



PROJECT MANAGEMENT GUIDE 2022



In Association with



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F1 IN SCHOOLS & THE PROJECT MANAGEMENT EDUCATIONAL FOUNDATION

In 2020 F1 in Schools partnered with the Project Management Institute Educational Foundation to Integrate Project Management into the F1 in Schools STEM Challenge.

The partnership will educate F1 in Schools' participants to develop project management skills and apply those lessons learned to their competition entry as well as to academic and professional pursuits.

Project management is now an assessed part of the competition and this guide is intended to help teams understand the power of project management to deliver a product – Your F1 in Schools car and competition entry.

Companies and organisations around the world employ the processes detailed in this document to deliver projects of all sizes from planning a marketing campaign to building a real-life Formula 1 car.

Andrew Denford, Founder and Chairman F1 in Schools, says of the association with PMIEF.

“We’re delighted to welcome PMIEF as a partner of F1 in Schools and look forward to a long and successful relationship. Project management is fundamental in our Challenge, as the students have limited time and resources for taking their F1 in Schools entry from concept to reality and I’m sure that PMIEF will be able to assist our students with this process. The scope of the partnership allows us to extend the learning and training to F1 in Schools staff and our In-Country Co-ordinators (ICCs) who deliver the programme internationally, and I am sure there will be enormous benefit to both individuals and F1 in Schools to have this opportunity.”

The PMIEF Executive Directorship said of the relationship.

"Our partnership with F1 in Schools supports its professionals to learn project management and, in turn, to transfer that knowledge to young people by thoughtfully integrating it into this globally-renowned Challenge. The organization already appreciates the value of having youth learn through a highly experiential Challenge, so we are confident this collaboration will only enrich their participation in this exciting, project-oriented competition."

ABOUT PMIEF

PMI Educational Foundation (PMIEF) is a 501(c)(3) supporting organization of the [Project Management Institute \(PMI\)](https://www.pmi.org/), the world's leading not-for-profit professional membership association. Founded in 1990, PMIEF cultivates long-term relationships with non-profits across the globe to help them integrate project management in their youth programs and to build their own project management capacity. The foundation achieves its mission to “enable youth to realize their potential and transform lives through project management” and its vision for “inspiring youth to achieve their goals, making dreams a reality” by investing in high-quality organizations that exemplify a commitment to preparing young people for 21st century success and an appreciation for both the societal application and value of project management. Visit [PMIEF.org](https://www.pmief.org/) for more information.

ABOUT THE PROJECT MANAGEMENT INSTITUTE

The Project Management Institute (PMI) is the world's leading association for those who consider project, program or portfolio management their profession. Through global advocacy, collaboration, education and research, the PMI work to prepare more than three million professionals around the world for The Project Economy: the coming economy in which work, and individuals, are organized around projects, products, programs and value streams. Now 50 years in the making, the PMI work in nearly every country around the world to advance careers, improve organizational success and further mature the project management profession through globally-recognized standards, certifications, communities, resources, tools, academic research, publications, professional development courses and networking opportunities. As part of the PMI family, [ProjectManagement.com](https://www.projectmanagement.com/) creates online global communities that deliver more resources, better tools, larger networks and broader perspectives. For more information visit:

[PMI.org](https://www.pmi.org/)

[projectmanagement.com](https://www.projectmanagement.com/)

[facebook.com/PMInstitute](https://www.facebook.com/PMInstitute)

[@PMInstitute](https://www.instagram.com/PMInstitute)

PRINCIPLES OF PROJECT MANAGEMENT

You probably are already engaging in project management in your everyday life. Each time you plan what clothes to pack for vacation, scheduled a time for your group of friends to get together, prepared a presentation or enter a competition with your team, you were participating in various aspects of project management.

Project Management is a process followed to help ensure that all project work that must be completed to create a product, service or result is understood, planned and finished within the constraints of time (the schedule), cost (the budget) and quality.

What is a project?

Perhaps it is best to say what a project is not... It is not a daily, weekly, or even monthly routine or activity such as walking the dog or weekly chores. These activities are called ongoing operations.

A project is temporary, it has a beginning and end and it creates a unique product, service, or result. It can vary in size, be simple or complex and will involve resources such as materials and people.

Some examples of a project are planning a school prom, a birthday party, or your entry into FI in Schools.

Key roles in project management

Project manager

This is the person responsible for making sure that each of the project's goals and objectives are completed. The project manager oversees the project from beginning to end and ensures that everyone involved is informed about how the project is going. In an FI in Schools team this could be the Team Manager or you could create a Project Manager role within your team.

Project stakeholder

This a person or an organisation who is involved or has an interest, positively or negatively, in the project or the outcome of the project. Project stakeholders may include customers, clients, vendors, team members and contributors to daily activities. All stakeholders need to be kept informed of the project's progress. The project stakeholders in FI in Schools could include your school or college, FI in Schools HQ or your in-country coordinator.

