Grade Level	Content Area	Course Title *(For 9-12 Samples Only)*	Unit Title
6th Grade	Mathematics		Ratios and Statistics: NBA MVP

Length of Unit	Time of Year Taught	Expected Prior Knowledge
5 - 7 Days	1st Quarter: Number Sense	Students will need to understand equivalency and the ability to convert between fractions, decimals, and percents.

Unit Description

The Ratios and Statistics: NBA MVP focuses on the relationship of ratios, along with multiple representations. Ratios will be represented in a variety of ways and keywords will determine the correct representation in a real life situation. The unit will begin with an introduction to ratios and explore possible ratios in everyday life. After gaining the concepts needed to be successful, the students will be presented with raw data of the top five leading candidates for the 2010-2011 NBA MVP. The students will be responsible for representing ratios in a variety of ways: ratios, rates, and percents. They will analyze and debate their opinion on who deserves to be the MVP. At the conclusion of the unit, the students will write a persuasive essay on the player that deserves to win the NBA MVP. During the unit, the instructor will be conducting small group instruction that will remediate the low students and continue to push the high students. The students will be given a pre-/post- assessment that will measure their prior knowledge along with their growth during the unit.

Standards: See instructions on page 15.	**Ratios of Proportional Relationships (RP)** Understand ratio concepts and use ratio reasoning to solve problems. 6.RP.1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
Summative Assessment *In addition to the description, include a copy of the summative assessment in the application package.*	Pre-/post- assessment that contains nice ratio based questions. The ratios are formed through a variety of reality world scenarios. The students will demonstrate their ability to express a ratio in various forms based on the words used to describe the situation. A copy of the summative assessment along with a scoring sheet is attached.
Scoring for Summative Assessment *In addition to the description, include a copy of the answer key and scoring rubric (if applicable) for the summative assessment in the application package.*	The assessment is worth 13 points. Mastery = 11/13 A copy of the summative assessment along with a scoring sheet is attached. *The students may write the ratios in a variety of ways that could be correct. The score sheet is just one possible representation.

Materials/Resources Needed *Include all items for the entire unit.*	NBA MVP Ratio Chart Persuasive Essay Rubric Summative assessment Calculators interactive math journals A variety of ratio problems Exemplar problems: Ratios/Rates

	Lesson 1	**Lesson 2**	**Lesson 3**	**Lesson 4**	**Lesson 5**
Instruction and Timeline	The teacher will explain to the class that they will be taking the pre-assessment. The class will be instructed that this will provide the teacher with information on the prior knowledge that the students have coming into this unit.	The teacher will begin will a whole group lesson on the three main types of ratio problems the students will be using to complete this unit. Students are directed to take out their interactive math journals. The instructor puts up the first type of ratio: "10 correct answers to 15 total questions." The word 'to' means the ratio needs to be written 2:3, 2/3, or 2 out of 3. The teacher explains the different forms	The class is given the NBA MVP ratio chart along with the persuasive essay rubric. The instructor reviews the questions and gives background knowledge on the different statistics in basketball. This allows the students who never watched or played basketball participate. After the discussion, the teacher prompts the students to find the key words of the ratios they need to find. The instructor asks them to discuss the meanings of 'to',	After all students are finished with the ratio chart, the teacher will talk about analyzing/debating their opinions. Each student will be director to write down 3 pros and 3 cons for each candidate. After the students begin to develop their opinions, the teacher announces they have 30 minutes to debate with at least 3 other students the player they believe deserves to be the MVP. The students may change their stance but they	The teacher writes the writing process on the board: brainstorming, rough draft, editing, and final copy. The students are given the expectations and requirements for the essay. The teacher discusses the importance of a thesis and that brainstorming needs to be done to support their candidate. Each student needs to have their essay peer edited by at least two students. The class will have 2 class periods to work on the paper.

		along with the rule that we always reduce a ratio. Second, a question that asks “how many correct answers per wrong answer?” the teacher discusses the meaning of ‘per’. The class is directed to think-pair-share their ideas for the meaning of ‘per’. The students would solve this problem by solving 10 ÷ 5 = 2.0 correct per wrong answer. The final piece is “what is the percentage score of correct answers?” The teacher poses the questions and allows time for the students to share ideas. The teacher then takes 10 ÷ 15 = .66666. The teacher demonstrates possibly solutions but has the students	‘per’, and ‘percentage’. After randomly calling on students to share their ideas, the students begin filling out the ratio chart. The teacher will be pulling small groups to help struggling students. The small group will focus on the ratio chart the students are completing.	need to come to a conclusion of who they believe should win.	During these two days, the instructor will be pulling small groups that will be used for remediation on concepts missed on the pre-assessment. Along with students who mastered the pre-assessment. They will focus on exemplar problems that are based on ratios/rates. The instructor will guide the instruction and monitor the progress of all the students.

