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| **Workshop : Steam to Green: Solar Power****National Curriculum Links**KS2 History: Investigating Local HistoryKS2 Science: yr 4 + 6 Electricity* Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
* Use recognised symbols when representing a simple circuit in a diagram
* Pupils will work scientifically by: observing patterns such as bulbs get brighter if more cells are added and cucumbers and humans are conductors because they water and building simple useful circuits

KS2 DT: - Design- generate, develop and communicate their ideas- Select from and use a range of materials according to their functional properties- Select from and use a range of tools and equipment to perform practical tasks.-technical knowledge- understand and use mechanical systems (wheel and axel)KS2 mathematics:-measure, compare, add and subtract lengths- Add and subtract amounts of moneyKS2 Geography- human geography: energy distribution, renewable sources of energy |
| **Learning objectives** | **Session structure** | **Assessment for learning** |
| **To explore energy production and distribution on Tyneside.****To investigate how inventions have impacted our environment.** **To learn about Solar power generation in the Northeast.** **To design and build successful Solar Circuits and consider the best conditions for solar panels** | **Introduction**We start the session by touring the museum to learn about energy production on Tyneside. We think about where we think most of our energy comes from and the best ways to generate energy and its impact on the environment. We talk about Charles Parsons, William Armstrong and George Stephenson. **Session activities**We then move to the Play + Invent space to learn more about Solar power in the Northeast. Students then work in small group to take part in a series of Solar based circuit challenges to discover the best conditions for solar power whilst testing their circuit building skills. **Plenary**If time allows we will explore hydrogen power and how it can interact with other green energy like solar power to power vehicles.  | Children will explore themes through class and group experiments, we will ask questions throughout to check understanding.Children will have opportunities to respond and give feedback throughout the session. There will be opportunities for Q&A at the end of the session.  |
| **Before your visit** | **After your visit** | **Key vocabulary** |
| Make a free teacher pre visit to familiarise yourself with the site- contact learning@discoverymuseum.org.uk Explore the museum virtually using goggle institute:<https://artsandculture.google.com/partner/discovery-museum>  | * Explore the last coal of Newcastle display on the Ground floor
* Learn more about inventors from the workshop using a self-led trail <https://discoverymuseum.org.uk/exploring-discovery-museum-self-led>
 | Solar Cell, Circuit, Switch, Volts, Energy, Steam, Coal, Renewable, Non-renewable, fossil fuel  |