Project sponsor

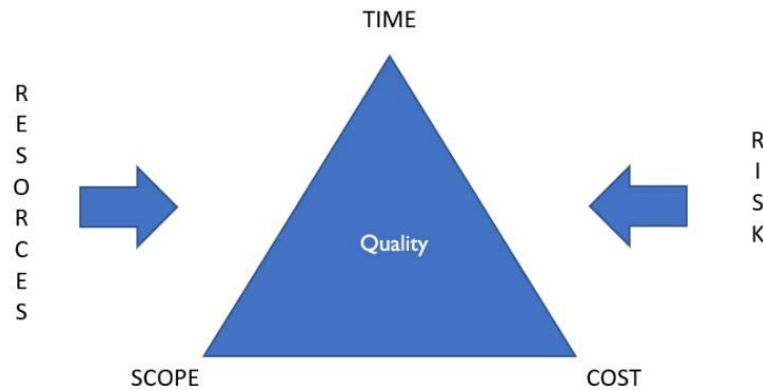
This is a key project stakeholder and is the person that provides financial and other needed resources for the project. The project sponsors in FI in Schools are your financial and in-kind sponsors or indeed your school or college.

Project team members

These are the people who work on a project and contribute to its success. This is your FI in Schools team.

The triple constraints of project management

Every time you start a project you will be concerned with what has to be done(scope), how much it will cost(budget), and how long it will take (time). You do this all of the time, using the above examples of planning the prom or a birthday party. We call the three parameters the triple constraints of project management.

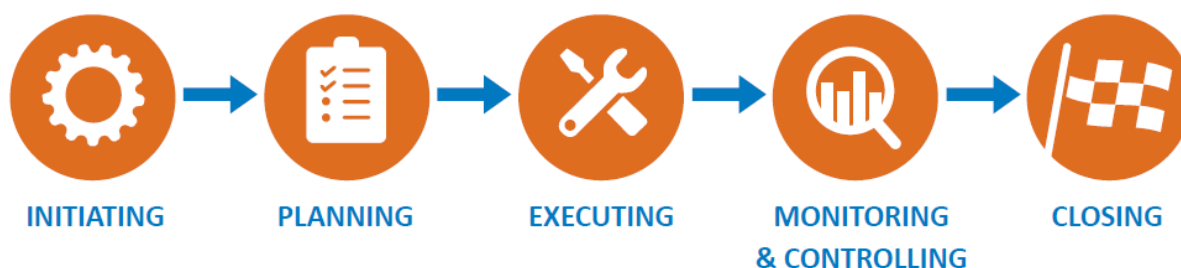


As a project manager you will want to define these parameters early in the project. Once defined, you will use these parameters as guideposts as you plan and later execute your project. You will also determine which parameter is most important and use the other two as negotiating points if necessary. For example, you might determine the most important parameter is being ready for your regional competition (time) with a car that meets the specifications (scope). If you run behind schedule, you might need more money or resources (cost) to manufacture the car correctly and make it to the competition on time.

You will notice the parameter of quality in the middle of the triple constraints and resources and risks as influencers. Quality, risks and resources are used as references to attain your goals. You always need to keep them in mind as you plan and execute.

THE PROJECT MANAGEMENT PROCESS

Any project, no matter the size or complexity, involves using specific skills, tools, and procedures to complete the project's goals. Project management can be broken down into five processes:



These processes help the project manager and team members define, organise, and keep track of all the work that needs to be completed for a project to be successful.

Overview

The **Initiating Process** is the beginning of the project. During this process, project stakeholders are identified and a project manager is selected. Project goals and objectives are defined and authorisation is obtained to proceed with the project.

During the **Planning Process**, the project plan is created. The project manager and team members define the activities and tasks needed to complete the final product, service or result. They also determine what staff and resources are needed and establish the timeline and available budget for the project. The planning process is very important to the overall success of the project. Without careful planning, a project manager and project team may find it very difficult to achieve project success.

Executing is the process of working through the project plan. The executing stage involves performing the activities outlined during the planning process.

Monitoring and Controlling occurs throughout the entire project. Monitoring and controlling involves ensuring that all the tasks in the project plan are completed on time and within budget, as well as addressing any changes necessary to successfully achieve the project goals.

In the **Closing Process**, project goals are delivered. Final administrative work is completed, and lessons learned are captured to improve future projects. The closing process involves taking the time to celebrate the team's successes along the way toward completion of the project.

Each of these processes will be addressed in more detail below:

INITIATING PROCESS



The initiating process group has three goals:

- **Defining the project**
- **Identify stakeholders**
- **Authorise the project**

Defining the project

During this process you will define the goals and identify the deliverables of your FI in Schools competition entry or as we will now call it your FI in Schools Project.

You will need to answer the basic project questions of Why, Who, What, When, Where and How:

WHY is the project being initiated? What is the reason for the project?

WHO is this work being done for? Identify the people participating in or affected by the project's outcome both positively and negatively.

WHAT are we going to deliver? What work do we need to complete? What resources and funds do we need to produce these **deliverables**?

WHEN will we produce these deliverables? When will the project sponsor approve and accept the final project deliverables?

WHERE will the deliverables be used?

HOW are we going to achieve the project's goal and objectives? How will success be measured?

