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|  Year 9: Mammal InvestigationSpring Half term 2 (6 Weeks):**Why are we studying this unit of work?**  This topic develops student’s practical geographical skills through completing a small-scale mammal investigation. This topic allows students to gain practical ecological experience and allows students to be exposed to a variety of career opportunities through this topic. **How does this unit build on students’ prior learning?** This unit builds on the fieldwork skills gained in Year 7 and Year 8 in both Outdoor Learning and Geography. This unit also allows students to build on prior knowledge of habitat management, threats and the impact this has on biodiversity.**How does this unit provide a foundation for future learning?** This unit allows students to develop their fieldwork skills and prepare them for GCSE Geography or their Ecology investigation in Science.**SMSC & Careers**: Skills – teamwork, staying positive, listening, aiming high, Career links – Wildlife officer, Ecologist, Surveyor. **Summative assessment:** Project based learning – assessment on final products created. End points: By the end of the Scheme of work pupils should:* Lower ability: Students will be able to: be able to identify mammal species within the UK. Students should also understand the need to record mammals in real life examples eg phase 1 habitat surveys. Students should be able to produce a basic bar chart to demonstrate biodiversity.
* Middle ability: In addition to the above, students will be able to describe the process of an investigation and describe what mammals are found within the forest school. Students should also be able to explain why habitat surveys are completed. Students will be able to plot and produce detailed graphs and use biodiversity indices to determine biodiversity of small mammals.
* Higher ability: In addition to the above, complete a detailed analysis of the data that has been collected, to evaluate the current state of biodiversity within the school grounds. Student should then be able to explain what could be done to improve this biodiversity. Students will be able to accurately produce detailed graphs and use biodiversity indices to evaluate the small mammal population of the school grounds.

Theme for this topic: BiodiversityQuestions to consider:* Why monitor biodiversity?
* What impact does habitat removal have on biodiversity levels?
* What small steps can you do to help support biodiversity levels locally?
* What skills are transferable across subjects?
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| Time | Non negotiables | Adapt to the needs/size of the class  |
| Key Idea | Content  | Key Vocabulary / Case Study | Suggested approaches to learning and resources  | Assessment/homework |
| 1 | What are the British Small Mammals? | **Know more**: What mammals are found within the UK. **Do more:** Design own mammal identification chart. **Go Further:** Use creative skills to design mammal identification card. |  | **Tablet/Computer activity****Connect:** 1. What are the stages of an investigation?
2. Give an example of a British Small Mammal.
3. What role do British Woodlands play in supporting UK wellbeing?

**Content:** * What mammals are found within the UK? – Research task compile a fact sheet on Name, description, locations found and conservation status.

**Checkpoint:** What small mammals are found on British Isles?**Concentration: Explain the biggest threats to small mammals in the UK and describe what could be done to improve their numbers.****Consolidation**: Exit Ticket **Challenge:****Support:**  |  |
| 2 | What is a Risk Assessment? | **Know more**: What is the sequence of an investigation?**Do more:** Complete a risk assessment and methodology for your investigation. **Go further**:Aim high to identify risks and suggest mitigation strategies.  | Push: Methodology | **Connect:** 1. Give 2 examples of small mammals found in the UK.
2. Give one reason for the decline in mammals in the UK.
3. Describe one strategy that could be used to improve species numbers.

**Content:** * **Think Pair Share –** What is the purpose of a risk assessment?
* Class to complete the risk assessment using the proforma provided.
* **PUSH: Methodology**
* What is our hypothesis/Key Question? (Does the quality of habitat impact the biodiversity of small mammals in our school grounds?
* SMART WRITER: Methodology

**Checkpoint: What data are you collecting?** **Concentration:** Use the SMART WRITER to write their methodology. **Consolidation**: Whiteboard quiz **Challenge:****Support:**  |  |
| 3/4 | Data collection: Mammal Trapping | **Know more**: What equipment is used to survey small mammals? **Do more:** Set Longworth Trap to monitor biodiversity within the forest school.**Go further**:Use team work to collect data on the abundance of mammals within the Forest School.  |  YOU MUST READ THE RISK ASSESSMENT FOR MAMMAL TRAPPING AND ASSOCIATED LEGISLATION.TRAPS MUST BE CHECKED WITHIN 12 HOURS – FOOD SOURCE AND BEDDING MUST BE PROVIDED.  | **Connect:** 1. What is the sequence of an investigation?
2. What small mammals could you find in the UK?
3. What are the safety precautions you must take?

**Content**: * Create a hypothesis – ‘*There are more small mammals within the forest school than on the yard’*
* Teacher demonstration of how to set a Longworth Trap.

**Checkpoint:** What are the requirements of setting a Longworth Trap?**Concentration:** Students to set mammal traps within groups and they must mark with the provided flag to ensure staff know where all traps are. **Consolidation:** Make a prediction – what will you find? **Challenge:****Support:**  |  |
| 5 | Data presentation | **Know more**: How can we present data? What does our data tell us about biodiversity?**Do more:** Use biodiversity index calculations to answer your hypothesis.**Go further**:Aim high to produce high quality graphs and analysis  |  | **Connect:** 1. Name 2 data presentation methods.
2. What data sampling strategy did you use?
3. What was your hypothesis?

**Content:** * Think Pair Share – What are the different data presentation methods?
* What does our data look like? Combine whole year group data.
* Teacher to model data presentation method – students then to use group data to complete their own data presentation.
* Can we quantify biodiversity? – Biodiversity index – Shannon’s Worked examples.

**Checkpoint:** What is a biodiversity index?**Concentration:** Students to complete biodiversity index questions to practice using ecology equations. **Consolidation**: Green Pen Improvements. **Challenge:** **Support:** |  |
| 6 | Data Analysis and Conclusion | **Know more**: How can we present data? What does our data tell us about biodiversity?**Do more:** Use biodiversity index calculations to answer your hypothesis.**Go further**:Aim high to produce high quality graphs and analysis |  | **Connect:** 1. What can be used to measure biodiversity?
2. What data sampling strategy did you use?
3. What are the threats to small mammal habitats?

**Content:** * Think Pair Share – What did our data show?
* What should be included in an analysis? Mind map including info from the investigation.
* What is a conclusion? – Mind map.
* Smart Writer – Data analysis and conclusion.

**Checkpoint:** What should be included in a data analysis?**Concentration:** Students to write up their data analysis and conclusion. **Consolidation**: Green Pen Improvements. **Challenge:** **Support:** |  |