Teacher Guide

Restoration Ecologist: Saguaro National Park

Covered Concepts:

Reading Comprehension: Sections 1 & 2
Writing Explanatory Texts: Section 3
Finding a Fraction of a Whole Number and Converting to Percentages: Section 4

Section 1: Restoration Ecologist

- **Vocabulary:**
  - Restoration Ecologist, National Parks, Saguaro National Park
- **Career Highlight:**
  - Students read about the role of a restoration ecologist.
- **Content Check:**
  - Students answer questions about restoration ecologists.

Section 2: Saguaro National Park

- **Learn:**
  - Students will read about Saguaro National Park, a national park located in Arizona.
- **Content Check:**
  - Students answer questions about Saguaro National Park.

Section 3: ELA Practice

- Students will imagine they are restoration ecologists and must design a robot that removes harmful plants from Saguaro National Park. They will then write an email to their supervisor explaining why the robot is important and how it works.

Section 4: Math Practice

- Students will find the fraction of a whole number and will convert that fraction to a percent.

Teacher Guide: Answer Keys

Content Check: Restoration Ecologist

1. What do restoration ecologists do?

Restoration ecologists are scientists who attempt to repair ecosystems or natural habitats that have been damaged. Restoration ecologists study damaged ecosystems to determine the cause and create a plan to restore the ecosystem and prevent future damage.

2. What kind of education is recommended to become a restoration ecologist?

To be a restoration ecologists you typically need a bachelor's degree with a major in science such as biology, environmental science, or conservation.

3. Would you enjoy being a restoration ecologist? Why or why not?

Answers will vary.

Content Check: Mammoth Cave National Park

1. Why was Saguaro made a national park?

Saguaro National Park was created to protect and display forests of the Saguaro Cactus for which the park was named. The park also protects the archeological sites located in the area.

2. Name at least two animals that can be found in Saguaro National Park and how they are able to adapt to live in the desert conditions.

Answers will vary. Example answers could be:

- Desert pack rat builds a shelter to escape the heat
- Gila monster lives in burrows underground for the majority of the year
- Jackrabbit's large ears are able to move eat away from their body to cool them down.

3. Why are nonnative grasses, such as buffelgrass, harmful to Saguaro National Park?

Nonnative grasses have caused intense fires in the park from 1989-1999. Buffelgrass is a nonnative and invasive grass that is the biggest threat to the park. It could overtake large areas of the park and cause high-intensity fires. This would kill the protected saguaro, and cause damage to the native plants and animals in the area.

ELA Practice

Answers will vary.

Teacher Guide: Answer Keys

Math Practice

1. On Monday, you set a goal for your robot to remove 645 buffelgrass plants. Your robot was only able to remove 5/7 of the amount you wanted. How many buffelgrass plants did it remove? What percent of your goal was met?

1. Find how many plants you removed

$\frac{5}{7}$ of 645

$\frac{5}{7} \times \frac{645}{1} = \frac{3225}{7}$

$\frac{3225}{7} = 460.7$

460.71 buffelgrass plants were removed and the goal was 645

2. Find how much of your goal was met. Your answer should be in the form of a percent.

$\frac{460.71}{645} = .71$

$.71 \times 100 = 71\%$

=71% of your goal was met

2. On Tuesday, you set a goal for your robot to remove 68 buffelgrass plants. Your robot was only able to remove 3/8 of the amount you wanted. How many buffelgrass plants did it remove? What percent of your goal was met?

1. Find how many plants you removed.

$\frac{3}{8}$ of 68

$\frac{3}{8} \times \frac{68}{1} = \frac{204}{8}$

$\frac{204}{8} = 25.5$

25.5 buffelgrass plants were removed and the goal was 68.

2. Find how much of your goal was met. Your answer should be in the form of a percent.

$\frac{25.5}{68} = .38$

$.38 \times 100 = 38\%$

=38% of your goal was met

3. On Wednesday you set a goal for your robot to remove 876 buffelgrass plants. Your robot was only able to remove 3/13 of the amount you wanted. How many buffelgrass plants did it remove? What percent of your goal was met?

1. Find how many plants you removed.

$\frac{3}{13}$ of 876

$\frac{3}{13} \times \frac{876}{1} = \frac{2626}{13}$

$\frac{2626}{13} = 202.15$

202.15 buffelgrass plants were removed and the goal was 876.

2. Find how much of your goal was met. Your answer should be in the form of a percent.

$\frac{202.15}{876} = .23$

$.23 \times 100 = 23\%$

=23% of your goal was met