



Betavoltaics

STEM Sims

Lesson 3: Long-lasting Source

Experience has shown that some direct current sources last longer than others. For instance, an alkaline battery generally supplies energy longer than a traditional dry cell battery. Can you find out which DC source has the longest discharge time and outperforms the others?

Doing the Science

1. Start the Betavoltaics Simulation by clicking on the “Sim” tab.
2. Click on one of the direct current sources located at the top of the screen.
3. Click the red “Start” button on the source testing device.
4. Record the source name, the Discharge Time, and the relative Cost in Table 1.
5. Repeat steps 2-4 until all sources are tested. Make sure to record your data in Table 1.

Table 1. DC Sources’ Power

DC Source	Discharge Time (hours)	Cost (relative)

Do You Understand?

1. Which DC source had the longest discharge time? Which source had the shortest discharge time?
2. Which DC source would you select for an application that required a very difficult process to replace the DC source? Please explain your reasoning.
3. Can you determine which DC source is the best value? Please explain your reasoning.