National Center and State Collaborative

NCSC Math Activities with Scripted Systematic Instruction (MASSI): Elementary Data Analysis Progress Monitoring and Skills Test

National Center and State Collaborative

The National Center and State Collaborative (NCSC) is applying the lessons learned from the past decade of research on alternate assessments based on alternate achievement standards (AA-AAS) to develop a multi-state comprehensive assessment system for students with significant cognitive disabilities. The project draws on a strong research base to develop an AA-AAS that is built from the ground up on powerful validity arguments linked to clear learning outcomes and defensible assessment results, to complement the work of the Race to the Top Common State Assessment Program (RTTA) consortia.

Our long-term goal is to ensure that students with significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for post-secondary options. A well-designed summative assessment alone is insufficient to achieve that goal. Thus, NCSC is developing a full system intended to support educators, which includes formative assessment tools and strategies, professional development on appropriate interim uses of data for progress monitoring, and management systems to ease the burdens of administration and documentation. All partners share a commitment to the research-to-practice focus of the project and the development of a comprehensive model of curriculum, instruction, assessment, and supportive professional development. These supports will improve the alignment of the entire system and strengthen the validity of inferences of the system of assessments.

IDEAs that Work
U.S. Office of Special Education Programs

The contents of this assessment were developed as part of the National Center and State Collaborative by Keri Bethune, Alicia Saunders, and Diane Browder at University of North Carolina at Charlotte and verified by Amy Lehew, math content expert, under a grant from the Department of Education (PR/Award #: H373X100002, Project Officer, Susan.Weigert@Ed.gov). However, the contents do not necessarily represent the policy of the U.S. Department of Education and no assumption of endorsement by the Federal government should be made. Some images used were obtained from www.pdclipart.com and www.school-clipart.com.

These materials and documents were developed under the National Center and State Collaborative (NCSC) General Supervision Enhancement Grant and are consistent with its goals and foundations. Any changes to these materials are to be consistent with their intended purpose and use as defined by NCSC.

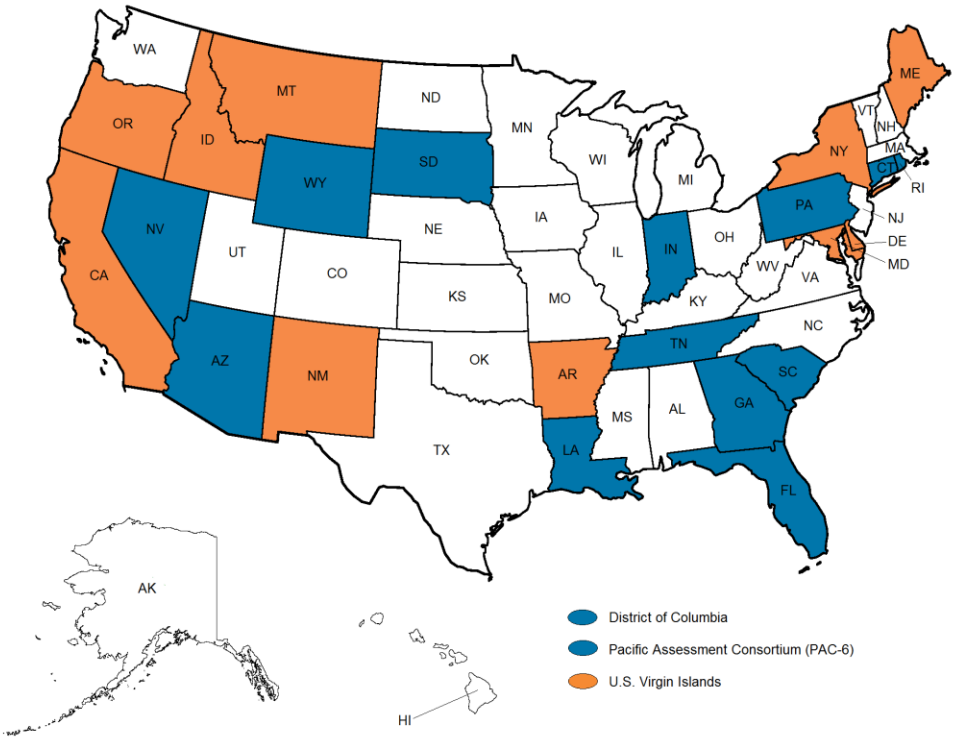
This document is available in alternative formats upon request.

National Center and State Collaborative

NCSC is a collaborative of 15 states and five organizations.

The states include (shown in blue on map): Arizona, Connecticut, District of Columbia, Florida, Georgia, Indiana, Louisiana, Nevada, Pacific Assessment Consortium (PAC-6)[1], Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, and Wyoming.

