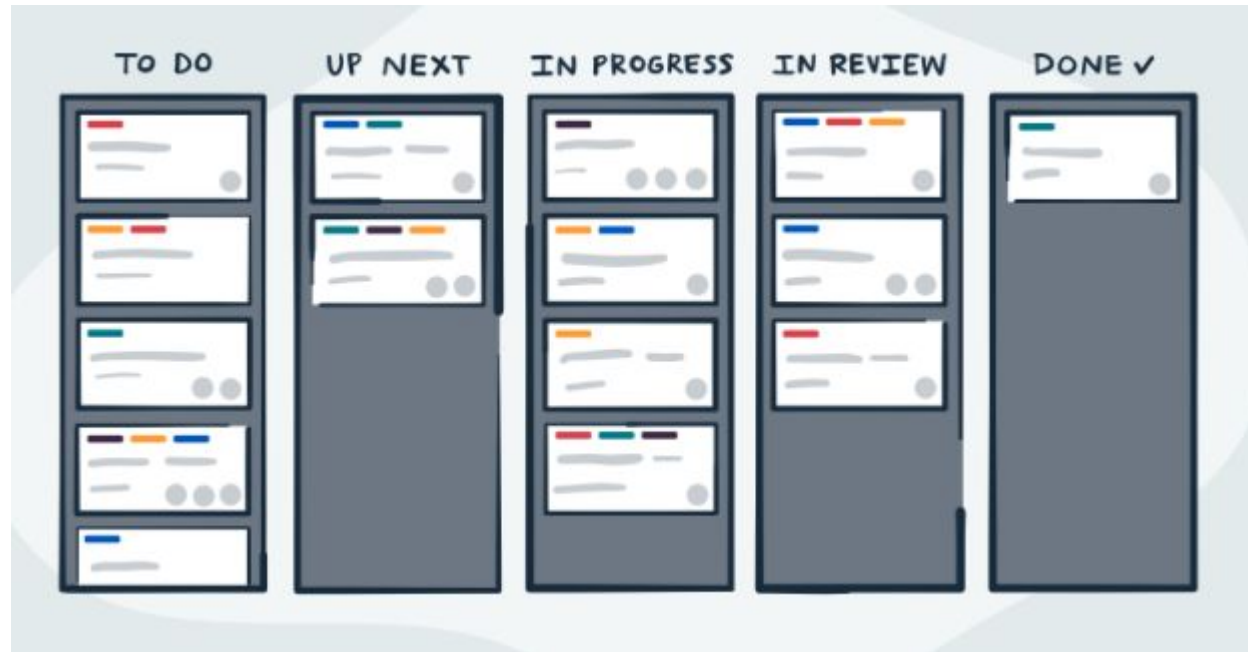




Introduction to the Kanban

Kanban(かんばん) Board

- A **visual** project management technique used in **agile** projects to check progress
- Display tasks on a **board** and manage the progress of tasks with **cards**



Kanban Board : what is it?

1.Tools and materials needed

- **Board:** physical or digital tool e.g.Trello, Jira, Asana, Microsoft Planner etc.
- **Cards:** display work items
 - define what you want to manage in the Card

2.Kanban Board Progress

- Divide the Board into unit columns for each work Progresses
- Place Cards in the corresponding work section
- The person in charge of the work manages the Card in his/her work section



Kanban Board : why we use it?

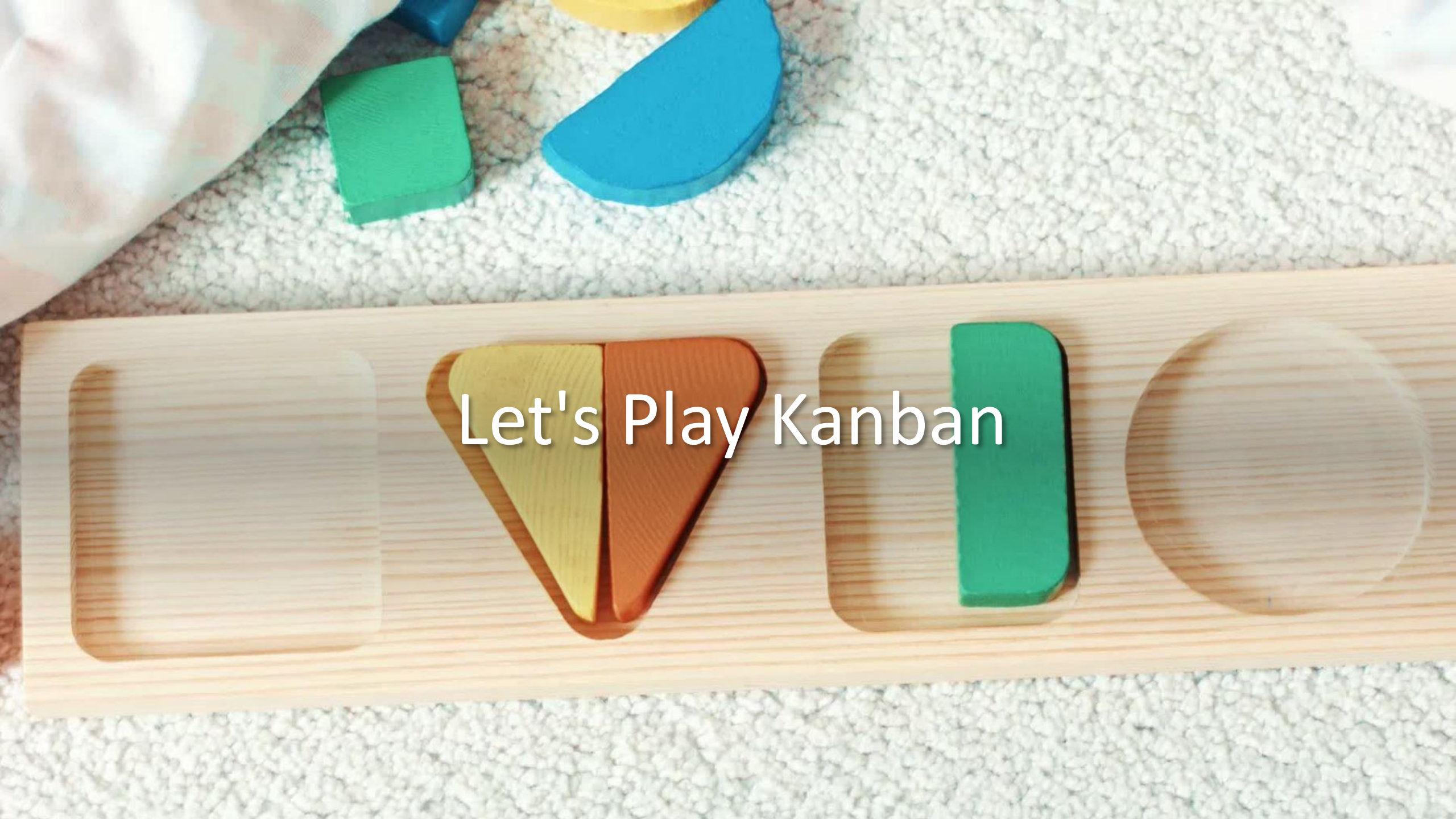
3.Keywords

- Card: information such as summary, description, priority, person in charge, period, etc. of the task
- **WIP Limit:** manage the number of simultaneous work in progress for each column
- **Daily Standup Meeting:** The team periodically reviews the Kanban Board and shares progress

4.advantages

Visual Tracking and Management for Project

Flexible response to issues: Track parts of the task in real time



Let's Play Kanban

The image shows a wooden Kanban board with four lanes. The first lane is empty. The second lane contains two overlapping triangles, one yellow and one orange. The third lane contains a green rectangle. The fourth lane is empty. In the background, there are more wooden shapes on a light-colored carpet, including a green square, a blue semi-circle, and a yellow semi-circle.

Background and Objective



- Each team is a software company



- Your company makes a web application with a subscription-based revenue model



- The more subscribers you attract, the more money you make



- Your goal is to **maximize profit**

Background and Objective



- You increase your application's capabilities by deploying new features



- New features attract new subscribers



- Your company has a three-day billing cycle: you bill your subscribers at the end of each billing cycle, on Days 9, 12, 15, 18, and 21



