

Bridge Builder Lab

Students plan a fair test, then build and test a paper bridge.

1.1.B “use scientific practices to plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems;”

NAME _____

DATE _____

Teacher: this page is run aloud. The script and answers are on the guide page.

1 PLAN IT _____

a	A	B	C
b	A	B	C

2 TEST IT _____

1	
2	

HOW TO RUN THIS PAGE

Read each planning choice aloud and have students circle one letter in each row. Then guide students through the bridge test so they can record observations as numbers while they test a design solution. Students never read directions on this sheet. Read each part's script aloud, then each prompt, giving think time before students mark.

PART 1 • PLAN IT

SAY “We will plan a test before we build. Listen to each choice, then circle the letter for the plan that makes the best test.”

ROW	SAY	STUDENTS CIRCLE
a	We want to find out whether a pencil moves farther with a soft push or a firm push. Plan A uses one pencil and changes the push. Plan B uses a pencil and a book. Plan C uses one pencil and gives it two soft pushes. Which plan changes just one thing?	A
b	We want to know where the pencil stops after each push. Plan A looks at the pencil color. Plan B makes a small mark where the pencil stops each time. Plan C closes our eyes. Which plan helps us observe the stopping places?	B

PART 2 • TEST IT

SAY “Our problem is to make a paper bridge that holds paper clips. Can you test one flat sheet of paper across two same-height books by adding paper clips one at a time, up to 12, and write the number it holds in box 1? Can you change a second same-size sheet in a way your group thinks will make it stronger, test it the same way, and write that number in box 2?”

- Box 1 (beside 1): **Teacher-observed number of paper clips held by the flat-paper bridge, from 0 to 12.**
- Box 2 (beside 2): **Teacher-observed number of paper clips held by the student-designed bridge, from 0 to 12.**

WHAT TO ACCEPT

Plan It answers are A, then B. For Test It, accept each numeral that matches the number of paper clips the bridge held before it sagged or fell, stopping the count at 12.