Between a Rock and a Hard Place

1. Start the Number Line application by pressing **APPS**.

2. Press 2 to choose the fraction line.

3. Set the window as shown.

4. Press graph to see the number line interval.

5. Press **DRAW** and then 1 to choose DrawLabel.
6. Player 1 enters a fraction between 0 and 1.

7. Press enter to see the location of the fraction.
   Player 2 enters another fraction between 0 and 1. This fraction may be on either side of the first fraction.

From this point on, a player must enter a fraction between the two most recent fractions. For example Player 1 can now enter any fraction between 1/4 and 3/5.

In this example, Player 1 entered 1/2.

Player 2 must now enter a fraction between 1/2 and 3/5.

The game continues until one player fails to place a fraction between the two previous fractions.

If the screen becomes too cluttered, change the window settings to show only the two most recent fractions as the minimum and maximum values.
Can You Find my Marbles?

Your bag should contain 80 total marbles. There are 3 different colors of marbles. Divide your 80 marbles among the 3 colors however you like. Fill in the table and find the probability of each color being selected.

What is the sum of the 3 probabilities? ______________________________

<table>
<thead>
<tr>
<th>Marble Color</th>
<th>Number in Bag</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Switch calculators with your partner.

Use the Prob Sim Application to pick 115 marbles from your partner’s bag. When you have 115 marbles, use the right arrow to fill in your results below.

<table>
<thead>
<tr>
<th>Marble Color</th>
<th>Number Chosen (115 total)</th>
<th>Prediction of Number in Bag (80 total)</th>
<th>Actual Number in Bag</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
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<td>C</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

What is the sum of the 3 probabilities? ______________________________
Using the Probability Simulation APP: Can You Find my Marbles?

1. Start the Probability Simulation (Prob Sim) APP and get to the main menu.

2. Choose 3: Pick Marbles

3. Chose SET by pressing the [ZOOM] key.

4. Change Types to 3 since there will be three colors of marbles.
5. Chose ADV by pressing the [WINDOW] key.

6. Enter the number of marbles for each color. Be sure the total number of marbles is 80.

7. Press [GRAPH] for OK twice. If the screen says “This will clear all trials from memory. Are you sure you want to continue?”, press [y=] to choose Yes. You should now be back at the screen showing the bag.

8. **Exchange calculators with your partner.**

9. Your partner should now press [WINDOW] to pick the first marble. Marbles can now be picked one at a time (press [WINDOW] for +1), ten at a time (press [ZOOM] for +10) or fifty at a time (press [TRACE] for +50). **Remember you must end up with 115 marbles, so plan ahead.**