Tier II states are partners in curriculum, instruction, and professional development implementation but are not part of the assessment development work. They are (shown in orange on map): Arkansas, California, Delaware, Idaho, Maine, Maryland, Montana, New Mexico, New York, Oregon, and U.S. Virgin Islands.



*Core partner states are blue in color and Tier II states are orange in color.

[1] The Pacific Assessment Consortium (including the entities of American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Republic of Palau, and Republic of the Marshall Islands) partner with NCSC as one state, led by the University of Guam Center for Excellence in Developmental Disabilities Education, Research, and Service (CEDDERS).

National Center and State Collaborative

The five partner organizations include: The National Center on Educational Outcomes (NCEO) at the University of Minnesota, The National Center for the Improvement of Educational Assessment (Center for Assessment), The University of North Carolina at Charlotte, The University of Kentucky, and edCount, LLC.

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NCSC Math Activities with Scripted Systematic Instruction (MASSI): Elementary Data Analysis Progress Monitoring and Skills Test

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July 2013

Student Name: _____

MASSI: Elementary Data Analysis

Options for Progress Monitoring/ Formative Assessment

1. Elementary Data Analysis Progress Monitoring (pg. 6-12): record student responses made during instruction on data sheet provided; teacher records each step correct during the lesson.

2. Elementary Data Analysis Skills Test (pg. 13-22): a brief on demand performance assessment; could be given weekly to see if student has mastered this lesson; also helps student practice responding in a test format.

    a. NOTE: The Skill Test can be used as a baseline assessment to check for any skills the student may already have prior to beginning the MASSI.

    b. NOTE: The Skill Test can also be readministered to check for maintenance throughout the year.

Student Name: _____

Elementary Data Analysis Progress Monitoring

Directions: Score each step during instruction or as soon as the lesson is complete. Score the step as unprompted correct with a "+." Use a system to code level of prompting required for incorrect responses (e.g., V = verbal prompt, G = gesture, P = physical). Graph the number of unprompted correct responses to monitor progress.

BUILDING ESSENTIAL UNDERSTANDING: CONCEPT AND SYMBOLS: Identifying Data Sets, Counting Data Sets, X Axis and Y Axis, and Creating a Picture Graph

Materials and Directions for Teacher	*Instructional Cue*	*Student Expected Response Date:*						
1. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
2. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
3. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
4. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
5. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
6. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
7. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
8. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
9. Hand student a picture of a student in Mr. Whatley's class	"**Where does this student go?** Or **How does this student get to school?"**	Student places the picture in the corresponding column (e.g., car rider, bus rider, or walker).						
10. Show students the sorting page they completed for Mr. Whatley's class (with the cards already sorted from above) and a blank table.	"**How many car riders are in Mr. Whatley's class?"**	Student counts the number of car riders (stopping at the appropriate number).						

Student Name: _____

11. See above.	**"Good, write it in the table."**	Student writes/stamps/uses Velcro numbers/points to/eye gazes the number into the appropriate place in the table.						
12. See above.	"**How many bus riders are in Mr. Whatley's class?"**	Student counts the number of bus riders (stopping at the appropriate number).						
13. See above.	**"Good, write it in the table."**	Student writes/stamps/uses Velcro numbers/points to/eye gazes the number into the appropriate place in the table.						
14. See above.	**"How many walkers are in Mr. Whatley's class?"**	Student counts the number of walkers (stopping at the appropriate number).						
15. See above.	**"Good, write it in the table."**	Student writes/stamps/uses Velcro numbers/points to/eye gazes the number into the appropriate place in the table.						
16. Present the student with their own graph or coordinate plane.	**"Show me the x axis."**	Student points to or otherwise identifies the x axis.						
17. Present the student with their own graph or coordinate plane.	**"Show me the x axis."**	Student points to or otherwise identifies the x axis.						
18. Present the student with their own graph or coordinate plane.	**"Show me the y axis."**	Student points to or otherwise identifies the y axis.						
19. Present the student with their own graph or coordinate plane.	**"Show me the y axis."**	Student points to or otherwise identifies the y axis.						
20. Make sure each student has their completed table for Mr. Whatley's class and a blank picture graph.	**"How many car riders are in Mr. Whatley's class?"**	Student states, points to, or otherwise identifies the correct number.						
21. Give each student more than enough car pictures.	**"Count out that number of car riders."**	Student uses one to one correspondence counting to count out the correct number of pictures.						
22. See above.	**"Now put them in on the picture graph."**	Student places the correct amount of pictures of cars on the picture graph above the car rider label, with the pictures lined up correctly.						
23. See above.	**"How many bus riders are in Mr. Whatley's class?"**	Student states, points to, or otherwise identifies the correct number.						

