

# 2020 Guidelines for Setting Goals & Preparing Schedules



# Our Mission

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*“...provide a fun and exciting educational engineering program for sixth, seventh, and eighth grade students that combines a stimulating engineering challenge with a "hands-on" application to present their vision of a city of the future.”*

*“Living on the Moon”*



# How to Get Started

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The **Define Stage** is where your Future City project begins. This is your team's opportunity to establish what the project "is" and what the project "isn't" before beginning the work.

1. Identify the Problem,
  - a. **Build** background knowledge about what's involved in creating a city;
  - b. **Learn the Specs**, where you'll learn about the competition deliverables.
  
2. Talk with your team about what you hope to achieve in the competition
  - a. think about resources and constraints that will shape your project, and summarize the requirements for each deliverable.

**Thinking about what you want to do before you do it is critical to your success!**



# Lead in Your Team

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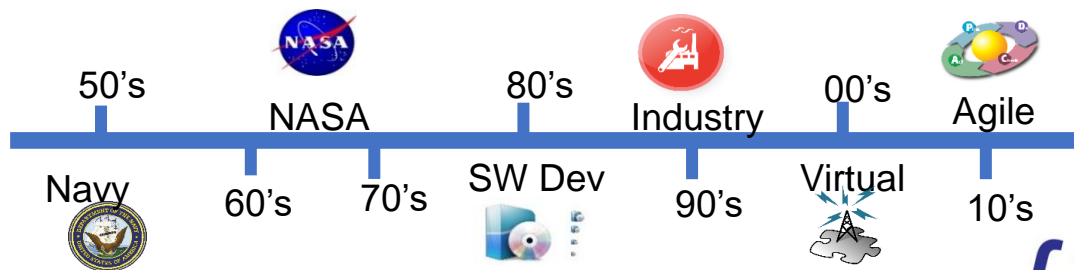
Building a city of the future is an exciting and complex project. To successfully lead your team through the competition, you've got two powerful tools:

- The Engineering Design Process--helps you design and build your solution to the Future City challenge
- The Project Management Cycle--keeps your project on track and aligned with goals of the team



# What is Project Management?

- Definition
  - “The application of knowledge, skills, tools, and techniques to project activities to meet the project requirements.”
- It is both a
  - Science – applying proven and repeatable processes and techniques, and an
  - Art – applying intuitive and personal skills in managing people and situations
- It is the planning, organizing, and managing of activities and people to efficiently and effectively deliver the end result.



# What is the Value of Project Management?

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- Helps define exactly what your product is and what activities you need to do to create it.
- Proper planning helps to create the shortest path to completion.
- Proper planning ensures you don't forget tasks and don't do unnecessary ones.
- Provides team members with a clear picture of what they have to do and by when.
- Keeps the project on track. Allows you to see if there is a problem and resolve it before it becomes critical.

*It does not mean you will have no problems, or no risks, or no surprises. What it means is you have standard processes in place to deal with all contingencies.*

# Getting Started With Your Team

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Assess your skills

- What do you do well?
- Not so well?
- **Pick your project manager!**

Set your team up for success

- Strengths
- Weaknesses
- Advantages
- Constraints

Create Team Rules

- No more than 10
- Example: No phones during meetings

Assign jobs

Create a team archive

# Getting Started With Your Plan

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Create your project plan to create our future city on the moon.

- Review the rubric for goal setting to understand point values.
- Make a list of important features of your city
  - Where is your city?
  - How many people live there?
  - When does it exist?
  - What things make your city great?

**Your team will use the Project Plan to plan how to complete each deliverable.**

- **You'll map out milestones and tasks, create a schedule, assign roles, and identify resources needed.**





# Getting Started With Your Plan (cont'd)

Understanding resources

- For research, designing, building
- Books, people, equipment, supplies

What resources will you need?

- Are the resources available?

What are constraints or limitations?

