

Exploring Data

Student Worksheet

Name _____

Class _____

Newspaper stories have reported that some research studies indicate that students who carry very heavy backpacks may experience balance problems and/or have chronic back pain. Erin surveyed several of her classmates and collected the data shown in the table below. She rounded student weights and backpack weights to the nearest kilogram.

Name	Gender	Backpack Color	Student Weight (kg)	Backpack Weight (kg)
Erin	female	Blue	40	6
Sara	female	Red	38	4
Jane	female	Green	35	7
Judy	female	Blue	39	8
Kendra	female	Red	37	5
Kate	female	Green	42	7
Cami	female	Blue	36	5
Bill	male	Red	55	7
Will	male	Blue	51	5
Jack	male	Blue	40	3
Luis	male	Red	47	4
Tony	male	Blue	52	6

Open the document *backpack.tns* on your TI-Nspire™ math and science learning handheld.

- The spreadsheet on page 1.1 contains the data displayed in the table.

Add one or more pages, as needed, to create graphs to help you answer the questions on the following pages about Erin and her friends.

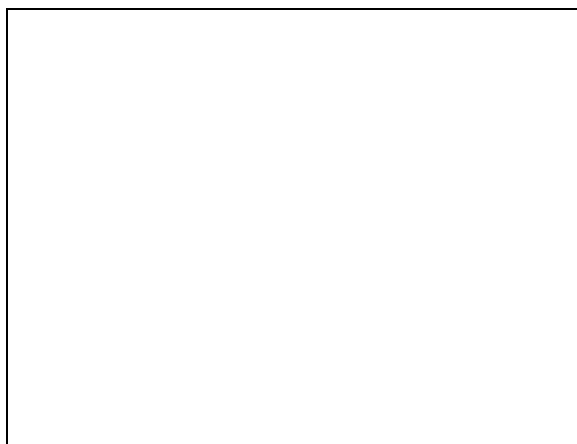
Questions:

1. Do girls have heavier backpacks than boys?

a. Justify your answer.

b. What type of graph was helpful to you in answering this question? Why?

c. Sketch your graph. Be sure to label the axes.



2. Do girls have heavier backpacks relative to their body weights than boys?

a. Justify your answer.

b. What type of graph was helpful to you in answering this question? Why?

c. Sketch your graph. Be sure to label the axes.



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3. One article about students' backpack weights and back pain suggested that a student's backpack weight should not exceed 15% of the student's body weight. Discuss how well Erin and her classmates are doing with respect to this recommendation. Use graphs and statistical summaries to support your reasoning.
4. Are the red backpacks for this group of students heavier than the other colors of backpacks? Justify your answer.
- Justify your answer.
 - What type of graph was helpful to you in answering this question? Why?
 - Sketch your graph. Be sure to label the axes.



5. What other questions could you ask about these data, and what graphs would help you find the answers?

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