Standard: DA.CVT.01 Grade: K

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With guidance, collect **data** on a basic topic (e.g., weather, temperature) and present it visually.

Essential Skills
Collect **data** on a familiar topic.
Display data.

Essential Questions
How can you collect **data**?
How can you decide the best way to display data?
How can a **computing device** help create a data display?

Explanation
Students will gather **data** as a class or individually about topics that interest them and organize and display the data. Pictographs are an effective introduction to **data visualization**, but as students gain proficiency they should be comfortable using displays such as a bar graphs, pie charts, and tables. Using computer **applications** such as spreadsheets can help students create such displays quickly and easily.

Think of this as similar to….
The people in a crowd display how much they like something by how loudly they cheer.

Implementation Examples—What would this look like in the classroom?

Title	Description	Link	Content Connection & Notes
Math Pictographs	**Grade K**- Each student or group of students is given a collection of counting bears (or other items) in different colors. The students use the bears to create a pictograph sorted by color and count the number of each color. This activity can be extended by transitioning students to using a spreadsheet application to transition to bar graphs from pictographs.	See Graphing in Google Sheets	This lesson also aligns with **Math** K.CC.B.4a; K.CC.B.5
Survey and Data	**Grade K**- With guidance, students decide on a topic for a survey (for example, favorite ice cream flavor) Each student can choose a different color post it to represent their choice and add it to the class graph. **Grade 1**-Students can extend their survey to their families and/or other classes. They can note patterns in ice cream preferences of adults vs. children, etc. and make predictions based on those patterns. They can use a spreadsheet, instead of a post-it graph, and generate a chart from their data.	Survey and Graphing	This lesson also aligns with **Math** K.CC.B.4a and K.CC.B.5
Weather Predictions	**Grade K**- Students observe the weather (sunny, cloudy, rain, snow) each day and display the data in a picture graph. Data can be displayed in a cumulative way such as number of sunny days in a week, or rainy days in a month. **Grade 1**- Students collect both weather and temperature data. While collecting the data, they should decide how to organize the data (by time period--week, month, season; by kind of weather--rainy, sunny, cloudy; etc.). Students will create different displays based on the different ways the data was organized. **Grade 2**--Determine how to display the data in order to answer a variety of different questions, such as “Which month has the most rainy days?” “How does the temperature change between September and December?” “What was the biggest change in temperature from one day to the next?”	See Weather Graphing Activity	This lesson also aligns with **NGSS** K-ESS2-2 and **Math** K.MD.B.3, 1.MD.C.4, 2.MD.D.10

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These annotations are a collaboration between Maryland Center for Computing Education and the Maryland State Department of Education.