- e.g. time, money, knowledge, helpers

State what you know is true about the project

- Time, materials, expected challenges

State additional goals that can be achieved

# Goal Setting Rubric

<b>Format and admin (2 pts)</b>	<b>0 Points Requirements Missing</b>	<b>1 Point Fulfills the requirements.</b>
Deliverable submitted on time.	No project goals deliverable or deliverable is late.	Deliverable was in the "Project Plan" mailbox by end-of-day, December 4, 2020
Deliverable includes all sections completed and Deliverable uses template provided by FutureCity.org	Missing one or more sections and/or Deliverable uses no format or another format.	All sections included.
<b>Content (2 pts)</b>	<b>0 Points Requirements Missing</b>	<b>1 Point Fulfills the requirements.</b>
Do the resources, constraints, assumptions seem reasonable?	No structure or elements in the deliverable; sections are not thought-through	Resources properly noted; well thought-through assumptions and constraints that are based in reality.
Are at least two of the goals related to running a project, not the city?	No goals	At least three goals created; two goals are for the project specifically. All goals are well-crafted and display project insight.

# Schedule, Tasks & Milestones

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Identify deliverables to be accomplished



Identify all tasks to be performed



Use color coded Index cards or “sticky notes” to relate tasks to deliverables.



Determine length of time for each task.



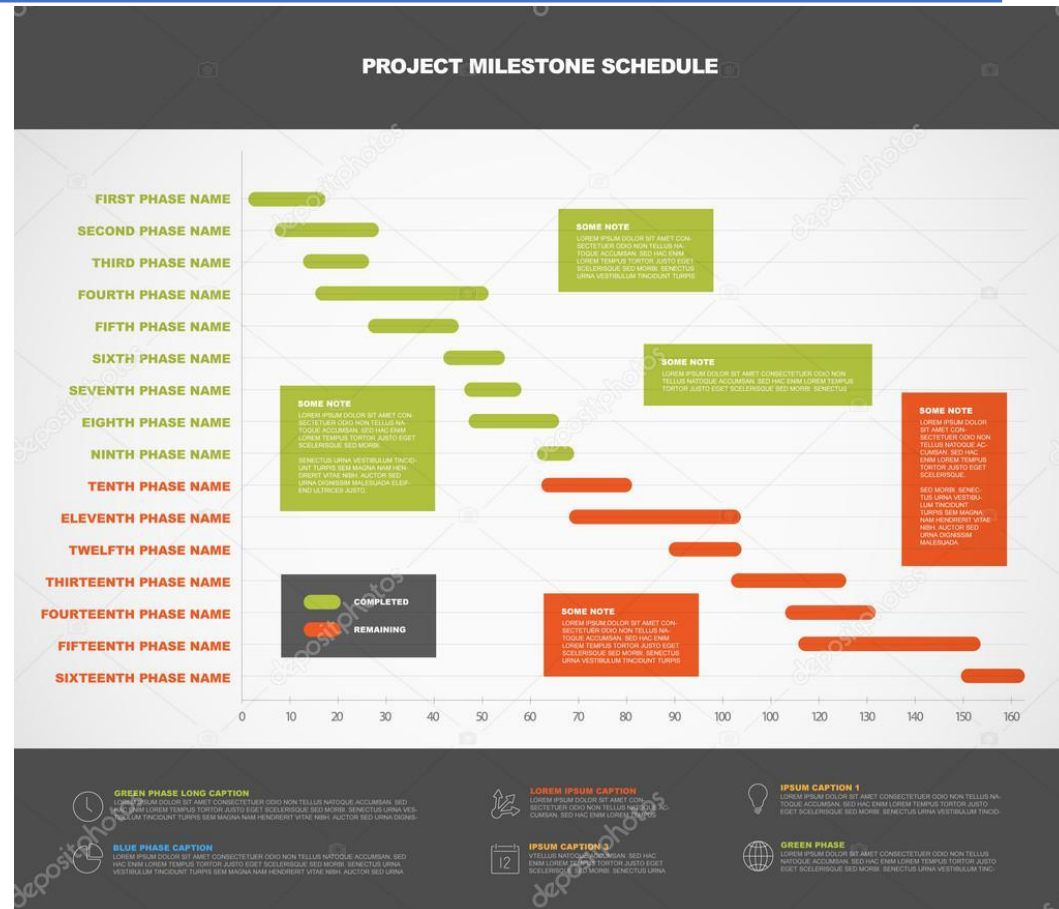
Determine which tasks require precedents and which tasks can be performed at the same time.



