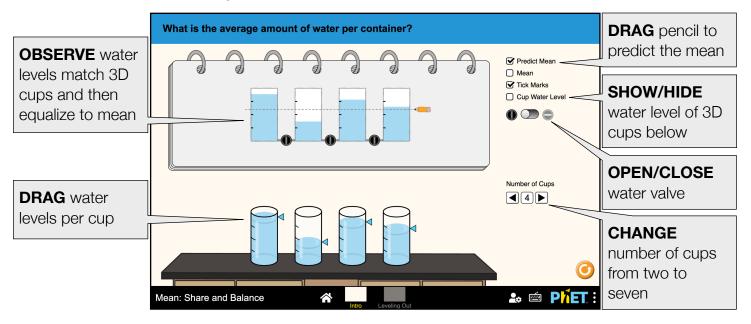The **Mean Share and Balance** simulation allows students to conceptualize the mean in different contexts. Students will watch as gravity equalizes the height of the water in the 2D cups when the valves are opened. The equalized height is the mean water level of the 3D cups.

OBSERVE water levels match 3D cups and then equalize to mean

DRAG water levels per cup

What is the average amount of water per container?

☑ Predict Mean
☐ Mean
☑ Tick Marks
☐ Cup Water Level

Number of Cups
◄ 4 ►

Mean: Share and Balance   Intro   Leveling Out

DRAG pencil to predict the mean

SHOW/HIDE water level of 3D cups below

OPEN/CLOSE water valve

CHANGE number of cups from two to seven

Insights into Student Use

- Students may desire to provide a numerical value for the mean. While a specific number is not the focus of the water screen, students can activate the "Tick Marks" checkbox to gain a better estimate of the mean.

Suggestions for Use

- Explore the mean by manipulating water levels in 3D cups. Check "Predict Mean" to estimate the mean water level of the 3D cups.
- Watch the mean change in real time when the valve is left open and the number of cups and/or the water levels are changed in the 3D cups.

Sample Challenge Prompts

- Find at least two ways to make a mean of 1/2 with ____ cups (fill in blank with a number from 2 to 7).
- Find ways to create a mean water level larger than two of the cup levels. Describe the water level of the remaining cups.
- Predict how the mean will change when you add one more cup that's full? Take one full cup away?
- When I add a cup, the cup is filled halfway with water. Will the mean increase, decrease, or stay the same from the existing mean?
- Explain how equalizing the water level illustrates the mean water level in your own words.

See all published activities for Mean Share and Balance here.
For more tips on using PhET sims with your students, see Tips for Using PhET.