Student Name: _____

24. Give each student more than enough bus pictures.	**"Count out that number of bus riders."**	Student uses one to one correspondence counting to count out the correct number of pictures.						
25. See above.	**"Now put them in on the picture graph."**	Student places the correct amount of pictures of buses on the picture graph above the bus rider label, with the pictures lined up correctly.						
26. See above.	**"How many walkers are in Mr. Whatley's class?"**	Student states, points to, or otherwise identifies the correct number.						
27. Give each student more than enough walker pictures.	**"Count out that number of walkers."**	Student uses one to one correspondence counting to count out the correct number of walkers.						
28. See above.	**"Now put them in on the picture graph."**	Student places the correct amount of pictures of walkers on the picture graph above the walker label, with the pictures lined up correctly.						
		NUMBER CORRECT:						
3rd BUILD A GRADE ALIGNED COMPONENT: Reading a Table and Filling in a Bar Graph **4th and 5th GRADE BUILD ESSENTIAL UNDERSTANDING: SYMBOLS: Reading a Table and Filling in Bar Graph**								
29. Give each student a completed table for Mr. Whatley's class (3 car riders, 5 bus riders, and 1 walker) and a blank graph.	**"Create a bar graph showing how the students in Mr. Whatley's class get to school."** or **"How many car riders are in Mr. Whatley's class?"**	Student states, points to, or otherwise identifies the correct number.						
30. See above.	Wait for students to independently initiate this step or say **"Find the column for car riders on the graph."**	Student identifies the corresponding column on the graph.						
31. See above.	Wait for students to independently initiate this step or say **"Draw a line showing the number of car riders."**	Student draws a line at the correct number in the correct location on the graph.						
32. See above.	Wait for students to independently initiate this step or say **"How many bus riders are in Mr. Whatley's class?"**	Student states, points to, or otherwise identifies the correct number.						

Student Name: _____

33. See above.	Wait for students to independently initiate this step or say **"Find the column for bus riders on the graph."**	Student identifies the corresponding column on the graph.						
34. See above.	Wait for students to independently initiate this step or say **"Draw a line showing the number of bus riders."**	Student draws a line at the correct number in the correct location on the graph.						
35. See above.	Wait for students to independently initiate this step or say **"How many walkers are in Mr. Whatley's class?"**	Student states, points to, or otherwise identifies the correct number.						
36. See above.	Wait for students to independently initiate this step or say **"Find the column for walkers on the graph."**	Student identifies the corresponding column on the graph.						
37. See above.	Wait for students to independently initiate this step or say **"Draw a line showing the number of walkers."**	Student draws a line at the correct number in the correct location on the graph.						
		NUMBER CORRECT:						

4th BUILD A GRADE ALIGNED COMPONENT: Collecting Data and Organizing it in a Bar Graph

5th GRADE BUILD ESSENTIAL UNDERSTANDING: SYMBOLS: Collecting Data and Organizing it in a Bar Graph

38. Give each student the picture data set for Mrs. Bishop's class and a blank graph.	**"Make a bar graph showing how the students in Mrs. Bishop's class get to school."** or **"How many car riders are in Mrs. Bishop's class?"**	Student counts the number of car riders (stopping at the appropriate number).						
39. See above.	Wait for students to independently initiate this step or say **"Find the column for car riders on the graph."**	Student identifies the corresponding column on the graph.						
40. See above.	Wait for students to independently initiate this step or say **"Draw a line showing the number of car riders."**	Student draws a line at the correct number in the correct location on the graph.						
41. See above.	Wait for students to independently initiate this step or say **"How many bus riders are in Mrs. Bishop's class?"**	Student counts the number of bus riders (stopping at the appropriate number).						
42. See above.	Wait for students to independently initiate this step or say **"Find the column for bus riders on the graph."**	Student identifies the corresponding column on the graph.						

Student Name: _____

43. See above.	Wait for students to independently initiate this step or say **"Draw a line showing the number of bus riders."**	Student draws a line at the correct number in the correct location on the graph.						
44. See above.	Wait for students to independently initiate this step or say **"How many walkers are in Mr. Whatley's class?"**	Student counts the number of walkers (stopping at the appropriate number).						
45. See above.	Wait for students to independently initiate this step or say **"Find the column for walkers on the graph."**	Student identifies the corresponding column on the graph.						
46. See above.	Wait for students to independently initiate this step or say **"Draw a line showing the number of walkers."**	Student draws a line at the correct number in the correct location on the graph.						
		NUMBER CORRECT:						
5th BUILD A GRADE ALIGNED COMPONENT: Creating a Line Graph								
47. Give each student the table data set for bus riders and a blank line graph.	**"How many bus riders were there Monday?"**	Student states, points to, or otherwise identifies the correct number.						
48. See above.	Wait for students to independently initiate this step or say **"Find the column for Monday on the graph."**	Student identifies the corresponding column on the graph.						
49. See above.	Wait for students to independently initiate this step or say **"Draw a point/dot showing the number of bus riders on Monday."**	Student draws a point/dot at the correct number in the correct location on the graph.						
50. See above.	**"How many bus riders were there Tuesday?"**	Student states, points to, or otherwise identifies the correct number.						
51. See above.	Wait for students to independently initiate this step or say **"Find the column for Tuesday on the graph."**	Student identifies the corresponding column on the graph.						
52. See above.	Wait for students to independently initiate this step or say **"Draw a point/dot showing the number of bus riders on Tuesday."**	Student draws a point/dot at the correct number in the correct location on the graph.						