Get volunteers for roles and responsibilities

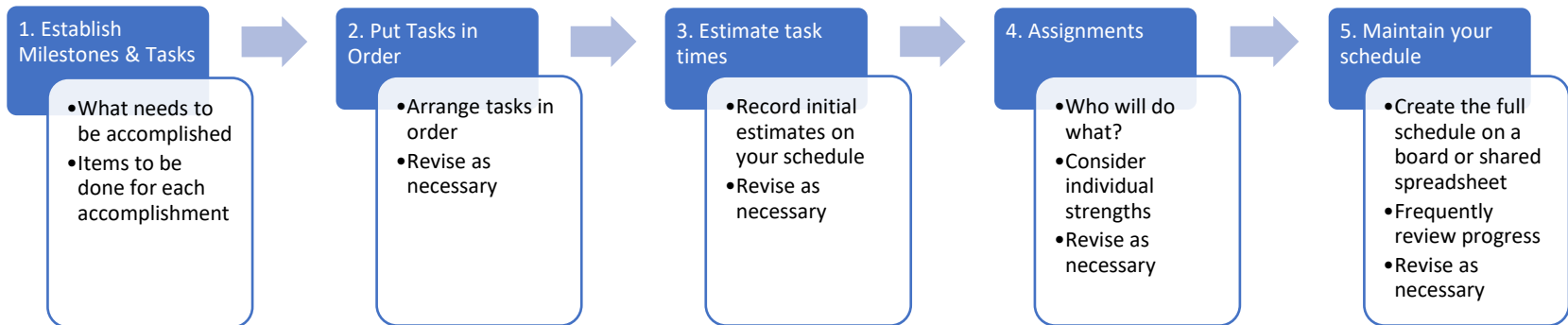
# Schedule, Tasks & Milestones

- Look for Schedule Flexibility
- ✓ Plan for possible delays
- ✓ Consider tasks that can afford delay
- ✓ Consider tasks that can start at the same time
- Create an image of your schedule



# Steps to Creating Your Schedule

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**See Handbook Appendix for additional information.**

