YETI Ascent

Documentation and resources for YETI's training system

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Introduction

Welcome to the YETI Ascent System, the framework for member growth and organization on Team 3506 YETI Robotics. This system is designed to help every student understand their roles, responsibilities, and the steps that they need to advance within the team. Currently, we use Level 1 (L1) and Level 2 (L2) roles to define the progress of technical abilities across both our Engineering and Business teams.

On the Engineering side, this includes our:

- Mechanical sub-team
- Controls sub-team: split between Programming(Robot Programming & Web-Dev) & Electrical sub-teams
- Strategy sub-team.

And, on our Business side, it includes our:

- Marketing sub-team
- Finance Manager

All of these sub-teams have L1 and L2 roles (exception for the Finance Manager). By following this system, we can ensure that every member has a clear path to develop their skills, take on leadership roles, and essentially contribute to the overall success of the team.

Marketing

Covering marketing standards for L1/L2

Marketing

L1 Standards - Marketing

Overview

L1 marketing is about reliable execution. An L1 marketing member can take a task (e.g., writing a caption, taking photos, creating a social media post) and complete it on-brand without needing someone to clean up afterward. They can tell the team's story/describe core outreach programs if asked, and show up consistently. L1 is the standard every active / full-time marketing member is expected to reach on YETI.

Benchmarks

#	Benchmark	Description
1	Brand Fluency	Produce an on-brand post from scratch (correct palette, fonts, logo placement, tone) without consulting the style guide during the task.
2	Content Production	5+ published pieces (posts, blog, newsletter) that required no major revision before going live.
3	Tool Proficiency	Complete an end-to-end task in at least one tool the team uses (Figma, Canva, Adobe, etc.) and the team's scheduling platform without getting stuck.
4	Copywriting	Caption, sponsor thank-you, or event announcement that is clear, on-brand, and audience-appropriate in one draft cycle.
5	Reliability	Meet deadlines 90%+ across a full build/comp cycle and communicate proactively if something slips.
6	Team Knowledge	Deliver a confident elevator pitch covering: team number, name, location, founding year, notable achievements, current robot, and season game.

#	Benchmark	Description
7	Program Literacy	Name and describe each core outreach program without looking it up: RISE with YETI, QCRA classes and camps, Girl Scouts merit badge, Doyenne Inspiration West, #FIRSTEmpowered, Go Green, FLL/FTC tournaments, The Zone, Roof Above.
8	FIRST Ecosystem Awareness	Explain the FRC/FTC/FLL/FLL Explore pipeline and FIRST's mission in practice, with real examples.

Assessment Process

1. Portfolio Review

You will be expected to maintain a portfolio of your work in Google Drive. Your portfolio should be a running record of your marketing work throughout the season. Start it on day one and add to it as you go.

Suggested Portfolio Structure

```
Marketing Portfolio — [First Last]/
  Published Work/       ← final versions of posts, graphics, newsletters, etc.
  Drafts & Revisions/   ← early drafts showing your process (optional but helpful)
  Copywriting/          ← captions, sponsor emails, announcements you wrote
```

What belongs in it:

- Every post or piece you published, with a note on what it was for
- Any written copy you've produced

What does not belong:

- Work that was heavily revised by someone else before publishing
- Files without context (unlabeled exports, random screenshots)

A good portfolio should make it easy for an evaluator to see what you made, when, and for what purpose. If the folder is disorganized, that already tells part of the story.

2. Structured Conversation

You will be expected to walk a mentor/leader through your portfolio. Some sample questions might be:

- Show me your strongest post, why does it work?
- Walk me through the design process for this piece
- Give me a 60-second elevator pitch to a potential sponsor about YETI
- Name our "big 3" outreach programs and give a brief description about what they do

3. Reliability Check

Subteam leads and mentors will evaluate candidate reliability, with an emphasis on communication and meeting deadlines.

Marketing

L2 Standards - Marketing

Overview

L2 marketing is about strategic ownership. An L2 member plans, initiates, and elevates the team's marketing, going beyond executing tasks they're assigned. They've demonstrated they can develop a content strategy, represent the team externally, mentor L1 members, and understand how YETI's programs connect to broader goals.

Prerequisite: L1 must be completed before pursuing L2.

Benchmarks

#	Benchmark	Description
1	Content Strategy	Plan and execute a 4-week content calendar with documented rationale tied to the season arc.
2	External Representation	Present or speak on behalf of the team in at least one external context (sponsor meeting, Impact presentation, awards interview, etc.) with positive mentor feedback.
3	Mentorship	Review and give actionable feedback on 3+ pieces of L1 member work, improving the output without redoing it yourself.
4	Metrics Awareness	Pull social analytics and explain what is working and what is not, citing specific numbers.
5	Capstone Deliverable	Serve as primary author on at least one high-stakes artifact: sponsor packet, Impact/EI essay, pit display, or equivalent used in a real context.
6	Program Storytelling	Independently develop a compelling narrative around one team program — human angle, photos/quotes, impact and mission alignment.
7	Cross-Program Strategy	Articulate how YETI's programs connect to broader goals (sponsor retention, award submissions, community presence, pipeline) and why each one matters.

