

1 Pass the Candy

- We will form groups of 3 and 4 people. Appoint a record keeper.
- We will each grab a handful of candy or plastic pieces (that are equivalent to candy). Count the number of pieces of candy or plastic pieces and tell your record keeper that number so they can record it on the Tally Sheet.
- When I say “Pass the Candy”, we will each pass half of our candy to the person on our left. We will count the number of pieces of candy and plastic and record that number on the Tally Sheet.
- If you have an odd number of pieces of candy, so that you can’t pass exactly half, then keep the extra one.

If we continue this process ... what do you wonder? ¹

¹This lesson is from Maria Hernandez via the Triangle Math Teachers Circle.

2 Some Initial Conditions

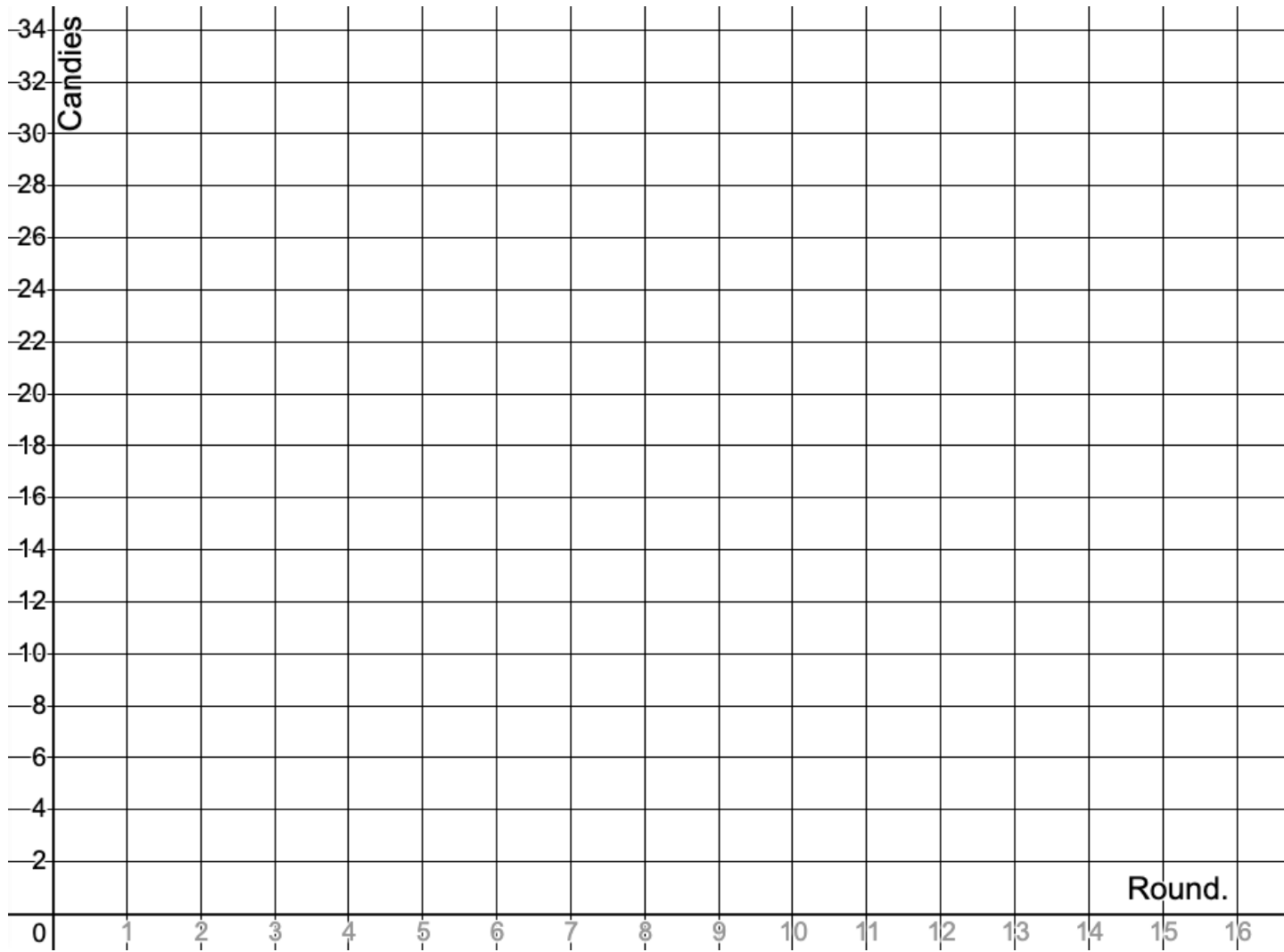
- Group 1: 18, 8, 10
 - Group 2: 2, 6, 30
 - Group 3: 4, 14, 22
1. If we continue this process, what do you think will happen in the long run? Who will end up with the most? The least?
 2. Continue the process and record your results.

	Student 1	Student 2	Student 3	Student 4
First Names →				
Start Values # of candies →				
# of candies after round 1 →				
after round 2 →				
after round 3 →				
after round 4 →				
after round 5 →				

3. Try it again with starting values of your choosing.

	Student 1	Student 2	Student 3	Student 4
First Names →				
Start Values # of candies →				
# of candies after round 1 →				
after round 2 →				
after round 3 →				
after round 4 →				
after round 5 →				

4. Make a graph of the number of pieces of candy over time for each student in your group. Make one dot for each number of candy for each round and for each student in your group. Each student should use a different color. You can use the grid below with different color pencils or the large grid paper and stickers.



Notice how the number of candies for each student settle down to an *equilibrium*. An equilibrium means that after a while, the numbers don't change, or don't change much.

5. Why do the candies settle out to an *equilibrium*? Hint: think about what happens to the difference between the numbers of candies in two students' piles.