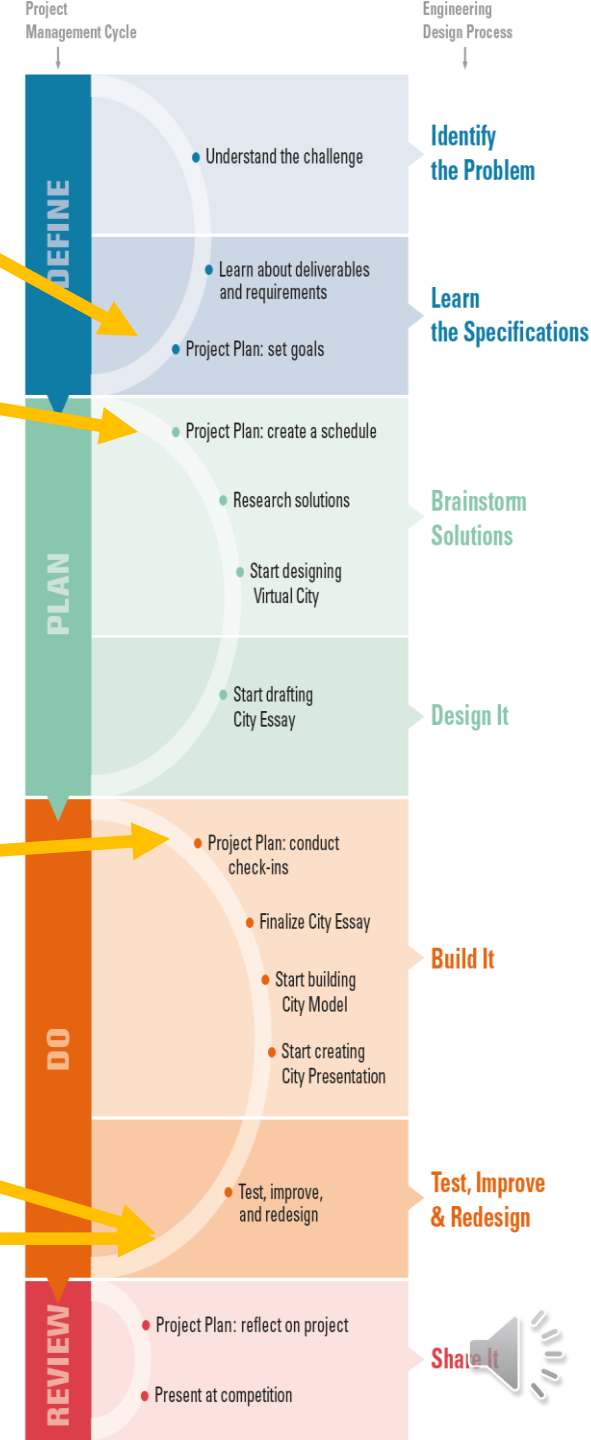
# Schedule Rubric

Format and admin (2 pts)	0 Points Requirements Missing	1 Point Fulfills the requirements.
Deliverable submitted on time.	No project schedule deliverable or deliverable is late.	Deliverable was in the "Project Plan" mailbox by end-of-day, December 4, 2020
Deliverable includes all sections completed; Deliverable has been provided in acceptable format.	Missing one or more sections and/or Deliverable uses no format.	All sections included.
Content (2 pts)	0 Points Requirements Missing	1 Point Fulfills the requirements.
Are there tasks for each deliverable, each task has start and end dates and team members assigned?	Very few tasks; tasks are missing dates and team members	Team came up with multiple tasks in addition to the template tasks; all tasks are resourced and timed.
Are the tasks and overall schedule realistically estimated?	Timeframes are rushed.	Team was able to articulate and provide enough time to complete each of their deliverables.

# Future City Requirements and Deliverables

- Rubric
- Templates on Page 44, 48, 50, 52.
- [futurecity.org/resources](http://futurecity.org/resources)
- Due Dates
  - Deliverable 1 – Dec 4
  - Deliverable 2 – Dec 4
  - Deliverable 3 – Jan 11
  - Deliverable 4 – Feb 5
  - Final – Feb 27

<b>Part 1: Set Goals</b>
Was the supplied template used?
Are all sections completed?
Do the resources, constraints, assumptions appear reasonable?
Are the two goals related to running a project, not the city?
Were revisions documented?
<b>Part 2: Create a Schedule</b>
Was the supplied template used?
Are all deliverables documented?
Are there tasks for each deliverable?
Are the tasks sequenced?
Are each of the tasks realistically estimated?
Are team members assigned?
Are dates assigned to complete all tasks by the due dates?
Is the Schedule in an acceptable format?
Were revisions documented?
Is the entry in the form of a photo, drawing, or other acceptable format?
<b>Part 3: Conduct Check In Sessions</b>
Was the supplied template used?
Was this an actual report which was used?
Was each requirement for that phase of the project discussed?
Were revisions to the schedule documented?
<b>Part 4. Reflect on the Project</b>
Was the supplied template used?
Did all team members participate?
Did the response answer the question?
<b>Final Submission</b>
Are all four parts in one Document?
Is the file saved as a PDF?
Is the final document uploaded to the online submission center by the deadline?