Student Name: _____

53. See above.	**"How many bus riders were there Wednesday?"**	Student states, points to, or otherwise identifies the correct number.						
54. See above.	Wait for students to independently initiate this step or say **"Find the column for Wednesday on the graph."**	Student identifies the corresponding column on the graph.						
55. See above.	Wait for students to independently initiate this step or say **"Draw a point/dot showing the number of bus riders on Wednesday."**	Student draws a point/dot at the correct number in the correct location on the graph.						
56. See above.	**"How many bus riders were there Thursday?"**	Student states, points to, or otherwise identifies the correct number.						
57. See above.	Wait for students to independently initiate this step or say **"Find the column for Thursday on the graph."**	Student identifies the corresponding column on the graph.						
58. See above.	Wait for students to independently initiate this step or say **"Draw a point/dot showing the number of bus riders on Thursday."**	Student draws a point/dot at the correct number in the correct location on the graph.						
59. See above.	**"How many bus riders were there Friday?"**	Student states, points to, or otherwise identifies the correct number.						
60. See above.	Wait for students to independently initiate this step or say **"Find the column for Friday on the graph."**	Student identifies the corresponding column on the graph.						
61. See above.	Wait for students to independently initiate this step or say **"Draw a point/dot showing the number of bus riders on Friday."**	Student draws a point/dot at the correct number in the correct location on the graph.						
62. See above.	Wait for students to independently initiate this step or say **"Draw a line to connect the data points."**	Student draws a line from Monday's data point to Tuesday's data point.						
63. See above.	Wait for students to independently initiate this step or say **"Keep going."**	Student draws a line from Tuesday's data point to Wednesday's data point.						
64. See above.	Wait for students to independently initiate this step or say **"Keep going."**	Student draws a line from Wednesday's data point to Thursday's data point.						

Student Name: _____

65. See above.	Wait for students to independently initiate this step or say "**Keep going.**"	Student draws a line from Thursday's data point to Friday's data point.						
		NUMBER CORRECT:						

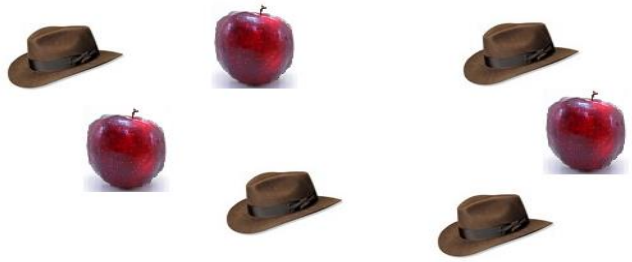
Student Name: _____

DATA ANALYSIS SKILL TEST 1: CONCEPT AND SYMBOLS

Student Name: _____

Note to teachers: It may be helpful to use a cover sheet of paper. Pull the cover sheet down far enough to show the model and read the text. Then, pull the sheet of paper down to show the problem and read the directions. Record "+" for an independent correct response or "-" for incorrect response beside number in blank.

___ **MODEL: Watch me as I circle all the hats.**



STUDENT PROBLEM: Circle (or otherwise mark) all the hats.

