Task for Ratio and Proportions: Standard 1

**Lesson Opener:**

Start by having students work on their own, with a paper and pencil. Ask these questions and have them answer on their own paper.

“If there are 7 cats at the kennel, how many tails are there? (7 tails, 7 to 7, 1:1)

How many eyes will you find in that same kennel? (14 eyes, 7 to 14, 1:2) How many legs? (28 legs, 7 to 28, 1:4)

Give the students several minutes to solve these problems, monitor the room.

**Development:**

As students are working find students who have solved the problem in different ways. Have them come up and present to the class how they have solved the story problem. Allow for class discussion and questions.

Ask students why they have solved the problem the way they have.

Once students have presented, as a class, ask what patterns they see.

Once the patterns are identified introduce ratio relationships between two quantities.

Introduce all three different way to show a ratio 1:3, 1 to 3, 1/3

Also discuss comparing parts to parts ex: eyes to legs, tails to eyes.

Practice:

Use several other examples with students and talk about when to use part to a part and part to a whole as well as when to use a fractional proportion versus a standard proportion.

Boys to Girls in the class

If the question is how many students in the class are boys? It would be better to describe this relationship as part to a whole. i.e. 10 Boys and 15 Girls the ratio should be there are 10 boys out of 25 students. 10 to 25 or 2/5 of the class are boys. If we want to play girls versus boys in soccer today what will the ratio be? 10 to 15. It does not make sense in this example to compare part to a whole.

What part of the class got an A on their test is better expressed as a fraction, while the odds of getting a 6 when you roll a dice might be expressed as 1 out of 6.

Task:

Divide students into groups. Each group has the task of finding something in the room that they can use as a ratio. EX: desks to legs, scissors to glue sticks, etc. Once their group has it, they are to show the ratios in all three ways on a piece of construction paper. They need to come up with 2 questions that could be asked that might imply one way of expressing the ratio over another. Once they are finished the groups will present their work to the class. Ask questions and discuss as a group.

Monitor Learning:

Monitor classroom throughout the lesson and give guidance when appropriate.

Closure/Follow-up:

Have the students turn to a neighbor and tell them what they have learned today. Then have 4 or 5 students share with the class what their neighbor said.