# Sample Project Plan

ID	Task Name	Duration	Start	Finish	Predecessors
1	<b>Future City Competition - Schedule Submission Elements</b>	<b>112 days?</b>	<b>Fri 10/30/20</b>	<b>Mon 4/5/21</b>	
2	<b>Initiate - Define</b>	<b>25 days</b>	<b>Fri 10/30/20</b>	<b>Fri 12/4/20</b>	
3	Preparing for the Competition	1 day	Fri 10/30/20	Fri 10/30/20	
4	Read Handbook in its entirety	2 days	Fri 10/30/20	Mon 11/2/20	
5	Explore Future City website	1 day	Fri 10/30/20	Fri 10/30/20	
6	Students complete competition forms	1 day	Fri 10/30/20	Fri 10/30/20	
7	Understand Regional Deadlines	1 day	Fri 10/30/20	Fri 10/30/20	
8	<b>Team Registration Deadline</b>	<b>25 days</b>	<b>Fri 10/30/20</b>	<b>Fri 12/4/20</b>	
9	<b>Identify the Problem</b>	<b>25 days</b>	<b>Fri 10/30/20</b>	<b>Fri 12/4/20</b>	
10	<b>Understand the Challenge</b>	<b>10 days</b>	<b>Mon 11/2/20</b>	<b>Fri 11/13/20</b>	
11	Learn about Cities	5 days	Mon 11/2/20	Fri 11/6/20	7
12	Explore the Engineering Design Process	5 days	Mon 11/9/20	Fri 11/13/20	11
13	Explore the Project Management Process	5 days	Mon 11/9/20	Fri 11/13/20	11
14	<b>Learn about deliverables, requirements, and scoring</b>	<b>10 days</b>	<b>Fri 10/30/20</b>	<b>Thu 11/12/20</b>	
15	Project Plan	5 days	Fri 10/30/20	Thu 11/5/20	
16	City Essay	5 days	Fri 10/30/20	Thu 11/5/20	
17	City Model	5 days	Fri 10/30/20	Thu 11/5/20	
18	City Presentation	5 days	Fri 10/30/20	Thu 11/5/20	
19	Complete Project Plan Part - Set Goals Template	5 days	Fri 11/6/20	Thu 11/12/20	18
20	<b>Submit Project Plan - Part 1 - Set Goals</b>	<b>0 days</b>	<b>Fri 12/4/20</b>	<b>Fri 12/4/20</b>	
21	Establish weekly check ins and document	1 day	Fri 11/13/20	Fri 11/13/20	19
22	<b>Plan - Plan</b>	<b>25 days</b>	<b>Fri 10/30/20</b>	<b>Fri 12/4/20</b>	
23	Research solutions	12 days	Fri 10/30/20	Mon 11/16/20	
24	<b>Create Project Plan: Schedule</b>	<b>13 days</b>	<b>Tue 11/17/20</b>	<b>Fri 12/4/20</b>	
25	Create a Work Breakdown Structure	5 days	Tue 11/17/20	Mon 11/23/20	23
26	Create a Project Schedule	5 days	Tue 11/17/20	Mon 11/23/20	23
27	<b>Submit Project Plan Part 2 - Create a Schedule</b>	<b>0 days</b>	<b>Fri 12/4/20</b>	<b>Fri 12/4/20</b>	
28	<b>Execute - Do</b>	<b>70 days?</b>	<b>Fri 10/30/20</b>	<b>Fri 2/5/21</b>	
29	Project Plan: Conduct check ins	1 day	Fri 10/30/20	Fri 10/30/20	
30	<b>Deliverable - City Essay /Mission Patch</b>	<b>11 days?</b>	<b>Fri 12/4/20</b>	<b>Fri 12/18/20</b>	22
31	<New Task>	5 days	Fri 12/4/20	Thu 12/10/20	
32	<New Task>	3 days	Fri 12/11/20	Tue 12/15/20	31
33	<New Task>	2 days	Wed 12/16/20	Thu 12/17/20	32
34	<New Task>	1 day?	Fri 12/18/20	Fri 12/18/20	33
35	Conduct weekly Check Ins	5 days	Fri 12/4/20	Thu 12/10/20	27
36	<b>Submit Deliverable - City Essay / Mission Patch</b>	<b>0 days</b>	<b>Fri 12/18/20</b>	<b>Fri 12/18/20</b>	
37	<b>Deliverable - City Model (make sure you account for all of elements)</b>	<b>35 days</b>	<b>Fri 12/18/20</b>	<b>Fri 2/5/21</b>	22
38	<New Task>	5 days	Fri 12/18/20	Thu 12/24/20	33
39	<New Task>	5 days	Fri 12/25/20	Thu 12/31/20	38
40	<New Task>	6 days	Fri 1/1/21	Fri 1/8/21	39
41	<New Task>	5 days	Mon 1/11/21	Fri 1/15/21	40
42	<b>Submit - Project Plan - Part 3 - Check Ins (Status)</b>	<b>0 days</b>	<b>Mon 1/11/21</b>	<b>Mon 1/11/21</b>	
43	<b>Submit Deliverable - City Model</b>	<b>0 days</b>	<b>Fri 2/5/21</b>	<b>Fri 2/5/21</b>	
44	<b>Deliverable - City Presentation (make sure you account for all of the elements)</b>	<b>35 days</b>	<b>Fri 12/18/20</b>	<b>Fri 2/5/21</b>	37SS
45	<New Task>	10 days	Fri 12/18/20	Thu 12/31/20	
46	<New Task>	10 days	Fri 1/1/21	Thu 1/14/21	45
47	<New Task>	10 days	Fri 1/15/21	Thu 1/28/21	46
48	<New Task>	5 days	Fri 1/29/21	Thu 2/4/21	47
49	<b>Submit Deliverable - City Presentation</b>	<b>0 days</b>	<b>Fri 2/5/21</b>	<b>Fri 2/5/21</b>	48
50	<b>Monitor and Control - Do</b>	<b>45 days</b>	<b>Fri 10/30/20</b>	<b>Thu 12/31/20</b>	
51	Test, Improve, and Redesign	45 days	Fri 10/30/20	Thu 12/31/20	
52	<b>Close - Review</b>	<b>112 days</b>	<b>Fri 10/30/20</b>	<b>Mon 4/5/21</b>	
53	<b>Submit ONE PDF in final form: Project Plan "Set Goals" through "Reflect (Close)"</b>	<b>0 days</b>	<b>Fri 10/30/20</b>	<b>Fri 10/30/20</b>	
54	<b>Present at competition</b>	<b>15 days</b>	<b>Mon 2/8/21</b>	<b>Sat 2/27/21</b>	
55	<b>Q&amp;A (to be scheduled with Team and Judges)</b>	<b>10 days</b>	<b>Mon 2/8/21</b>	<b>Sun 2/21/21</b>	
56	Finals/Awards Day	1 day	Sat 2/27/21	Sat 2/27/21	
57	Present at nationals (sometime in April)	3 days	Thu 4/1/21	Mon 4/5/21	





