# **Student Step by Step Instructions for the Project.**

## **Steps**

1. Answer questions from the Forbes article, gather an overall understanding of challenges faced by autonomous vehicles.
2. Complete the “Cabin layout” activity.
3. Complete “What do taxi’s look like around the world?” activity.
4. Research and create a [sample board](https://docs.google.com/document/d/1BJ8WF1WnRx9UejzXaN0eS4iXUJ8cyXWqngN2t90ZawI/edit?usp=sharing), include the following:
   1. Samples for interior items, colours, textures for different surfaces like seats, doors, floor, panels, touch surfaces, seating arrangement, door access.
   2. Samples of exterior items, colours, shapes, windows, wheels, exterior storage, door type.
5. Activity, [Sketch concepts](https://docs.google.com/document/d/1BFbNoJfkAYsyCTT_KtYiFYlr6FyT4K0ziwxEkYqIFNQ/edit?usp=sharing) 2 to 3 interior and exterior views of the taxi.
6. Optional Task, review the [rating system chart](https://docs.google.com/spreadsheets/d/1eABncpphIG9aTneuh1kkMRfnvTioerfC6sZG_vgO3JU/edit?usp=sharing) and the key categories being used to rate the different design. Give a rating for each and see what the total comes to. This will help determine which design you should move forward with.
7. Create a [base structure](https://docs.google.com/document/u/0/d/1aOAAqTakwMZL6MaF34yoh8fsTf6ZkcCg1ViJUuu6tRQ/edit)
   1. Design a 3D model of your final design. Export file as an STL to be printed using a 3D printer.
   2. Option, if a 3D printer is not available it could be created using wood and tools like a bandsaw or scroll saw. This also could be assembled using lego.
8. Finish the Model.
   1. Review [Creating a small Clay model](https://docs.google.com/document/d/1McJ01jOpC47Spe3yL1uF26nGFgVeNrATxyA_J114CNo/edit?usp=sharing).
   2. Clay can also be used to create complex curves, or compound curves on the model or add other features using coloured clay.
   3. Limit mixing of clay colours to allow the clay to be reused.
   4. Finish the model by painting it. Ensure you are painting in a ventilated area or outside if using spray paint.
9. Presentation option, create a one page advertisement or [Presentation](https://www.youtube.com/watch?v=b5Jg2fREEZo) board to advertise your autonomous taxi. This should include three photos of your model, sketches, and details about why you chose this design over other models. Describe how the seating is laid out and how the other key functions work on the vehicle. Describe three key design elements that make your design stand out from others or how they make yours unique. Include information from your rating system. Evaluate the final design based on factors such as usability, safety, comfort, and sustainability. Discuss the design process and explain how the final design meets the user needs and preferences identified in the research phase.