Identify stakeholder

Stakeholders are the people or organisations involved or that have an interest, positively or negatively, in the project or the project's outcome. A stakeholder register should be created which includes the individuals involved and/or impacted by the project, their role in the project and their contact information.

Name	Role in project	Organisation	Contact	Engagement Activities
Mrs Smith	Teacher	My School	smith@school.com	
R Harvey	Sponsor	Sponsor Inc	rharvey@sponsor.eu	
A Denford	Comp CEO	FI in Schools	info@flis.com	
S Millar	Team member	My Team	millar@team.com	

Authorise the project

A **project charter** is a document authorising the start of a project and is used to further clarify and refine the project. It will describe the outcomes and expectations for the project and identify the measure of performance, milestones, assumptions, constraints, and identify risks and resources.

The Why, Who, What, When, Where and How questions are used to create the project charter.

The **project description** outlines your goals. Goals should be specific, measurable and observable. Goals can guide a project from start to finish. The clearer you are in defining your goals, the easier it will be to stay on track.

The **project manager** should be named and a list created of the **team members** that will be involved in the project.

The **project reason/justification** outlines the reason for doing this project. The why question could be 'we want to become World Champions'.

A **milestone** is an estimated time when a major deliverable will be completed. Consider when high-level progress will be made throughout the project. For example, when your car will need to be completed.

The **acceptance criteria** documents how the final product will be evaluated and what the quality of the final product will look like. It defines how you will know you are done and if you have successfully completed your goals.

Assumptions are factors about the project that you consider true without getting proof. Identifying assumptions helps a team clarify assumptions that not all team members share. An assumption could be that your school will excuse you from class to attend a final event.

A **constraint** is any factor that provides a limit on the ways that a project goal can be accomplished. This may include limitations in finance, scheduling, people or others. For example, a sponsor not paying would limit finance or the new release of the technical regulations has increased the minimum weight of the car.

Risk includes any unexpected situations that might arise. Consider potential risks at the beginning of a project so that you can manage them appropriately and create a plan of response. While you cannot predict all situations, the more prepared you are, the more successful your project will likely be. An example of a risk could be an issue with your 3D printer preventing you from printing your car front wing. The response plan would be to have a list of contacts who have a 3D printer and would be willing to let you use it.

Resources may include money, time, people, expertise, equipment, machinery or a workplace. Consider all resources that would be needed for the project and their estimated cost.

By taking the time in the beginning to define the project and obtaining authorisation, teams can set themselves up for success. Once the project charter has been approved the project is authorised and can commence.

Template Project Charter

Project charter

Project: *FI in schools*

Team name: *Evolution*

Date: *September 15*

Project manager

The person responsible for ensuring that each of the project's goals and objectives are completed.

Team member

The people who work on a project and contribute to its success.

Project description

Describe the project. What is the goal of your project?

Project role/justification

Why are you doing this project?

Major milestones

What are the big points of progress? What are the deliverables? When are they due?

Acceptance criteria

How will the final product be evaluated?

Assumptions

What do you believe to be true about this project?

Constraints

What factors will limit how the project gets done?

Risk

What things could cause issues during the project?

Resources

What resources are needed? What will it cost?

<i>Project Start date</i>	<i>XX/XX/XXXX</i>	<i>End Date</i>	<i>XX/XX/XXXX</i>
<i>Project Manager</i>	<i>Signature</i>	<i>Date</i>	<i>XX/XX/XXXX</i>
<i>Approved by</i>	<i>Signature</i>	<i>Date</i>	<i>XX/XX/XXXX</i>

Helpful hints

Deliverables

These are the products, services or results of a process or project. In FI in Schools this will be your cars, portfolio work, pit display etc. Deliverables are written as a statement of something accomplished or produced.

Milestones

Milestones will always have at least one deliverable and will include the due date. This serves as a marker for how far along you are in the project.

The **Why, Who, What, When, Where and How** are not yes/no questions. Instead, they are all open-ended questions. Asking open-ended questions helps get a fuller sense of what the project includes.

For example:

If your team asked “Do we know who the project stakeholders are?” You might answer “Yes,” but it is possible that each team member has different people in mind.

Asking an open-ended question like, “Who are the project stakeholders?” provides the opportunity for all ideas.

