

Team Attributes (TA)

REQUIRED TEAM ATTRIBUTE (TA) QUESTION:

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CONNECT:

REQUIRED	1	Team demonstrates professional development competency by explaining its plan for developing team member skills, including both A. The team's goals for learning, and B. The steps the team has taken or will take to reach those goals
ENCOURAGED	2	Team demonstrates networking competency by building and maintaining meaningful in-person or virtual relationships with professionals in STEM.
ENCOURAGED	3	The team demonstrates collaboration competency by actively working with members of the engineering community through mentoring, knowledge sharing, technical guidance, or collaborative activities.

REACH:

REQUIRED	1	Team demonstrates outreach planning competency by clearly explaining all of the following : A. its outreach objectives, B. the strategy behind its outreach activities, and C. how these activities support the growth of the <i>FIRST</i> community
REQUIRED	2	Team demonstrates successful recruitment of new teams, coaches, mentors, or volunteers who have not previously participated in the <i>FIRST</i> community
ENCOURAGED	3	Team demonstrates strong communication competencies by serving as an ambassador for <i>FIRST</i> and increasing public awareness of <i>FIRST</i> programs through effective outreach and communication.
ENCOURAGED	4	Demonstrates media and promotion competencies by developing creative, continuously improving outreach materials that effectively introduce both the team and <i>FIRST</i> to the public.

SUSTAIN:

REQUIRED	1	Team demonstrates organizational sustainability competency by explaining its plans for long-term success, including one or more of the following: A. financial sustainability, B. season planning, and/or C. long-term team sustainability objectives.
REQUIRED	2	Team demonstrates project management competency by explaining how it measures, reviews, and tracks progress toward its sustainability plans and objectives.
ENCOURAGED	3	Team demonstrates leadership development competency through clearly defined team roles and an intentional process for preparing future student leaders.
ENCOURAGED	4	Team demonstrates risk management competency by identifying organizational constraints, implementing mitigation strategies, and adapting plans when challenges arise.

Make notes on reverse side

Machine, Innovation, and Creativity (MCI)

REQUIRED MACHINE, INNOVATION, AND CREATIVITY (MCI) QUESTION:

INNOVATE:

REQUIRED	1	The team demonstrates their engineering competency by showing examples of their engineering work that explain how the team developed their design.
REQUIRED	2	The design of the ROBOT or ROBOT MECHANISM is creative, unique, or both.
REQUIRED	3	The creative design must be stable and reliable. It must help the team reach its game goals most of the time.
ENCOURAGED	4	Designs often involve risks. The team should explain how they reduced those risks.

CONTROL:

REQUIRED	1	Team must submit a PORTFOLIO. The PORTFOLIO must include all of the following: A. a hardware or software control COMPONENTS on the ROBOT, B. the challenges each COMPONENT or system solves, and C. the function of each COMPONENT or system.
REQUIRED	2	The team must use one or more hardware or software solutions that use external feedback to control the ROBOT and improve how it performs
ENCOURAGED	3	The control solution(s) should work consistently during most MATCHES.
ENCOURAGED	4	The team can explain how reliable their solution is. They can show this by demonstrating that it works, or by explaining how it could be improved.
ENCOURAGED	5	The team should describe what they learned while using the engineering process to develop their control solutions (sensors, hardware, algorithms, or a combination).

DESIGN:

REQUIRED	1	Team must describe or demonstrate that their ROBOT is elegant, efficient (simple to build and operate), and/or practical to maintain.
REQUIRED	2	The design of the entire ROBOT, or the detailed process used to create it, must be considered – not just one COMPONENT.
ENCOURAGED	3	The ROBOT stands out from other ROBOTS because of its appearance and how well it functions.
ENCOURAGED	4	The team has clearly thought through the reasons behind their design choices, such as inspiration or function.
ENCOURAGED	5	The design works consistently and matches the team's game plan or strategy.

Make notes on reverse side

Think Award

☐ **Team submitted a PORTFOLIO**
(Required for this award)

Team Number: _____

Team Name: _____

Judge's Name: _____

THINK:

REQUIRED	1	Team must submit a PORTFOLIO. The PORTFOLIO must include at least one of these engineering topics: A. evidence of use of the engineering process, B. lessons learned and applied relating to the design of their ROBOT, C. Comparing Choices: Show how you looked at different ideas and explain why you chose one over the other, and/or D. Math Choices: Show how you used math to make decisions about your robot or programming design.
ENCOURAGED	2	Information in the PORTFOLIO should be easy to read and easy to find.

Questions

(Not required to ask of the teams but items to ask yourself as you review the team's portfolio):

- Did the team describe the engineering process(es) used in designing their robot?
- Did the team document how their robot improved throughout the season?
- How did the team decide what aspects needed to be improved - did they use data or any analysis?

Notes: