

**Team: P18347      Engineer: Prince Rex**  
**Entering Phase: II (System Level Design)**

**What do I plan on doing to ensure that Team P18347 has a successful Phase 3 review?**

When will each task take place? Does sequencing matter?

1. Take part in meetings and discussions before the first review, so content is properly known. (5-6 hours 10/13,10/16)
2. Discuss and create 3-week plan (2-3hours 10/16)
3. Create a to do list for myself and check off things done (30 mins to 1 Week 10/10)
4. Make pugh charts and house of quality (2 to 3 hours 10/11)
5. Update various tables such as feasibility, team norms and things on edge. (5 to 10 hours various days before 10/16)

**You will answer these three questions when you submit at the end of Phase 3.**

1. What did I actually do?

I learnt various skills and techniques throughout the past three weeks. I was able to contribute to various planning objectives and assessing risks and various other project related hurdles. I was able to build a healthy environment with the group to start working with.

2. What did I learn?

Quality of Writing - Appropriate Use of Figures and Diagrams - Clarity of Project/Problem Description - Relevance/ importance of Project's Scope - Feasibility of Project's Scope

3. What do I plan on doing to ensure that Team P18347 has a successful Phase (N+1) review?

Modeling collaborative behavior.

Supporting a sense of community.

Follow the plan the team has set.

Focus on completing tasks and goals set time bound.

Make a good system design and follow it.

**Team: P18347      Engineer: Danielle Labelle**

**Entering Phase: II (System Level Design)**

**What do I plan on doing to ensure that Team P18347 has a successful Phase 3 review?**

1. Research various insulation materials to determine best option for application.
2. Participate actively in discussions.
3. Keep communication open with all team members.
4. Identify mounting points for electrical components.
5. Assist team in updating EDGE as we accomplish tasks, instead of at the end.
6. Assist Ian and Prince with electrical calculation to understand more about the batteries.

**You will answer these three questions when you submit at the end of the System Design Review.**

1. What did I actually do?
  - Assisted the team to complete a functional decomposition
  - Facilitated the concept screening exercise
  - Created a morphological chart document for EDGE
  - Calculated the work to cool the stroller at worst case conditions
2. What did I learn?
  - I learned how to do a functional decomposition
  - I learned more about the scope of the electrical system
3. What do I plan on doing to ensure that Team P18347 has a successful Preliminary Detailed Design review?
  - I will do my best to keep moving according to our outlined schedule and keep communication open if I am having any difficulty meeting deadlines

**Team: P18347      Engineer: Emily Heitzhaus**  
**Entering Phase: II (System Level Design)**

**What do I plan on doing to ensure that Team P18347 has a successful Preliminary Detailed Level review?**

1. Assist with the research of different types of materials we can use for the seat, insulation, the visor, and frame (3 hours, Monday, 10/23)
2. Discuss with team and guide the PRIORITY of the work being done (1 hour, Wednesday, 10/25 with teammates)
3. Discuss design considerations with teammates Danielle and Maura and Josa Hanzlik (customer) to get her input as both an engineer and a mother (1 hour, Monday, 10/30)
4. Begin working on test plans and brainstorm for prototyping procedures (4 hours, Wednesday, 11/01)
5. Update engineering requirements, schedule, and risk assessment (1 hour, Friday, 11/03)

**You will answer these three questions when you submit at the end of the System Design Review.**

1. What did I actually do?
  - Read through different product reviews on strollers and also benchmarked other products that operate similarly, such as a fan, a heated blanket, a space heater, etc.
  - Reviewed Engineering of Systems notes
  - Take apart a stroller to understand the parts and design used
  - Actively participated in the decision-making process for the design we would like to move forward with by helping make a morph chart, a pugh chart, and a functional decomposition.
2. What did I learn?
  - I learned about other products and how they operate similarly. With the various designs we explored, it was interesting to see how other products operated. We looked into a heated car seat to learn how it was power and the way the seat is heat. We are planning on implementing that in our design moving forward.
3. What do I plan on doing to ensure that Team P18347 has a successful Preliminary Detailed Design review?
  - I will assist with keeping good communication amongst teammates. Because everyone is doing a lot of their own calculations, it is important to keep everyone in the same loop.
  - I will also attempt to manage the overall calculations and making sure we stay on schedule and continue to meet deadlines.