Brainstorming

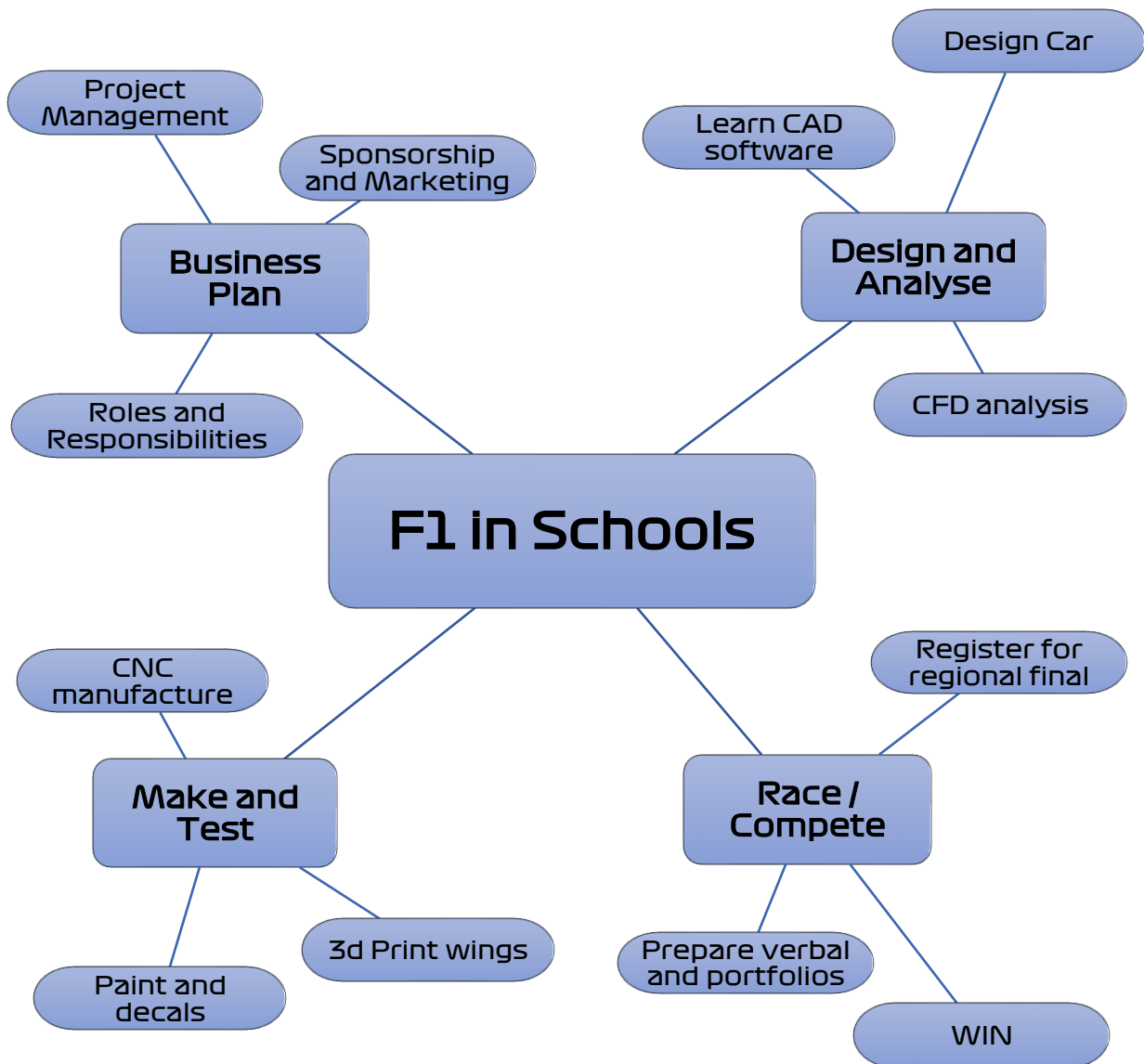
This is a strategy of creative thinking, usually done in groups, that comes up with as many creative ideas as possible, over a set period of time.

While there are many different approaches to brainstorming, generally, the rule is that no idea should be immediately judged or dismissed because negativity or self-doubt can make it very difficult to think as freely and/or as creatively as possible. Sometimes the idea that seems the strangest at first ends up being the inspiration for the perfect project solution

Mind Mapping

This involves writing the goal of the project in the middle of a piece of a large sheet of paper. Draw a circle around that idea. Then, think of as many ideas or concepts that relate to that central goal as possible. Write them on the paper around the central goal and draw lines out from the central circle to these related ideas. For each new concept, draw a circle around it and think of as many related ideas as you can and connect those ideas with lines to that circle.

Example Mind Map



PLANNING PROCESS



The **planning process** includes the following actions:

- Writing a scope statement
- Planning for quality
- Planning how to monitor and control the project
- Building a project schedule
- Assigning roles and responsibilities
- Planning for acquiring resources
- Creating a budget
- Planning how and when to communicate
- Planning for risk

Writing a scope statement

The **scope statement** builds upon the description created in the **project charter** in the initiating process. It sets the goals for what will be accomplished in your project. Aim to make your goal as specific as possible and measurable so you can determine if your goals are achieved.

A project **scope statement** describes the work that will be done and what will not be done to create the project's unique outcome.

For example, you know you will need to prepare a verbal presentation, engineering portfolio and build a pit display so these items must appear in the scope statement. You also know that FI in Schools is a team competition so no individual work needs to be submitted and individual work would not appear in the scope statement. You should read the competition regulation carefully and list all the deliverables you are going to be expected to deliver. These are your guidelines and standards.

Planning for quality

Planning for quality is part of the normal project planning activities. You need to gather the quality standards that are required for your project and make sure you plan quality into the tasks of the project schedule. You will also build tasks that ensure or inspect the quality of the deliverable. You then need to monitor and control the quality of the deliverables of the project.

