

### Test 3-1A: Identifying Variables and Graphing

Carlos liked the ball bounce experiment, and he was curious to know how the experiment would change if tried bouncing a ball on stacks of paper.

He chose three sizes for his stacks of paper: 200 sheets, 300 sheets, and 500 sheets. He dropped a Skybounce handball from 100cm each time, and measured the bounce height the ball reached.

Stack Size (sheets)	Bounce Height (cm)
200	60
200	65
200	55
300	40
300	45
300	45
500	40
500	35
500	35

- a. Use the format in EA 1 on p 53 to **write a correct research question** that describes the experiment that Carlos completed.



**CONNECT**

EA 1, p \_\_\_\_

EA 2, p \_\_\_\_

- b. What is the **independent variable** in the experiment?

**Skill 1a**

- c. What is the **dependent variable** in the experiment?

- d. If Carlos lost the handball and used a tennis ball for the 500 sheet drops, **did he control all important variables in his experiment?**

Yes      No

- e. List two specific, detailed variables that Carlos needs to control in the experiment.

i.

ii.

- f. On the grid to the right, **present a complete graph** of the data.

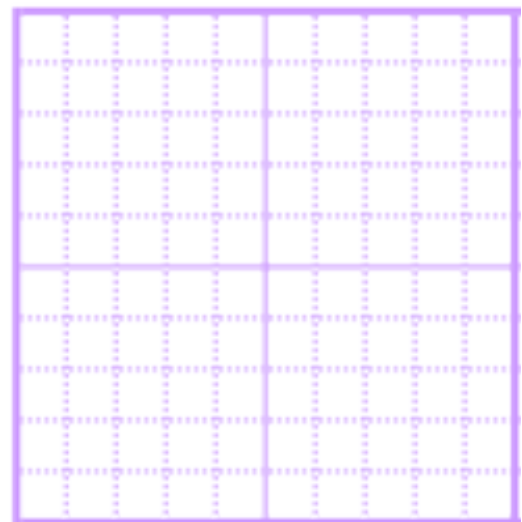


**CONNECT**

EA 4, p \_\_\_\_

**Skill 1b**

- g. In the space below, **state a relationship** between the two variables.



**CONNECT**

EA 2, p \_\_\_\_

**Skill 1a**

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**Skill 1a** I can identify the independent and dependent variables of an investigation, as well as any controlled variables, and identify a relationship between two variables if it exists.

Solid: M	Improving: P	Struggling: X
I can <b>identify the IV and DV</b> and <b>name important controlled variables</b> . I can state a research question, and <b>identify a relationship between two variables</b> .	I <b>mixed up the IV and DV</b> , or most of my controlled variables were irrelevant. I <b>didn't quite identify a relationship correctly</b> .	The variables or relationship I named showed that I <b>didn't carefully think about the experiment that was done</b> .

**Skill 1b:** I can graph data on graph paper, making sure that my axes are labeled and scaled appropriately and the graph has a useful title.

Solid: M	Improving: P	Struggling: X
I <b>used a consistent scale starting at zero</b> w/ the IV on the "x-axis." I showed <b>variable names (w/ units)</b> and a <b>descriptive title</b> , and the <b>points are plotted</b> but NOT connected.	<b>Some labels on my graph were missing or incorrect</b> . I connected points, or <b>used a scale that didn't use enough graph space</b> , or I put the IV on the "y-axis."	The scale I used <b>didn't start at zero or wasn't consistent</b> , or I <b>left off most labels</b> .

**Skill Feedback:** Use feedback on each skill to help you learn from your mistakes.

☐ **1a** I can identify the independent and dependent variables of an investigation, as well as any controlled variables, and identify a relationship between two variables if it exists.

☐ **1b** I can graph data on graph paper, making sure that my axes are labeled and scaled appropriately and the graph has a useful title.

☐ **2b** I always use correct units when working with numerical values.