Can’t Judge a Powder

2022 New Mexico Coaches’ Clinic
Rio Sessions
Event Setup

What to bring:

- Lab kit from page 69 in the rules
- Nothing else (including writing utensils)

Safety

- Lab Coats/Aprons
- Skin covered from neck down
- Loose-fitting pants
- Goggles
- Closed-Toed Shoes
Event Setup

At the start of the event, teams will be provided

- One powder
- Pen(cil)s of one color
- 1M NaOH & HCl
- Distilled water for washing
- Waste container(s)
- An observations sheet
- Any other ✨fancy✨ equipment for extra tests
Part 1: Objectives

Make as many useful observations about this one powder as you can.

Observations, not inferences.

In Part 2, you’ll use these to answer questions, so be ready!
Part 1 Demo
Part 1: Tips

● Your team’s observation has to be better quality than ALL the other teams in the room.
  ○ The best observations at regionals may only be three-pointers at state.

● OBSERVATIONS, not inferences.

● Practice, practice, practice!
  ○ Your team decides the observations! Nobody says what to do.
  ○ Know what you need to look for to answer various questions.
  ○ Internet/videos: great for learning how to do some powder tests
2004 Observation Flowchart

This probably doesn’t cover everything you’ll need, but is somewhere to start.

- Observe a small amount of the powder.
- Determine density.
- Obtain a new sample if necessary.
  - Add distilled water.
  - Note any temperature change.
- Conductivity test, pH test.
- Test with any other test reagents that are supplied.
- Insoluble, does not dissolve.
  - Obtain a new sample.
- Soluble, dissolves.
  - Conductivity test, pH test.
  - Test with HCl.
  - Obtain a new sample.
  - Test with NaOH.

- Insoluble, does not dissolve.
  - Obtain a new sample.
Transitioning from Part 1 to Part 2!

After 25-35 minutes, Part 1 will end.

1. Lab equipment set aside
   Color 1 pen(cil)s collected
   All chemicals (including sample) collected

Only the team’s observation sheet should be left.

2. Question sheet distributed.
   New color pen(cil)s distributed
Part 2: Objectives

Answer questions using observations from Part 1.

Put the relevant observation number(s)

You do NOT need to answer the question.
Part 2 Demo
Scoring

Each question is worth 5 points.

- High quality data and observations will be worth 5 points.
  - Higher quality observations correspond to more points.
  - Compared to other teams
- Inferences are worth at most 3 points, likely less.
- Answers with no supporting data are worth no more than 2 points.

Remember to clean up! Not worth the 10% penalty...
Things to Remember

● Better observations than everyone around you.
● **Observations** are the most important thing.
  ○ NOT identifying the powder
  ○ NOT giving the correct answer to the question
● Practice with practice tests!
  ○ Be surprised by questions you can’t answer ASAP
  ○ Get to where you can work very quickly
  ○ Get familiar with the event
● Make sure you have everything you need and nothing more.
● Time goes faster than you think...
Resources!

Official 2023 CJAP Event Page

- [https://www.soinc.org/cant-judge-powder-b](https://www.soinc.org/cant-judge-powder-b)

2004 Event Presentation (VERY outdated, but good info)

- [https://scioly.org/wiki/images/7/73/Cant_Judge_A_powder_Coaches_Clinic.pdf](https://scioly.org/wiki/images/7/73/Cant_Judge_A_powder_Coaches_Clinic.pdf)

Dated National Event Supervisor’s Site (on Web Archive)

More Resources!

Science Olympiad Student Center Wiki Page

Old Sample Tests (slightly different rules)
- https://scioly.org/wiki/index.php/Test_Exchange_Archive#Can.27t_Judge_A_Powder

2023 Sample Tests (biggest collection of scioly exams)