A technique you can use to verify that the quality standards have been met is called acceptance criteria. You can define acceptance criteria for the entire project or specific deliverables. The below example demonstrates the quality acceptance criteria that could be implemented for your car development.

Example Quality Acceptance Criteria

Quality Acceptance Criteria	Testing and Assessment	Review, Acceptance and Sign Off	Timing	Responsibilities
No bubbling of Paintwork	Visual signs of bubbling	Team Manager	Completion of painting	Manufacturing Engineer
No component breakages.	Visual signs of cracking checks.	Team Manager	At end of first and second round of testing	Manufacturing Engineer

Planning when and how to monitor and control the project

Each part of the planning process builds on the others. You may find that you need to revisit and revise parts of your project along the way. This process of review and revision is part of monitoring and controlling your project. Monitoring and controlling will be easier to conduct with ongoing check-ins.

Take a moment to plan how frequently you will schedule check-ins with your team and project sponsor and how you will document the progress you are making. You may decide to check in hourly, daily, or weekly.

Building a project schedule

A **project schedule** needs to be created, identifying all the tasks to be completed including their start and due dates. The following steps should be undertaken:

Determine the major categories of work:

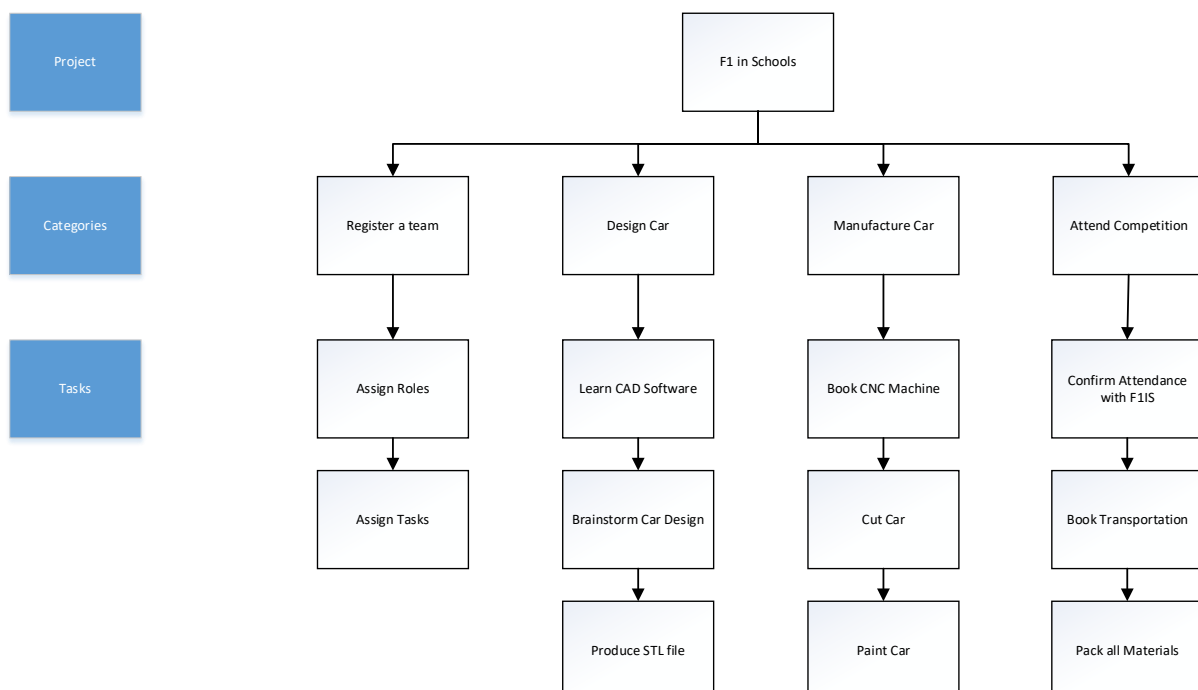
These categories can be established in several ways.

1. By PHASES: What should be accomplished pre competition, during competition, etc?
2. By MAJOR PIECES OF WORK: what should be accomplished for the design of the car, the manufacture of the car, creation of the enterprise portfolio, etc.
3. By MILESTONE: Milestones are the critical points in a project's timeline that can be monitored to determine if the project is on schedule. They show completion of major pieces of the project.

Define tasks:

What tasks need to be accomplished to meet each milestone? Tasks are the “to-do” list. Breaking out the categories and tasks in this way is called a **Work Breakdown Structure (WBS)**

Example Breakdown structure



Determine the sequence:

When will each task be accomplished? To determine this sequence, you will need to assess which tasks are dependent and which are independent.

A **dependent** task means another task must be completed before the dependent task can begin. A very basic example... You will need to design your car in CAD before you can manufacture it so manufacture is dependent on the CAD work being completed.

An **independent** task means the task can be completed at any time and is not related to some other task being completed.