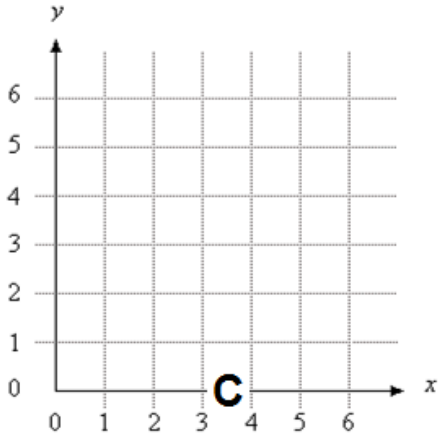
Student Name: _____

___Watch me as count the flowers. One, two, three… Three flowers.

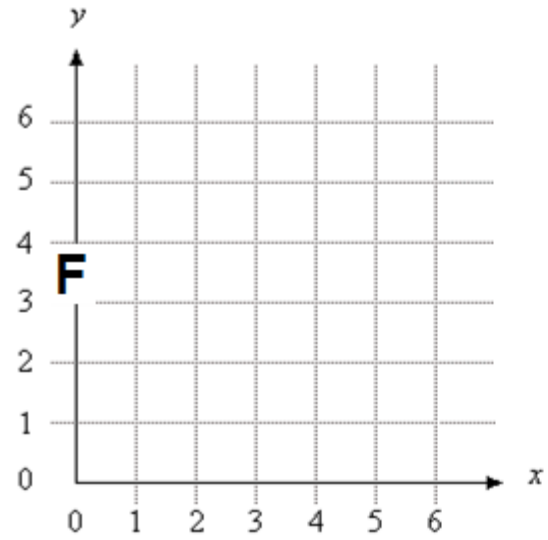
STUDENT PROBLEM: Your turn, count the shoes. How many shoes?

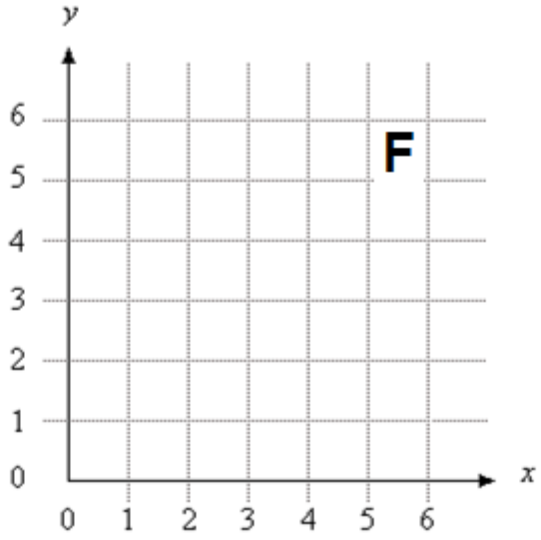
Student Name: _____

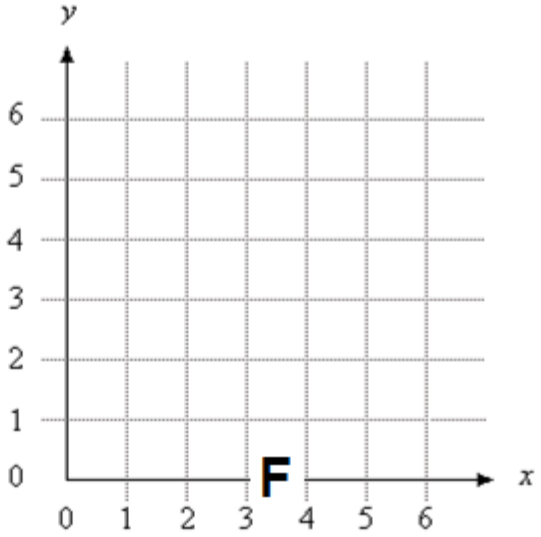
___ **This graph has a C on the x axis.**



STUDENT PROBLEM: Which graph has a F on the x axis?