**Team: P18347     Engineer: Maura Keyes**

**Entering Phase: III**

**What do I plan on doing to ensure that Team P18347 has a successful Phase III review?**

1. Review thermal analysis to determine material selection criteria from calculations (1 week; 10/23/17 - 10/27/17; with Danielle and Dr. Stevens)
2. Participate with team on outlining a budget for testing and prototyping (1 hour; Wednesday 10/25/17; with MSD team)
3. Determine if we can design and build a custom, heated seat liner or if we will be sourcing and integrating components (1 week; 10/23/17 - 11/3/17; with Danielle and the rest of MSD team as needed)
4. Work with team to determine designs for retrofitted system with maximum allowable efficiency (1 week; 10/30/17 - 11/3/17; with MSD team and Josa Hanzlik)
5. Create CAD drawings of components and system (1 month; date TBD; with Danielle)

**You will answer these three questions when you submit at the end of Phase II.**

1. What did I actually do?
  - Met with Margaret's House; the team decided that we would not pursue human subject testing at this point in the process
  - Read through different American Society of Testing and Materials (ASTM) and U.S. Consumer Product Safety Commission (CPSC) guidelines and standards on strollers, baby carriers, baby walkers, baby jumpers, bassinets, and heating blankets.
  - Reviewed Heat Transfer and Thermodynamics notes
  - Analyzed heat transfer design used in 2.5 concepts for work required to power the system in different environmental temperature ranges and available sunlight.
  - Took apart a stroller to understand the parts and design used with teammates
  - Actively participated in team decision-making process for design consideration by helping make and discuss morph charts, pugh charts, and a functional decomposition
2. What did I learn?
  - The scope of standards childhood products must conform to in order to be implemented for general use
  - The theoretical work needed over a range of environmental temperatures (-40 - 120 degF) and a range of solar emissivity values (0.1 - 1.0) with system efficiencies in 10% increments from 100% - 10%
3. What do I plan on doing to ensure that Team P18347 has a successful Preliminary Detailed Design review?
  - I will continue to divide the mechanical calculations with Danielle and we will check each other's work
  - I will continue to check that team in designing with an integrated, systems level goal in their individual calculations and design choices
  - I will attempt to learn more about the electrical aspects of the system

**]Team: P18347      Engineer: Christina Pensabene**  
**Entering Phase: III**

**What do I plan on doing to ensure that Team P18347 has a successful Phase (III) review?**

1. Meet with Dr. Linte or Dr. Phillips about my calculations to ensure they are accurate and correct (WO 10/23, 2 hours)
2. Calculate the convection between the baby and the heated seat and determine the max temperature and time before the baby gets burned (Wed. 11/1, 4 hours)
3. Determine a prototyping procedure and outline what materials we will use to prototype (with team, 10/30, 3 hours)
4. Review and outline safety requirements for the heated seat (Wed. 11/1, 1 hour)
5. Assist the team in editing the EDGE page
6. Work with team in determining the ergonomics of the stroller (ie. location of battery, switches, etc.) (10/23, 1.5 hours)

**You will answer these three questions when you submit at the end of Phase (II).**

1. What did I actually do?
  - Completed calculations to determine the amount of heat the baby loses by convection and radiation
  - Worked with the team to complete functional decomposition, and pugh chart to determine a final design
  - Updated EDGE with feasibility analysis
2. What did I learn?
  - Heat transfer between the baby and the environment is very complicated and difficult to model. There are many assumptions
  - How each individual discipline feeds off of one another and everyone's feasibility analysis depended on someone else's calculations
  - It is important to have someone check your work - they usually see things that you didn't
3. What do I plan on doing to ensure that Team P18347 has a successful Preliminary Detailed Design review?
  - Will check over my calculations and have the team check them over to ensure they make sense
  - Will assist in updating the EDGE page
  - Will communicate and help my teammates with their work if needed
  - Will complete my tasks to the best of my ability and on time

**Engineer: Ian Smith**

**What do I plan on doing to ensure that Team P18347 has a successful Phase 3 review?**

When will each task take place? Does sequencing matter?

1. Assist the team in editing the EDGE page and review it before the next design review.
2. Start to compile a list of potential components for the electrical system BOM. (2-4hrs 10/22/17)
3. Review calculations done by mech team and update preliminary electrical calculations accordingly. (1-2hrs 10/19/17)
4. Work with team in determining the desired/needed controls for the stroller (ie on/off switch, temp controller, temp display, etc...)
5. Begin to investigate how to create a battery charging circuit.

**You will answer these three questions when you submit at the end of Phase 3.**

1. What did I actually do?
  - Made baseline total power requirement calculations for a stroller with both heating and cooling
  - Found batteries that meet the requirements that were calculated along with their datasheets and dimensions.
  - Worked with the team to complete functional decomposition, morph chart, pugh chart, and house of quality.
  - Deconstructed a baby stroller with team
2. What did I learn?
  - Running a heated seat all day requires a very large battery
  - How a modern baby stroller is assembled and what it's made of through the deconstruction of one.
3. What do I plan on doing to ensure that Team P18347 has a successful Detailed design review?
  - I will review the edge page prior to the design review to check for any errors or last minute changes needed.
  - I will work with the rest of the team to add any needed information/ help where needed
  - I will complete my assignments to the best of my ability