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| **Workshop: Stephenson's Rocket and the Rainhill Trials**  **National Curriculum Links** KS1 Science: Everyday Materials- Identify and name everyday materials  KS1 History: Investigating Local History  KS1 DT: Make- Select from and use materials according to function, evaluate their ideas and consider improvements, technical knowledge- understand and use mechanical systems (wheel and axel)  KS2 History: Investigating Local History KS2 Science: yr3 + yr5 Forces and Magnets- Compare how things move on different surfaces  Identify the effects of air resistance and friction that act between moving surfaces  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 money | | |
| **Learning objectives** | **Session structure** | **Assessment for learning** |
| **To investigate how a steam engine works**  **To explore the events of the Rainhill Trials**  **To select and use materials according to their function.**  **To work as a team to build the fastest air powered locomotive.**  **Ks2- To manage a budget to ensure all materials can be bought to build a successful locomotive.** | **Introduction**  We will learn about George and Robert Stephenson's and their work on steam locomotives. Using actions, we will investigate how a steam engine works. Students will then investigate the events of the Rainhill Trials using object handling and a PowerPoint. We will investigate why the event took place, the contestants and results of the trial.  **Session activities**  Working in small groups students will select materials for, design, and build air-powered locomotives to take part in the Discovery Museum Trials. KS1 students will select materials from a catalogue and KS2 students will have a budget of £550 to spend at the shop.  **Plenary**  At the end of the session, we will test the locomotives to see which will travel the furthest and fastest to win the Discovery Museum trials. | Children will explore themes through class and group tasks, 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](mailto:learning@discoverymuseum.org.uk)  Explore the museum virtually using goggle institute:  <https://artsandculture.google.com/partner/discovery-museum>  Borrow a Great Fire themed Box of Delight  [Loans boxes | North East Museums](https://twamschools.org.uk/boxes-of-delight) | * Investigate our transport resources <https://discoverymuseum.org.uk/week-2-transport> * Explore the museum to learn more about amazing Northeast inventors with our self-led resources <https://discoverymuseum.org.uk/exploring-discovery-museum-self-led> | Steam, engine, firebox, tender wagon, coal, cotton, canal, piston, cylinder, railway track, Rainhill, Rocket, George Stephenson, Robert Stephenson, Engineer, Ironstone, Smelting |