# Essential Skills for Data Analysis: Inference and Models

| Grade | Standards DA.IM.01 | Essential Skills |
|---|---|---|
| K | With guidance, draw conclusions and make predictions based on picture graphs or patterns (e.g., make predictions based on weather **data** presented in a picture graph, complete a pattern) with or without a **computing device**. | Identify patterns and trends in picture graphs<br><br>Make predictions, comparisons, and/or draw conclusions from information in picture graphs or patterns. |
| 1 | With guidance, identify, interpret, and analyze data from a chart or graphical display (**visualization**) in order to make a prediction, with or without a computing device | Identify what kind of **data** is contained in a data display.<br><br>Make a prediction, a comparison or draw a conclusion from a data display |
| 2 | With guidance, collect, organize, present, and analyze data from a chart or graphical display (visualization) in order to make a prediction, with or without a computing device | Collect, record, and organize data.<br><br>Present a data display and draw a conclusion or make a prediction. |
| 3 | Utilize data to make predictions and discuss whether there are sufficient data to make these predictions and **extrapolations**. | Examine data collected and discuss the reliability of predictions and/or conclusions given that quantity of data. |
| 4 | Discuss the potential accuracy of conclusions and predictions based on the adequacy of the data set (number of data). | Identify features that increase the reliability of a data set such as sample size relative to total number, composition of sample relative to composition of whole group, etc.<br><br>Assess how reliable a prediction is based on the features of the data set. |
| 5 | Refer to data sets to highlight or propose cause-and-effect relationships, predict outcomes, or communicate ideas. | Use data to justify how you answer a question, detect a pattern, or infer causation, correlation or draw a conclusion. |

Skills for Standard: DA.IM.01   Grades K-5
These annotations are a collaboration between Maryland Center for Computing Education and the Maryland State Department of Education.