Panda Weasley's Experimental Design Practice Test: Answer Key and Instructions

Coach Instructions:

Disclaimers: This is a stationed test. Not all states use stations, so check your rules before practicing this format.

Instructions: This test is designed to last 40 minutes (10 minutes to give instructions) with 5 minutes per station. There are 8 stations. There are several stations that are on the same piece of paper. When setting up the event make sure that you cut all joined stations so that they are separate. Two stations (listed below) need extra supplies.

Station 6: Baking Soda, vinegar, plastic cups (3 per group), paper towels, and stirring utensils. Make sure there is a trashcan or a place marked at this station for participants to dispose of waste.

Station 8: 8.5" x 11" paper (2 per group), 2 green markers, 2 blue markers, 2 red markers, 2 black colored pencils, a stapler, and several paper clips.

Panda Weasley's Experimental Design Practice Test: Answer Key and Instructions

Answer Key

(If there is a note that says 'use rubric', it means to use the Div B/C Scoring Rubric to determine if the answer is correct and/or how many points to score it)

Answers: (Total points scored/110)

Station 1: (Points scored/14)

1. July
2. September
3. Females
4. 18-(**21**)-24
5. 71-**(74.5)**-78
6. 199-**(202)**-205
7. Anything relating to school starting, increased workload/homework, or makes sense as an answer counts.

Station 2: (____/14)

1. Use rubric.
2. Use rubric.
3. a Plane wing length

3.b Time aloft or distance traveled

3.c Plane design, launch force, launch height, launch angle, weather conditions, and any other that make sense.

4. Use rubric. Remember a plausible answer could be 'no SOC applicable'
5. Anything that makes sense counts. Example: She launched the glider at a slightly different angle each time.

Station 3: (____/18)

Materials:

List must include the following for 4 points:

- All variations of the paper towels used
- Water
- Some method of measuring the absorbency
- Any other materials listed in the procedure below.

If extra details are included (brand, roll size, quantities, etc.) give full 6 points.

Procedure:

Use rubric. Must cover all steps of the experiment.

Station 4: (____/13)

1. Answers must make sense and are logical. Explanations are not required, but give an extra point if given. Example: He changed the string type partway through the experiment.
2. Answer must be logical and make sense. Key words: Changes the mixture, bubbles will be different, changes the data, etc.
3. Use rubric.

Station 5: (____/10)

Ramp Length (cm)	Mean	Median	Mode	Range
2	8.4	8.7	8.7	0.8
4	14.2	14.5	-	1.4
6	22.4	22.5	-	0.8

1. Answer is logical. Possible answer "The longer the ramp, the farther the ball rolled because…."

Panda Weasley's Experimental Design Practice Test: Answer Key and Instructions

2. Any logical answer accepted. Example: For designing skate parks to know how long ramps should be.

Station 6: (____/14)

1. Use rubric.
2. Use rubric
3. Title- DV units

IV (Units)	Trial 1	Trial 2	Trial 3	Average
IV-1	Data	Data	Data	" "
IV-2	" "	" "	" "	" "
IV-3	" "	" "	" "	" "

4. Use rubric. Answer must make sense with data and questions 1 and 2. Example: The reaction time is longer when there is a 1:1 ratio of baking soda and vinegar.

Station 7: (____/14)

