

ELECTRIC FENCE

A VIDEO DEMONSTRATION OF HUMAN CIRCUITS

Brainiac Science Abuse S1E4: "Electric Fence"

Name: _____ P-G-S: _____

Read the questions before watching the corresponding video clips. Answer each question with words and diagrams.

1. a. What acts as the battery in this circuit?

b. Where are the terminals for this "battery"?

c. The Brainiac acts as a _____ in the circuit.

2. a. What will happen when the Brainiac stands on the foam tiles ("polystyrene" = Styrofoam) and touches the fence?

b. Why?

c. What kind of circuit is this?

d. The resistance in this circuit is ___ low ___ high.

3. When five barefoot Brainiacs hold hands and touch the fence,
___ All brainiacs will get shocked the same amount.
___ Some Brainiacs will get shocked more than others. Describe:

4. a. What will happen when four out of five Brainiacs are on foam tiles when the fence is touched?
___ All Brainiacs will get shocked the same amount.
___ Some Brainiacs will get shocked more than others. Describe:

b. What kind of circuit is this? Include a diagram.

5. What happens when all five Brainiacs are standing on foam tiles when the fence is touched? Why?

6. What was the circuit when all five Brainiacs were uninsulated (barefoot and not on tiles)?

a. How do you know it's not series?

b. How do you know it's not parallel?

c. What is it? Include a diagram.

7. What is one practical application of this kind of circuit?