- To save startup time, we begin the game on Day 9 of a project already underway

Roles and Team arrangement

Project Manager

Team Member

Run Chart Tracker

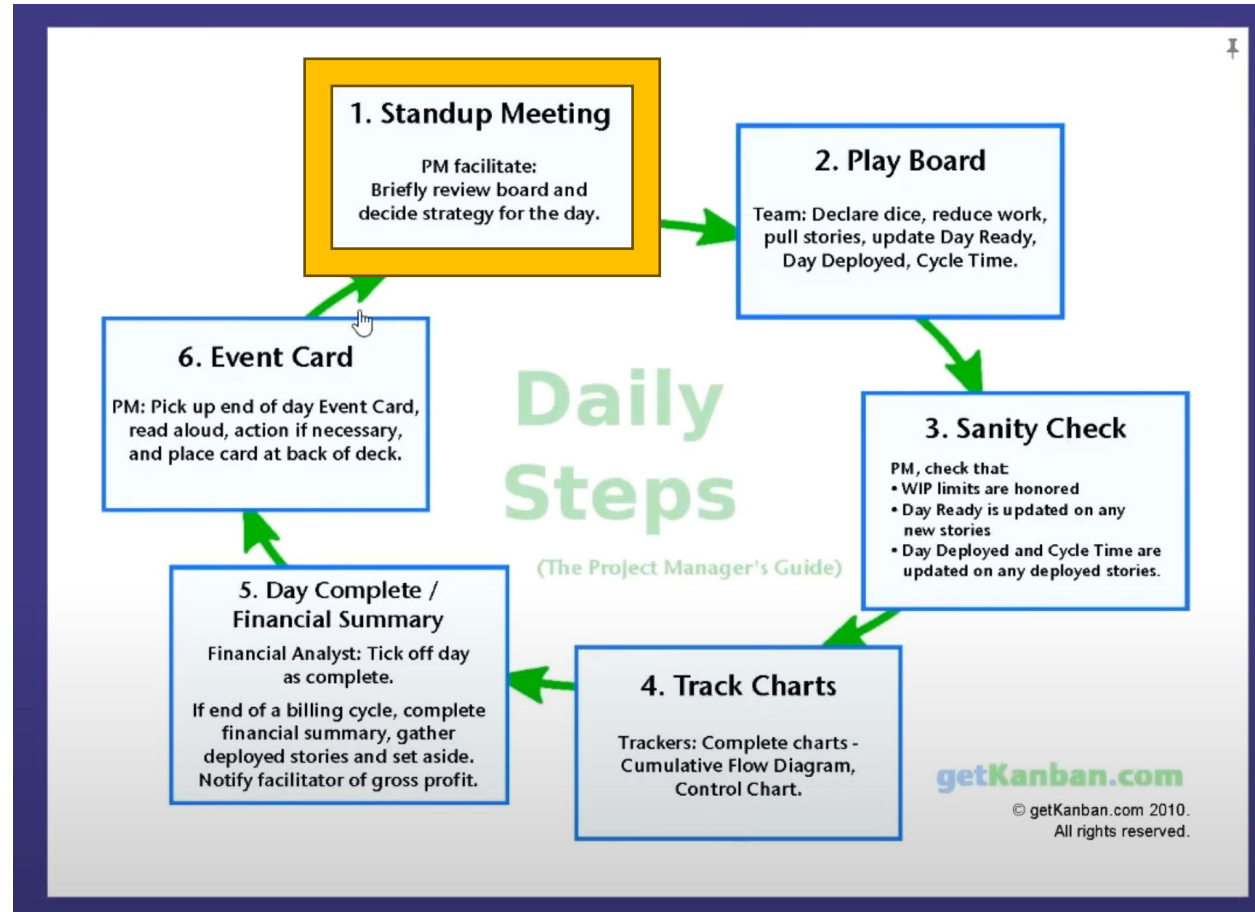
Lead Time Distribution
Chart Tracker

Financial Analyst

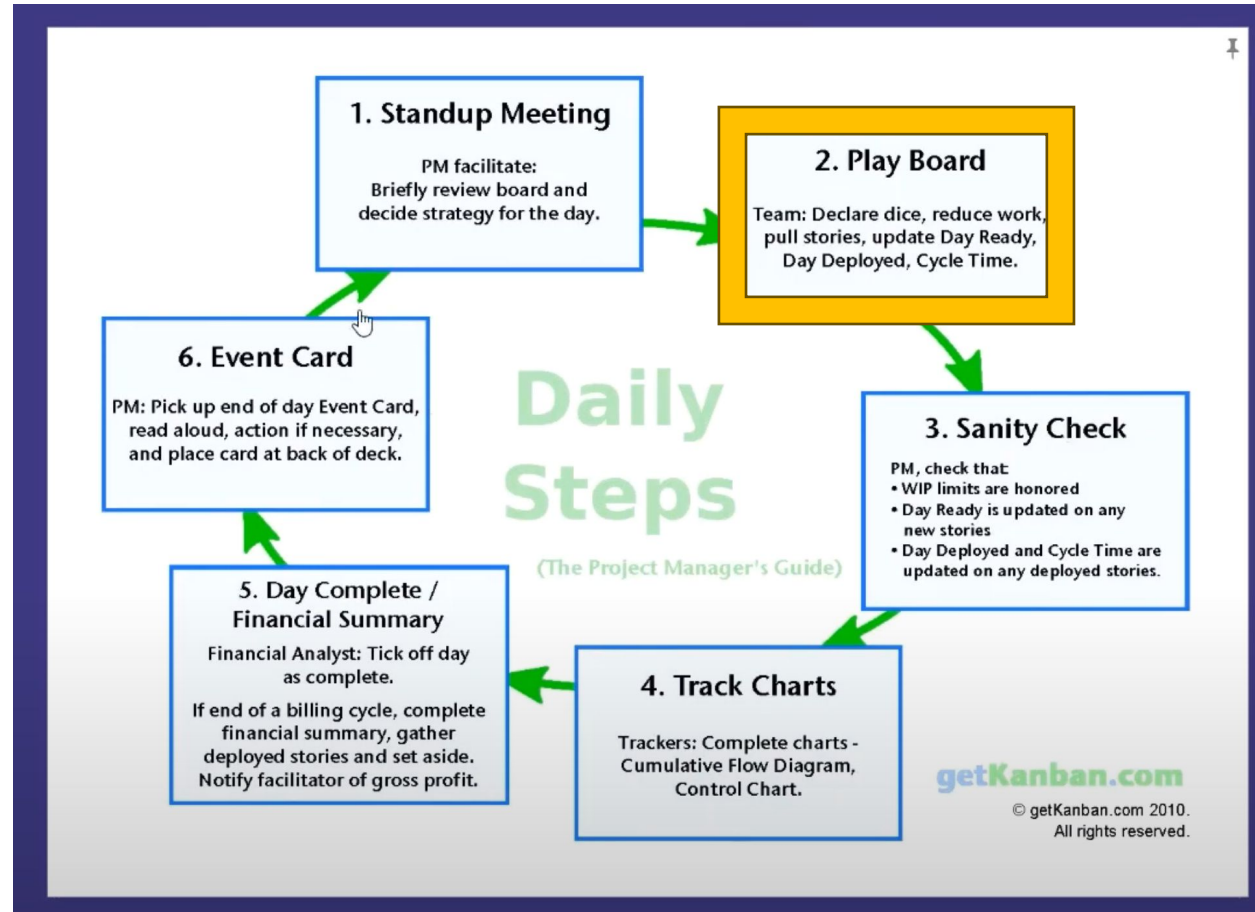
CFD Tracker

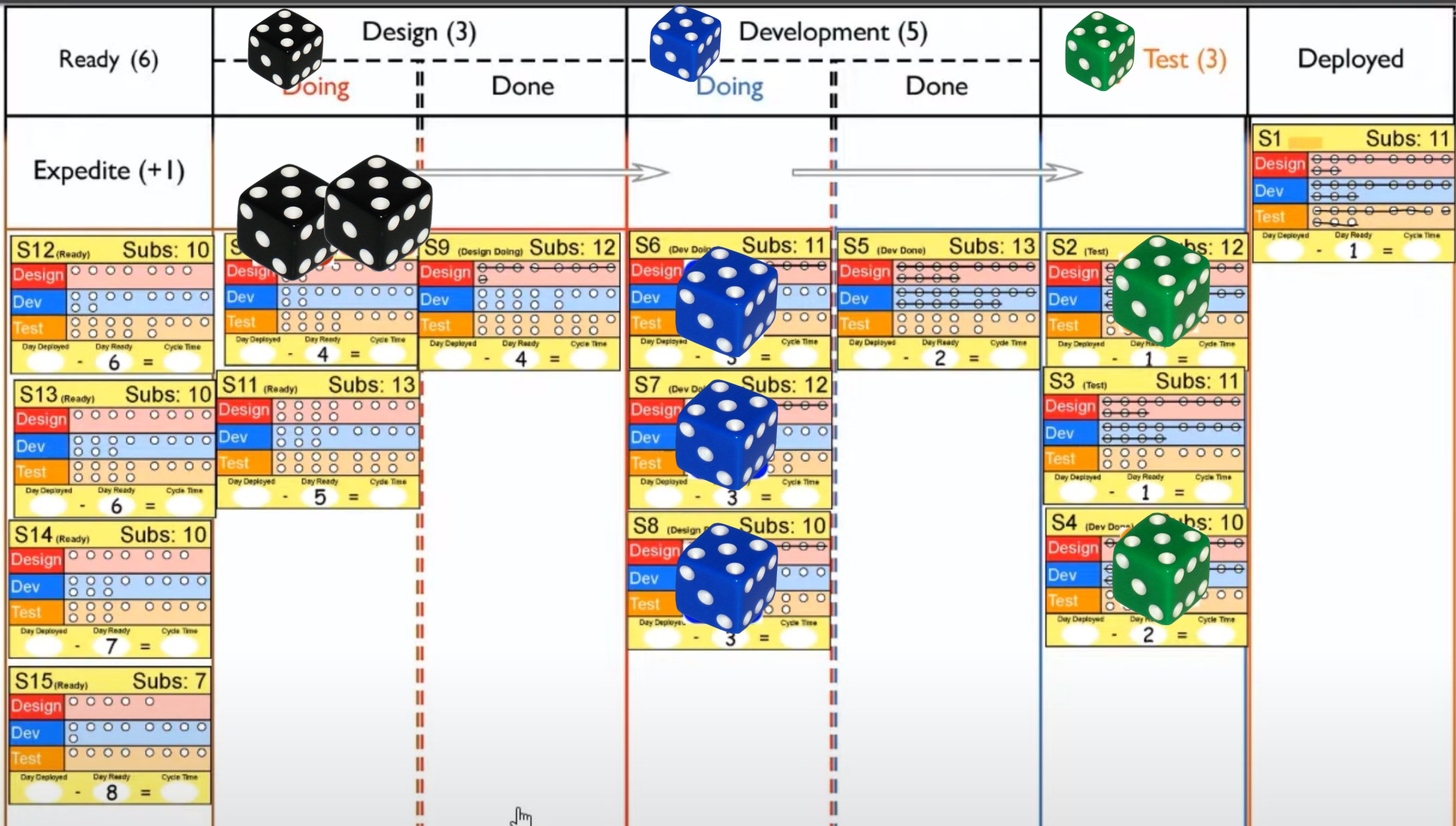


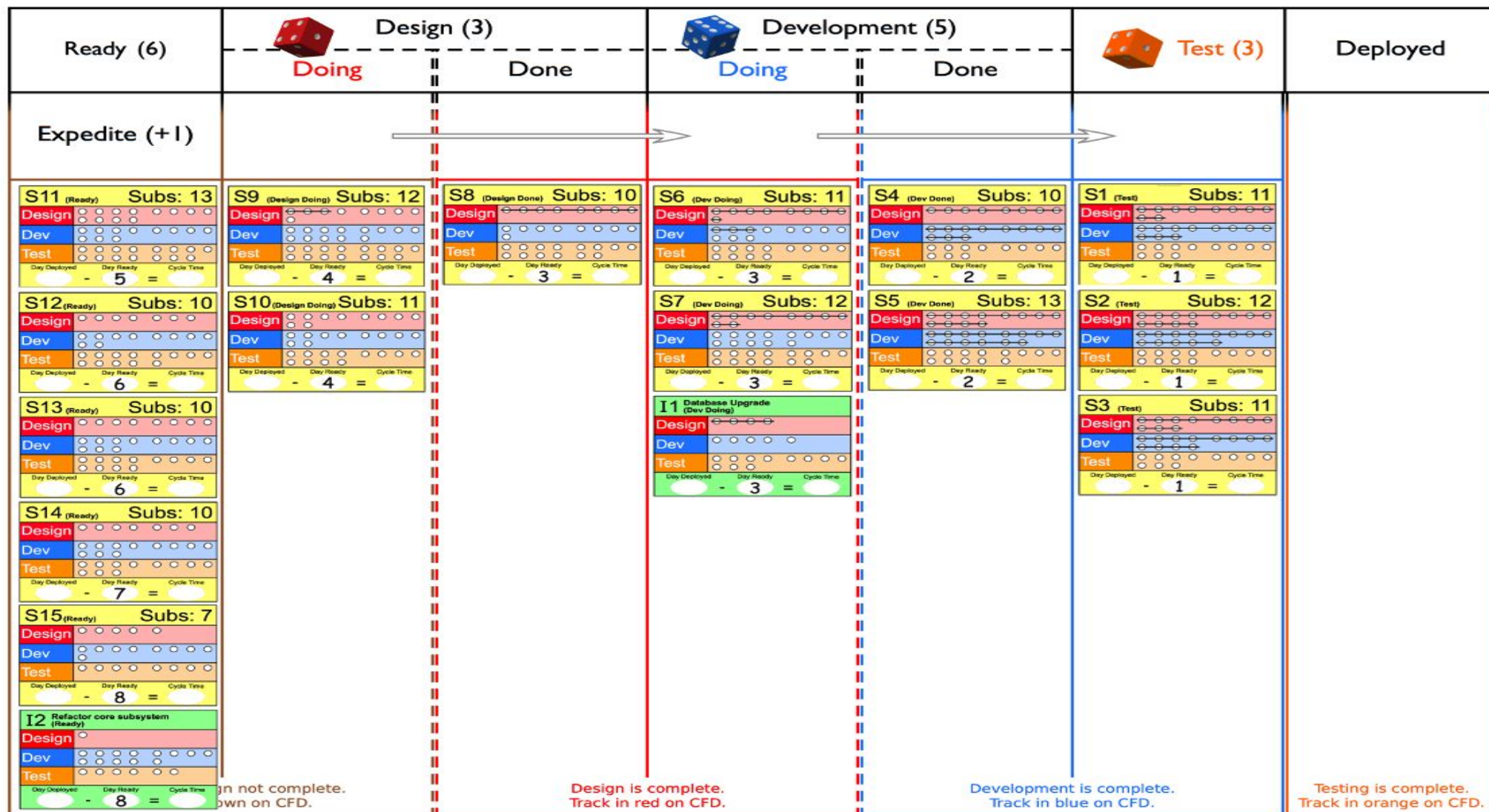
Project manager, Keeping track of all the steps



