**World 4 – 7: Linear Word Problems**

**Step** **1: Find the Equation**

Given **WORDS describing the equation**

Example 1: Ellie is emptying her hot tub. The tub contains 450L of water and is emptying at a rate of 30L each minute.

**y = 450 – 30x**

Example 2: Shane is climbing a rock wall. He starts at 17m and climbs at a rate of 8m/min.

**y = 8x + 17**

Given **WORDS describing points**

Example: Jessie works at Sports Experts. He earns $36 for working two hours, and $66 when he works for five hours.

1. Write the words as coordinates:

**x: hours**

**y: $**

**(2, 36) and (5, 66)**

2. Find a

3. Find b

4. Write equation of the line (y = ax + b)

**Step 2: What do you know? What are you looking for?**

Going to zero (emptying a plane, landing a plane, etc)

Make the equation equal to zero (because y = 0) and solve for x

Make the equation equal to that number and solve for x

Given y value

Given x value

Substitute the x into the equation and solve