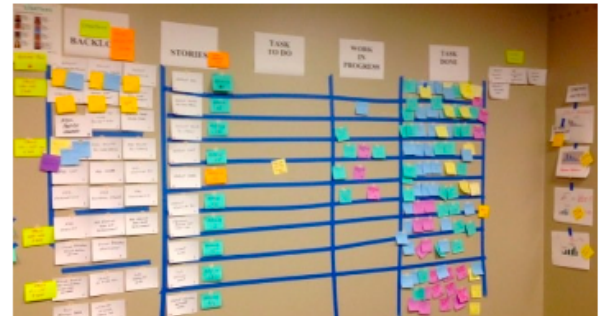


## SCRUM

SCRUM is a way of managing a project that breaks the project down into small chunks to be completed in a sprint – usually a two week period. A SCRUM Master (the teacher) keeps the teams on track with their timing, supports regular meetings and helps teams to develop the SCRUM culture.



### SCRUM Board

Scrum starts with a SCRUM board. The SCRUM board has five main columns: the backlog, to do, doing, done and impediments (or stuck).

The **backlog** is a wish list of all the big things that need to get done. For example in a short film involving robotic cars: code the robots, build the set, make the props, come up with a story, and practice the story.

The **to do** column lists the more specific tasks that make up the big task. For example: the big task of “make the props” becomes:

- Decide what props we need
- Sketch out the props
- Make the 5 trees
- Make the pizza building
- Make the street façade
- Make the villain’s house
- Paint the pizza building
- Paint the street façade
- Paint the villain’s house

Each of these tasks needs to go on a separate post it note (or equivalent).

The **doing** column should contain the tasks that each person will do during the sprint. Students will need help to manage their workload effectively. However, as they work through the process they will get an idea for how much they can do during a sprint.

A **sprint** is usually two weeks long but you can determine the length of a sprint based on your time availability and the age of the students. In class I have used a sprint as four 1 hour sessions or two weeks of 1 hour sessions.



The **done** column is where completed tasks go. Students will need help to determine what *done* means. It may pay to make a note of the one or two conditions that make an item done, especially if there is potential for argument. For example; “paint the pizza building” means that anyone can tell it is a pizza building, it should have a pizza sign, it should have three windows and a door and the whole box should be painted.

The **impediments** column is for when students get stuck. I would recommend that they use this for when they need help from the teacher, and use their Scrum meetings to ask for help from their team mates. If you continue to recommend to students to put their task in the impediment section, you can quickly see who needs help and with what, rather than being inundated with random “help please”.

## **Sprint Planning** (15 mins max)

Sprint planning is the first meeting in the Sprint:

- Quickly read through all the to do list items.
- Each person select two items that they will work on – add their names to the items and move them into the doing section.
- Ask: does anyone need anything (resources, devices, internet access, library time, an expert, paper etc.). Team leader should take note and communicate these needs to the teacher.
- Ask: is anyone concerned about anything or have something that may affect our timing this sprint (like trips out of school, feeling sick etc.). Team leader should take note and suggest a solution.
- End meeting



## Daily SCRUM meeting (10 mins max)

The Daily Scrum should happen every time the team meets. This could be daily, or every time you work on the project. You may rotate the person who runs the meeting each time.

Ask each person:

1. What task are you working on? (Should be a 10 second reply)
2. Do you need anything?
3. Is there anything that will stop you finishing things?
4. Do you have anything to celebrate? (Finished a tricky task, found out something cool, someone else helped you out)
5. Any other questions?

End meeting – make sure everyone has moved tasks into **doing** and **done** and have their name on them.

## Sprint Review and Retrospective (10 mins max)

The Sprint Review and Retrospective are about understanding how to improve for next time. While the Scrum method usually has these as two as separate meetings, here they have been combined for efficiency.

Quickly read through the **done** items.

Is there anything outstanding? If so, move these tasks into the next Sprint

Ask:

1. What helped us get things done on time? (Headphones in so I can't get distracted, working in 10 min blocks etc.)
2. What stopped us getting things done on time? (Talking too much, too much arguing, someone was sick)
3. (If behind schedule) What can we do to catch up? (Someone who finishes early help out the others, do extra time if away etc.)

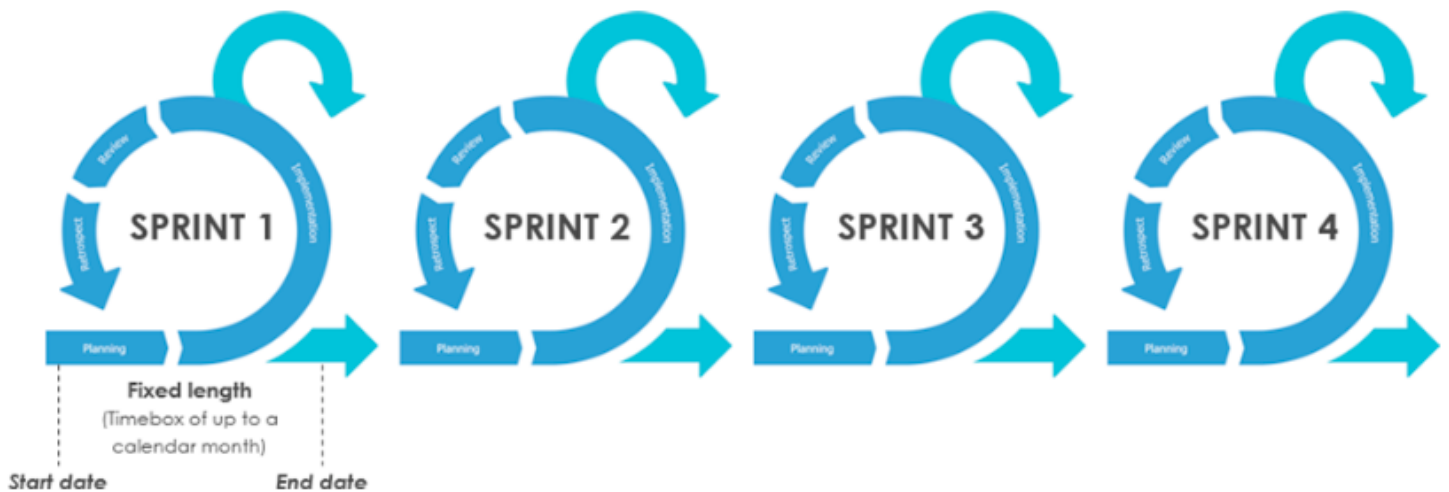
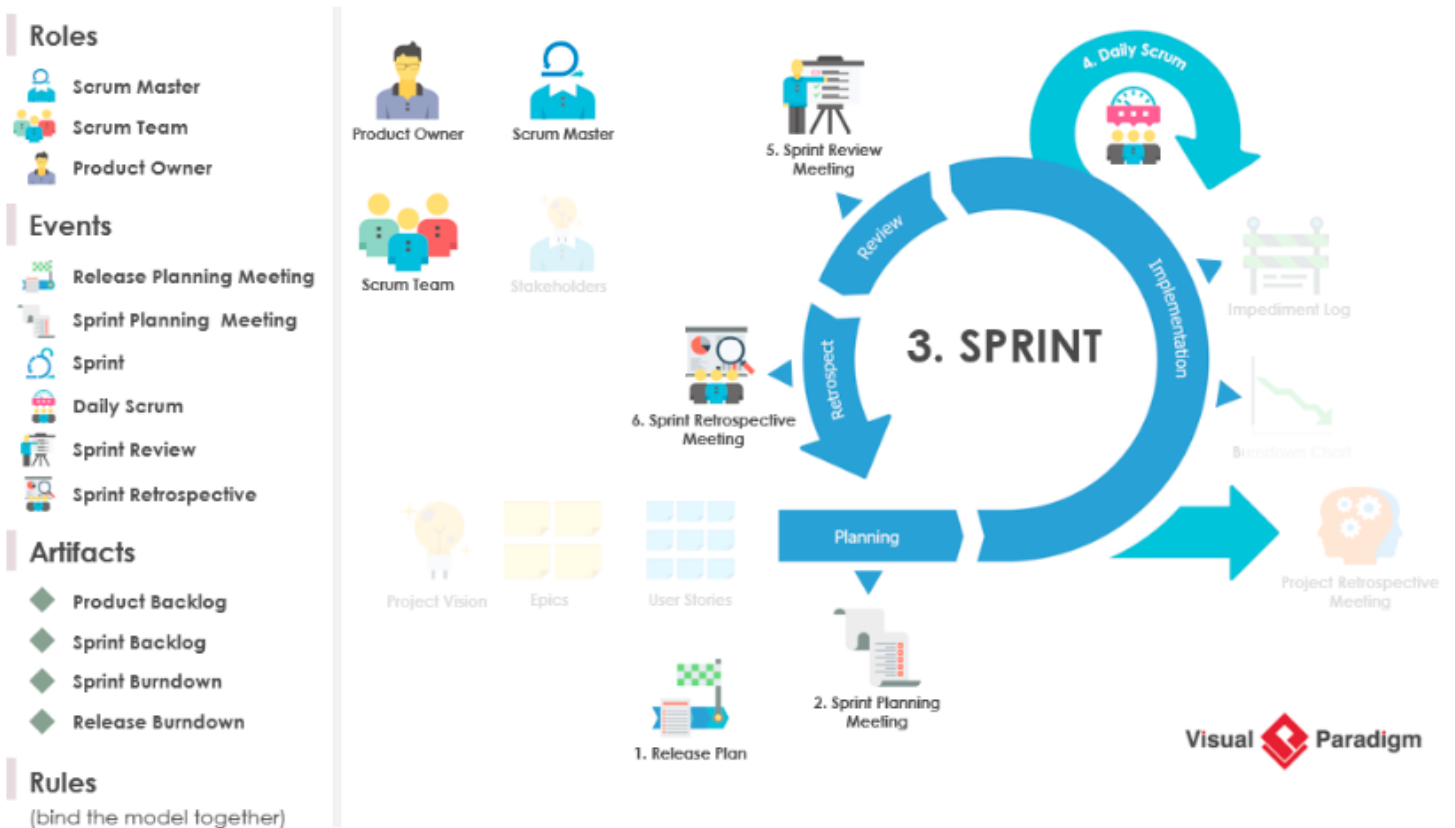
End meeting

