Spaghetti Bridge

Your task: Determine the number of marbles one strand of spaghetti can hold.

Rules: You can't just use one strand of spaghetti!

Materials: Uncooked long strand spaghetti, thick and thin Large plastic cups or small cans. String to make a handle on the cup/can to attach to the bridge Unit masses: Marbles, washers, hex nuts, or pennies. I found some decorative squashed glass marbles they don't roll far when they hit the floor.

Photo: Here's a hint…

Whiteboarding!

Use a white board to brainstorm, throw up ideas on procedure, materials, data to collect, and questions to answer. Allow everyone in your group to add ideas.
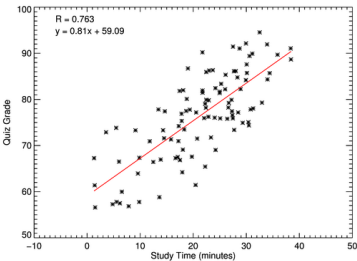
Once you have a good number of items. As a group you start to narrow down your focus. Does the procedure and data your collecting answer your main question? Does the data table and graphs show your results clearly?

The whiteboard is a visual aid.
What representations are most helpful in conveying what you did and what you found?
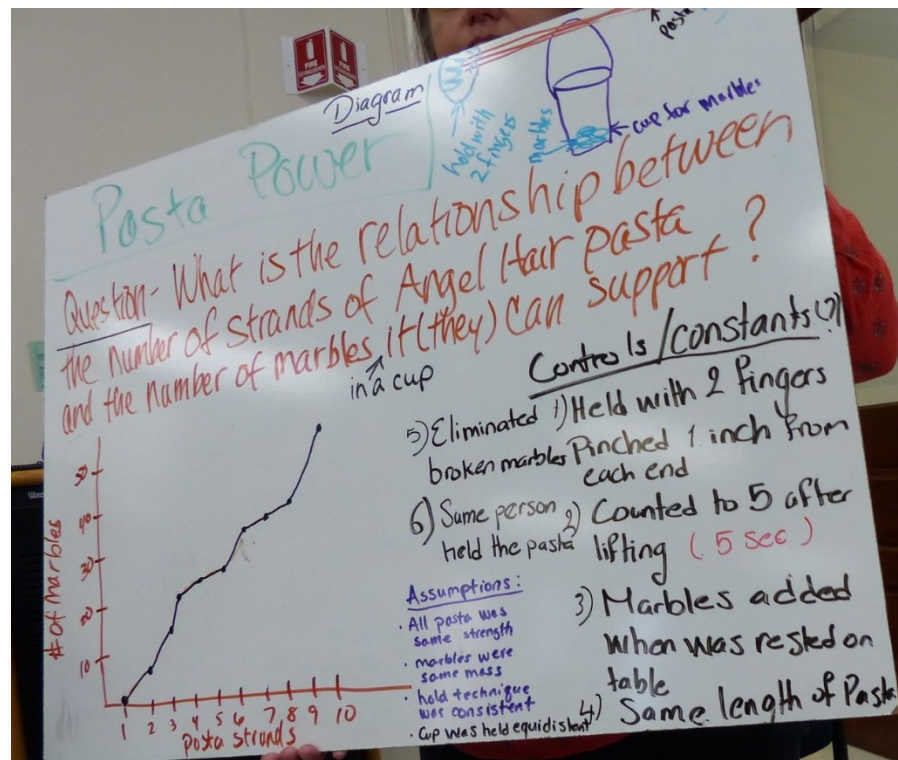
Your whiteboard could have the format below:

Before you start your lab write up, show Mr Allan your whiteboard.

What is the question you are trying to answer?	Data table
Graph	**Conclusion--try to make it in the form of an equation!** $$y = mx + b$$

Example questions or things to Consider:

Experimental procedure questions:
What was your procedure?
Is the procedure clearly shown on the whiteboard?
What was your independent variable?
What was your dependent variable?
What is meant by control of variables?
How did you control variables?
Why did you control variables?
How is a dependent variable different from an independent variable?
How did you know you had collected enough data?
 What is the advantage of doing multiple trials?

Questions about the presentation of results:
What are the features of a good data table?
How did you convey the pattern you found?
Use your pattern to determine the number of masses that could be supported by 10 (for example) strands of pasta.

Questions about the graphical analysis of data:
What kind of graph best represents your data?

Explain why you graphed this variable on the vertical axis and that variable on the horizontal axis.
What does the straight line graph tell you about the bridge?
What does the y-intercept mean in terms of your bridge?
How do you determine the units of the slope?
What does the slope of your graph tell you about your bridge?
Why do different groups have different values for their slopes?
What variables affect the size of the slope?
Under what conditions might you get a larger slope?
What parts of the equation should have units and what parts of the equation do not have units?