**Divide villagers into 3 groups of 4**

**First Weigh**

Weigh group 1 against group 2

**Condition 1: Balancing**

We know that all villagers in groups 1 and 2 weigh the same.

Weigh 3 villagers from group 1 or 2 against 3 villagers from group 3

**Condition 1.1: Balancing**

The oddly weighted villager must be the one we haven’t weighed from group 3.

Last weigh: weigh any villager against the remaining villager to check if it’s   
 heavier or lighter

**Condition 1.2: Oddly weighted**

We now know that it’s one of the 3 villagers from that side of the seesaw  
 Put 1 villager on either side and sit the 3rd off to the side

**Condition 1.2.1: Balancing**

The 3rd villager off to the side is the target

**Condition 1.2.2: Oddly weighted**

If the heavier side changes, it’s the villager we moved to the left  
 If the heavier side doesn’t change, it’s the villager we didn’t move

**Condition 2: Not balancing**

We know that one of these 8 villagers is oddly weighted.  
For the 2nd weighing, remove the last 2 villagers from the right hand side of the seesaw, and move the 4th villager from the left hand side of the seesaw to the right.

**Condition 2.1: Balancing**

We know it’s one of the 2 off to the side

Weigh any balancing villager against 1 from the side

**Condition 2.1.1: Balancing**

The 1 villager left off to the side is oddly weighted.

That villager is either heavier or lighter depending on how it influenced the seesaw

**Condition 2.1.2: Oddly weighted**

The villager on the right-hand side is either heavier or lighter depending on the

results of the 3rd weighing

**Condition 2.2: Not balancing**

**Condition 2.2.1: Heavier side changed**

If the heavier side changes we know that it’s the villager that we moved and the

weight is heavier or lighter depending how that villager has influenced the seesaw  
 A third weighing is not necessary

**Condition 2.2.1: Heavier side stays the same**

We know that it’s one of the 3 villagers on the left side that have not moved

Sit villager 3 to the side and weigh 1 and 2 against each other

**Condition 2.2.1.1: Balancing**

Villager 3 is heavier or lighter depending on results from earlier weighing

**Condition 2.2.1.2: Not balancing**

We can deduce that villager 1 or 2 is heavier or lighter depending on results from earlier weighing