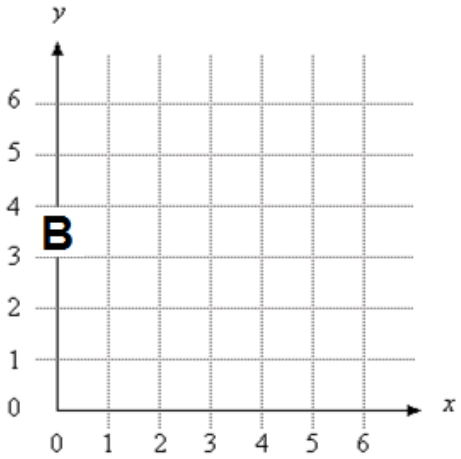




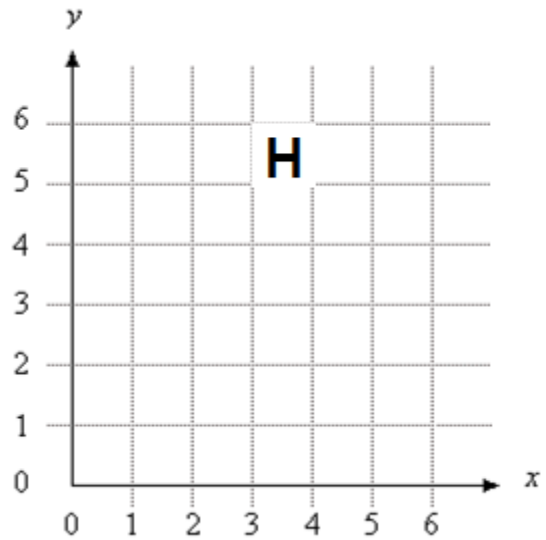


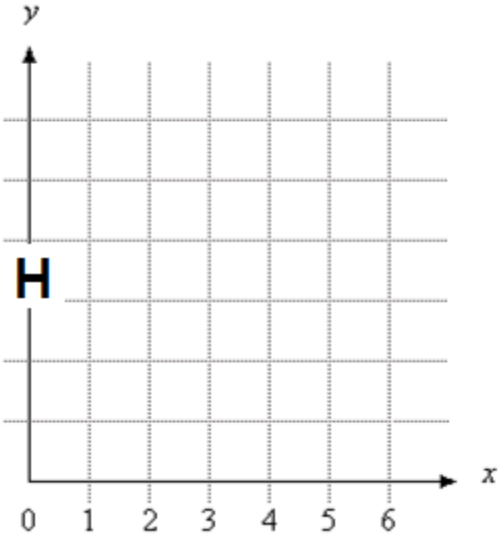
Student Name: _____

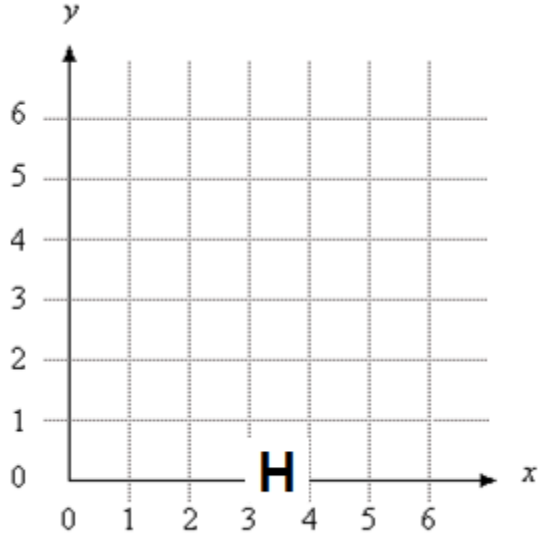
___ **This graph has a B on the y axis.**



STUDENT PROBLEM: Which graph has a H on the y axis?

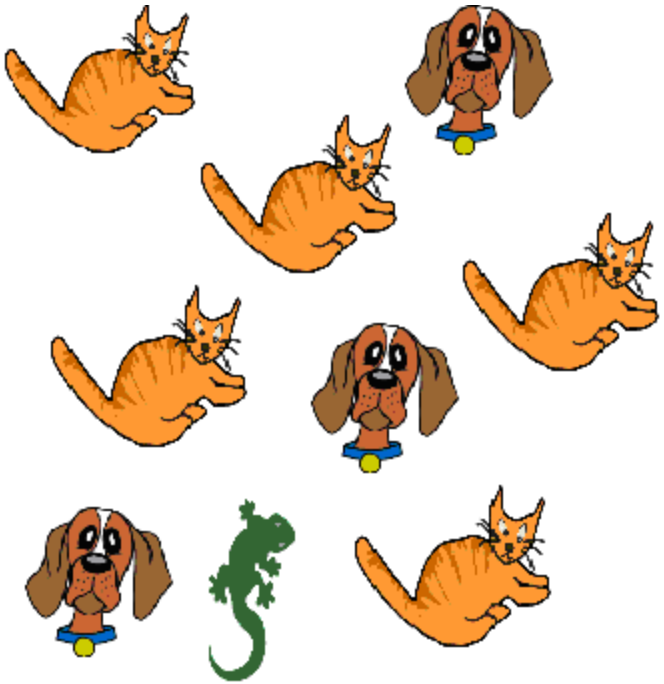


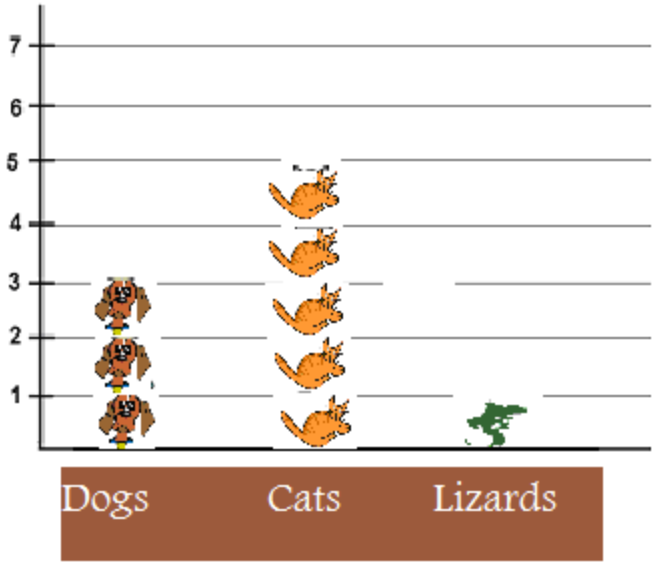




Student Name: _____

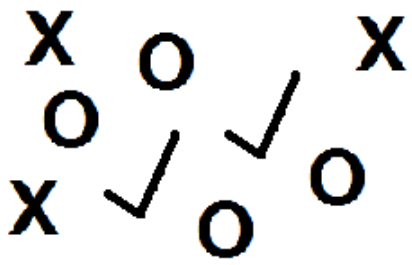
___**Here is a picture graph of the data below.**