Students will need to be guided through this process as it is very different from most group work they have done. For the first few Sprints ask the questions yourself and have the teams discuss. For the next few sprints rotate through the groups each day as they do their meetings, starting with the teams who need more guidance.

# PROJECT MANAGEMENT



There are three key SCRUM meetings. The **Sprint planning** (1st meeting), the **Daily Scrum** and the **Scrum Review / Retrospective**.



# TO DO

If you're looking for some ideas on what should be on your 'to do' list, here is a start (not in any particular order):

- Brainstorm desired vehicle components (solar panels, wheels, speed monitor etc.)
- Generate first sketch and design
- Evaluate design against WOF and rules
- Amend design
- Agree on design
- Put measurements on the design (wheel sizes, width, height)
- Decide on materials
- Create a list of measurements for materials e.g. length of steering rods
- Locate, order/purchase materials
- Mount wheels
- Cut tie rods for steering
- Create steering column
- Test steering circle
- Mount motor
- Place batteries and secure
- Measure lengths for exterior
- Put together exterior
- Design a seat
- Tidy up wiring
- Detailed design of steering
- Determine where to mount motor
- Determine where to locate batteries
- Determine where to locate controller
- Take parts of bikes as needed e.g. wheels, brakes, forks
- Measure lengths for chassis
- Cut lengths for chassis
- Weld or put chassis together
- Cut lengths for steering
- Create brackets for steering
- Put steering together
- Amend steering as needed
- Add chain to motor
- Wire up your motor
- Cut lengths for exterior
- Paint, stain or otherwise make it look classy
- Make the seat
- Check WOF