

### ASPIRE – ENDEAVOUR - SUCCEED

#### Purpose and aims

Geography at David Nieper Academy aims to inspire in pupils a fascination about the world. Our teaching will equip pupils with lasting knowledge about diverse places, people, resources and natural and human environments, together with a deep understanding of the Earth's key physical and human geographical processes at a variety of scales. As pupils progress through the curriculum, they will appreciate how interactions between physical and human processes underpin the formation and use of multi-scalar landscapes, including their change over time.

Therefore, the Geography curriculum at David Nieper Academy aims to ensure that all pupils:

- A. Develop **contextual knowledge of the location of globally significant places**, their defining physical/human characteristics, and how they act as the setting for understanding the actions of geographical processes
- B. Understand the **processes that give rise to key physical and human features**, including their interdependence and how they bring about spatial variation and change over time
- C. Are competent in the **procedural knowledge (geographical skills)** needed to:
  - Collect, analyse and communicate with a range of data gathered through fieldwork
  - Interpret a range of sources of geographical information, including maps, diagrams, globes, aerial photos, and GIS
  - Communicate geographical information in a variety of ways, including through maps, numerical and quantitative skills and writing at length.

#### Threshold concepts

Our geography curriculum is structured around a few organising concepts that underpin the discipline itself, and which reflect our purpose and aims. Our threshold concepts serve as the overarching principles that appear repeatedly across the curriculum and provide the lens through which geographers understand and interpret the world. Our threshold concepts are:

- **Place.** A place is a unique and specific part of the Earth's surface that has been named and given (possibly contesting) meaning by people. When studying places, our students will consider their location, as well as the human and physical characteristics that help support a 'sense of place' for any given area. Places exist at a variety of scales, are interconnected with other places, and change over time. In line with the National curriculum in England, our curriculum ensures that students develop a particular focus on Africa, Russia, Asia (China/India), and the Middle East.
- **Process.** Places are the context for geographical processes. In this way, processes refer to the multi-scalar human or physical cause-and-effect relationships that explain the creation of features, landscapes or geographical phenomena, patterns or distributions and/or changes over time and space.
- **Interconnection.** Both places and processes are complex, and therefore do not exist or take place in isolation. Interconnection therefore refers to explicit examples of where geographical processes overlap or where places exist inter-dependently. It also refers to the interconnection between places and processes themselves, that is, the way in which processes are mediated by place context.
- **Geographical procedures.** Geographical procedures refer to the application of skills or procedural knowledge that geographers use to interpret the world and to communicate geographical information. It includes the collection and analysis of qualitative and quantitative data (in part through fieldwork), the interpretation of maps and diagrams, numerical skills and writing at length.

#### Sequence of learning

Pupils begin Year 8 learning about weather, climate and climate change. They learn about this at a range of different scales, they are well placed to do this due to them having learnt and developed their locational skills in Year 7 as part of the global to local geography topic. This means that they are already aware of key concepts such as latitude. Within this topic they complete a piece of fieldwork around the school, on account of them having completed some fieldwork in Year 7 they have already started to learn and develop data collection skills that form part of the geographical enquiry process. The River and coastal landscape topic studied in year 7 pupils introduced students to climate change and the possible risks. This provides the foundation for developing this knowledge in more detail as they learn about climate change overtime and global warming. Moving onto Year 9 pupils will study global biomes and glacial environments. It is important that before pupils' study these they have a good knowledge and understanding of weather, climate and climate change as these concepts are deeply embedded within these topics.

Population and urbanisation is the next topic studied in Year 8. The global distribution of population is highly influenced by the development of a place hence it is important that pupils have already studied development and understand economic geography. Economic and development geography are studied in Year 7 hence pupils are aware of key information, for example the employment sectors which will then be referred to in population and urbanisation as part of rural to urban migration. In Year 9 Pupils get to apply their population knowledge to the Middle East as they study population distribution and demographic variations across this region.

Lastly pupils' study tectonic hazards, pupils will be able to study the distribution of hazards and describe the trends due to the locational skills they have developed over the course so far, starting with the global to local topic in Year 7. Furthermore, as part of using a range of different types of maps pupils have already touched upon the rock cycle and have been introduced to different types of rocks which they build upon at the start of this topic before moving on to learn about place boundaries. Pupils are introduced to the different geographical categories (social, environmental, economic and political) during Year 7 when they study the impacts of river and coastal flooding. This means that they already have the skills to be able to start assessing the impacts of different tectonic hazards and are well placed to learn about further categories such as long term and short-term impacts.