Project manager, Keeping track of all the steps







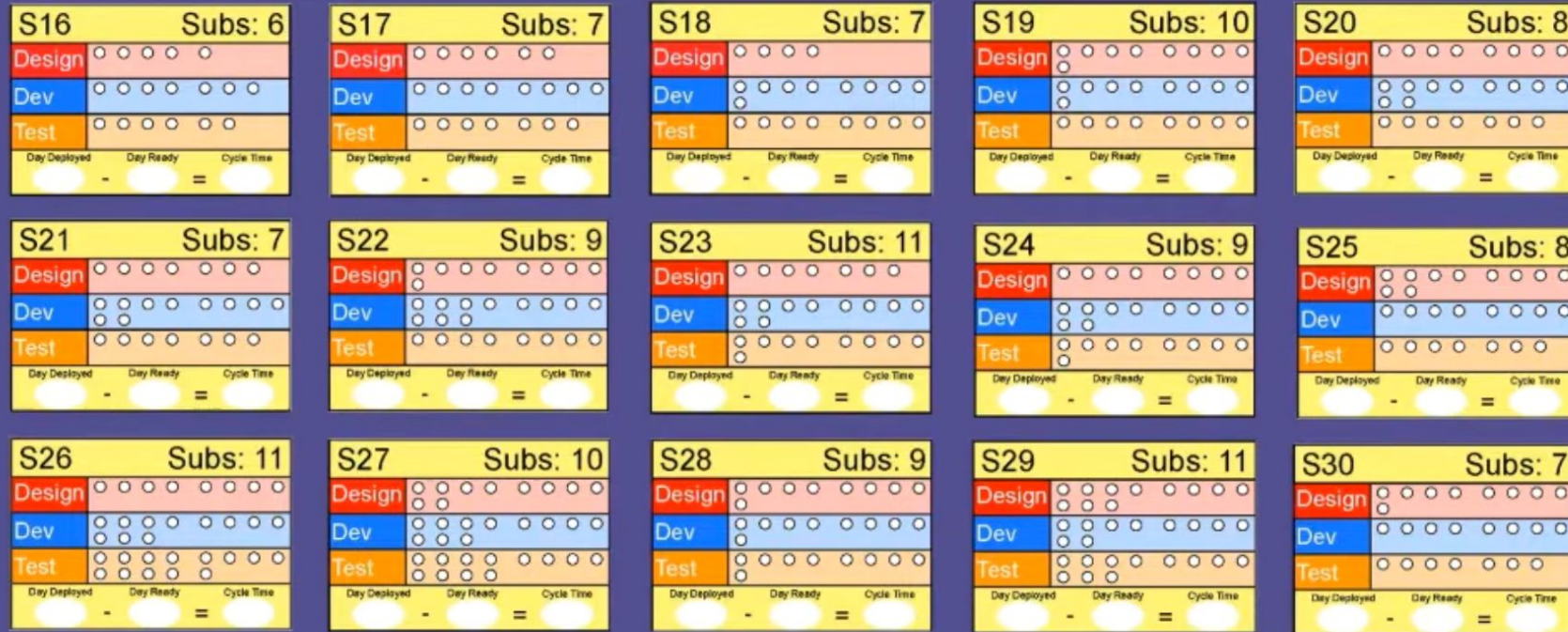
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Board at start of Day 9

Tasks

DEVELOPMENT CARDS



Development team roles



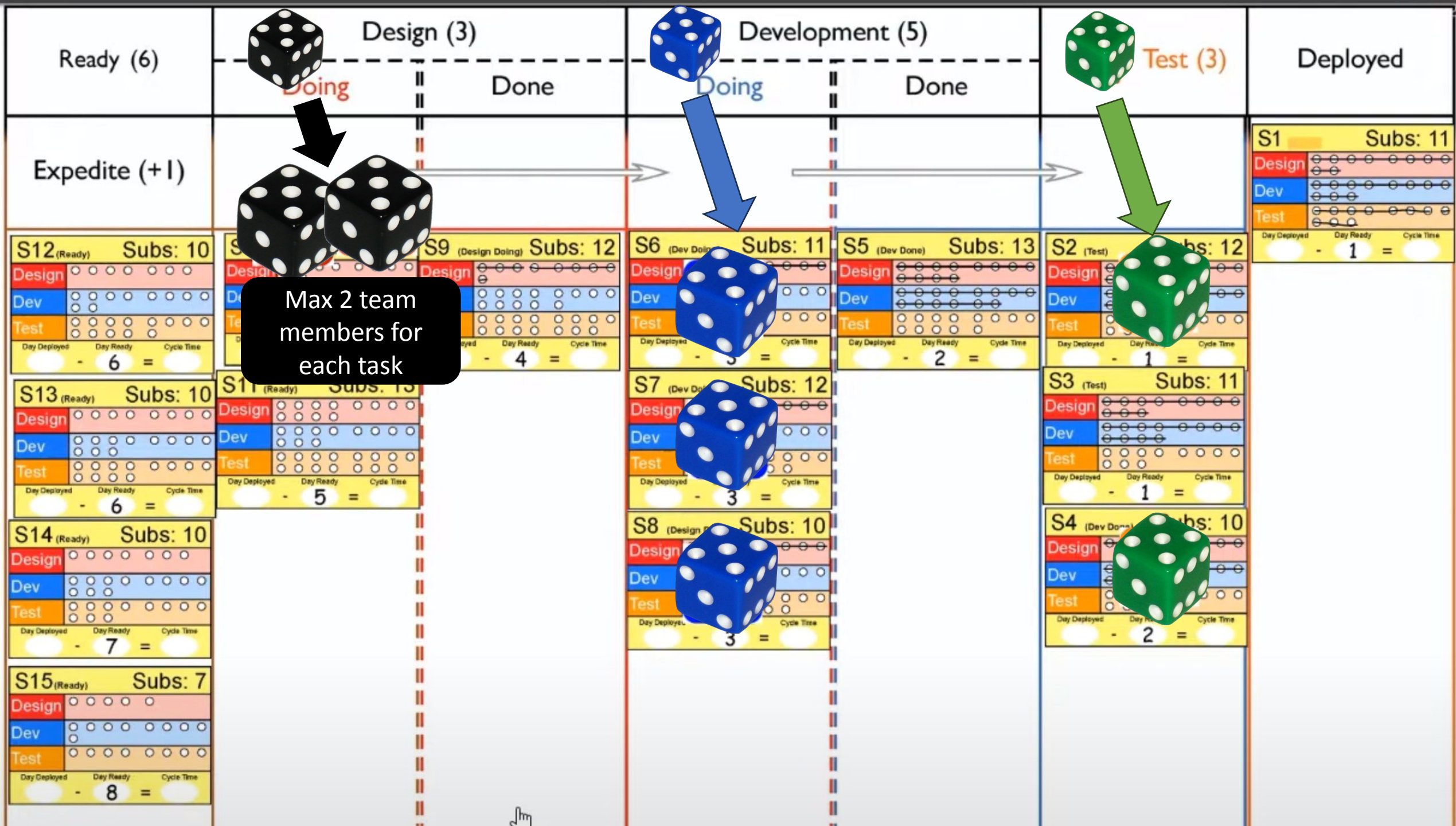
Designer (you start with 2 dices)



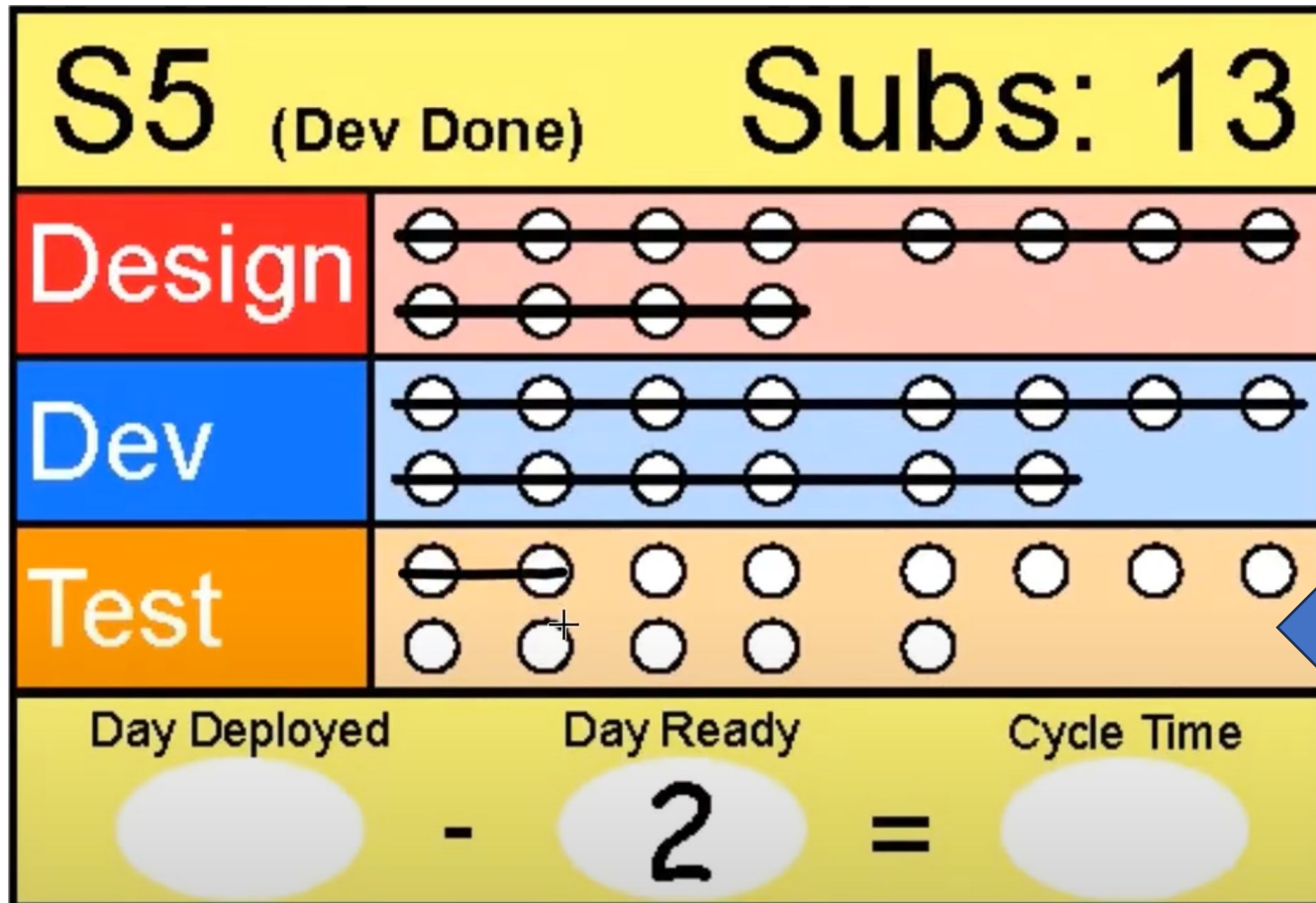
Developer (you start with 3dices)