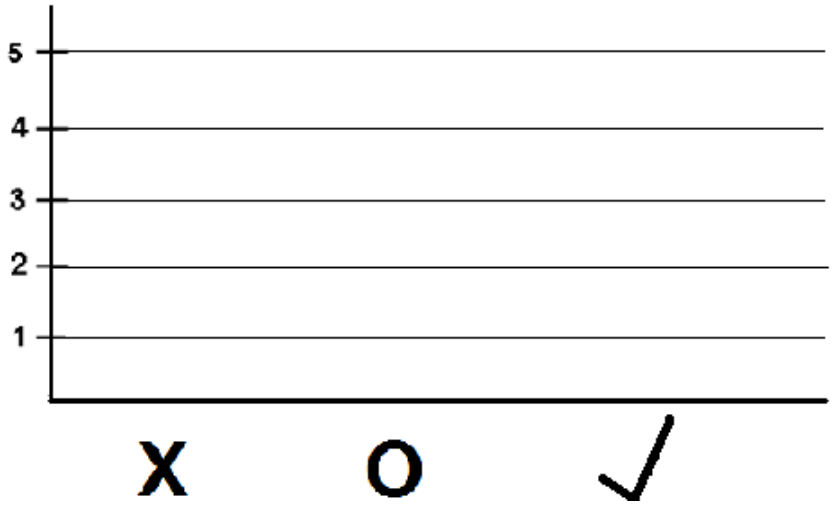




Student Name: _____

STUDENT PROBLEM: Fill in the picture graph using the data below.





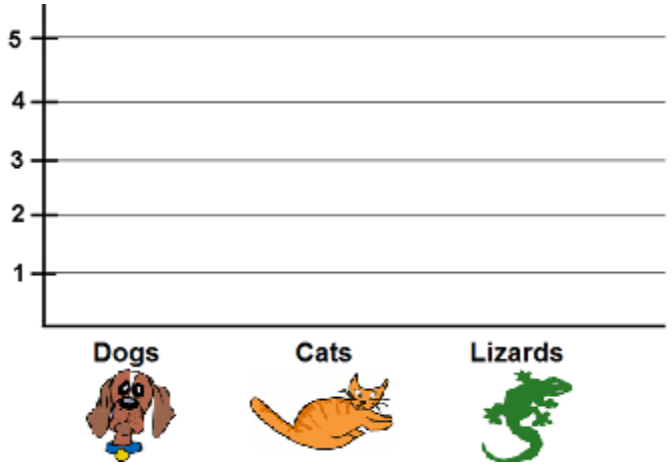
Student Name: _____

DATA ANALYSIS SKILLS TEST 2: READING A TABLE AND FILLING IN A BAR GRAPH

Student Name: _____

Complete the bar graph using the data in the table below.

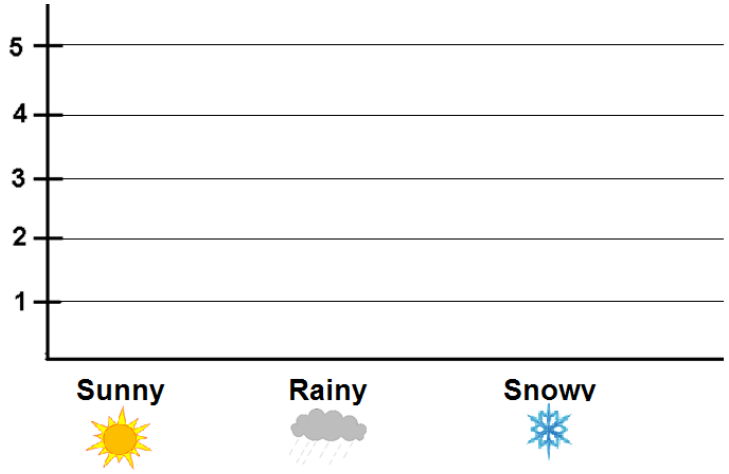
Pets	Number
 Dogs	3
 Cats	5
 Lizards	2



Student Name: _____

Complete the bar graph using the data in the table below.

