

Name: _____

Date: _____

How Do We Store Electricity?

One of the concerns with renewable energy sources, such as wind and solar, is that they cannot easily be stored for a “rainy” day. Scientists have developed a number of storage options for this energy. In this activity, we are going to explore the current storage options to assess their usefulness.

Read the description of each storage option. Then rank the storage options from most useful (1) to least useful (5).

Storage Option	Description	Ranking
Pumped Hydroelectric	We use electricity to pump water up to a reservoir. When we release water from the reservoir, it flows down through a turbine to generate electricity.	
Compressed Air	We use electricity to compress air at up to 1,000 pounds per square inch and store it, often in underground caverns. When electricity demand is high, we release the pressurized air to generate electricity.	
Flywheels	We use electricity to accelerate a flywheel (a type of rotor). When people need the energy, the spinning force of the flywheel turns a generator. Scientists and engineers are exploring new designs to get larger rotational speeds to store more energy.	
Batteries	Similar to common rechargeable batteries, extremely large batteries can store electricity until people need it. Scientists and engineers are still exploring battery designs that can store grid-level electricity.	
Thermal energy storage	We use electricity to produce thermal energy, then store it until people need it. For example, we can use electricity to produce chilled water or ice during times of low demand and later use it for cooling during periods of peak electricity consumption.	

Source: <https://www.epa.gov/energy/electricity-storage>

Explain your top choice: why do you think it's most useful?

Explain your last choice: what disadvantages does it have in comparison to other options?