Tester (you start with 2dices)

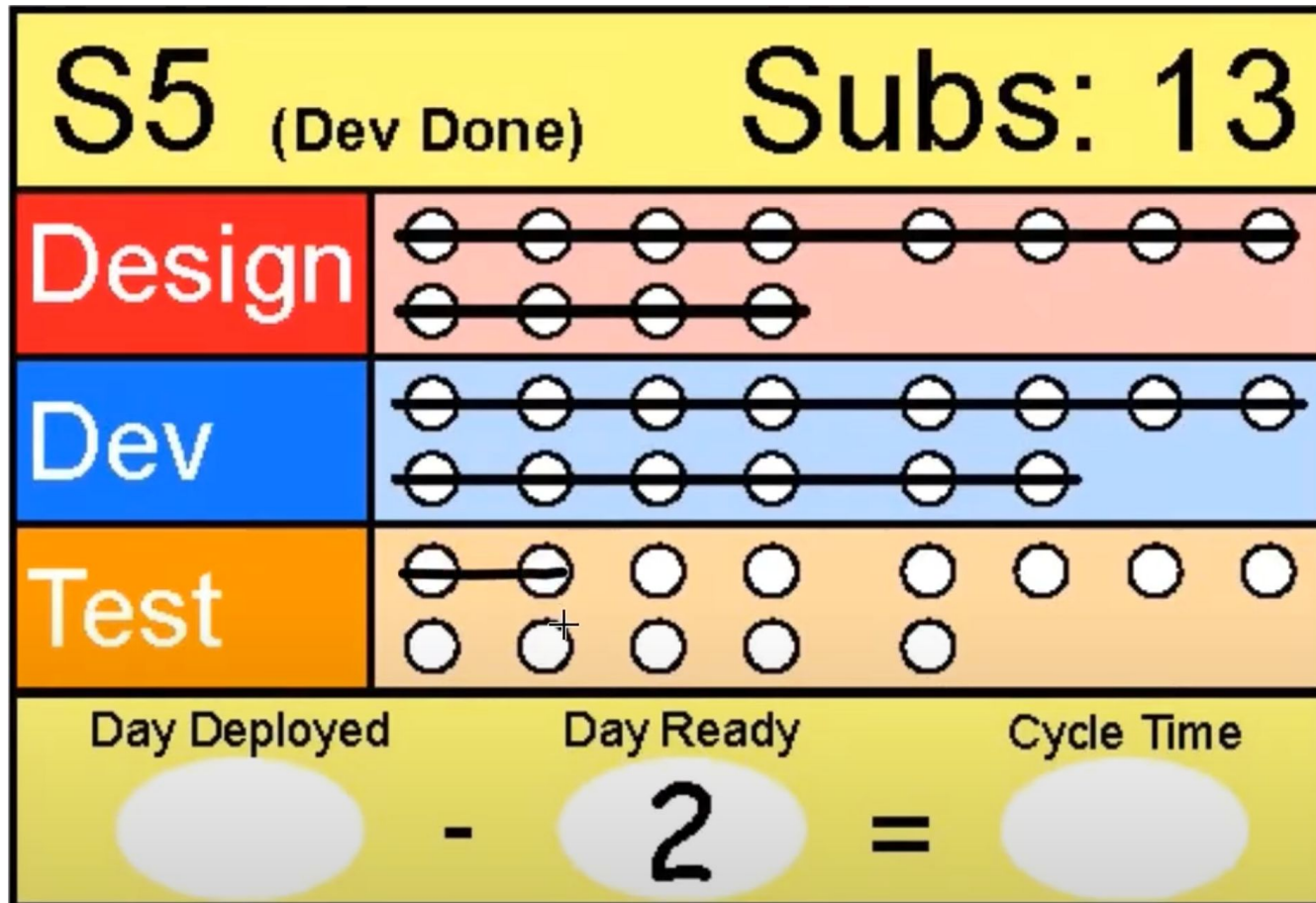


Remaining units of work



This story needs to be tested for 11 units of work

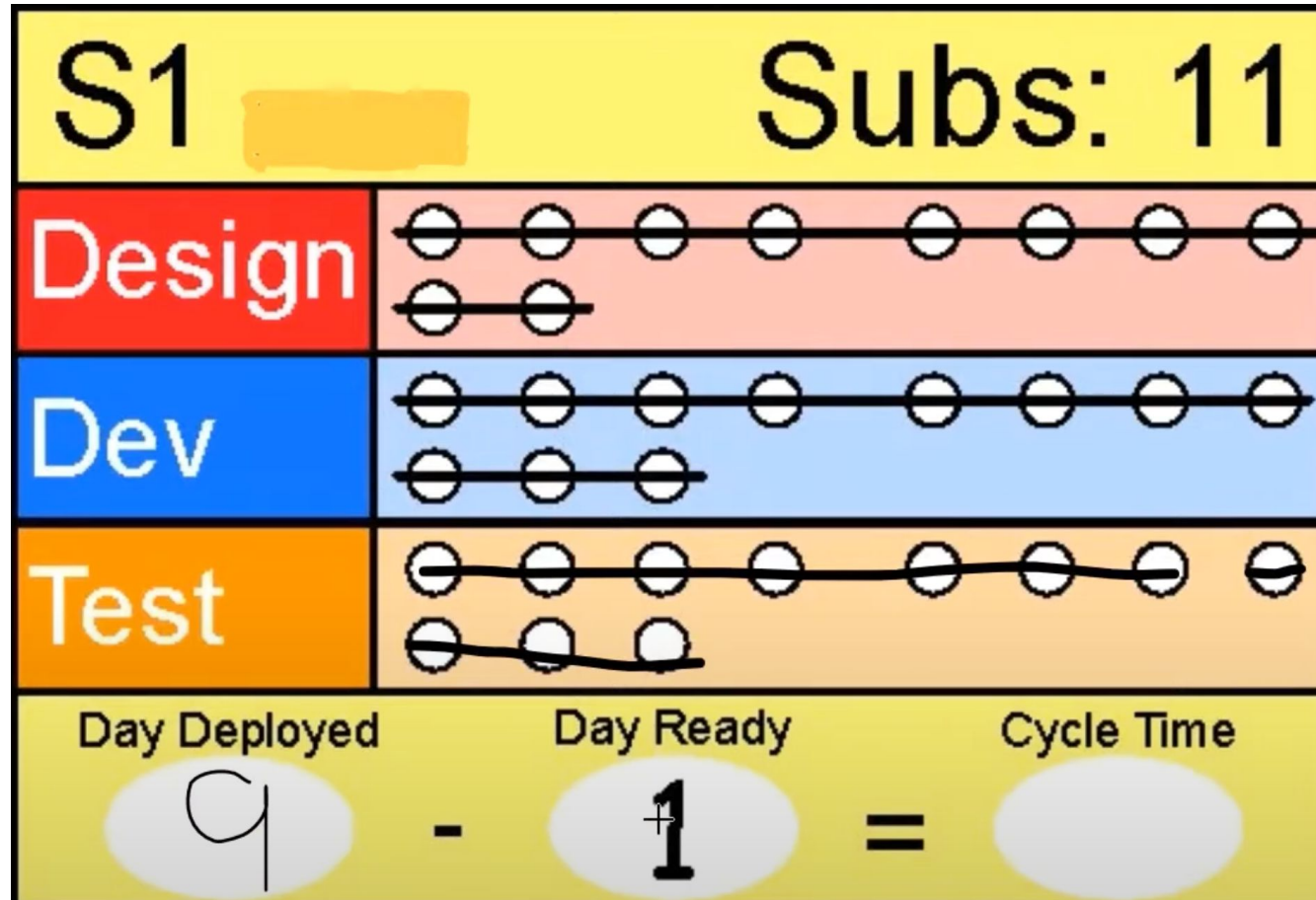
Remaining points



Roll the tester dice

$$6 * 2 = 12$$

