Fraction Baseball

Part 1: Batter Up! Playing the Game

1. Begin by accessing prior knowledge about baseball. Ask who has played or watched baseball. Project an overhead of the Fraction Baseball game board with the Baseball Guide of the board covered. Have students identify parts of the field, and review how the game is played.

2. Tell students that they will use dice to move the players on this field. Have a student roll a pair of dice and tell class the numbers rolled. For example, if 3 and 4 are rolled, ask what fractions could be made with those numbers. After students identify three-fourths and four-thirds, let them know that in this game, they will use the smaller number in the numerator. Ask which fraction is allowed in this game. [3/4] Have another student roll the dice and let the class create the fraction. In the case where both numbers are the same, the result is one. All fractions in this game will be less than or equal to one.

3. Tell students that the fraction will determine how a player moves on the field. Uncover the Baseball Guide that tells how to move a batter based on the fraction rolled as follows:

Baseball Guide for Hits, Runs, Balls & Outs ~ No Strikes!

DICE OUTCOME	RESULT
1	Single
$\frac{1}{2}$	Double
1/3	Triple
$\frac{1}{4}$	Home Run
$> \frac{1}{2}$ and < 1 (between $\frac{1}{2}$ and 1)	Out
less than $\frac{1}{2}$ AND $\neq$ 1/3 or $\neq \frac{1}{4}$	Ball (roll dice again)

4. Using the overhead game board, play one inning against the class to model how to play the game. On a white or chalkboard, create a portion of a Scorecard to model how to keep track of each team.

SCORECARD

Team 1: _____   Team 2:_____

INNING	Runs	Outs	Runs	Outs
First				
Second				

6. Partner students and distribute materials (gameboard, dice, markers, and Scorecard). Circulate as students play and question/guide students who may need assistance.

7. After nine innings, the game is over. Players/teams with greatest number of runs win. In case of a tie, each player/team rolls a die and highest number wins the game.

Part 2: Who Got to First? Whose on Second? - Discussing the Game
1. Pose questions related to the outcomes based on the game, such as:
- Did anyone make three outs in a row?
- How many people got a homerun (HR) in the game? More than one HR?
- Did anybody get four balls in a row and walk to first?
- Is it likely or unlikely to get a triple?
- What are the chances of getting a double?
- What seemed to be the most common baseball outcome?

2. After hearing their ideas, focus the discussion on the possible outcomes. Ask students what fractions resulted in a Single. List those fractions below the 1 on the number line.

3. Continue with the fractions that resulted in a Double and record those below the $\frac{1}{2}$ on the number line (2/4, 3/6). Ask student what these fractions are called (equivalent). Follow the same procedure for Triples, 1/3 (2/6) and then for Homeruns, $\frac{1}{4}$ (no equivalent fraction in this game).

4. Ask student what fractions resulted in a Ball and generate a list of them. Have students order these fractions from smallest to greatest and explain how they did (1/6; 1/5; 2/5). With student assistance, situate those fractions on the number line.

5. Have partners list the fractions that resulted in an Out in the game and record them. Have students determine the order from smallest to greatest (3/5; 2/3; 4/6; $\frac{3}{4}$; 4/5; 5/6). Ask for their methods to order the fractions. Have students add these fractions to the number line.

6. Ask students what the fractions on this number line represent and how the number line can help explain the game outcomes. Listen to their ideas and build on their thinking.

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Team 1: _____   Team 2:_____

INNING	Runs	Outs	Runs	Outs
First				
Second				
Third				
Fourth				
Fifth				
Sixth				
Seventh				
Eighth				
Ninth				

TOTAL RUNS: _____   TOTAL RUNS: _____

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Team 1: _____   Team 2:_____

INNING	Runs	Outs	Runs	Outs
First				
Second				
Third				
Fourth				
Fifth				
Sixth				
Seventh				
Eighth				
Ninth				

TOTAL RUNS: _____   TOTAL RUNS: _____