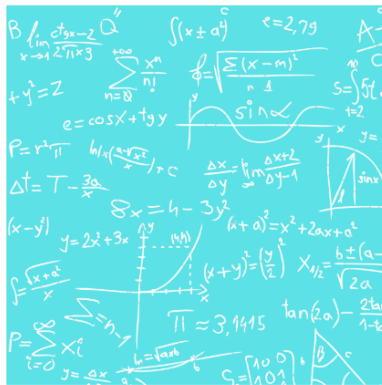
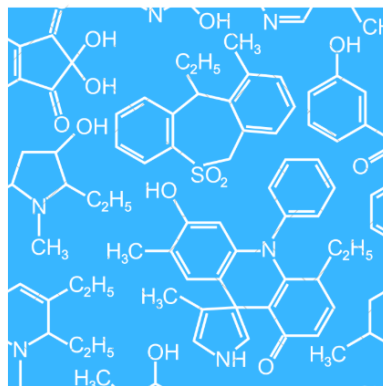


# Catapult: Personal Power with Partners

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## STEM at Stead



### SCIENCE WORTH EXPLORING

Written by Aubree Larson adapted from Brune (1993). Facilitation Skills for Quality Improvement. Quality Enhancement Strategies. 1008 Fish Hatchery Road. Madison WI 53715. Branchaw, J. L., Butz, A. R., & Smith A. (2018). Entering Research (2nd ed.). New York: Macmillan.

# Catapult Teacher Information: Personal Power

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## When do I give the student this work sheet?

This work sheet is meant to be completed after the entire experiment has been completed. This work sheet is only relevant if the scientist worked with a partner or group to complete this experiment. There is a separate work sheet for scientists who completed this experiment alone.

## What will they learn?

1. The discussion materials for this experiment will be based off the Iowa Core Standards for Employability Skills. These standards are consistent across all age groups, so this work sheet can be used for any aged scientist. The following standards that will be reflected on through this work sheet are:
  - a. 21.9 – 12.ES.1  
Communicate and work productively with others, incorporation different perspectives and cross-cultural understanding, to increase innovation and the quality of work
    - Work appropriately and productively with others
    - Use different perspectives to increase innovation and the quality of work
    - Use all the appropriate principles of communication effectively
  - b. 21.9 – 12.ES.3  
Demonstrate leadership skills, integrity, ethical behavior, and social responsibility while collaborating to achieve common goals
    - Use interpersonal skills to influence and guide others toward a goal
    - Leverage the strengths of others to accomplish a common goal
    - Demonstrate integrity and ethical behavior
    - Demonstrate mental, physical, and emotional preparedness to accomplish the task
  - c. 21.9 – 12.ES.5  
Demonstrate productivity and accountability by meeting high expectations
    - Deliver quality job performance on time
    - Demonstrate accountability for individual performance

# Catapult Scientist Information: Personal Power

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**1. Read through the following constructive group behaviors and identify one behavior that you exhibited during the catapult experiment:**

*Constructive Group Behaviors* →

- a. Cooperating: Is interested in the views and perspectives of other group members and willing to adapt for the good of the group.
- b. Clarifying: Makes issues clear for the group by listening, summarizing, and focusing discussions.
- c. Inspiring: Enlivens the group, encourages participation and progress.
- d. Harmonizing: Encourages group cohesion and collaboration. For example, uses humor as relief after a particularly difficult discussion.
- e. Risk Taking: Is willing to risk possible personal loss or embarrassment for success of the overall group or project.
- f. Process Checking: Questions the group on process issues such as agenda, time frames, discussion copies, decision methods, use of information, etc.

One constructive group behavior I showed was...

**2. Read through the following constructive group behaviors and identify one behavior that you exhibited during the catapult experiment:**

*Destructive Group Behaviors* →

- a. Dominating: Uses most of the meeting time to express personal views and opinions. Tries to take control by use of power, time, etc.
- b. Rushing: Encourages the group to move on before task is complete. Gets tired of listening to others and working with the group.
- c. Withdrawing: Removes self from discussions or decision making. Refuses to participate.
- d. Discounting: Disregards or minimizes group or individual ideas or suggestions. Severe discounting behavior includes insults, which are often in the form of jokes.
- e. Digressing: Rambles, tells stories, and takes group away from primary purpose.
- f. Blocking: Impedes group progress by obstructing all ideas and suggestions. "That will never work because ..."

One destructive group behavior I showed was...

# Catapult Scientist Information: Personal Power

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3. What is one constructive behavior that you could work on showing more? How will you work on showing it more?

4. How can you help other group members show their constructive behaviors more?

5. How can you minimize the amount of time you demonstrate destructive behavior?

6. Share your thoughts with your group members. Did they have any ideas for how you could improve your group behaviors? Write some of the things they said below:

# Catapult Scientist Information: Personal Power

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**7. Now practice the behaviors you can work on through this exercise:**

**With your group, think about an invention that could help you or society as a whole. The invention needs to use the same scientific principles as the catapult you built earlier. Write down/ draw your group's ideas:**



**8. Explain how you improved your behavior this time when you worked with your group:**

