SPORTS DATA ANALYTICS

Sports Data Analytics is the collection and study of sports data to:

- ENHANCE player performance and prevent injury
- INFORM recruiting or sports broadcasting
- INCREASE tickets sales and team revenue
- ACHIEVE desired target goals within a sports team

Why a career in Sports Data Analytics? Well, according to the U.S. Bureau of Labor Statistics, the potential for growth in this career is quite significant. Check out these statistics:

$93K	33%	$4.5B
median salary	job outlook through 2030	expected market growth by 2025

To understand the dynamics of this career and develop your knowledge and skills, we encourage you to fully engage with the expedition's resources and activities and take charge of your learning. You will have the opportunity to:

- REFLECT on an industry expert's video and your future aspirations. Be sure to reflect throughout the expedition.
- STRETCH your knowledge and skills.
- INNOVATE by collecting and analyzing data, completing a passion project, and solving a real-world problem.
- SHOWCASE your findings to an audience in an engaging way using appealing technology applications.

REFLECT

Meet Chris Rodriguez, the Director of Baseball Operations for Jacksonville University, an NCAA Division I team. He handles daily operations and data, analytics, and technologies to aid player development. He also served in the Arizona Diamondbacks organization in technology, scouting, analysis, and developing pitch design protocols for minor league players.

As you reflect on Chris's video, think deeply about these questions:

- What excites you about sports or sports performance?
- What skills or traits would help you succeed in a career in sports data and analytics?
- What parts of Chris's work do you see yourself doing in the future?
- What else would you like to learn about sports data and analytics?
- How do you plan to stretch your learning about sports data analytics?

STRETCH

Dive into these resources to expand your learning and skills:

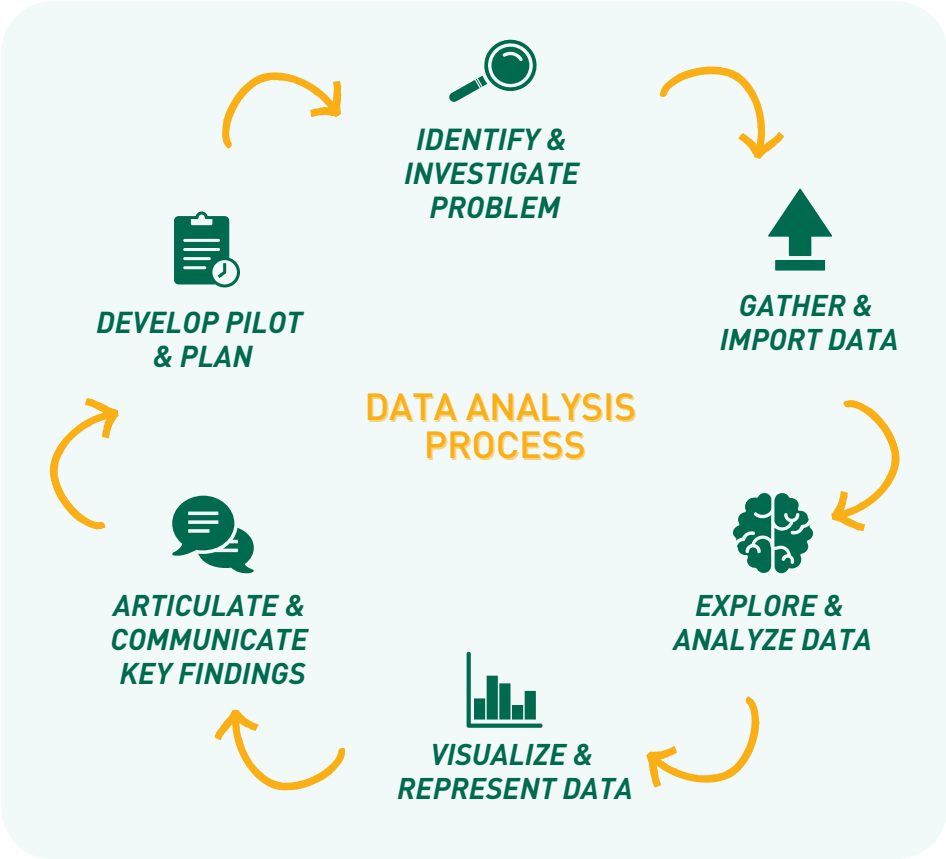
- Discover how data transformed the NBA.
- Learn more about sports data analytics through Hevo.
- Research current data-gathering technologies and data visualization tools to track player or team performance.
- Check out how to import sports data into Excel and create data models.
- Get inspired by Tiffany Kelly, a STEM leader and the first black woman to join ESPN's analytic team.
- Consider how data tracking of athletes can test ethical boundaries and practice empathy as you collect and share data.
- Check out the Speed Needed in Softball, an archived video from ESPN's Sports Science, to discover how data inform science.
- Explore how sports tracking technology can mitigate racially coded language in Soccer Looks Different When You Can't See Who's Playing.
- Investigate college and career data:
  - 10 best colleges for sports analysts
  - How to become a sports data analyst
  - Top sports data analytics companies

