Rectangular Prism

- Ease of Construction (5)
    - All the parts would be flat, right-angled parts
    - Could be assembled by hand (wouldn't have to be as precise)
        - Due to right angles fitting together easily
    - Simple to 3D print as parts or whole
    - The component layout is straight forward
- Structural Stability (4)
    - Resistant to wobbling/twisting
    - Beams are connected in sets of three (strong support)
    - Potential for reinforcement if needed
        - Extra braces
    - Electronics fit well within the shape
        - Secure mounting
    - Size could affect mounting if the frame is too large for the components
- Component Fit (5)
    - Electronics fit well inside the shape
    - Flywheel fits tangent or just outside
        - Little wasted space
    - Easy access for wiring and maintenance
    - Angular shape naturally fits rectangular components
- Weight Distribution (4)
    - Flywheel centred on one face, aligned or slightly outside edges
    - Supported by 4 points on the frame
        - Promotes stability
    - Component placement undecided
        - Heavy parts should be balanced opposite flywheel
    - Design allows for adjustable component positioning during prototyping
    - Likely to achieve balanced weight distribution with planning
- Aesthetics (3)
    - Slightly spread out design might make wiring look less tidy
    - Natural symmetry on all faces
        - Visually balanced
    - Multiple sides might complicate presentation/orientation

Triangular Prism

- Ease of Construction (4)
    - Easy triangle faces in CAD and print
    - Slightly trickier beam connections
        - Could need angled ends, exact spacing, and can't be done by hand as easily
    - Easier to print as a whole body than by parts
    - Part-by-part adds would be more complex
- Structural Stability (3)
    - Triangles provide great inherent strength

        - The beams are rigid but the connecting beams don't follow the "rule of three"
            - Possibly will have weak points under high pressure
        - Triangles resist the force of torque well, but the connecting beams might break under that stress
        - The components might fit awkwardly since they're rectangular and triangular spaces
            - Would require proportionally larger triangles in comparison to the components
- Component Fit (3)
    - Rectangular components don't naturally fit inside a triangle
    - Triangle must be larger to accommodate rectangular electronics
        - Causes wasted space
    - Maintenance access harder due to beams and angles
    - Less flexibility to shrink the triangle around components
- Weight Distribution (3)
    - Flywheel places at edge face of the triangle, supported by 3 points (middle of each triangle edge)
    - Components clustered on the opposite end of the triangular prism for balance
    - Triangular shape leads to less evenness in weight distribution along some exes
    - Potential for +/- Y-axis heavy areas causing stability concerns
    - Careful component placement needed to maintain overall balance and reduce instability
- Aesthetics (2)
    - Naturally symmetric shape (equilateral triangle)
    - Unmatched rectangular electronics mak look awkward inside
    - Unusual shape makes presentation harder

Cylinder on Beams

- Ease of Construction (2)
    - Cylindrical parts are easy to CAD/print
    - Beams must curve and have complexer upper geometry to fit with flywheel holder
    - Challenging to align beams evenly
    - Needs part-by-part assembly to check if everything fits
    - Needs precise measurements for structural/functional alignment
- Structural Stability (4)
    - Cylinder shape naturally resists wobbling/twisting
    - Multiple points of contact reinforce stability
    - Beams assumed to be fairly strong if short and arranged well
    - Electronic can fit inside well
    - Vibration could cause some instability but manageable
- Component Fit (4)
    - Circular shape fits rectangular components reasonably well if sizes align
    - Flywheel fits perfectly
    - Some wasted space possible, but less than triangular prism

    - More beams improve strength of structure but reduces components access
        - Using the back of the cylinder as an access point could solve these issues
- Weight Distribution (4)
    - Flywheel centered inside the cylinder
        - Good for balance
    - Electronics tightly packed behind flywheel
        - Compact layout
    - Short cylinder reduces torque effects
        - From longer lever arms
    - Beams placed symmetrically & perpendicularly
        - Helps even load distribution
    - Risk:
        - Improper placement of electronics could cause uneven weight
- Aesthetics (5)
    - Circular shape and symmetric beams give a clean look
    - Easy to present despite its unusual look
    - Strong symmetry and layout is good