

Subject: Science	Year groups: 5/6
Duration: Variable – One afternoon session or several shorter ones	Main objective: recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
<p>Further curriculum links and ideas:</p> <p><u>English</u> – slow writing task using image of Mount Kinabalu as stimulus. SPaG elements covered could include hyphens, prepositions and exclamation sentences. The legend surrounding the meaning of the mount’s name (the revered place of the dead) could be also be explored, either through story-telling, drama or descriptive writing. As this is also attempting to raise money for charity, a persuasive advert or letter could also be written.</p> <p><u>Geography</u> – discovering the location of Mount Kinabalu and the Himalayas, using maps, atlases and online mapping tools. Also, investigating the geographical features of mountains generally, perhaps with specific focus on Mount Kinabalu or comparison with it and an English mountain, for example.</p> <p><u>Maths</u> – The collected data from either the main task or the optional follow-up task could be used for children to write their own maths questions and answers to test each other. Alternatively, these could be made by the teacher.</p>	
<p><u>Introduction:</u></p> <ul style="list-style-type: none"> • Begin with image of Mount Kinabalu. Ask children to look deeper by asking them, ‘Where’s the risk in the picture?’, ‘Where’s the maths?’, ‘Where’s the beauty?’, ‘Where’s the science?’ and so on. • Tell children the name of the mountain and tell them where it is. If you have time, ask them to locate it in an atlas or on a map. Have any of them travelled near there? Have any of them seen a mountain before? What makes something a ‘mountain’? When does it stop being a big hill? • Tell them that they need to imagine that they are going to climb the mountain. In pairs, they should write a list of 20 things that they would pack. After allocated time has been spent on this, join two pairs together to share their lists. Then, tell them that they need to now produce one list, between the four of them, of fifteen items to take. Then, when they have done that, reduce it down to ten. • Regroup as a class and discuss the task. Was it easy to agree on what to take? What items were easy to choose? Where there any items that every single group in the class chose to take? What weather did they plan for? 	
<p><u>Main task:</u></p> <ul style="list-style-type: none"> • Continue the discussion on weather possibilities for climbing mountains. Are they all going to be cold? Or hot? What might influence the weather for that particular mountain? How might the weather change as you either ascend or descend the mountain? 	

- Explain that a group of people are going to climb Mount Kinabalu and need our help. Show them the website: <http://www.markthompsonastronomy.com/a-mountain-some-celebrities-and-stem/#1523652787742-80c5f340-69e1> and explain the data that will be collected. Tell the children that we have been asked to present the temperature data in the best possible way.
- Place a picture of a different type of data display on each table (chart, pictograph, pie chart, bar graph, line graph, tally chart). Ask children to identify the pros and cons of tracking the temperature on their allocated data type in their group. When finished, regroup as a class, share ideas and together, choose the best way of representing temperature change over time (line graph).
- Discuss the mathematical features of how to construct a line graph, if not covered in a maths lesson previously. Give the children the data and allow them to attempt to represent it on their line graphs.
- When completed, regroup as a class and discuss. What does their graph show? Why does the temperature change? Did anything surprise them? Do they think there would be similar results for different mountains?

Optional Follow-up Task:

- Tell the children that they are going to produce their own 'Observation over Time' experiment. Explain that it has to be something that they can do in the classroom. Allow them time to discuss in pairs or small groups what they could monitor (temperature outside over the day, noise levels in classroom, temperature in classroom, for example), how they would monitor it, what equipment they would need, and the best way to present their collected data.
- Children to work in pairs, or individually, planning their task and writing it up. They should include a basic chart to collect their data and make a prediction.
- The amount of time allocated for this task is to be determined in advance by the teacher.
- When the data has been collected, it should be transferred onto a line graph, with a conclusion added to their write-up.
- Reflect: how did the original study (Mount Kinabalu) help them when planning their own investigation? Were their predictions correct or close? What would they do differently if they had to do it again? What were they most successful in? What skills have they learnt?

Differentiation:

- While the main task has just been to track temperature over time, adding extra elements would provide further challenge to children. They could measure temperature against altitude, or altitude against humidity, for example.