We encourage you to continue researching this topic and curate a list of resources that feeds your curiosity, learning, and passion about Sports Data Analytics.

INNOVATE

It's time to think about what you would like to investigate and create:

- Use the choice boards (on the next 2-pages) to select a project idea and presentation method to showcase your data, findings, and learning.
- Reflect on what excites you about sports, who are your favorite athletes, or what fuels your interest? Then, as you ideate and innovate, implement the Data Analysis Process:



Adapted from: The Life Cycle Phases of Data Analysis

INNOVATE

Use the Innovate Choice Board to select a project that you are passionate about or one that relates to a problem you want to investigate and solve:

Choice 1: Make a case for your favorite athlete to be inducted into their sport's Hall of Fame using performance data. Analyze existing free data sets and create compelling visuals of the data using software of your choice.

Choice 2: Create a dream team to represent your favorite sport. Collect and gather player stats and analyze them using data science and machine learning tools. For an advanced-level project, create two teams, simulate a game or match, and determine which team would win.

Choice 3:

1. Download (or print) a layout of your favorite sport's playing field or court.
2. Create a heat map (tally) indicating where most shots or big plays occur over 2-3 games.
3. Analyze for patterns and create a visual of your data and articulate your findings.

Extension Activity: Create a shooting chart or expected goals (xG) model using Python or R Studio Coding.

SPORTS DATA ANALYTICS INNOVATE CHOICE BOARD

Choice 5: Choose your own sports data project. Discuss it with your educator then GO FOR IT!

Choice 4: Predict and project outcomes for potential draft picks for the next draft of your favorite sport.

- Examine metrics (physical and performance) for a small set of players to determine whether they would be an instrumental addition to the team.
- Analyze the data, and create draft scenarios using a free data visualization tool.

SHOWCASE

Use the Showcase Choice Board to select a presentation style to share your innovative project to a local, national, or global audience:

Choice 1: Create a YouTube video to detail your learning through the project challenge.

Choice 2: Create a blog to highlight your findings and learning journey.

Choice 3: Create a digital portfolio to showcase your data and findings using Google Sites or Bulb to showcase your project and learning journey.

Meet Dr. Katherine Evans, the first woman in the NBA to head an analytics department.

Choice 5: Share your findings with an audience (your class, a coach, or connect with the academy's Advisory Board. Pretend you were in a press conference with sportscasters. Allow for a Q&A, then solicit feedback on the quality of your visuals and how you shared your findings.

Choice 4: Code or create a simple webpage to showcase your findings and learning. Consider Replit or Wix.

If you would like to share your project with NAF, please submit it HERE. You must have your educator's permission before sharing. (NAF will not share your work without your educator's and your approval).

Choice 6: Showcase your project in a format of your choosing.