Rextor and Unit Ratios

"Ratio quiz tomorrow," mumbled Charlie as he crawled into bed. "Face 2:1 two eyes one head. Pig 4:1 four legs for each pig. Horse 1:6 zzz…"

"Horses 1:6? Poor kid doesn't know his ratios," thought Rextor as he padded up to check on his human. A good sniff showed that Charlie was stressed. "I guess I will have to help him out."

Rextor's nails clicked on the hardwood floor as he headed down the hall to the kitchen. "Hmm. 36 planks in the hallway. That could be used for several ratios. No, it sounds like the quiz is on unit ratios."

The clicking began again. Rextor sniffed the cabinet doors. "One handle on each door. One fridge two handles. Oops, not a unit rate. How about two handles on the fridge? Yep, that is a unit rate."

"Fifty-five kibbles, one bowl. Crunch, Crunch. One bite five kibbles. Woops, other way around; five kibbles per bite." The crunching continued followed by several laps of water. "Water is challenging for unit rates. Water can be measured in many different units. 7.48 gallons per cubic foot. One hundred centiliters per liter. Four quarts per gallon. All these are rates though, they have different measures. Ratios have the same measure like feet to feet. Dogs have 4 feet and humans have two, 4:2. But that's not a unit ratio. A unit ratio is some number to one. I can reduce it: two dog feet for each one human foot, 2:1."

Scratch, scratch, scratch. "Three scratches for one itch. Unit rates are everywhere. Better go share this with Charlie."

The mattress creaked as Rextor jumped on the bed. Charlie flopped his arm across the dog. Rextor settled in to project some thoughts into Charlie's dream.

"Three scratches per itch," mumbled Charlie.

1. What is a unit ratio?

2. Why is "One fridge two handles" not a unit rate?

3. Give 3 unit rate examples that Rextor could have used.

4. On a separate piece of paper, draw the unit rates from the story.

Challenge: Change Horses 1:6 to a unit rate then give a daily life example.
Extra challenge: Make a unit ratio out of 1:6 and explain the difference between the rate and ratio.

Answer Key

1. A unit ratio is ratio of any number to 1.
2. A unit rate has the 1 last.
3. Possible answers: 12 floor tiles per kitchen, 1 tongue per body or vice versa, 3 pieces of silverware per place setting…
4. Included unit rates/ratios: two eyes one head, four legs for each pig, one handle on each door, two handles on the fridge, fifty-five kibbles one bowl, five kibbles per bite, 7.48 gallons per cubic foot, one hundred centiliters per liter, four quarts per gallon, two dog feet for each one human foot, three scratches for one itch.

Challenge: 6:1 6 horses to one wagon or 6 spots on 1 pony or 6 horses on the carousel or 6 braids in the mane…

Extra challenge: 6:1. 6 horses 1 winning horse or 6 red marbles to 1 blue marble or … A unit ratio compares items with the same unit or measure; a unit rate uses different units or measures.