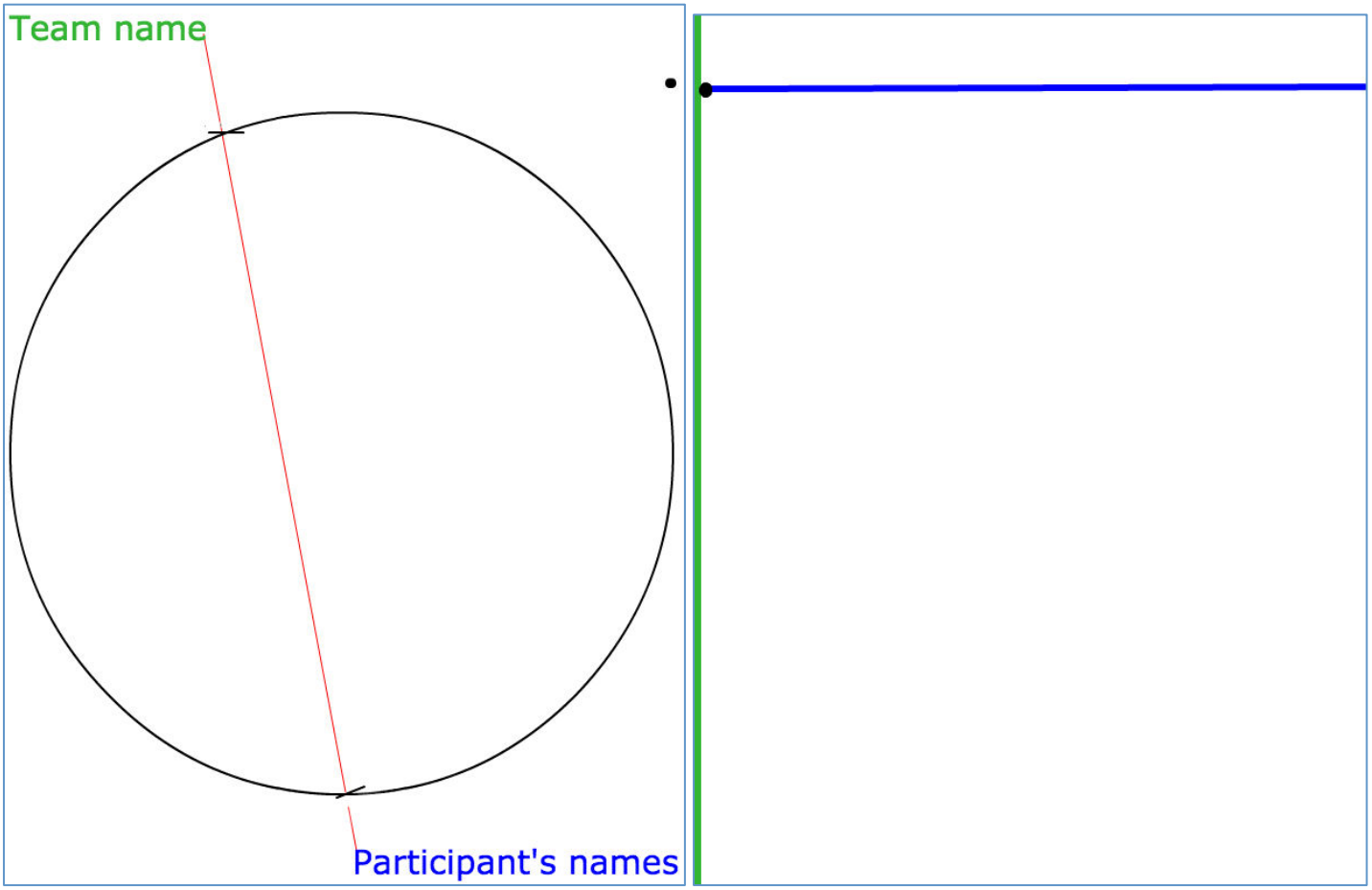
1. Any answer that makes sense. Example: "Watermelon and Peach were the two most liked fruits overall…"

Graph: Use rubric. Each bullet point listed counts as 2 points if present.

Station 8 Points: (____/13)

1. Turn the paper so that the short end is at the top, and the long end down the side (portrait).
2. Write your team name at the top left hand corner with the green marker.
3. Write your name(s) with the blue marker at the bottom right hand corner.
4. Draw a straight line with the red marker connecting the last letter of your team name with the first letter of your name(s).
5. Measure 2in. down along the red line from the top. Make a mark with the black colored pencil.
6. Measure 2cm. up along the red line from the bottom. Make a mark with the black colored pencil.
7. Rotate the paper 90^{o} clockwise.
8. Draw a large circle with your pencil that intercepts the two points on the line.
9. Flip the paper over the bottom edge.
10. Draw a line with the green marker along the top edge of the paper.
11. Draw a line with the blue marker along the right edge of the paper with a 1in. offset.
12. Pierce the paper with your pencil at the intersection of the blue and green lines.
13. Attach the paper to your answer sheet with the stapler.

Give one point for each step that is correct. If there is a step skipped or done incorrectly stop counting points there. Team's papers should look like the example on the next page.



Pictures not to scale.