		round to the nearest percent: 67%			

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Student Activities and Timeline	The students will be taking a pre-assessment that will be used as a guide for the instructor to determine their current level of knowledge.	The whole group lesson focuses on the students taking notes in their interactive math journal. The write down the three key words 'to', 'per', and 'percent' so they can right down key components of each scenario. The students discuss and collaborate during think-pair-share and class discussions. They share there thought process and prior knowledge coming into the lesson. After the guided practice, the students will complete sample problems provided by the teacher.	The students will begin filling out the ratio chart for the NBA MVP. They will be required to fill out 8 key statistically ratios/rates for the 5 unknown candidates. The students will write all their work in their journal and they are allowed to use a calculator. The will need to reduce the ratios and round the decimals when appropriate. The teacher will be pulling small groups to help struggling students. The small group will focus on the ratio chart the students are completing.	The students will write down 3 pros and 3 cons for each candidate. After they decide who they believe should win, they have 30 minutes to debate their player with at least 3 other classmates. During this time they should be writing down arguments that will help them write their persuasive essay.	The students will write a thesis statement on the player they believe should win. They will then brainstorm the facts and mathematical calculations that will be used to defend this stance. They will write a rough draft that will be edited by at least two of their peers and put together their final draft. Students that are pulled to small group will bring their interactive journal to record and solve the problems presented to them by the teacher. The focus will be on explaining their thinking orally

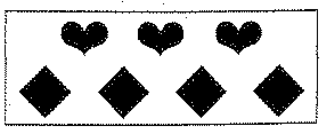
					and written in the notebook.

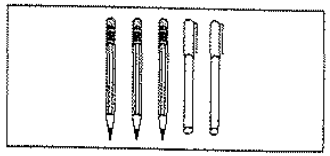
6th Grade Pre-/Post- Assessment: Writing Ratios

Name_____ Date_____

Mastery = 11/13 Score = ____/13

Questions 1 & 2 are worth 3 points. Questions 3 – 9 are worth 1 point each.
Write 3 separate ratios that the diagrams represent.

1. 

2. 

The table at the right shows the results of a survey. Write a ratio for each comparison.

Which Meal Do You Want for the Party?

Tacos	Pizza
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3. *Tacos* to *Pizza*

4. *Pizza* to *Tacos*

5. *Tacos* to the total

6. *Pizza* to the total

The table below shows the results when the seventh-grade classes were asked whether they wanted chicken or pasta served at their awards banquet. Use the table for Exercises 7–8.

Banquet Preferences

Room Number	Chicken	Pasta
201	10	12
202	8	17
203	16	10

7. In room 201, what is the ratio of students who prefer chicken to students who prefer pasta?

8. Combine the totals for all three rooms. What is the ratio of the number of students who prefer pasta to the number of students who prefer chicken?

9. A bag contains 8 yellow marbles and 6 blue marbles. What number of yellow marbles can you add to the bag so that the ratio of yellow to blue marbles is 2:1?

6th Grade Pre-/Post- Assessment: Writing Ratios

Name_____ Date_____

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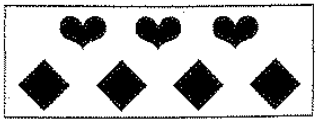
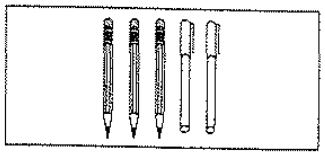
Questions 1 & 2 are worth 3 points. Questions 3 – 9 are worth 1 point each.
Write 3 separate ratios that the diagrams represent.

1. 

3:4
4:3
3:7
4:7

2. 

3:2
2:3
3:5
2:5

The table at the right shows the results of a survey. Write a ratio for each comparison.

Which Meal Do You Want for the Party?

Tacos	Pizza
𝍸 |||| 𝍸	𝍸 𝍸 𝍸 |

3. *Tacos* to *Pizza* 7:8

4. *Pizza* to *Tacos* 8:7

5. *Tacos* to the total 7:15

6. *Pizza* to the total 8:15

The table below shows the results when the seventh-grade classes were asked whether they wanted chicken or pasta served at their awards banquet. Use the table for Exercises 7–8.

Banquet Preferences

Room Number	Chicken	Pasta
201	10	12
202	8	17
203	16	10

7. In room 201, what is the ratio of students who prefer chicken to students who prefer pasta?

5:6

8. Combine the totals for all three rooms. What is the ratio of the number of students who prefer pasta to the number of students who prefer chicken?

39:34

9. **A bag contains 8 yellow marbles and 6 blue marbles. What number of yellow marbles can you add to the bag so that the ratio of yellow to blue marbles is 2:1?** 4 more yellow marbles

Summative Assessment

Pre-/post- assessment that contains nice ratio based questions. The ratios are formed through a variety of reality world scenarios. The students will demonstrate their ability to express a ratio in various forms based on the words used to describe the situation.