RAFT IDEAS

Topics: Balance, Dexterity, Data Collection

Materials List
- ✓ Foam disks (lots!)
- ✓ Optional: timer

This activity can be used to teach:
Common Core Math Standards:
- Younger students: Counting (Grade K, Counting and Cardinality, 1, 2, 4, 5, 6)
- Older students: Statistics and Data (Grade 6, Statistics and Probability, 1-5)
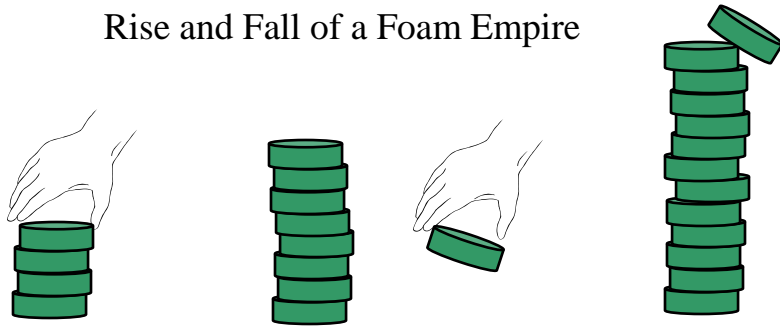
Next Generation Science Standards:
- Properties of materials (Grade 2, Physical Science, 1-1, 1-2)
- Science & Engineering Practices (Grades 3-6)

Stack 'em High
Rise and Fall of a Foam Empire

This challenge is fun and simple! How many can you stack with your right hand? How about your left hand? And the best part is…data collection opportunities abound!

To Do and Notice (for younger students)
1. Instruct students to hold a foam disk in one hand.
2. Students stack foam disks, one at a time, on top of the disk in their hand until the stack topples. How many can they stack?
3. Try stacking with the other hand. Is it easier? Harder? Or the same?
4. When stacking the foam disks, take the opportunity to use target vocabulary: counting numbers, ordinals (first, second, third), properties of materials (light, green, round, squishy), location (top, below, beneath).

To Do and Notice (for older students)
1. For older students, this simple physical challenge can demonstrate the scientific method. Ask students if they think they can stack the same number of disks using either hand, right or left (an easily testable question).
2. Next, students gather data: Students stack foam disks, one at a time, on top of a disk held in their left hand. Students continue until the stack topples.
3. Students record their data (the number of foam disks stacked) and then repeat the test 2 more times.
4. Students repeat steps 2 and 3 with their right hand. Again, 3 times.
5. After collecting the data, students analyze it to draw conclusions. Each student computes the average of the 3 trials for each hand. (trial 1 + trial 2 + trial 3 = total, then the total divided by 3 = average).
6. Next, students share their findings with their peers. What did they find? Were their findings similar to other students' findings?

Taking it Further
For an added twist, students can make their own variations (i.e. - stacking in teams, while using blindfolds, or with time limits.) Older students can design their own experiments to test questions that arise from class discussions.

Web Resources (Visit www.raft.net/raft-idea?isid=404 for more resources!)
- Teacher designed math courses from the New Jersey Center for Teaching & Learning – https://njctl.org/courses/math