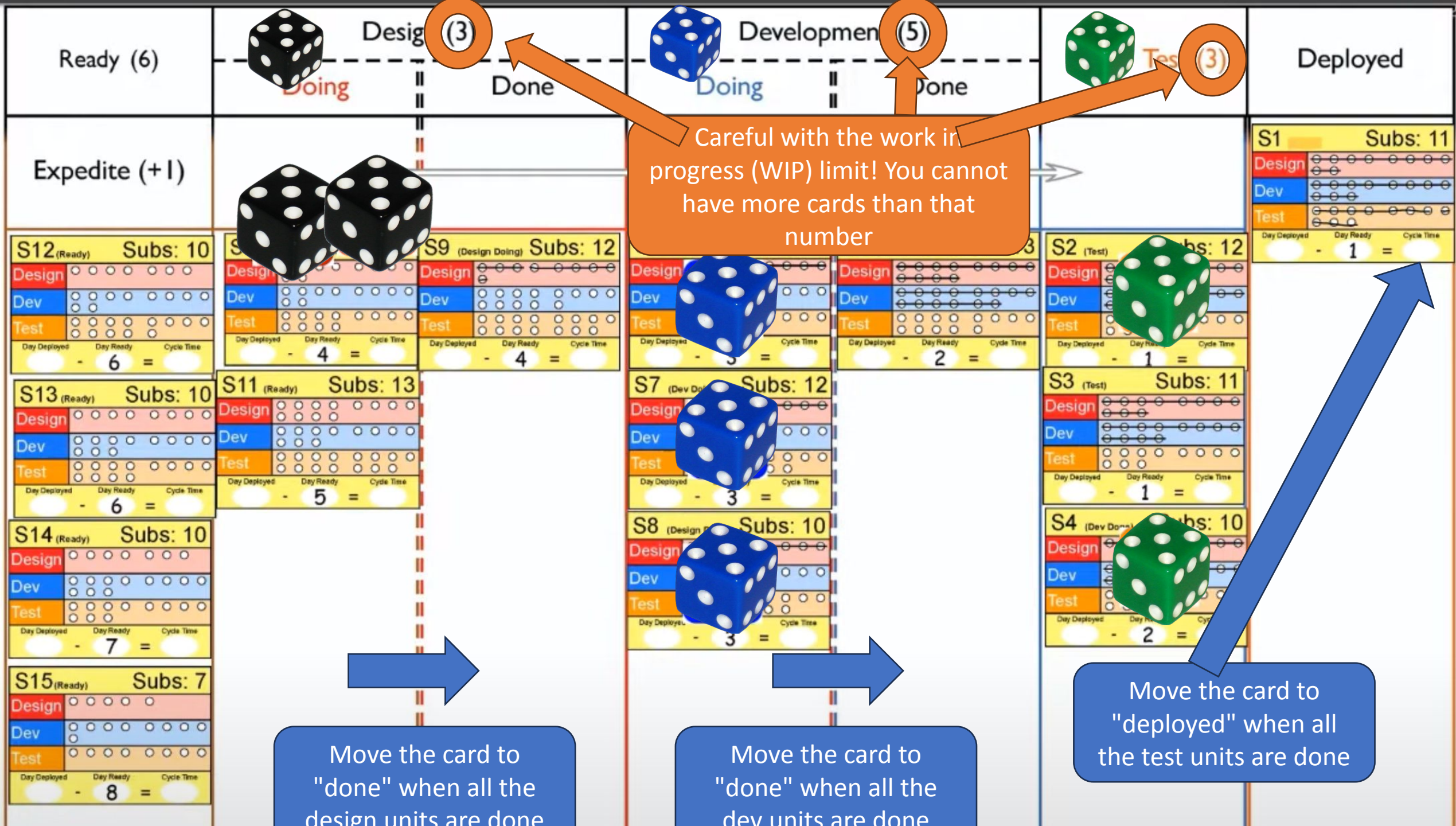
Strike out the unit of works

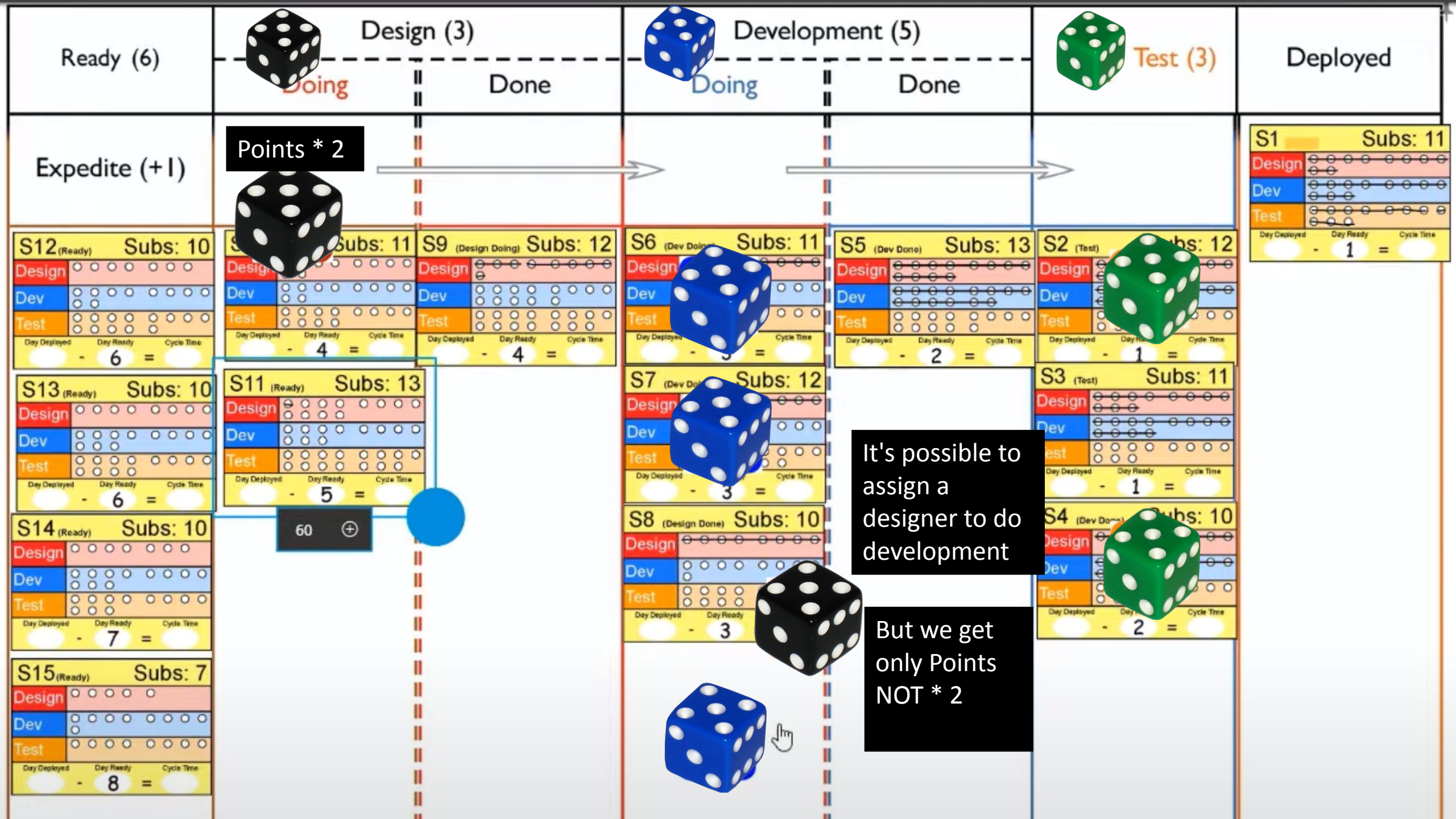


Roll the tester dice

$6 * 2 = 12$ points

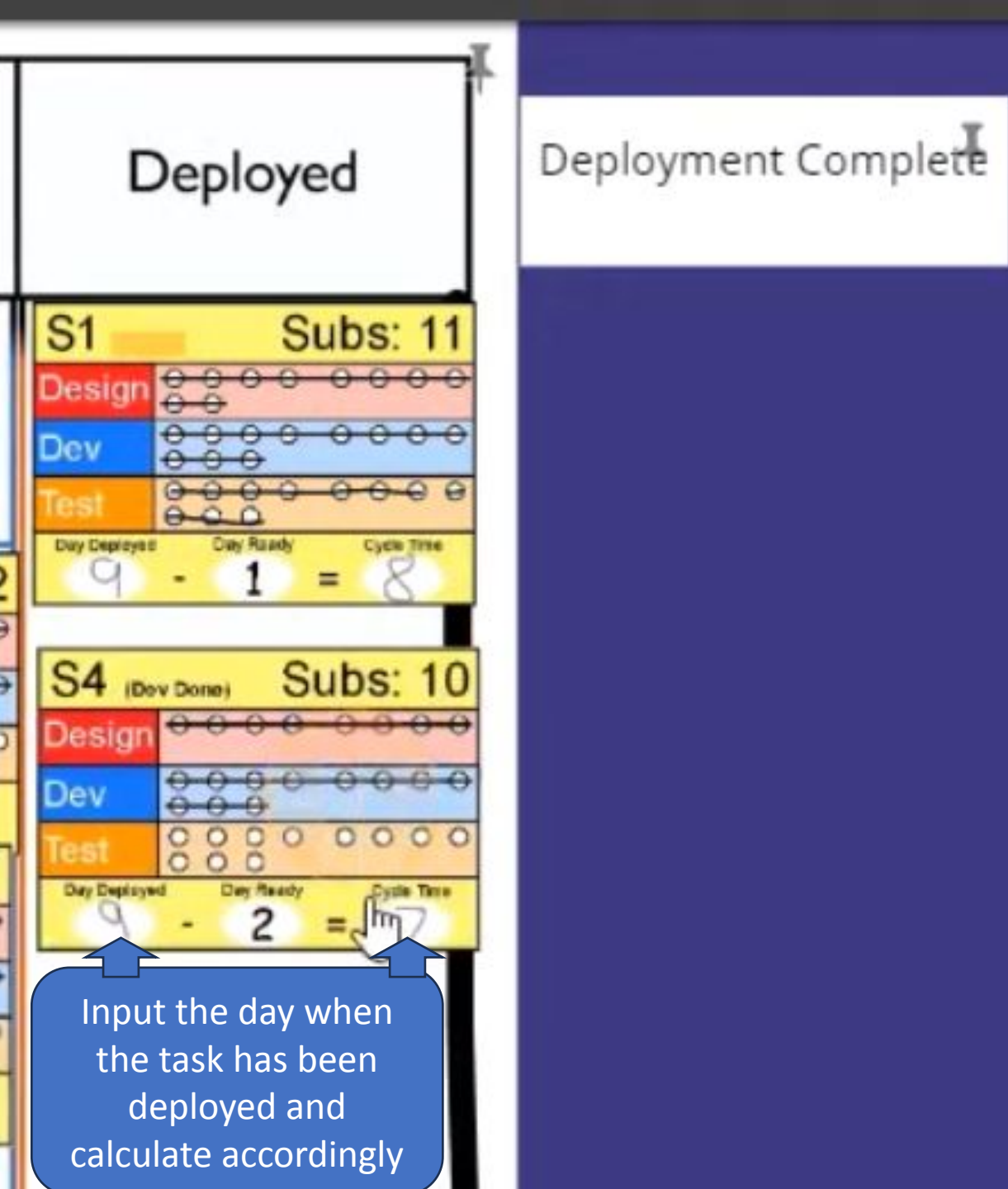
$12 > 11$ so strike out all the remaining 11 points





