the AP Statistics exam.