

Middle School Go-Kart Assignment.

This unit description is to be kept in your pocket folder for future reference. The Go-kart assignment objective is to research; design, build and race a go-kart using sound engineering principals. You are also required to complete a folio that documents your progress. You may use the design centre and the computers during class time to work on your folio, or you may decide to do your folio assignment for homework so you can spend more time in the workshop. The following is an out line of the minimum content your folio must have; it must be presented in a complete and professional manner.

Folio contents

A folio of your work must be handed in, as this is a high percentage of your mark. It should be set out in the following way.

All work to be presented as a digital foilo

Contents page

Research Sketches and notes.

Planning Sketches and formal drawings

Building Photos and notes

Testing Photos notes and sketches

Racing Photos and notes

Evaluation how could you improve your design if you were to build another kart.

Title page:

Subject -

Your name -

Relevant clip art, photo or drawings -

Content page.

Neat layout required with correct sequence of information.

Research

- Notes, sketches and photos on existing kart design.
- List of parts required, and dimensions of parts.
- Size limits of a standard kart.
- You will need to understand and explain the following.

Track	Toe in	Kingpin Inclination	Displacement
Wheelbase	Toe out	Pitman angle	Dimensions
Overall length	Caster	Maximum power output	
R.P.M.	Gear Ratio	Camber	Maximum Torque
Lever Ratio			

Concept Sketches.

- Draw free hand sketches showing a variety of ideas backed up with notes to explain detail on the sketches.

Working drawings

- Complete and accurate drawings to scale, showing dimension and views necessary to make the project. Us CAD whenever possible

Planing

Go-karts must have!

- Brakes

- Throttle
- They must also have bumpers to stop the rear wheels coming into contact with another kart.
- Chain must be able to be adjusted.
- Standard off the shelf parts must be used.
- Toe in must be able to be adjusted.
- Chain guard
- No sharp edges
- Rough sketches (concepts) and final formal drawings must be handed in before the next stage. 3 or 4 of the best designs will then be chosen and teams picked

Building

- Your teacher will show you how to use equipment safely and how to complete your project. You will need to pay attention during these demonstrations and taking notes is a good idea if you are not familiar with the subject or equipment.
- A camera will be available to document your progress.
- All karts to be built on a jig, full size plans to be drawn on particleboard and steel to be laid on top, clamped down before welding the frame. Frame should be first tacked into place then checked and adjusted. Frame then can be fully welded, and assembled.
- Notes, sketches and photos showing the stages of the project, include any mistakes, or problems and how you were able to overcome them.

Testing

Once the kart is running testing can begin, to iron out any “bugs” in your design. Document any problems and how you rectified them.

When you are happy with your karts performance, it can be striped down, painted and reassembled, ready for you to go racing.

Racing

You May have the opportunity to drive on the go kart track in Numurkah If your kart is up to standard. Photos and notes should be taken of problems and where you placed.

Evaluation

Notes, sketches and photos showing the stages of the project, include any mistakes, or problems and how you were able to overcome them.

Modifications, you had to make.

If you had to build another kart, what would you do differently, what worked well, how could you improve your design?

Handy hints

Set out your work clearly; do not cram too much on to one page.

Look after your paper work, keep your hands clean.

Use sketches drawings and photos wherever possible.

Printing must be neat, or use a computer.

Have someone check your spelling and grammar.

For project ideas, video tutorials, and student work examples look in the Student common files > technology > wks > folders.

General workshop and design centre rules

Students are expected to:

Arrive to class on time and in uniform. No scarfs, lose clothing, clothing with drawstrings or inappropriate footwear.

Bring all equipment to class i.e. pen, pencil, ruler, compass, eraser, and pocket folder.

Be prepared for class. E.g. recess and lunchtimes are when you need to get a drink, food, use the toilet or pay for Internet or print credits.
 Not leave the class without teacher's permission.
 Refrain from disrupting the class or other students.
 Listen to instructions
 Remain seated in the design centre.
 Use the computers for class work only and are not to be used for emails music games or web surfing.
 Complete their own work, copying other student's assignments or plagiarizing articles from the Internet is unacceptable.
 Operate machinery and tools correctly and only use the equipment that you have been instructed to use.
 Treat all students and teacher with a respectful attitude.

Assessment

All written assignments will be graded from	A to UG or NA.
Investigation or research	A to UG or NA
Design	A to UG or NA
Participation in practical work will be graded	A to UG or NA
Evaluation	A to UG or NA

Late Work Penalties

One day late	minus one grade
One week late	the work will not be graded, but will be recorded as Satisfactory.

In Addition to the written and practical assignments, you will also be assessed on your:

- Attitude to learning
- Ability to work independently
- Ability to make effective use of class time
- Willingness to respect the rights and work of others
- Willingness to seek assistance
- Willingness to clean up, put tools away, and treat equipment in a safe, appropriate manner
- Observing all workshop rules, and exercise common sense, in the interest of everyone's safety
- Meet all of the set deadlines for the completion of work.

I understand the work requirements and agree to the workshop and design centre rules

Signed. Parent / Guardian.....
 Student.....