What is Power?

In January 2023, the XP Gateshead Year 8 expedition was called “What is Power?”, where the guiding question was also:

“What is Power?”

The overarching expeditionary learning targets were:

- **I can explain the relationship between balance within a system and change.**
- **I can evaluate where power lies in relationships and in society**
- **I can explain what power means in terms of the rate of change of energy making reference to a range of systems**

The long-term learning targets were:

LT1: I can evaluate the causes and consequences of the Peasants’ Revolt.

LT2: I can analyse historical source material and make a judgement about the interpretation presented.

LT3: I can examine how the severity of an earthquake is determined by a country’s development level and tectonic processes

LT4: I can describe the development of central characters throughout the play.

LT5: I can analyse a writer’s viewpoint within a text.

LT6: I can explain why chemical reactions occur due to differences in their chemical structure

LT7: I can explain the relationship in the forces that cause the change in motion during an earthquake.

LT8: I can compare the power in earthquakes and normal tectonic plate movements.

LT9: I can reflect on an artist's work, its purpose and how it was created.

LT10: I can create digital artwork that communicates a message using multiple layers and colours.

Immersion

For our immersion we began by playing a disaster simulator game where we designed our own cities and attempted to mitigate against the risk of natural disasters. This sparked our curiosity and got us thinking about what countries need to consider when mitigating against risks and how our prior knowledge about development might impact on countries' abilities to secure themselves against such risks. We then built background knowledge by reading the Andrew Matthews modern telling of Macbeth. Whilst doing this, we recorded key plot points on a flowchart and mapped key characters and their relationships with each other. We then completed a gallery walk of images depicting the aftermath of natural disasters, protesters and diagrams of the earth structure. We attempted to draw connections between the images. Finally, we watched a series of clips and again tried to identify a common theme. We also practised using oil pastels to create abstract graffiti art using a variety of line types, and considered whether graffiti should be classified as art?

In science students we pondered how differences are often causes of changes within chemical and physical systems. We carried out a series of activities to explore the effects forces have on objects. We then carried out chemical reactions, noting changes taking place and then began to grapple with chemical formula and equations.Our immersion was completed by using the BBK protocol to build on their knowledge of elements, mixtures and compounds to help find connections between chemical directions and the make up of elements and compounds.

Case Study 1

Where does power lie in Macbeth?

The Tragedy of Macbeth was explored throughout the full twelve week expedition, due to the introduction of Shakespearean Language and Jacobean culture. Students were introduced to the Witches in Act 1, Scene 1, and also explored the different presentations of witches in popular culture and historical periods, in order to explain and predict audience reactions. We read the key scenes of the play, watching the Royal Shakespeare Company interpretation to explore the theatrical elements of the play such as stage setting, lighting and proxemics. We recorded the key characters and main events on plot lines, capturing who depicted power at the beginning of the play, and how this power shifted as a result of the different characters' motivations.

The expedition culminated in two written assessments. One based around an extract and the portrayal of Lady Macbeth in her thirst for power, and a full play extract based around the theme of our guiding question: 'Where does the true power in the play lie?' in answer to an English Literature GCSE question.

In DT we learned wood cutting techniques and used simple butt joints and z frames to put together stage flats from planks of wood. These frames were designed to be suitable for the set of our production of Macbeth.

Case Study 2

What causes change in systems?

In case study 2 in science we studied the big scientific idea that differences within systems cause change to occur. This idea was first explored chemically, and we became familiar with the structure of an atom and then recognised that the Group 0 in the periodic table, the noble gases, have a stable structure rendering them unreactive. We learned to name compounds from their formula, using the periodic table so that we could name reactants and products in a variety of chemical reactions. The differences within a chemical's reactivity, pH and the relationship to energy were all linked to causes of chemical change. The law of conservation of mass was studied to ensure that we understood that even within chemical changes the atoms are merely rearranged to form different more stable products that we summarised in word and balanced formula equations.

We then applied the idea that differences within systems drive change looking at the effect of balanced and unbalanced forces on the shape, speed and direction of objects. We started by learning the difference between contact and non contact forces and how they act upon objects using free body diagrams to show that forces act in pairs. We learned to calculate the difference between the force pairs as the resultant force in order to determine what effect this would have upon the object. This was summarised by learning Newton's first and third laws and the importance of friction in allowing contact forces to interact. The interaction between matter and forces was then studied to study why objects, such as the earth's crust can float on the mantle using the concept of pressure and also density. Differences in pressure and in the density of material were used to predict if an object would float or sink. The differences in depth and its effect upon pressure in fluids were also examined.

Building on this, in Geography, we studied the distribution of tectonic hazards and the characteristics of each plate boundary and how earthquakes and volcanoes form at them - making connections to science by looking at how stress forces build up until they are greater than frictional forces and slips occur. We focused on two case studies, an earthquake in a High Income Country - Japan 2011 and a Low Income Country - Haiti, 2010. When analysing these case studies we focused on how the physical factors, such as the depth of the focus and magnitude, impacted the severity of the earthquakes. In addition to the physical factors, we explored the influence of human factors such as population density and wealth on the severity of the primary and secondary effects. As part of our case studies we evaluated the effectiveness of immediate and long term responses to earthquakes and how these help to mitigate the impacts and prepare for future hazards. All of this helped us to answer the guiding question through the lens of

the physical power of the earth over human societies and how we can best manage, respond and live with this power. This also gave us a further understanding of the imbalance of societal power for different groups of people which foreshadowed some of our studies in Case Study 3.

Our music aligned with Case Study 2. We looked at how differences in the way that musical dimensions are organised in a composition can build or release tension. We first listened to and analysed film music, and then made connections back through time to music from the western classical tradition. Following this we used similar techniques with more modern synthesised instruments through garageband to sequence tonal music. These tonal pieces were then used as the sonic backdrop to our performance of Macbeth.

Case Study 3

What causes change in society? What is the difference between societal power, and power as a scientific term?

In case study 3 in science the students learned to define power scientifically as the rate of energy transfer. Contrast was drawn between political and historical ideas of power - the ability of individuals or groups to affect change or exert control - and the scientific meaning of the term. Students started by learning to calculate work done and in doing so explored the link between energy transferred and the force applied. The relationship between the quantity of matter, its mass, and the force it exerts was explored by learning to calculate weight. The students carried out a simple investigation to calculate the work done and their relative power when ascending the school stairs at different speeds to reveal that the work done is the same even when the power, or rate of transfer of energy was different. This allowed them to contrast the power in normal tectonic plate movements and the occasions where the earthquakes occur.

Our art aligned with Case Study 3. We looked at the street art movement. We studied how artists like Banksy, Shepard Fairey, and Bambi use stencils and digital media to create powerful images that reflect on issues affecting our society. Our work included learning about their methods and using them to create powerful ideas based on themes from the expedition.

Final Product

The expedition culminated in a performance of Macbeth at Caedmon Hall in Gateshead, with our stencilled artwork as a backdrop and soundscapes helping to set the scene and build tension.

Before this performance, we had the opportunity to present and display our own powerful artwork inspired by the work of Banksy. We crafted these pieces of art using the techniques and media that we'd studied in the expedition basing them on key

themes where we wanted to speak out against an imbalance of power. The proceeds we raised from selling them was given to a charity of our choice..