Case Study: Carlos, Grade 6

Student Background: Carlos is an 11-year old boy with autism entering 6th grade in middle school. Carlos speaks both English and Spanish at home, but learns in English at school. He is estimated to have a moderate intellectual disability. Carlos responds to instruction in English, but will speak Spanish when he wants a translation. Carlos likes math and asks for worksheets to do both in his free time and at home. He can add and subtract single-digit numbers and recognize geometric figures and simple fractions. He likes to match sets of numbers to 20. Carlos's special interest is machinery. He will talk about the types and parts of machines for long periods of time if not interrupted.

High-Quality Planning and Instruction: Grade 6 students in the general education classroom are learning to create dot plots by studying Grade 6 Eureka, Module 6, Lesson 3. Ms. Binder reviews the lesson and determines that Carlos might require additional support in order in meeting the expectations required by Lesson 3, specifically in accessing the context of the data and managing the number of data points which sometimes exceed 20. This requires small, important adaptations to the general education teacher's lessons. As such, the teacher consults the Adapting Lesson Plans resource on the Louisiana Believes website. Having identified the standard and lesson of the class, Ms. Binder consults the crosswalks document to determine the Louisiana Connector for Louisiana Student Standard 6.SP.B.4. By doing so, she determines that she needs to focus first on leveraging Carlos's understanding of one-to-one correspondence to have Carlos build a dot plot absent of context before tackling the work of Lesson 3. From there, she develops aligned activities and identifies the appropriate manipulatives to best support Carlos.

Louisiana Student Standard	Louisiana Connector
6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	**LC.6.SP.B.4** Collect and graph data: bar graph, line plots, dot plots, histograms.

Carlos has strong knowledge of numbers and one-to-one correspondence, but he is easily distracted and sometimes discouraged when presented with an unfamiliar context and/or a context about which he has no interest. To help Carlos focus on the math, Ms. Binder pulls a data set of 15 numbers absent of context. To aid Carlos in building his first dot plot, Ms. Binder also creates a number line on a large sheet of paper that covers Carlos's desk and has printed and cut-out, small, black dots for Carlos to use. Ms. Binder informs Carlos that they will be placing one dot for each number in the set and they are to place the dot above the corresponding number on the number line. She models placing the first dot above the first number in the set. She asks Carlos to read the first number aloud, then to point to the same number on the number line. After placing one of the black dots in its appropriate place, she points to the next number and repeats the process.

Now the teacher uses the least intrusive prompt to help Carlos do the next one on his own. She is using the data set from Example 1 of the Eureka lesson but has limited the data set to only 20 numbers. "Read the first number in the data set," she tells him. When Carlos does not respond, the teacher gives a verbal directive for the first step, "Point to the first number in the data set." When he does not, Ms. Binder models it by circling the first number with her finger. Then Carlos circles with his finger. She waits for him to take the next step. When he does not, she says, "Place a black dot on the number line directly above the number you circled." Carlos waits. She shows him, "Here, 7 is the first number in the set. Place a black dot above the number 7." With this guidance, Carlos places a black dot on the number line above the number 7. She waits for him to continue. Carlos looks at the data set and reads, "Eight." He looks at his number line, finds the "8," and places a black dot above it. "Perfect!" the teacher says. "You plotted the next number in the set by yourself." She waits for him to finish. He begins to skip numbers in the set and she interrupts by gently putting her hand over the remaining numbers, allowing Carlos to only see the numbers he has plotted thus far. She gives the verbal

direction, “Don’t skip any numbers.” Carlos says, “*Si!*” and then plots the next number. Ms. Binder uses a small sheet of paper to cover part of the set, helping Carlos to not skip any numbers.

After a few more practice problems, she gives Carlos three more examples to do at his desk. While he does these, Ms. Binder begins thinking about how to transition Carlos from dot plots to histograms in the next Eureka lesson, allowing him to stay on pace with his peers.