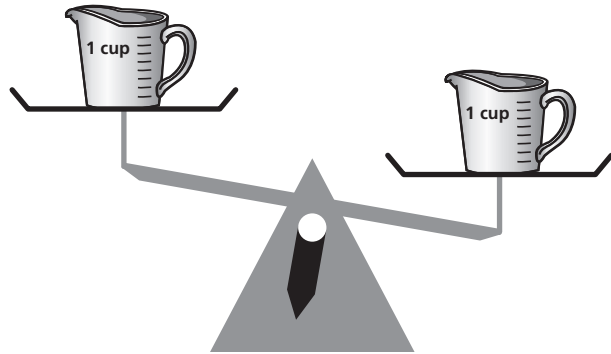


Weight and Capacity

Suppose you have exactly 1 cup of each of these items.



You want to put the cups in order from lightest to heaviest. You have only a pan balance. You can compare two cups at a time.



Suppose you start with the cooking oil and the water. It would look something like this.

The water is heavier. So, you put that cup aside as you continue to find the lightest cup.

1 Next, you compare the cooking oil with another cup. You put the heavier cup aside. You keep doing that until you find the lightest. Which cup do you think will be the lightest? _____

2 Putting aside the lightest, you now have four cups left to order. You compare all of them using the balance. How many comparisons will you need to make? _____

Which cup do you think will be the lightest this time? _____

3 Now you have three cups left. How many comparisons will you make with three cups? _____

Which cup do you think will be the lightest this time? _____

4 Finally, you can find the heaviest cup of all by doing one more comparison. Which cup do you think it will be? _____