



21. Cottonwood Quiz

Description: Students take a true/false quiz of their knowledge of cottonwoods and the bosque, then administer the quiz to others and analyze the response data.

Objective: Students will:

- know about surveying techniques by conducting, collecting data, organizing and displaying data and analyzing the results of a simple survey;
- learn what others know about the bosque; and
- educate participants in the quiz about cottonwoods and the bosque.

Materials: copies of the Cottonwood Quiz
pencils
calculator

Procedure:

1. Administer this quiz to all of the students. Each student should answer the questions him/herself first and record the answers in the first column on the Cottonwood Quiz sheet. Discuss the answers as a class. Statements 1 through 5 are false; 6 through 10 are true (see answers following the quiz).
2. Prepare for conducting a survey using the quiz. Go over the instructions on the quiz. Discuss how many people will be questioned by each student. Your goal is to survey 100 people. (A class of 20 will survey five each, when their own quiz results are included.) After each survey, students should go over the correct answers with those they have surveyed and tell them the percentage answered correctly. In teaching about the bosque in this way, students solidify their own knowledge.

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Grades: 5–8

Time: two class periods plus administration of quiz

Subjects: science, math

Terms: *germinate, saplings, seedlings, evolving, levee, introduced species*



3. Students will return with all of their surveys completed, correct answers recorded and percent correct calculated. Now they combine their results with the rest of the class.

Go through each question and record the total number of correct answers of all the people surveyed. Since you surveyed 100 people, this number represents the percent of correct answers for each question.

Sum the totals for each question and divide by 10 to calculate the average score of all people taking the quiz.

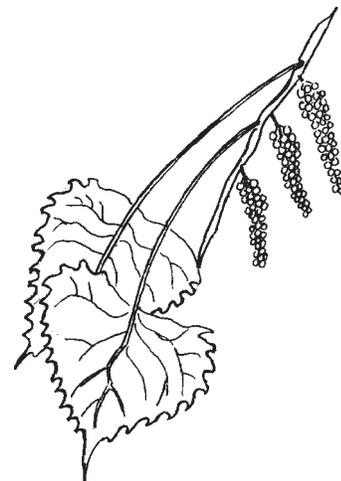
4. Students display the data in some way, a graph, chart, etc.
5. Students then answer the analysis questions.

Analysis questions:

1. Which questions were answered correctly by most participants?
2. Which question(s) were answered incorrectly by the most number of participants?
3. Make a general statement about the level of knowledge and understanding of cottonwoods and the bosque among the people surveyed.
4. Do you think these results will be true for the general public? Why or why not?

Extensions: Write a news article about your findings.

Take the questions that were answered incorrectly by the most number of people and design something to teach that information. This could be posters, videos, leaflets, etc.—an “ad campaign.”



Cottonwood Quiz



1* 2 3 4 5 True or false?

					1. A Rio Grande cottonwood lives about 300 years.
					2. Most cottonwood seeds germinate and start new trees.
					3. Russian olive trees and elm trees have always been a part of the Rio Grande bosque.
					4. Rio Grande cottonwood trees get all the moisture they need from rain.
					5. We don't have to be concerned about the bosque. It will always be the way it is now.
					6. The cottonwood has been the most important tree in the bosque for thousands of years.
					7. Cottonwood seeds need sunlight, clear space, and soil that stays wet to start to grow.
					8. Historically, annual floods provided the wet ground that cottonwood seeds needed to grow and develop.
					9. Cottonwood trees have either female or male flowers but not both on the same tree.
					10. With river conditions today, cottonwoods do not naturally regenerate on a large scale. For the cottonwood to be a significant tree in the future forest, people need to plant the trees or manage the river for flooding over the banks.
					Number of correct answers
					Percent correct (multiply by 10)

*Student's name _____

Instructions

- Answer all ten questions yourself and record your answers (T for true, F for false) in Column 1.
- Read the questions to four more participants and record their answers in Columns 2 through 5.
- Go over the correct answers (on the next page) with each participant.
- Count the number of correct answers for each participant and record the number in the participant's column.
- Compute the percentage of correct answers by multiplying the number of correct answers by 10. Write the percentage in the column.

Answers to Cottonwood Quiz



1. False: Cottonwood trees are like people—not many grow to be more than 100 years old. Cottonwoods are not long-lived trees.
2. False: Very few seeds germinate. Even fewer find the conditions they need to develop into trees.
3. False: Russian olive and elm trees came to the bosque in the 1930s. Saltcedar (tamarisk) was also introduced about the same time.
4. False: Large trees like cottonwoods need much more than the 10 inches (25 cm) of rain that make our area a desert. We often get even less than that. Cottonwoods tap the water table for their needs.
5. False: The bosque has always been changing following natural cycles. But today's changes are not cyclical. Instead they represent a progression from one type of habitat to another. Without responsible management the bosque may not survive as a cottonwood forest.
6. True: The Rio Grande cottonwood has been evolving with the river for thousands, perhaps more than a million years.
7. True: Cottonwood seeds need sunlight, a clear space, and soil that stays wet until the seedling roots reach the water table.
8. True: Annual floods kept the soil wet long enough for this to happen. Because the river is now controlled by levees and dams, it no longer floods unless managers allow it.
9. True: Cottonwoods with male flowers release pollen in the spring. It floats in the air to the trees with female flowers which later produce the cottony seeds.
10. True: Without flooding to provide a start for new trees, existing cottonwoods will die off and introduced species will take over. Changing management goals to manage for the entire ecosystem are setting an optimistic outlook for the bosque.

