Social, Emotional, and Academic Development (SEAD)
Lesson Plan for Mathematics

GRADE LEVEL/COURSE AND MATH STANDARD(S)

Grade 2

2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in the bar graph.

INTRODUCTION

The tasks are teacher created and utilize the lesson planning template from Stride 3: *A Pathway to Equitable Math Instruction: Creating Conditions to Thrive* (pages 13–14).

The lesson is intended to:
- Connect to the social, emotional, and academic (SEAD) theme of discourse in mathematics in order to promote equitable instruction, specifically shared voice and collaboration.
- Deepen student understanding of the picture graph as a representation for a data set.
- Honor student contributions by involving them in different roles throughout the lesson (Materials Manager, Checker, Time Keeper, Reporter, Facilitator).
- Strengthen student disposition by providing multiple data sets for students to build confidence and clarity.
- Provide strategies to support students learning English (for example, mixed ability grouping, role assignments, Team Talk prompts, discussion protocols).

SEAD THEME

	Identity
X	**Discourse**
	Agency
	Belonging

SMP(S) TO SUPPORT THE SEAD THEME

X	**SMP 1: Make sense of problems and persevere in solving them.**
	SMP 2: Reason abstractly and quantitatively.
X	**SMP 3: Construct viable arguments and critique the reasoning of others.**
X	**SMP 4: Model with mathematics.**
	SMP 5: Use appropriate tools strategically.
	SMP 6: Attend to precision.
	SMP 7: Look for and make use of structure.
	SMP 8: Look for and express regularity in repeated reasoning.

I can make a pictograph that matches given sets of data and keys.
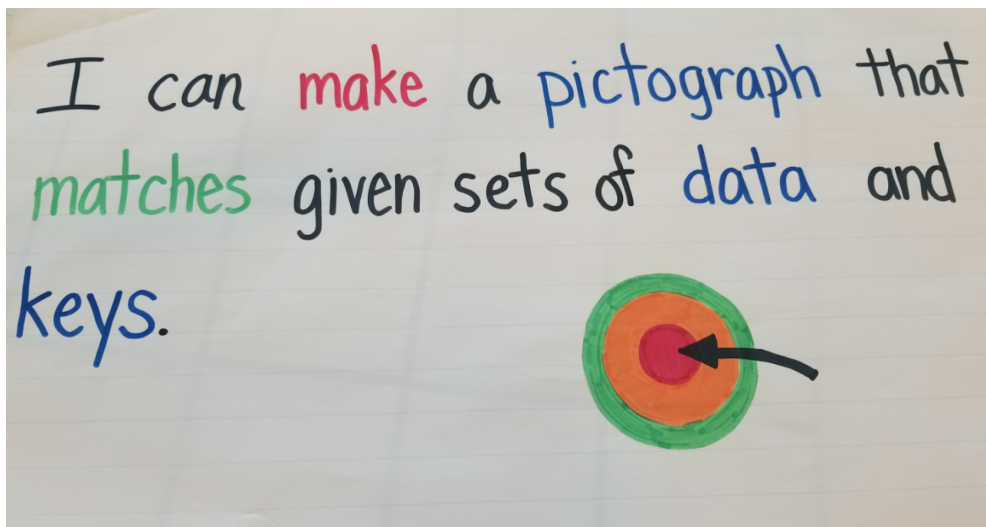
STEPS

