**Two Pails**





**7**

**3**

You are standing by a pond with two pails.

One pail holds 7 gallons, and the other holds 3 gallons.

Neither one of the pails has measurement markings anywhere on them.

How can you get exactly 5 gallons of water in the big pail?

* See how many different ways you can arrive at 5 gallons of water in the big pail.
* How can you arrive at 5 gallons in the big pail with the fewest number of ‘steps.’ (Let’s define a ‘step’ as the act of either filling a bucket, or dumping water out of a bucket)

Remember:

* Be prepared to convince your classmates that your method works!
* Be prepared to respectfully challenge your classmates’ methods.
* PERSEVERE! ☺

**For the teacher:**

One solution strategy is as follows~

Step 1: Fill the small pail (since it holds 3 gallons, I’ll call it “3” from now on)

2: Dump 3 into the big pail (I’ll call the big pail “7” from now on)

3: Fill 3 again

4: Dump it into 7 (which now holds six gallons)

5: Fill 3 again and dump 1 gallon into 7

(you can do this, since only one more gallon will fit into the large

pail~7 is now full, and 3 has two gallons left in it)

6: Empty 7 completely

7: Pour the two gallons left in the small pail into 7

8: Fill 3 again

9: Pour the 3 gallons into 7, which now holds 5 gallons!

**See if you and your students can find other methods!**