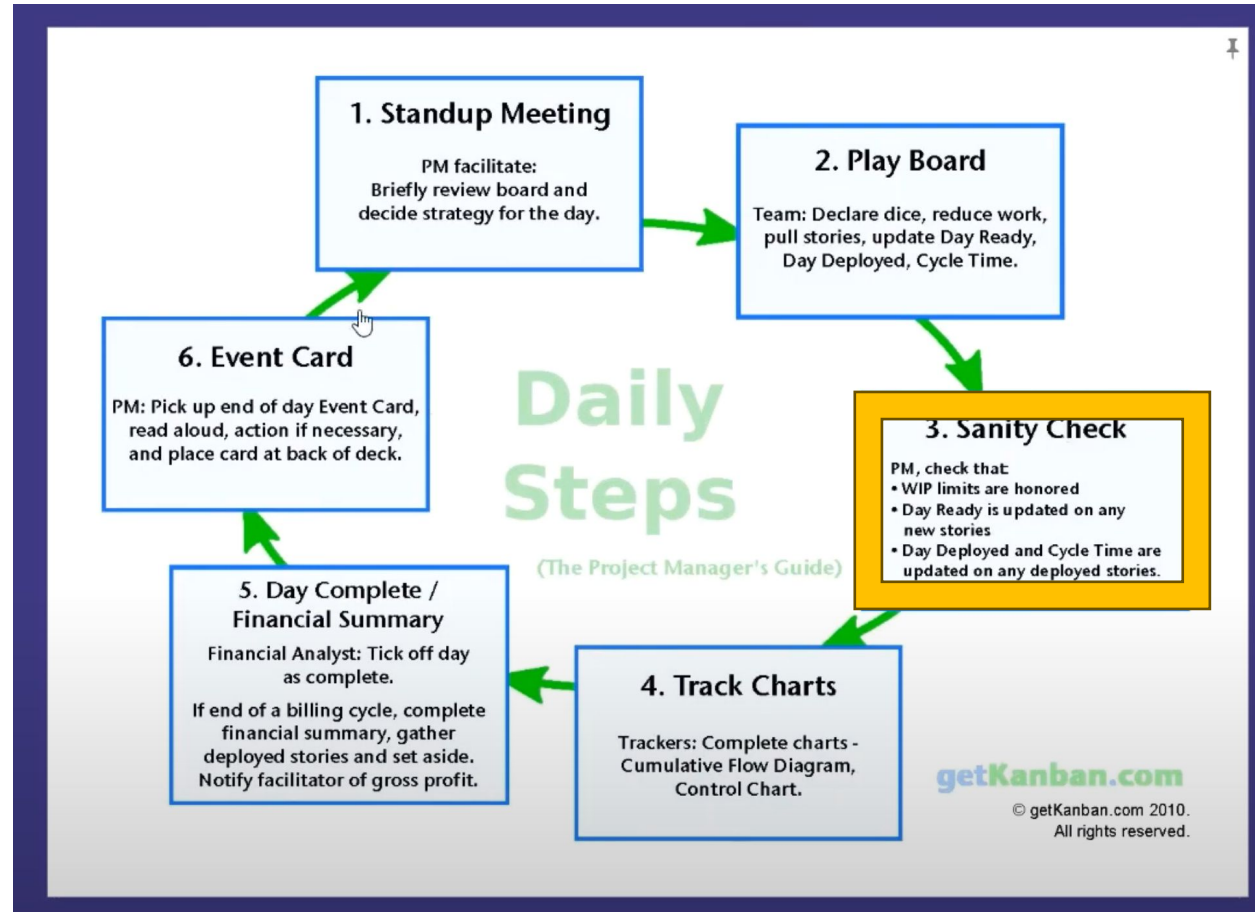
Calculate and keep Track

- Cycle time for each deployed features or card
- And the number of subscriber gained

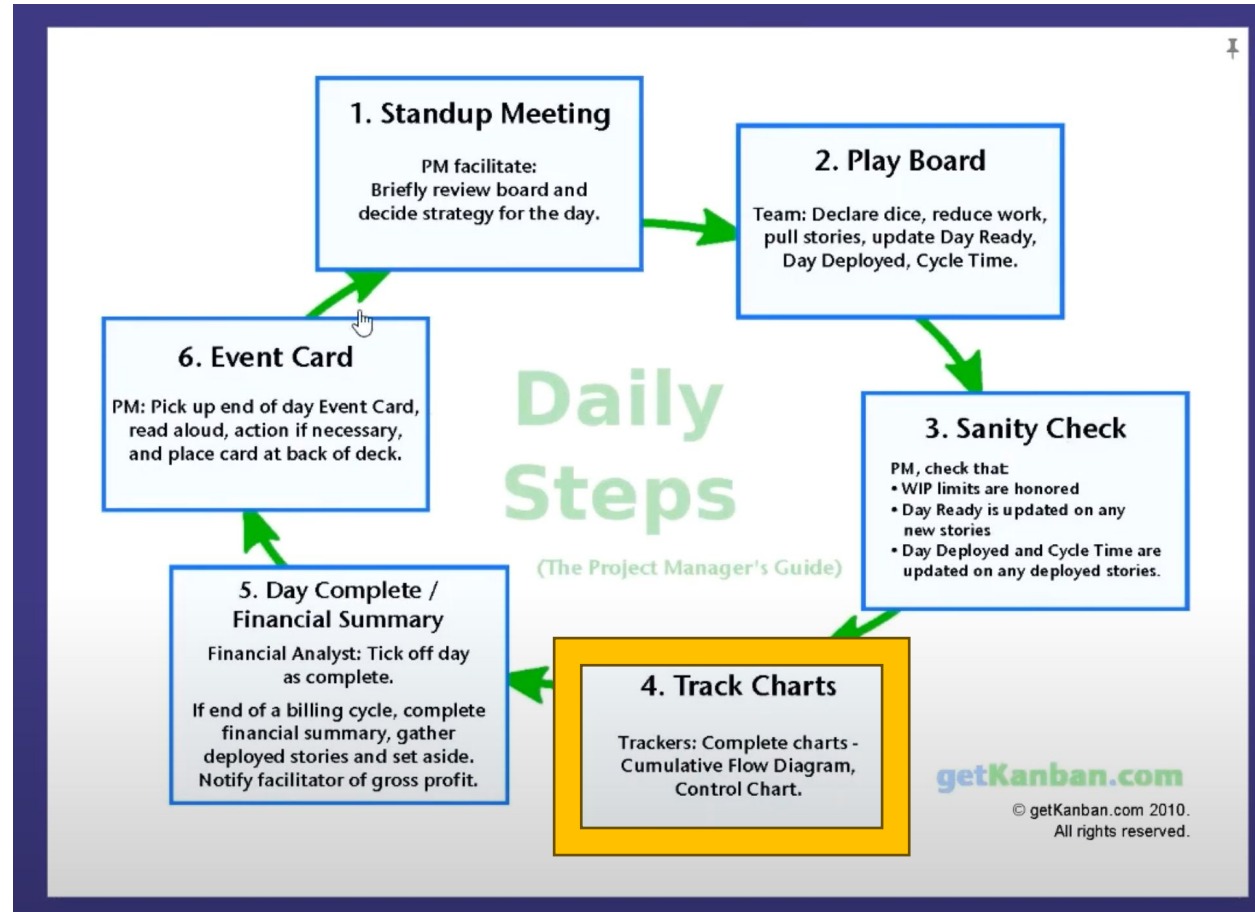


Input the day when the task has been deployed and calculate accordingly

Project manager, Keeping track of all the steps

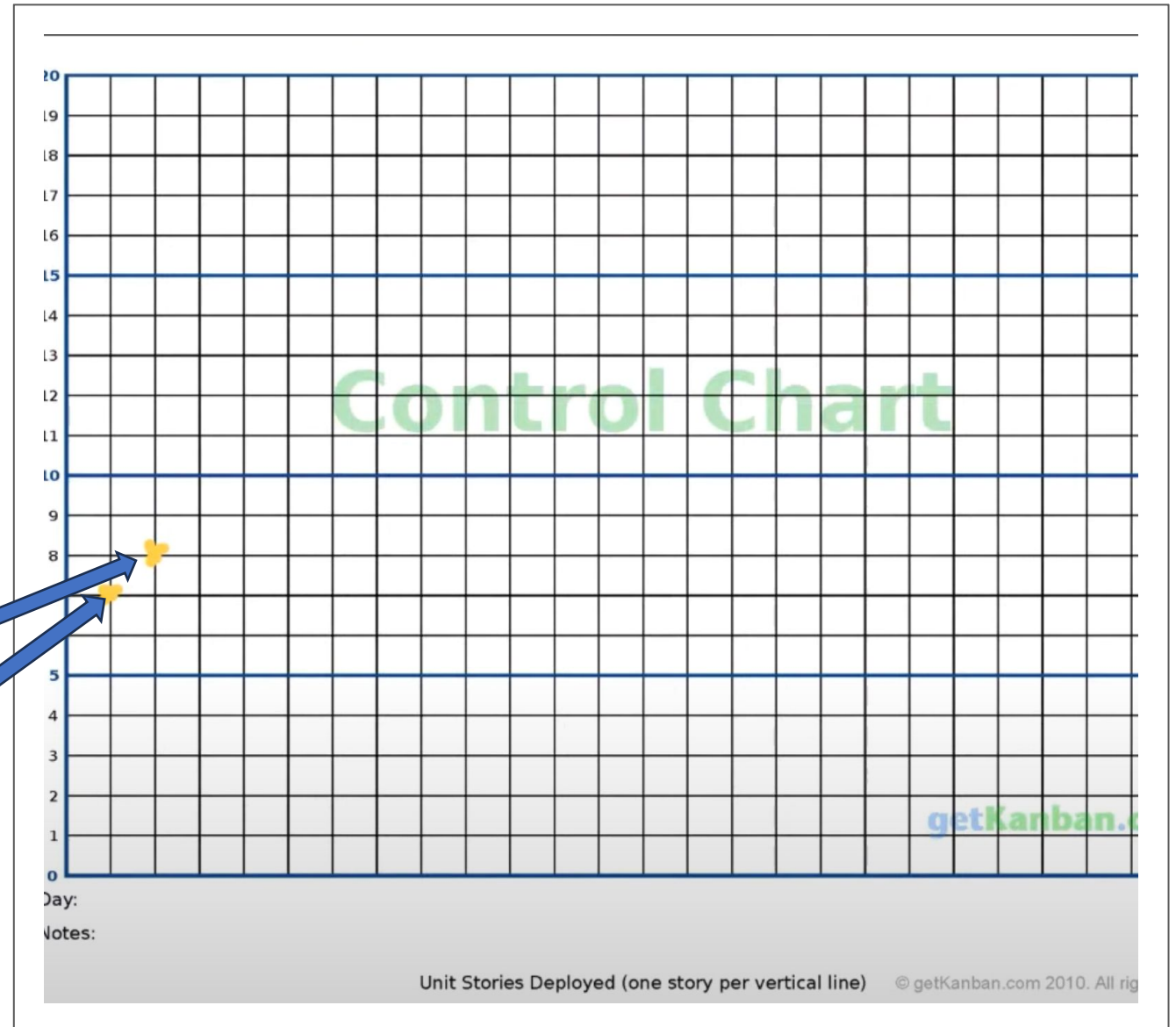
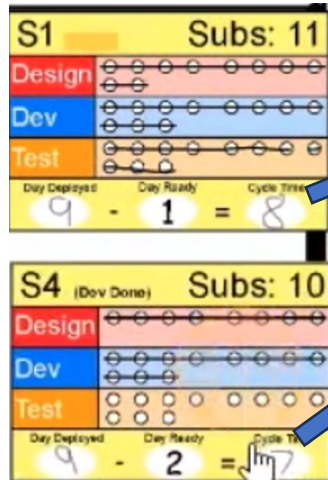