Pre-Lesson Preparation: Teacher creates and/or gathers materials:
- Graphing templates on large sheets of paper. These could be student made or premade by the teacher. (Graph Example)
- Sets of index cards that correspond to the picture graph information that the students will construct. (Index Cards & Symbols)
- Sets of symbols that correspond to the key for each picture graph. (Index Cards & Symbols)
- Data Sets (Data Example)
- Team Talk Cards (Example)
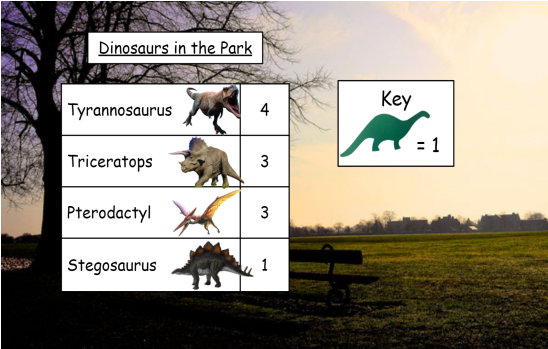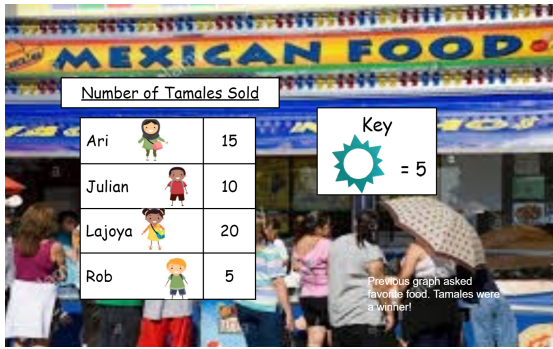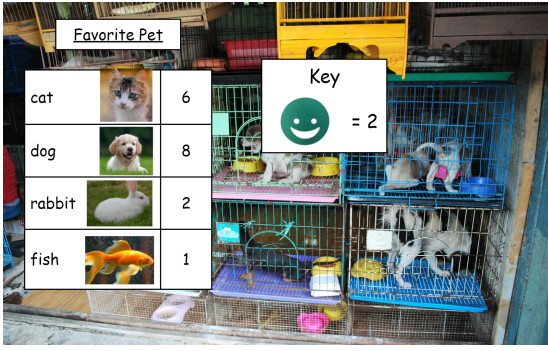
Launch: Explicit instruction is a crucial step to set expectations and provide discourse skills training for this and future group activities. Structure your circle or classroom environment to meet the needs of your students.
- Set your expectations and rehearse Team Talk.
- Discuss the fact that each student has gifts to share and the greatest gift is kindness. Chart student moves that will help each other in the learning community and role-play and/or rehearse.
- Explicitly model and practice each role that a student will have in their group.
- Promote ways to celebrate a student taking a risk when sharing their thinking, as well as how to respectfully disagree with a peer and share their reasoning.
- Review the self assessment rubric that they will complete after group work. There are many available resources or design your own rubric. (Example)

Math Activity:
- Ask the whole group what they know about graphs. The group's knowledge of picture graphs will drive the depth of the review of vocabulary and/or features of a picture graph.
- Share each task separately, and students will work in groups to accurately create pictographs that correspond to specific data sets.

- Lean into student discussions to listen for team talk and student understandings of the math content, providing support as needed. Give behavior explicit reinforcement: "I noticed you are listening to your team members."; "Way to go using your Team Talk to share your thinking."

Data Set #1	Data Set #2
Data Set #3	Data Set #4

Data Set #1 — Dinosaurs in the Park
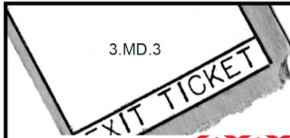
Tyrannosaurus	4
Triceratops	3
Pterodactyl	3
Stegosaurus	1

Key: = 1

Data Set #2 — Number of Tamales Sold

Ari	15
Julian	10
Lajoya	20
Rob	5

Key: = 5

Previous graph asked favorite food. Tamales were a winner!

Data Set #3 — Favorite Pet

cat	6
dog	8
rabbit	2
fish	1

Key: = 2

Data Set #4 — Food Bought at the Fair

elote	6
fried rice	4
fufu	10
hotdog	9

Key: = 2

- Important Notes:
  - Use the structure that works for your classroom. I used roles, and Reporters shared out, but you could physically rotate the groups to check the work of their classmates, encouraging them to give feedback and learn from each other.
  - For Data Set #2, depending on your students, you may want to limit the number of symbols in the bag to 12, reminding them that this will be enough to create the graph.
  - For Data Set #3, it is important to have a symbol that the students can tear or manipulate to use half of it to represent the fish.

Summary: Exit Ticket

SUMMARY/REFLECTION OF LESSON

I intentionally chose a lesson that I developed and have taught with previous groups over the years. In my teaching, I also have used the CASEL descriptors for Discourse, listed in Stride 3, which led me to add in scaffolds to encourage academic talk, increase student talk time, and provide opportunities for students to understand the viewpoints of others. This involved rehearsal of Team Talk stems and group norms before the lesson, revolving group roles, multi-ability grouping, and opportunities to engage in the reasoning of other groups. In using the CASEL descriptors and planning intentionally for discourse, I felt I saw an increase in the number of students actively participating in their groups. The students were confident in their roles and felt safe to share their mathematical thinking. Their identities as mathematicians were honored.
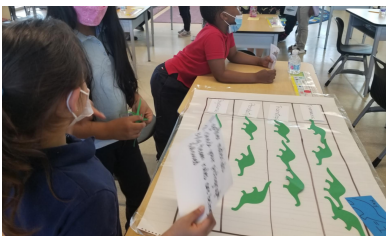
The self-assessment rubric, completed by students, provided important information to plan how to further support my students in developing discourse skills. I know I need to continue to explicitly teach these skills within my math lessons. The SEAD themes and lesson planning template led me through an Experiential Learning Cycle. As I was reviewing the environments and practices that support SEL in mathematics (*know*), I was motivated to continue my growth in these equitable practices (*feel*), and so improved my instruction in this activity (*do*).