Estimate time:

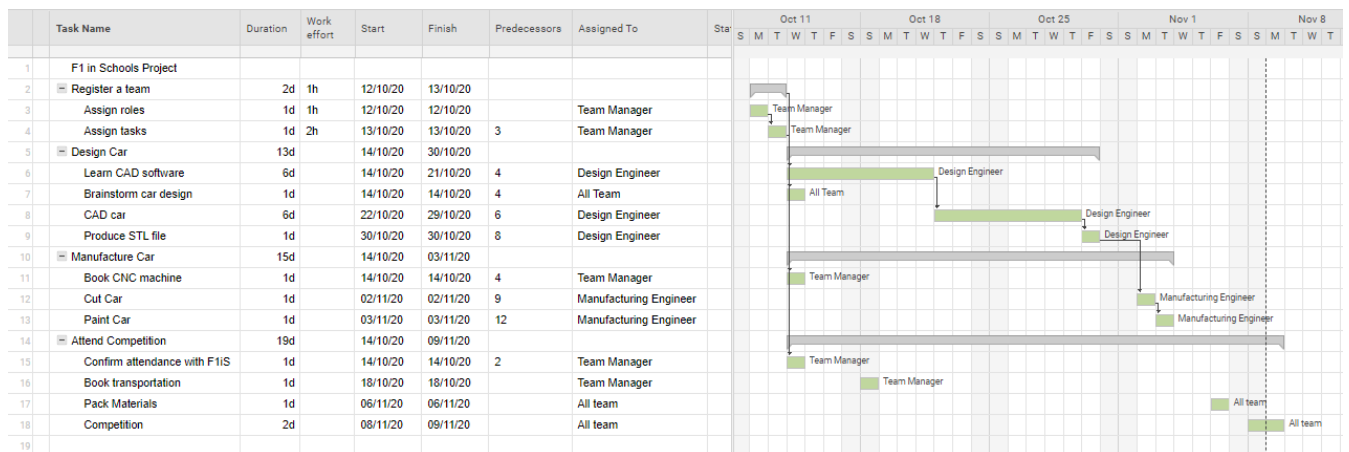
How long will each task take to be completed? This is your best guess based, perhaps on experience or after discussion with your team, considering the amount of work to be done. Underestimating the amount of time needed to complete each task is a common error. Building extra time into the schedule can help ensure you have the time needed to complete your project on time. As you will be attending an event final you have a hard deadline that cannot be moved. Running out of time could mean not finishing your car or other judged work.

Build the schedule:

With all the above information in hand, it is now possible to build the schedule.

There are many tools you can use to create your schedule such as table in Word, a chart in Excel or other project management specific software that can generate a Gantt chart such as Microsoft Project, Smartsheet, miro.com or projectmanager.com. Speak with you school to see what tools you are able to access.

Example Schedule



Assigning roles and responsibilities

It is important to assess the strengths, skills, and abilities of each team member to effectively assign responsibilities to the best-equipped individual(s). A **Responsibility Assignment Matrix (RAM)** can be used to assign team members to appropriate tasks. A legend or key is usually applied to the RAM, the one most commonly used is **RACI (Responsible - Accountable - Consulted – Informed)**.

Example RACI Matrix

Task	Team/Project Manager	Design Engineer	Manufacturing Engineer	Graphic Designer
Design Car using Autodesk	Accountable	Responsible	Consulted	Informed
Design Team Logo	Accountable	Consulted	Informed	Responsible
Create Budget	Accountable	Informed	Informed	Informed
Book CNC Time	Accountable	Consulted	Responsible	Informed

Legend / Key:

Responsible for doing the work

Accountable for making sure the work gets done.

Consulted to provide critical input to the work.

Informed of the work being done or completed

A FI in Schools team will be very structured, the rules and regulation documents highlight the roles that a team should have. This does not limit you assigning other roles to team members.

It is important to ensure that each activity and task identified in the project schedule is allocated to a team member

Planning for acquiring resources

Resource planning considers all the things needed to complete the project. This may include people, money, equipment or even space needed to do the work.

In the planning process you will need to determine where and how you will acquire each resource, when each resource is needed and how long you will need it.

Example Resource planning

Resource Needed	When will you need it?	How you will acquire it
Model block	November 15	Place order with Denford LTD
Denford CNC router	November 24 (1 day)	Request access via school lab technician
School Minibus	January 20 (2 days)	Book Minibus with School administration office

Creating a budget

A budget is a financial plan of income and expenditure for a defined period of time.

You will need to:

- Identify what items will cost you money and how much they will cost. It is normal for costs to initially be estimated and your budget should include the actual costs so you can identify any over or under spend.
- Identify where you plan to acquire the money. A fundraising event, sponsor pitch or a donation.
- Agree who will be responsible for the budget and keep a record of spending and approve any purchases.

There can be many different costs associated with an entry to FI in Schools, some of which may not be immediately obvious or expected. For example, they may be associated with risks you have identified or unexpected changes that you need to make as you develop your car. There may also be a scenario where items cost more than you expected and you need to ensure your budget can accommodate all these. In

finance this is called the budget contingency. You can decide how much contingency you need by assessing how likely each of the scenarios presented above are likely to happen.

