Data Detectives

Sort counts, measures, and labels.

MA.7.DP.1 "Represent and interpret numerical and categorical data."

NAME _____ DATE _____

NUMERICAL DATA

Numerical data tells how many or how much. You can count or measure it.

Mass of a pumpkin: 4.5 kilograms

CATEGORICAL DATA

Categorical data names a group, type, or label. Digits can be categorical when they identify something instead of telling an amount.

Eye color: brown

For Part 3, use the supplied graph page and attach your two displays. Name each variable, label axes and use equal numerical intervals.

1 SORT

8 items

Circle NUMERICAL or CATEGORY for each item, then choose two items and explain how you knew where each one belongs.

1.	Type of pet: dog, cat, or fish	NUMERICAL	CATEGORY
2.	Minutes spent practicing piano: 35	NUMERICAL	CATEGORY
3.	Number of windows in a classroom: 6	NUMERICAL	CATEGORY
4.	Shirt color: green	NUMERICAL	CATEGORY
5.	Bus route number: 14	NUMERICAL	CATEGORY
6.	Temperature at noon: 72°F	NUMERICAL	CATEGORY
7.	Movie rating: PG	NUMERICAL	CATEGORY
8.	Distance walked: 1.8 miles	NUMERICAL	CATEGORY

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Make two displays from these sample observations: pets = cat, dog, dog, fish, cat, dog; practice minutes = 10,15,15,20,20,20. Draw a labeled bar graph for pets and a labeled dot plot for minutes. Explain why each display fits its data type and give one supported comparison from each.

NUMERICAL

CATEGORY

CHALLENGE

A school list shows each student's lunch account number and the amount each student spent on lunch last week. Classify both kinds of data and explain why the account number is different from the amount spent.

ANSWER KEY # Data Detectives

GRADE 7 · MA.7.DP.1

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Type of pet: dog, cat, or fish	**CATEGORY**	Pet type names groups.
2	Minutes spent practicing piano: 35	**NUMERICAL**	Minutes are a measured amount of time.
3	Number of windows in a classroom: 6	**NUMERICAL**	This is a count.
4	Shirt color: green	**CATEGORY**	Color names a group.
5	Bus route number: 14	**CATEGORY**	The number identifies a route, not an amount.
6	Temperature at noon: 72°F	**NUMERICAL**	Temperature is a measurement.
7	Movie rating: PG	**CATEGORY**	A rating is a label or group.
8	Distance walked: 1.8 miles	**NUMERICAL**	Distance is a measurement.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **NUMERICAL**: Pet bars: cat 2, dog 3, fish 1; three dogs is two more than one fish. Named categories have separate bars.
- **CATEGORY**: Minutes: one dot at 10, two at 15, three at 20, on a numerical scale. Twenty minutes occurred twice more than ten minutes.

Challenge: Lunch account number is CATEGORY because it identifies an account. Amount spent is NUMERICAL because it tells how much money was spent.

Accept equivalent explanations that identify counts or measurements as numerical and groups, names, or identifiers as categorical. In Part 2, students should name the chosen item and give a reason for each classification. Require both actual student displays, six observations in each, category counts 2,3,1 and numerical frequencies 1,2,3, with a data-supported comparison. Supply blank graph paper; a data-type label alone is insufficient.