# Resources

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- National presentations

  - 2020 FutureCity Theme

  - <https://www.youtube.com/watch?v=HZkSWQkXSV8>

  - An Astronaut's Message to Future City Teams

  - <https://youtu.be/7p5mlQ5hGvs>

- <https://futurecity.org.org/>



# Additional Resources - YouTube

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## ➤ Planning the Project

- <https://www.youtube.com/watch?v=7VELSwDKpGk>

## ➤ Work Breakdown Structure (WBS)

- <https://www.youtube.com/watch?v=FkIYonNknRs>
- <https://www.bing.com/videos/search?q=How+to+Facilitate+Work+Breakdown+Structure+Session&&view=detail&mid=2B2457984EE18E0AB0962B2457984EE18E0AB096&&FORM=VRDGAR>

## ➤ Schedules

- [https://www.youtube.com/watch?v=H-1Ab30\\_rrM](https://www.youtube.com/watch?v=H-1Ab30_rrM)

## ➤ Status Reports

- <https://www.youtube.com/watch?v=VhGFwTjB094>

## ➤ Close – Lessons Learned

- [https://www.youtube.com/watch?v=DBUqW\\_ek4hl](https://www.youtube.com/watch?v=DBUqW_ek4hl)

THANK YOU  
&  
Good Luck!

