



Data Portfolio Level Definitions

Level 0 – Students build background skills and knowledge needed to do a Level 1 activity. Students analyze one variable or they determine patterns, organize data into a table or graphical representation and draw qualitative conclusions based on the representation of these data.

Level 1 – Students use the background skills developed in Level 0. They calculate descriptive statistics, seek patterns, identify outliers, confounding variables, and perform calculations to reach findings; they may also create graphical representations of the data. Datasets are small in size. The data models come from particle physics experimentation.

Level 2 – Students use the skills from Level 1. They perform many of the same analysis tasks but must apply a greater level of interpretation in order to distinguish between signal and background. Datasets are medium in size so that mathematical calculations are too large to be done using pencil and paper.

Level 3 – Students use the skills from Level 2. They develop and implement a research plan utilizing large datasets. They make decisions in their analysis by taking into consideration complications such as background, signal to noise, and instrumentation effects.

Level 4 – Students use the skills from Level 3. They identify datasets and develop analysis tools for the investigation of their own research plan.