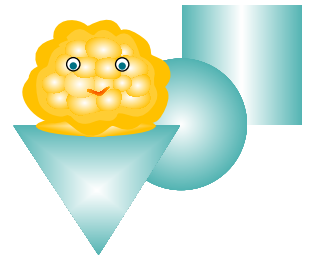


Fat: Who Says? Measuring Obesity Bioelectrical Impedance Analysis



Human Electrochemical Cell
Student Data Page 3C Part 1

Engagement Part of the Activity – The Energy Ball

1. As a group, decide what is happening to make the ball glow - write down your observations and inferences and try to explain what has caused the light to glow.

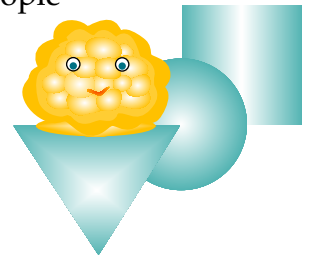
Observations

Inferences

What Makes the Energy Ball Glow?



2. Explain how you were able to make the Energy Ball glow with two people using it at the same time.



A large rectangular area with a light purple background and ten horizontal red lines, intended for writing an explanation.

3. Draw a diagram showing the arrangement of all people in the group making the *Energy Ball* glow.

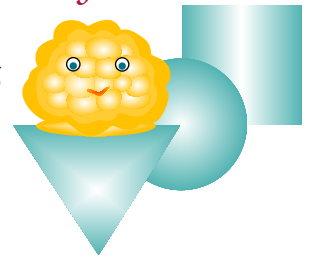
A large empty rectangular box with a light blue background and a teal border, intended for drawing a diagram.



People and the Energy Ball



Engagement Part of the Activity – Does the Human Body Have Electricity?



1. Did you see any movement of the needle when the *multimeter* setting was on 250 milliamperes (mA)?

2. When you set the dial to the 50 microamperes (μA) setting and touched the probes from the *multimeter*, did you see any movement on the dial of the *multimeter*?

What does that tell you?

3. Which scale measures smaller quantities – 50 microamperes (μA) or 250 milliamperes (mA)? Why?

4. What would movement on the *multimeter* indicate?



LESSON 3

ACTIVITY 3C, PART 1

Corpulosity

5. Why did it seem to move slightly on one scale but not on the other scale?

6. What do you think was the purpose of using the electrode gel?

7. Why do you think this activity indicates that humans produce a small amount of current?

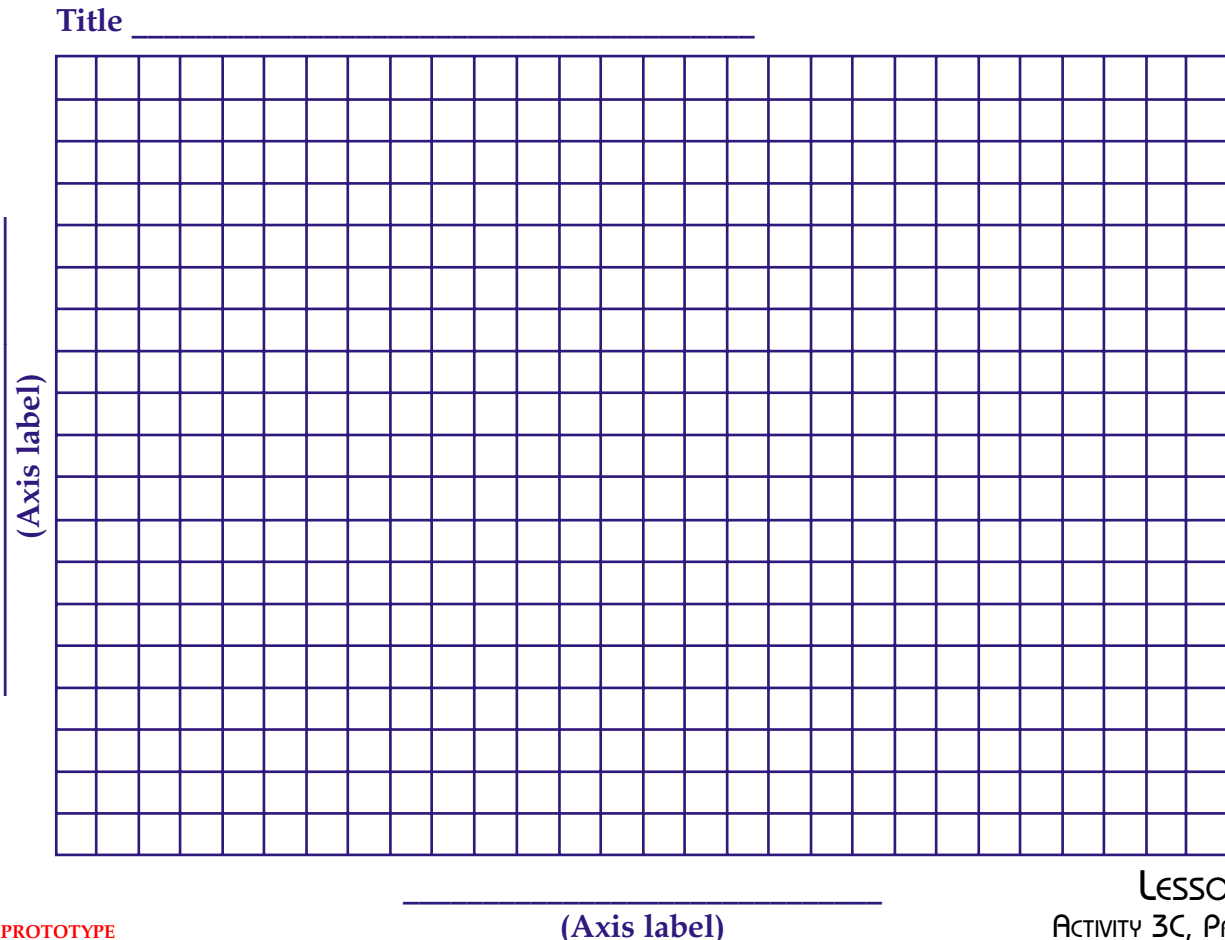


Explain Part of the Activity: How Can Humans Become Better Batteries?

Electrical Flow in Various Combinations of Metal

Type of Metal	Microamps Without Gel	Microamps With Gel
A		
B		
A		
B		
A		
B		
A		
B		
A		
B		
A		
B		

Make a Bar Graph of Your Data: (Be sure to include title and axes labels)



Analyzing the Data:

1. Which combination of metals produced the greatest electric current?

2. Which combination of metals produced the least electric current?

3. What did you do to your hands to make it easier to conduct electricity?

4. What evidence do you have to prove that humans can conduct electricity?

5. Do you think two people holding hands (right hand to left hand) with one person placing their free hand on one metal plate and the other person placing their free hand on the other plate still generate enough current to get a reading on the micro ammeter? Try it and see.

6. Based upon the results you got using the electrode gel, what effect do you think the electrode gel might have if you had two people making a circuit as in question 5?

7. How many people were able to link up and still conduct a measurable current?

8. Why is this possible?