Weather	Number of Days
Sunny	1
Rainy	2
Snowy	4

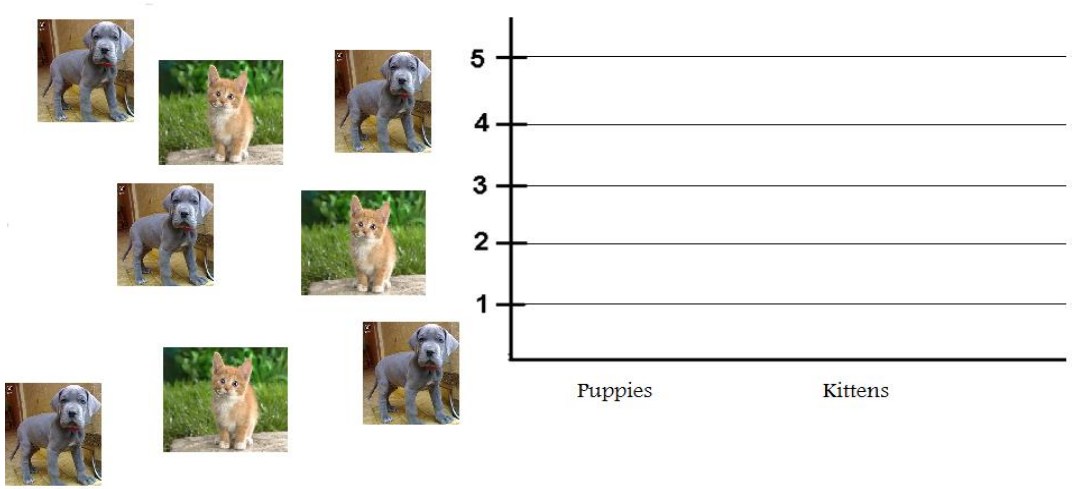


Student Name: _____

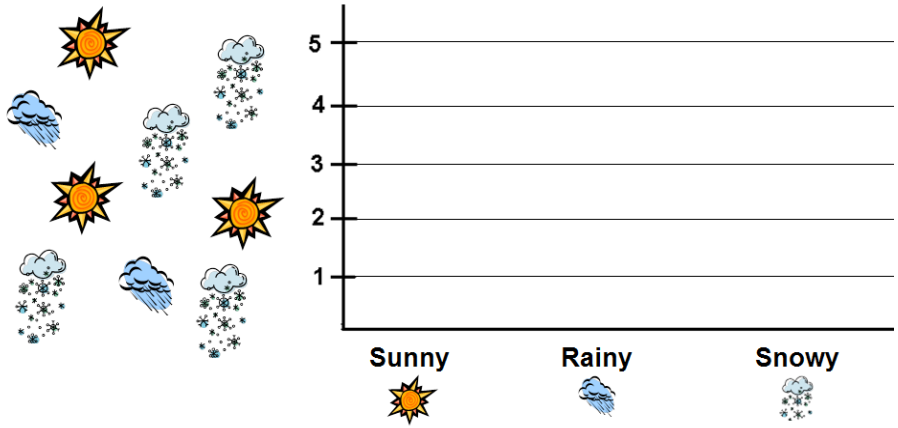
DATA ANALYSIS SKILL TEST 3: Collecting Data and Organizing it into a Bar Graph

Student Name: _____

____ Draw a bar graph to represent the following data.



____ Draw a bar graph to represent the following data.



Student Name: _____

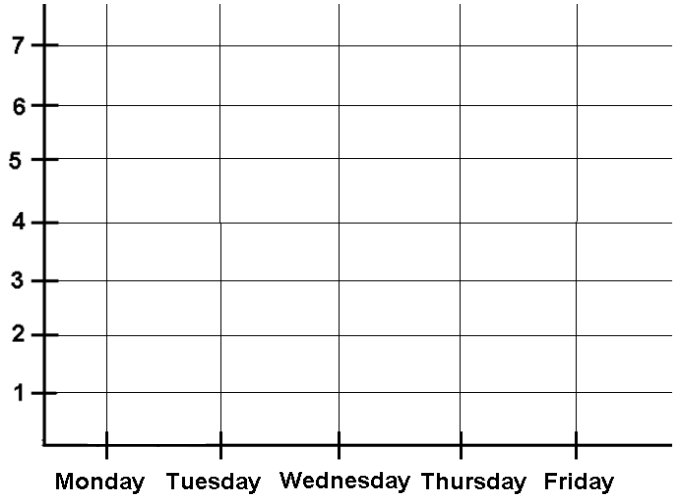
DATA ANALYSIS SKILL TEST 4: Creating a Line Graph

Student Name: _____

____ Draw a line graph to represent the following data.

Stacy walks dogs after school to earn money. The table below shows how many dogs she walks every day.

Monday	Tuesday	Wednesday	Thursday	Friday
7	2	4	3	0



____ Draw a line graph to represent the following data.

The school nurse counted the number of students who went home sick every day. The table below shows how many students went home sick on each day of the week.

Monday	Tuesday	Wednesday	Thursday	Friday
2	1	5	7	6