Example Budget

FI in Schools Budget			
Item	Budget cost	Actual cost	Balance
Equipment			
Travel			
Materials			
Contingency			

Planning when, what and how you will communicate

Team members and stakeholders need information on how the project is developing and what may need to change to get all the work done.

Planning for communication involves having a clear understanding of who needs to communicate with whom and how often, as well as what information would be relevant and useful to each stakeholder.

Example Communication Matrix

Who to contact	What to communicate	Communication method	When
Teacher	Milestones met	Face to Face	Milestone completion
FI in Schools HQ	Competition registration	Email / on-line forms	Start of year and when information is requested
Sponsors	Competition progress update	Email	Monthly
Team members	Team update	Microsoft teams	Daily @ lunchtime

It is very important to have an internal project team communication plan. You should agree how you plan to communicate, how often, where and when. Look at the various communication tools that are available to you in case you cannot always meet in person.

Planning for risk

It is important to identify possible risks that might impact the successful outcome of the project. Identifying potential risks provides the opportunity to plan a response in advance that will help to avoid or minimise a negative impact on the project.

Risks could impact one or more areas of the project, including:

- **Resources:** Ability to acquire people, equipment, funding, or other resources to complete project. All of these apply to FI in Schools.
- **Timing:** Will deliverables or the entire project be completed on schedule? This is critical for FI in Schools as you have a hard deadline of attending an FI in School final event.
- **Scope:** Completing and delivering all the items named in the original scope. You may choose to change the class of the competition you have entered.
- **Quality:** How well each deliverable meets the goals set in the acceptance criteria. Has your car been manufactured as expected?

Example Risk Assessment Matrix

What might go wrong	Risk Level L = Low M = Medium H = High	Area of Impact R = Resource T = Timing S = Scope Q = Quality	Preventative planning
Car front wing damaged during testing	M	R – New part will need to be manufactured T – We may not have enough time to manufacture a new wing before	-Manufacture a spare wing -Ensure testing takes place well before the finals



THE EXECUTING PROCESS

Executing is the process of working through the project plan. This involves putting your project plan into action. The project plan serves as a guide to help ensure that the deliverables — the intended goals of the project — will be completed properly, on time, and within the budget.

As work is being executed, you should strive to:

- ✓ Use your **budget** and resources as planned.
- ✓ Manage the **risks** you identified.
- ✓ Stay focused only on the work you described in your **project's scope**.
- ✓ Meet your **milestones**.
- ✓ **Document** your progress in an organized way.
- ✓ **Communicate** your project's progress regularly and effectively to your stakeholders.

By checking on your progress, evaluating whether project goals are being achieved in the best possible way and being prepared to adjust their path if necessary, you are engaged in the monitoring/controlling process.

THE MONITORING AND CONTROLLING PROCESS



Monitoring/controlling is a continuous process throughout the project life cycle. Project managers and team members need to establish a cycle to evaluate the progress of the project and report back to stakeholders about project developments.

Validating and controlling scope

This is a key component of the monitoring/controlling process group.

Keep the following in mind:

- Ensures that all the tasks necessary to achieve the project goals are completed.
- Identify if any activities need to be added to the project.
- Prevent work on the project from going beyond the scope.
- Determine what to do if any activity is taking more time than planned.

Scope creep

This occurs when work is added to the project without appropriately adjusting the schedule and resources, and without obtaining sponsor approval.

Routinely review the **Acceptance Criteria** that were established in the project to make sure that the products of a project will satisfy project stakeholders' needs and meet their standards.

Avoiding scope creep should start early in the project, ideally during the initiating process when you established a goal and set the boundaries for the project's work and scope. During the planning process you established what would not be included or would be "out of scope" for the project. If you establish early what is and what is not a part of the project's scope you can rely on and monitor those plans to help you avoid scope creep.

Adjust for the unexpected

It is more than likely that you will encounter some surprises as the project progresses. This is OK, it is what monitoring and controlling is for. Discuss any surprises that occur as project work is being done. If a change needs to occur, review the schedule, resources and scope to see if there are other changes that need to be made.

Status reports

A status report is an effective way to monitor and document of the progress of your project — and to communicate that progress to others. Each **status report** should include:

- ✓ What work has been completed
- ✓ What tasks are in progress
- ✓ What work is still planned
- ✓ What issues have developed

Status reports can help identify items that might affect the project scope, timeline, budget or deliverables. For example, if you raise money to buy a 3D printer but this arrives 2 weeks late, this will affect your timeline and you may not have time to 3D print your wheels for the regional final.

Example Status Report

Status report

Project: *F1 in schools*

Team name: *Evolution*

Date: *November 12*

Project status: *in good shape*

Tasks accomplished:

- all sponsorship acquired.
- car cad design milestone achieved and car ready for cfd analysis and then manufacture.

Tasks In progress:

- cfd analysis underway.
- manufacturing engineer is preparing resources (model blocks) and booking the denford cnc router to cut the car.

Planned tasks

- portfolio writing.
- verbal presentation script writing and powerpoint creation.

Issues:

- one of the team members has an appointment clash on the date of the regional final. They are currently attempting to reschedule the appointment.
- our 3d printer needs maintenance and we are yet to confirm an engineer site visit.

