



NASA’s new mission to Mars called InSight will be launched in March, 2016. It will land in a region of Mars located near the equator and deploy a seismographic station to study the interior of Mars.

From the time a mission is imagined to the time it actually launches, many events have to be scheduled so that everything is built, tested, and delivered in time for the launch of the mission. The date and time that a mission launches is very carefully determined and called a Launch Window. Sometimes it is only few hours long on a specific date that is many years in the future. The InSight mission must land on Mars on September 20, 2016.

To make sure that all of the thousands of components to a spacecraft are built, tested and delivered on time, Mission Planners develop very detailed schedules that show all of the components, their state of construction, and when the many critical tests and ‘milestones’ have to be reached to keep a mission on time for launch.

Believe it or not, you do this kind of planning yourself and probably do not even know it!

Imagine that you are taking a vacation to visit a family member, and that you are flying on a jet plane. Your parents have already booked your reservations for August 5 and the plane will leave the gate at exactly 11:35 AM. Allow exactly 2:00 to travel from your home, park your car, pass through Airport Security and walk to the gate. You have to arrive at the gate 45 minutes before the flight leaves to check your baggage and to board the flight.

**Problem** – Create a timeline for each person in your family that includes waking up on August 5, packing bags and loading them in the family car, eating breakfast, taking showers and other bathroom preparations. Oh...suppose, also, that you only have one bathroom to share, and that no two family members took exactly the same amount of time to do each of their tasks!

**Problem** – Students timelines will vary. Students should organize each person’s activities as a row on the table, and time progressing from left to right along the columns of the table as shown in the example below. The times denote the start of each event.

	7:15	7:30	7:45	8:15	8:30	9:20	9:34	9:35	11:35
Person 1	Wake up	Get dressed	Eat breakfast	Use bathroom	Pack bags	Load car	Fasten seatbelt	Car Leaves Home	Flight Leaves
Person 2	Sleeping	Wake up	Use bathroom	Get dressed	Pack bags	Load car	Fasten seatbelt	Car Leaves Home	Flight Leaves