

## Questionnaire

1. In 100 words or less, which single statistic do you think is most important when evaluating pitchers? Explain.
2. In 100 words or less, which single statistic do you think is most important when evaluating hitters? Explain.
3. Who is the most undervalued prospect in today's landscape? Explain.
4. Write a short paragraph explaining who you think the Kansas City Royals should acquire in the offseason – whether through Free Agency or Trade.
5. The Royals have a chance to acquire one of the two following relievers. Which player would you prefer? Please provide your reasoning:  
Player A: 4.50 ERA, 3.00 FIP, 28 K%, 6 BB%  
Player B: 1.75 ERA, 2.80 FIP, 20 K%, 8 BB%
6. List 5 things to consider before calling up a prospect to the Majors? Provide brief explanation.
7. Identify a middle inning reliever who you think should be used in high leverage situations more often. Explain.
8. Prioritize the following traits for catchers: Throwing, Blocking, Framing, Pitch Calling. Explain.
9. Player A is an above average defender at all infield and outfield positions with a .700 OPS. Player B is a below average defensive 1st baseman with a .900 OPS.
  - a. With no other information, which player would you prefer? Briefly explain.
  - b. You are given the opportunity to ask 3 follow up questions. What 3 questions would you ask to make the most informed decision possible?
10. We have identified that our bullpen needs to be better at getting LHHs out, however, there are no LHPs available to acquire. In this scenario, what pitch characteristics would you look for in a RHP that would suggest he is an advantageous matchup versus LHHs?

## Querying Prompts

Using the attached dataset of throws to first base, please answer the following questions. Please utilize SQL, R or Python to aggregate the data. Attach all code and visualizations that you used throughout your entire process.

1. Which 5 infielders had the quickest exchange times on throws to first base?
2. The infield coach wants to see which teams made the most errant throws to first base. An errant throw is described as a throw that bounced and resulted in the runner being safe. Please create a basic visual that you would present to the infield coach to present your findings.
3. Looking at all infield throws to first base, given that the distance of the throw to first base was in the top 90th percentile, what team had the best average exchange time? Which team had the largest variation in exchange time on these throws?
4. Given that a throw was made less than 100 feet from first base, is there a correlation between throw velocity and throw distance? Provide a basic visual alongside a brief explanation.

## Modeling Project

While often routine, an infielder making a timely and accurate throw to first base is a skill that is critical to the outcome of a game. Arm strength, exchange time, velocity, and the first baseman's ability to receive an errant throw all determine whether or not an out is made on the play. We have attached a dataset of throws to first base for you to analyze. We would like to see you build some sort of model based on this data that evaluates the talent of a subset of infielders. We will be evaluating your submission on four components of your output:

1. Your modeling approach and creativity
2. Your model evaluation process
3. Your ability to perform a skill assessment of some group of players involved
4. Your creation of a player-evaluation tool or other presentation layer that would be presented to a less technical audience

If there is additional information that you think would clarify this problem or strategies you would implement if you had more time, please detail that as well.

This project should take approximately 8-12 hours to complete. Please include all code written (in either R or Python) for this analysis, as well as your final product.