Assessment Process

1. Portfolio Review

Your L2 portfolio builds on your L1 portfolio. The evaluator is looking for evidence of strategic thinking: did you plan things, or only execute what you were assigned?

```
Marketing Portfolio — [First Last]/
  Published Work/
  Drafts & Revisions/
  Copywriting/
  Strategy/          ← content calendars, planning docs, campaign briefs
  Analytics/         ← screenshots or exports from social analytics
```

What belongs at L2:

- A documented content calendar with rationale
- Analytics pulls showing you tracked and interpreted performance
- Your capstone deliverable

2. Structured Conversation

You will walk a mentor through your portfolio. Sample questions: Walk me through how you planned this content calendar and why you made those choices Pick an outreach program and pitch me a content piece about it on the spot: what's the angle, who's the audience, what's the takeaway? Show me an analytics report and explain what it tells you How would you onboard a brand-new marketing member on their first day?

3. Peer Signal

Mentors will ask 2–3 members—typically L1 members you've worked with—whether you helped them improve their work and whether they sought you out for feedback. This is separate from the portfolio review.

4. Real-World Test

Before your assessment, you will be given ownership of a bounded campaign — a sponsor outreach push or a full week of social content. You are responsible for planning it, executing it, and reflecting on what worked. This is evaluated alongside your portfolio.

Robot Programming

L1 and L2 standards for robot programming

L1 Standards - Robot Programming

Overview

L1 programming is about foundational Java competency. An L1 programming member can read and write basic Java code—variables, conditionals, loops, classes—and apply those concepts in an FRC robot codebase. They can explain core OOP concepts if asked and contribute to the team codebase without needing constant support. During the build season, L1 programmers work to reprogram a previous season's robot, putting their skills into practice. L1 is the standard every active / full-time programming member is expected to reach on YETI.

Benchmarks

#	Benchmark	Description
1	Primitive Types & Variables	Identify and explain all Java primitive types (boolean, int, double/float, char, String). Choose the correct type for a given real-world scenario without prompting.
2	Variable Assignment & Operators	Declare and assign variables, create variables from other variables.
3	Classes & OOP Concepts	Identify a constructor in a given class, explain what it does, and determine a method's return type. Articulate the difference between a class and an object, and explain what `static` means.
4	Calling Methods (Static & Non-Static)	Given a class definition, instantiate an object and correctly call a non-static method on it. Separately, call a static method using the class name without creating an instance.
5	Conditionals & Control Flow	Complete a method skeleton by writing a correct if/else if/else block that returns the intended value. Use comparison operators accurately. Code handles all branches.

#	Benchmark	Description
6	Loops	Explain the difference between a for and while loop. Given a loop snippet, describe what it does, when it terminates, and how many times it executes. Write a simple loop that produces the correct output.
7	Inheritance & Access Modifiers	Explain what it means for a class to extend another. Given a superclass and a stub subclass, implement a method using the parent's accessible methods while correctly respecting private access.
8	Code Literacy	Read unfamiliar Java code and explain what it does in plain English. Catch common beginner mistakes (off-by-one errors, wrong operator, wrong return type) when shown a broken snippet.

Assessment Process

1. Written Quiz

You will complete a short quiz on the topics below. Questions are randomized across 10 variations per topic. The quiz is closed-reference: no IDE, no internet, no notes.

- Primitive data types
- Variable assignment & operators
- Classes & constructors
- Static vs. non-static methods
- Conditionals (if / else)
- Loops (for / while)
- Inheritance & access modifiers

Resources

- Codecademy — Learn Java
- CodingBat — Java Practice Problems

L2 Standards - Robot Programming

Electrical

Everything you need to know to be either L1 or L2 in the Electrical Subteam on FRC 3506

Electrical

L1 Electrical Panel Builder

Responsibilities:

- Builds the electrical panel based on Electrical Schematics and Layout drawings
- Installs the electrical panel on the robot
- Installs and wires all sensors
- Installs Pneumatic components such as valves, air preparation/storage, and plumbing based on Pneumatic Schematics and Layout drawings
- Creates “red-line” drawings and keeps them updated throughout the life of the robot
- Maintains the Electrical and Pneumatic systems of all robots in the fleet

Requirements:

- Must meet fundraising, outreach, and attendance requirements
- Basic use of hand tools
- Test & Measurement tools
- Know basic DC Circuits
- Wiring and assembly techniques/best practice
- Intro to Electrical & Pneumatic Schematics
- CAD Electrical Schematic knowledge is preferable

Comfortable with the following (able to be tested and pass with satisfaction):

- Crimping
- Questions/Component Identification:
- Basic Wire Management
- Basic Schematic Usage

Electrical

L2 Electrical Engineer

Responsibilities:

- Mentor (L1) Electrical/Panel Builders
- Oversee electrical and pneumatic work in the shop
- Works with the other Managers to select electrical and pneumatic components
- Designs Electrical Schematics and Panel Layout based on team Standards & Best Practices
- Designs Pneumatic Schematics and Panel Layout based on team Standards & Best Practices
- Responsible for updating the Engineering Workbook and maintaining project documentation
- Takes guidance from mentors and maintains Standards & Best Practice documentation

Requirements:

- Must meet fundraising, outreach, and attendance requirements
- Knowledge bank to pursue:
    - DC Circuits
    - Communication Networks
    - Discrete and Analog control circuits
    - Circuit Layouts
    - General Sensor knowledge
    - Drive Systems
    - Encoders
    - Closed Loop vs. Open Loop control
- Must be CAD capable in OnShape or SolidWorks to design sensor, camera, and electronic mounts

Must be confident (and able to pass, if tested, with satisfaction) in the following:

- Crimping
- Questions/Component Identification:
- Advanced Wire Management
- Rule Questions

- L1 CAD Certified
- Electrical Schematics

Confident L2's can wire a subsystem on their own with appropriate wire lengths, documentation, schematics, and necessary components/parts WITHOUT crimp failures.