Project manager, Keeping track of all the steps

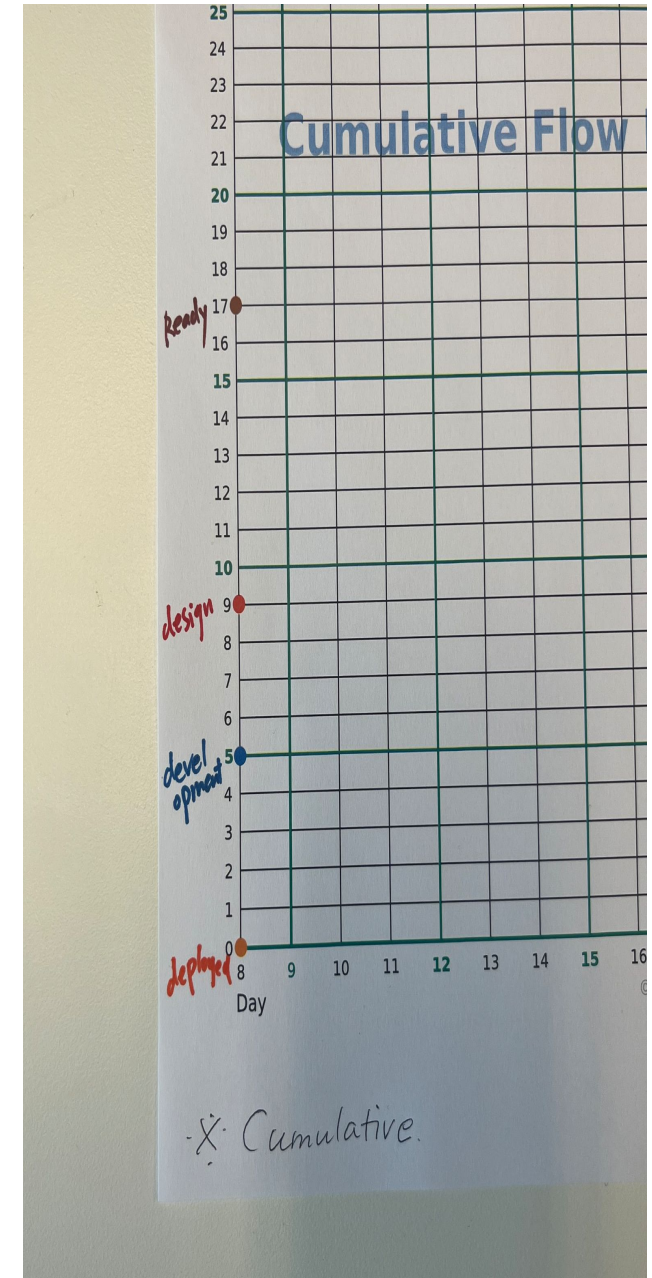
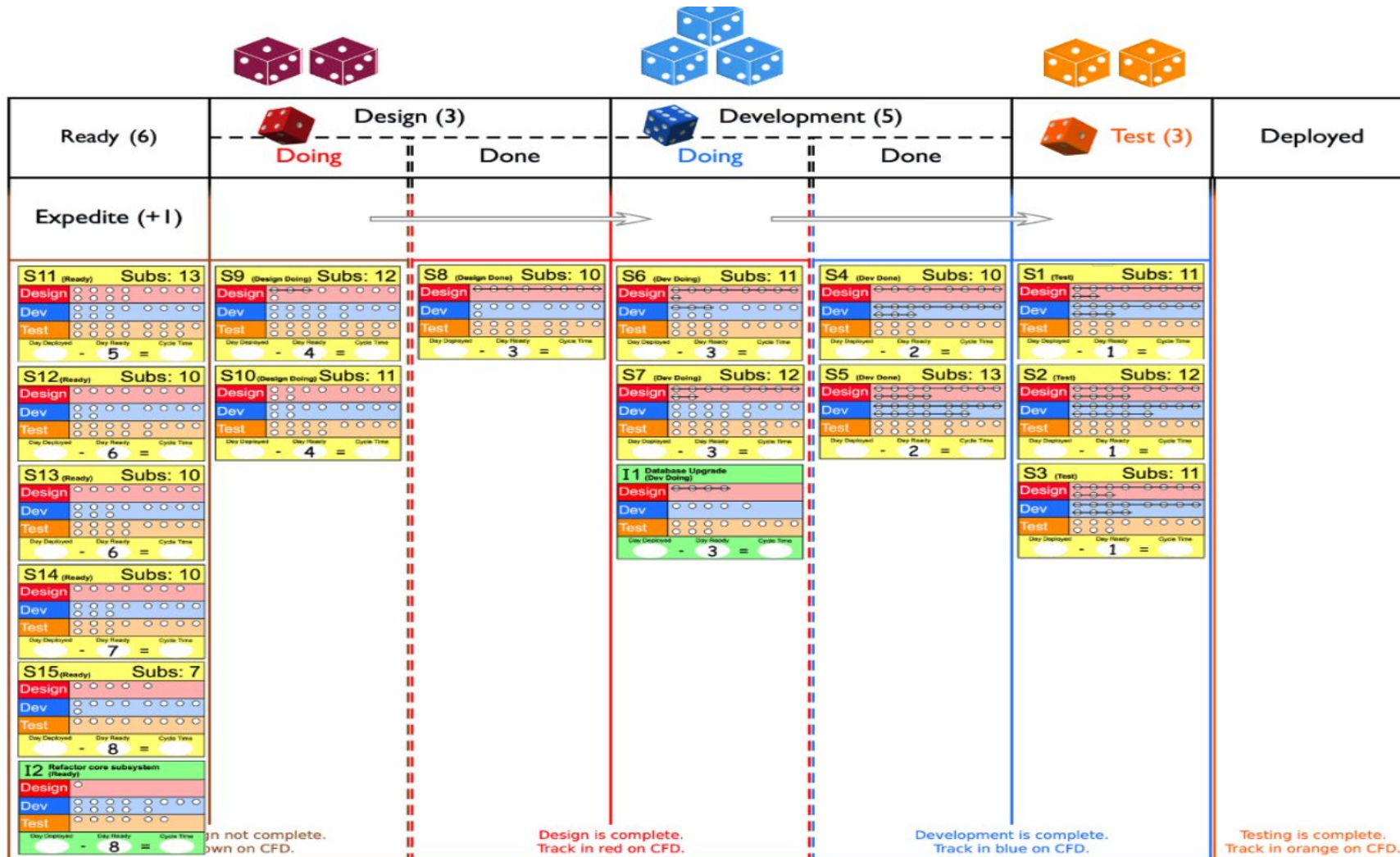


Plot the Cycle time

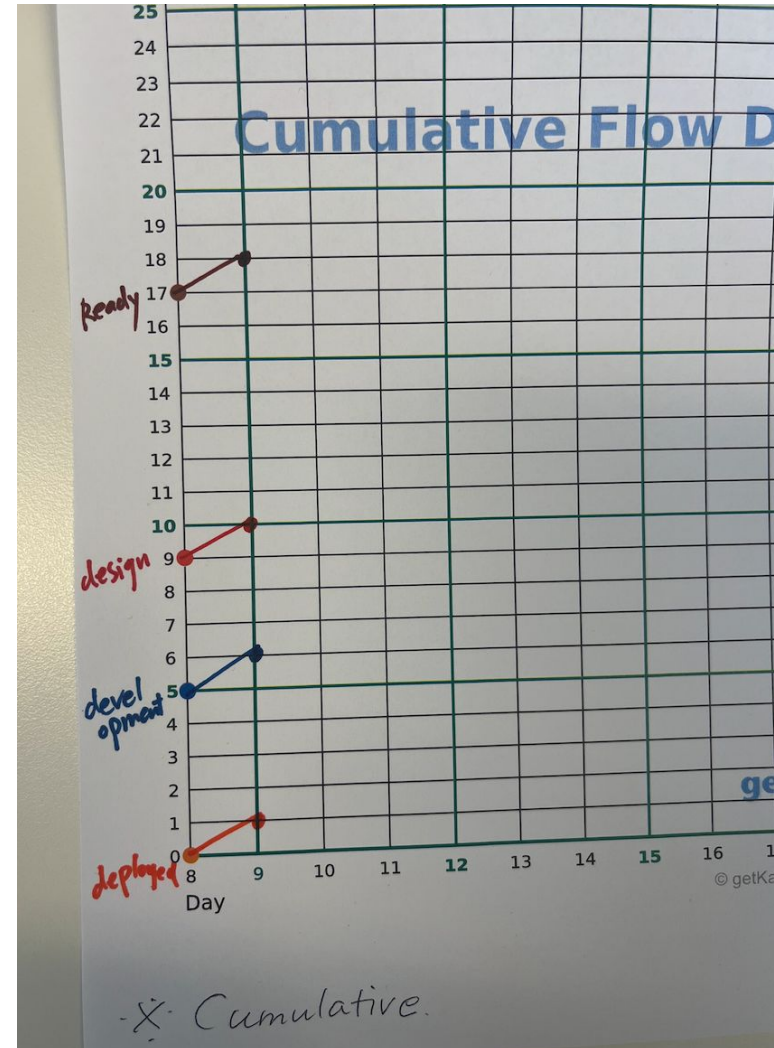
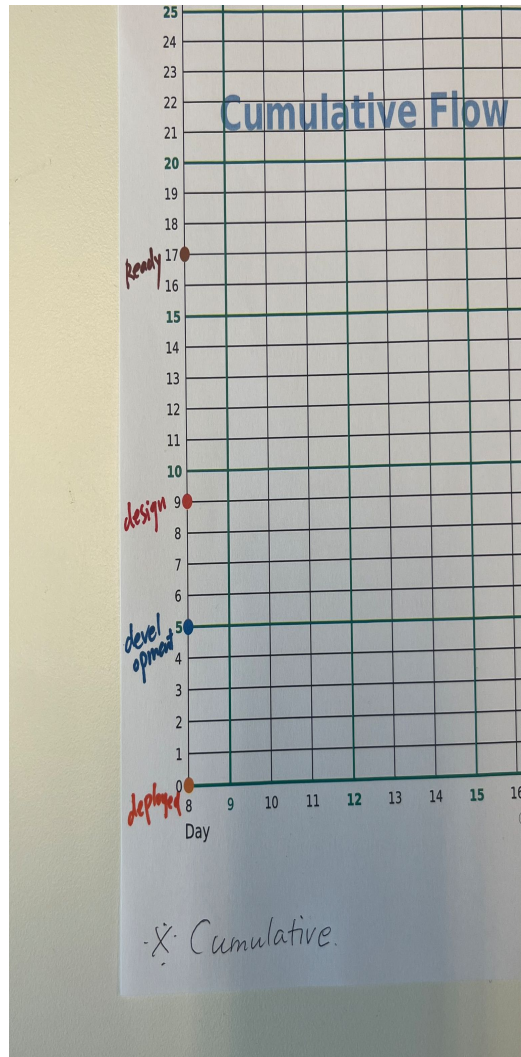
- From the deployed cards, Plot the cycle time everyday



