

Transforming Data - Examples and Suggestions

Topic: <i>The amount of litter found in the nature reserve at school</i>	
Location/s:	<p>Suggestions include:</p> <ul style="list-style-type: none"> • School nature reserve • Gardens • Areas prone to litter accumulation • The whole school (using sample locations throughout) • Community areas: parks, creeks, car parks etc.
Variable: (i.e. what are you going to be collecting?)	<p>Suggestions include:</p> <ul style="list-style-type: none"> • Number of items • Weight of items • Volume of items (using a waste-paper bin) • Type of litter (all litter, plastic bags, plastic bottles etc.) <p>This video may help students choose a variable and variable type, especially if they are unfamiliar with the terms discrete and continuous: https://www.youtube.com/watch?v=_yAQb8g-WBpU</p>
Variable type:	<p>Discrete - whole or specific numbers (e.g. number of items)</p> <p>Continuous - numbers with any number of decimals (e.g. weight, volume)</p>
How will you collect this data?	<p>Survey people - Students to design survey questions and collect data from students, teachers, school admin etc.</p> <p>Survey an area - Students to use quadrats or transect lines to approximate rubbish in numerous sample areas of the school/ location</p>
How much data will you need? (i.e. how many people? how much space?)	<p>Students to consider fair tests when designing investigation. For surveying people:</p> <ul style="list-style-type: none"> • How many people need to be surveyed to represent a population? • Do you need a mixture of people? (e.g. students, teachers, groundsmen) • Any other special conditions? <p>For surveying an area:</p> <ul style="list-style-type: none"> • What size quadrat/ transect line? • How many samples to represent a whole area? • Use of sub locations (e.g. grass, dirt, leaf litter, shrub) • Any other special conditions?
How will your use your data to make projections? (e.g. I will multiply the average of my sample by the school size to make projections for the whole school)	<p>Students to consider how they can combine their data to produce one (or a few) statistics as a focal point for their artwork. Suggestions include:</p> <ul style="list-style-type: none"> • Measures of centre: mean, median mode • Multiplying by population or area size • Multiplying by relevant time frames to represent weeks, months, years • Consideration of error or confidence intervals (extension only)