Questions for discussion:

- we need to finalise our transport arrangements for attending the finals.

THE CLOSING PROCESS



Closing is the process of completing the project. Finishing a project is an accomplishment. It is the achievement of a lot of work. As a group, you and your team members collectively sparked an idea, planned it, executed the plan, monitored/controlled your progress, and have now reached the closing process.

In the closing process you have the opportunity to reflect upon the quality of the project deliverables, what you learned about managing a project, and how well you and your team worked together.

In the closing process there is still some work to be completed as follows:

- ✓ A closing **presentation** is created, for some projects, to present the final report to the stakeholders.
- ✓ Collect and store any project-related paperwork and documents (such as the project plan, completed schedule, etc.) in a **project portfolio** such as in a notebook or a computer. These documents become reference material for future projects.
- ✓ Team members need to **“sign off”** on the project to verify that the project is completed.
- ✓ Create a **Lessons Learned** document with team members by asking what went well, what could have been done better, and what should continue. You may have received feedback from the judges which should be included. You can also reflect on how your car performed on the track.
- ✓ Complete a **self and peer assessment**. Include whether you and your group:
 - Treated each other with respect,
 - Shared responsibilities,
 - Communicated clearly and effectively,
 - Worked in an organized fashion and
 - Managed time wisely.
- ✓ Finally, **celebrate** all that you and your team have accomplished! Regardless of the outcome, you have dedicated time and effort, learned a lot along the way, and should be rewarded for such effort.

Example Lessons Learned Report

Lessons learned

Project: *F1 in schools*

Team name: *Evolution*

Date: *January 15*

What did we do right?

- we won the regional final and have a place at the national finals.

What could we have done better?

- we have not scored well in our verbal presentation. We all acknowledge we did not rehearse this enough.
- our car was not as fast as we had hoped. We all acknowledge that we did not leave enough time to test our prototypes.

What should we continue to do?

- test, test, test
- verbal presentation script writing, this really helped

What significant issues did we encounter and how did we resolve?

- our 3d printer really let us down
- we built a relationship with our local university to gain access to their equipment

What are our lessons learned?

- we need to use as much time as we can analysing our cad design. Our car was fast, but we wanted to win the fastest car award
- we should have had more team meetings especially as we progressed through the project milestones

Template Self & Peer Assessment

Self & peer assesment

PROJECT: FI in Schools
TEAM NAME: Evolution
DATE: JANUARY 15

List your team’s members, including yourself, in the space provided below. Then, rate every person on each behaviour listed. Use the following rating scale:

4 = Always

3 = Usually

2 = Sometimes

1 = Never

Behaviors	Team Member Names (including your own)					
Exhibited a positive attitude						
Treated other with respect						
Shared responsibilities						
Did work accurately & completely						
Communicated clearly & effectively						
Was organized						
Managed time wisely						

KEY TERMS

INITIATING PROCESS	
Acceptance criteria:	A set of conditions that is required to be met before deliverables are accepted.
Assumption:	A factor in the planning process that is considered to be true, real, or certain, without proof or demonstration.
Constraint:	A limiting factor that affects the execution of a project, program, portfolio, or process.
Deliverables:	Any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project.
Milestone:	A type of schedule that presents milestones with planned dates.
Project charter:	A document issued by the project initiator or sponsor that formally authorizes the existence of a project and provides the manager with the authority to apply organizational resources to project activities.
Project scope:	The work performed to deliver a product, service, or result with the specified features and functions.
Resource:	A team member or any physical item needed to complete the project.
Risk:	An uncertain event or condition that, if it occurs, has a positive or negative effect on one or more of the project objectives.
Stakeholder register:	A project document including the identification, assessment, and classifications of project stakeholders.
Negative interest	A stakeholder with negative interest is typically one who is affected by the outcomes of a project. They either does not want that outcome to happen or will be negatively impacted by that outcome.
PLANNING PROCESS	
Milestone:	A significant point or event in a project, program, or portfolio.
Planning process:	Those processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve.
Project schedule:	An output of a schedule model that presents linked activities with planned dates, durations, milestones, and resources.
Scope:	The sum of the products, services and results to be provided as a project.
Work Breakdown Structure (WBS):	A hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables.

EXECUTING / MONITORING / CONTROLLING	
Communications management:	A component of the project, program, or portfolio management plan that describes how, when, and by whom information about the project will be administered and disseminated
Executing process:	Those processes performed to complete the work defined in the project management plan to satisfy the project requirements.
Monitoring/controlling:	The processes required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes.
Risk:	An uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives.
Scope creep:	The uncontrolled expansion to product or project scope without adjustments to time, cost, and resources.
CLOSING PROCESS	
Closing process:	The process(es) performed to formally complete or close a project, phase, or contract.
Lessons Learned:	The knowledge gained during a project which shows how project events were addressed or should be addressed in the future for the purpose of improving future performance.

FURTHER READING

For more resources and information about project management, head to the resources page of the FI in Schools website:

[FIINSCHOOLS.COM](https://www.fiinschools.com)