## **Subject knowledge**

### **5. Coastal Landscapes**

- The difference between constructive and destructive ocean waves and factors controlling wave energy (inc. fetch)
- How rocks can be shaped through mechanical, chemical and biological weathering
- How wave (erosional) and weathering processes interact to form cliffs, wave-cut notches/platforms, headlands and bays, caves/arches/stacks/stumps
- How longshore drift transports beach sediment
- How erosional and depositional processes interact to form beaches, spits, bars and tombolos
- Reasons for changing rates of coastal retreat and coastal flooding (storm frequency and magnitude, sea level rise mechanisms, climate change)
- Possible effects of coastal retreat and coastal flooding (social, economic, political, and environmental).
- Characteristics, costs and benefits of hard and soft coastal engineering strategies (sea walls, groynes, beach replenishment, managed retreat)

### **6. Weather, climate and climate change**

- Weather is the current meteorological conditions, including cloud, precipitation, wind, temperature and air pressure, all of which can be measured using various techniques and apparatus.
- How the density of air changes with temperature, and consequent air movement
- How relief rainfall occurs
- How convectional rainfall occurs, mainly in equatorial regions
- How frontal rainfall occurs along the Polar Front, close to the UK
- What anticyclones are, and how air pressure can explain the weather conditions that they bring
- How the characteristics of anticyclones (temperatures, fog, subsequent hazards) vary depending on seasonality
- Why and how meteorologists forecast weather
- Climate is the average weather conditions of a place
- How local factors can influence climate at a micro-scale (aspect, vegetation, human features)
- Local on-site fieldwork investigation – 'How do local characteristics affect meteorological conditions on the school site?'
- Factors that affect climate at a global scale (latitude, altitude, prevailing winds and distance from sea) and how this gives way to a clear distribution of global climate zones (including their key features)
- Regional differences in UK climate characteristics, and reasons for the differences
- Regional differences in African climate characteristics, and reasons for the differences
- How climate changes naturally over geological timescales: glacial and interglacial periods
- Why climate changes naturally over geological timescales: volcanism, surface impact and solar variation.
- Global warming is the rapid increase in Earth's temperature as a result of anthropogenic activity
- Global warming can be explained by the enhanced greenhouse effect
- How deforestation, industrialisation, population growth, and burning fossil fuels all contribute to the enhanced greenhouse effect
- Scientists have reached a consensus on global warming through evidence bases such as temperature increases, dendrochronology, glacial retreat and reducing Arctic Sea ice.
- Global warming is and will continue to have multi-scalar consequences that are social, economic, environmental and political, including an increase in extreme weather events and sea level rise.
- Case study of the impacts of global warming: Desertification in the Sahel

- Multi-scalar approaches exist to mitigate the effects of global warming, including global agreements and commitments (e.g. Paris Agreement), changes instigated by national governments (e.g. congestion charges) as well as changes in the behaviour of individuals

## 7. Population and urbanisation

- Trends in global exponential population growth, including controlling factors (birth rate, death rate, natural increase)
- Patterns of global population distribution and density, including historical and geographical reasons for such characteristics
- Factors affecting population distribution: Russia
- What population structures are, and how they are presented on population pyramids
- How population structures change as countries develop over time
- The Demographic Transition Model: how and why a country's population geography changes over time
- Strengths and limitations of the DTM
- Changing population in Africa: challenges and opportunities
- Changing population in Asia: comparing Japan and Afghanistan
- Further approaches to population control: a case study of China's One Child Policy (rationale, features, costs, benefits)
- What migration is, and the various categories of migration that exist
- How each type of migration is influenced by a variety of push and pull factors
- Major global migratory flows, including the US-Mexico border
- The causes of urbanisation as a process, including temporal and spatial trends
- Urbanisation in Bangalore, India: causes, consequences, opportunities and challenges, including approaches to improving quality of life for impoverished residents

## 8. Tectonic hazards

- The characteristics (thickness, state, composition, temperature) of the Earth's layers – crust, mantle, outer core, inner core.
- The differences (thickness, geology, location, density, age) between oceanic and continental crust.
- There are 3 types of rocks which have different characteristics.
- To know how the rock cycle can change the rock types
- The Earth's crust is split into sections called tectonic plates.
- The names and locations of the world's 8 major tectonic plates.
- How convection currents explain why plates move.
- How continental fit, fossil evidence, and seafloor spreading help to prove the theory of continental drift.
- Movement at a conservative plate boundary and the location of earthquakes globally using a range of maps and GIS
- Characteristics of earthquakes – focus/epicentre and how they are measured using the Richter Scale, which is logarithmic.
- Causes and characteristics of tsunamis
- Causes, consequences and management response for the 2015 Nepal Earthquake
- Movement at a divergent plate boundary and the location of these boundaries globally using a range of maps and GIS
- Shield volcanoes and their characteristics
- Iceland case study as a volcanic island.
- The African Rift Valley case study
- Movement at a convergent boundary and the location of these boundaries globally using a range of maps and GIS
- Composite volcanoes and their characteristics
- Causes, consequences and management response for a named volcano example

## Curriculum links to careers

Students will be introduced to careers around meteorology and in particular the Met Office. They will use their knowledge of meteorological conditions, measurement, and UK climate to write and present a weather forecast for differing locations. In introducing students to the role of a meteorologist, and how this role is accessed, they will consider the knowledge required, numerical/analytical/communications skills necessary for this job. Students will then write a weather forecast using data provided, plotting synoptic charts and scripting a presentation pitched at a universal audience. Students will video their forecasts and a winner will be decided.