A list of the significant project risks and your associated contingency plans to mitigate the critical risks that are reasonably likely:

- **Risk**: Not being able to supply the necessary coding needed for a laser sensor to recognize when an object has blocked it's path for a set amount of time.

  Contingency plan: Find a code online which performs a similar function and research how to alter it in order for it to function to our needs. Apply using Arduino.

- **Risk**: The filter will not sift an adequate amount of sand out of the hopper.

  Contingency plan: Benchmarking against other sand filters so as to narrow the number of designs that are to be used in prototyping. Rigorous testing of designs will mitigate risks associated with an underperforming sifter.

- **Risk**: The filter will not adequately remove the wet sand from the hopper resulting in a buildup of wet sand blocking the filter

  Contingency plan: Make the filter large enough that wet sand can fall through, while keeping the smallest trash contained in the hopper. Make the colour of the hopper black to absorb heat energy to evaporating water on sunny days.

- **Risk:** The raised hopper will cause an uneven distribution of weight, potentially increasing the frequency of flips.

  Contingency plan: Design the filter to be as low as possible while allowing for the same amount of volume and the best evacuation tube size. Keep additional weight as low as possible.

An estimate of the cost for all components and materials which you will need for the different prototyping deliverables described above'

- IR Break Beam Sensor - 3mm LEDs x2 -
  - Cost: 12.14$
  - https://www.adafruit.com/product/2167

- Printing material: free

Tasks:

- Design 3D model of Hopper, filter, and lid. (10 days) -Nick, Calvin, Chris

- Acquire materials. (1 day) -Nick
- Design prototype 1 (2 days) -Chris, Nick, Calvin
- Print prototype 1. (2 days) -Nick
- Assemble prototype 1. (1 day) -Team

- Refine/Design prototype 2. (8 days) -Chris, Calvin, Doug
- Print prototype 2. (1 day) -Mofiji
- Assemble prototype 2 (1 day) -Team
- Test prototype 2 (1 day) -Team

- Refine/Design prototype 3 (3 days) -Nick, Calvin, Doug
- Print prototype 3 (1 day) -Steve
- Assemble prototype 3 (1 day) -Team
- Test prototype 3 (1 day) -Team

- Collect purchase receipts (throughout) -Doug
- Final presentation preparation(7 days) -Team