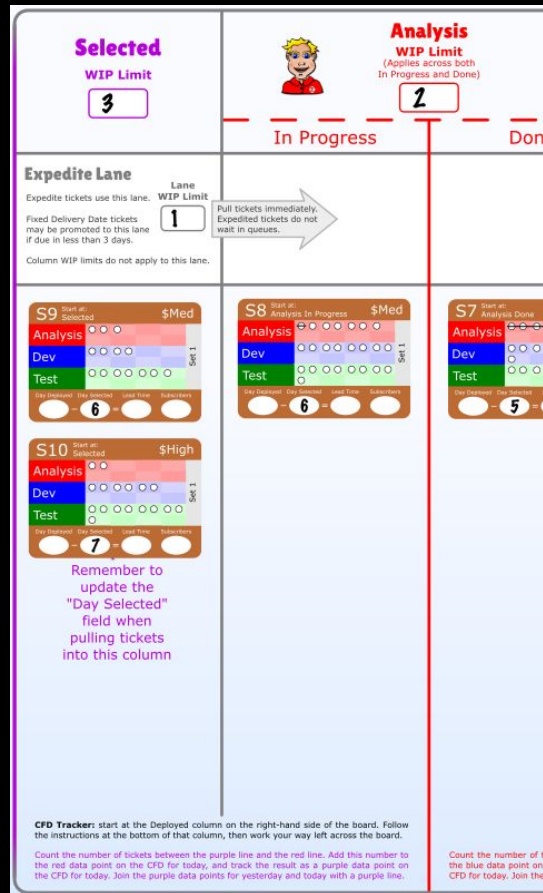
Cumulated Flow Chart Instructions



Cumulated Flow Chart Instructions

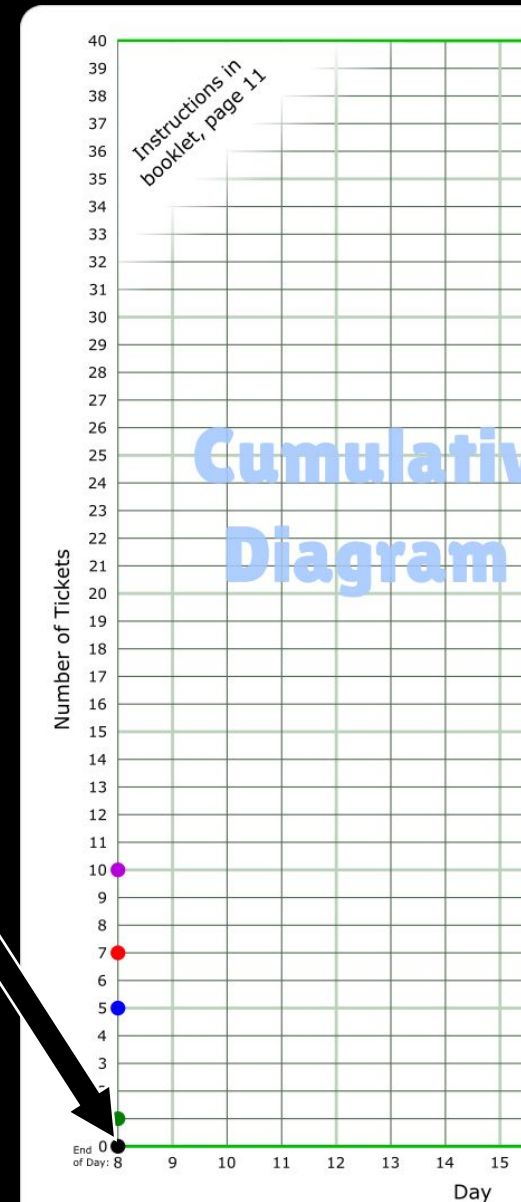
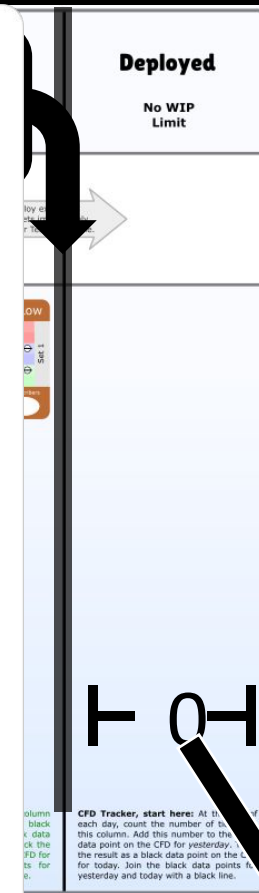
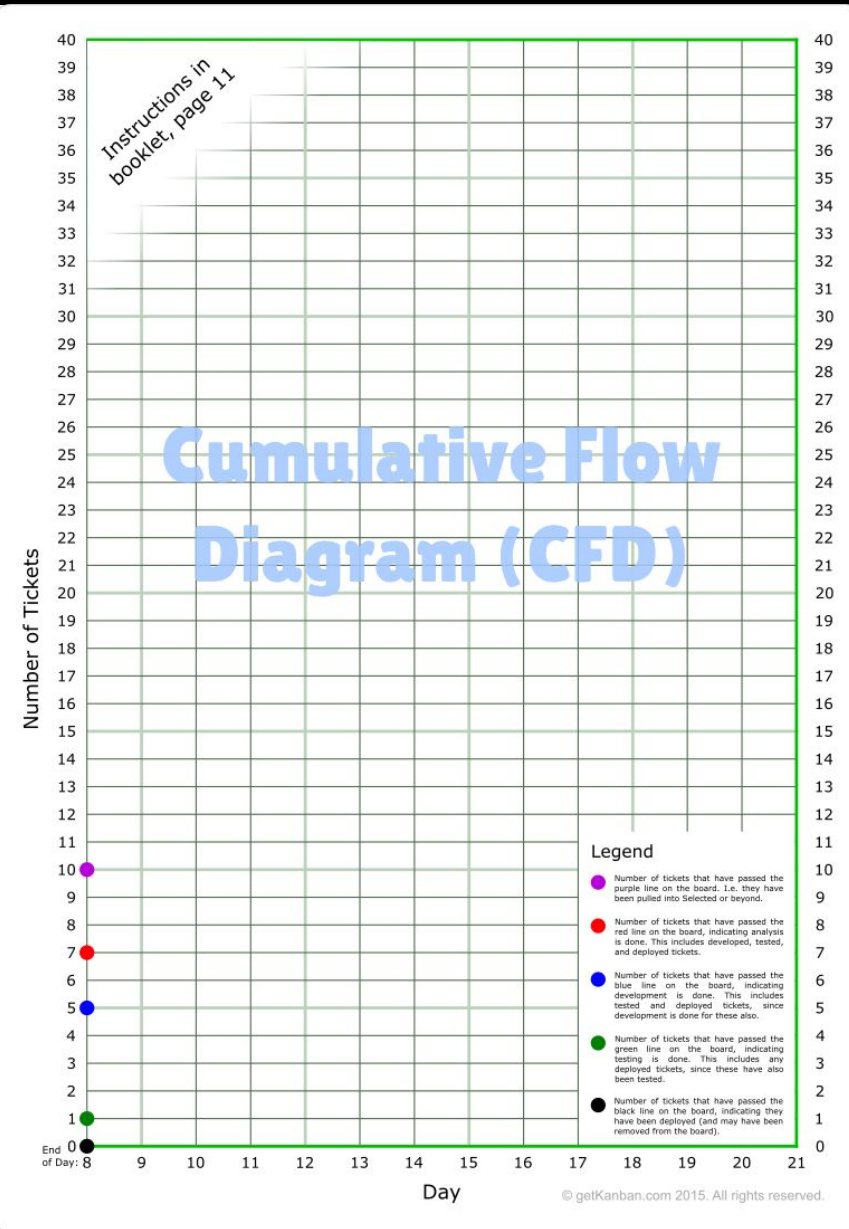


Understand the CFD as at the end of Day 8 (that is, now – at the start of the game)

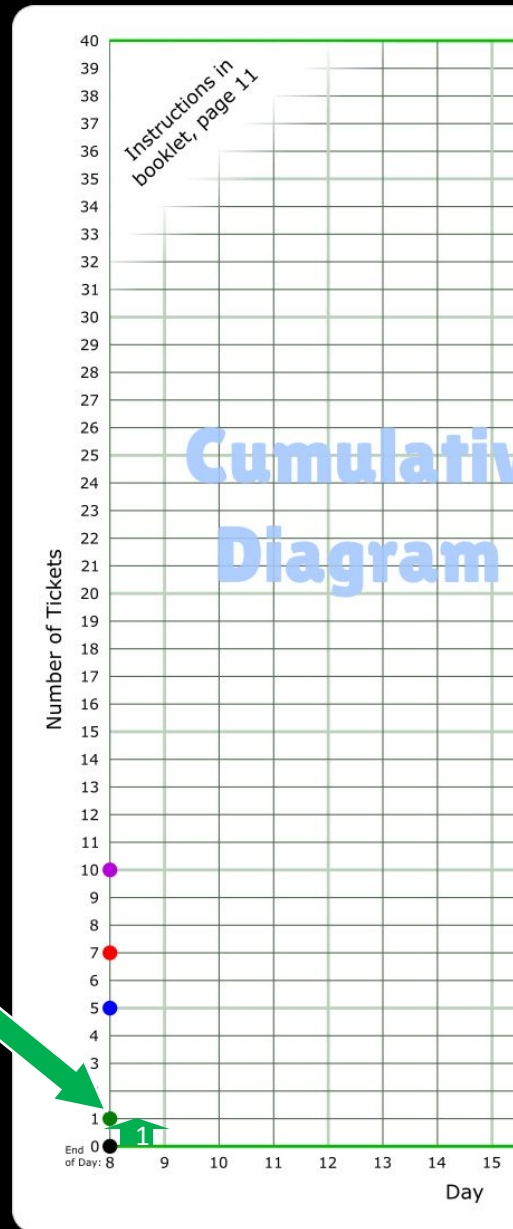
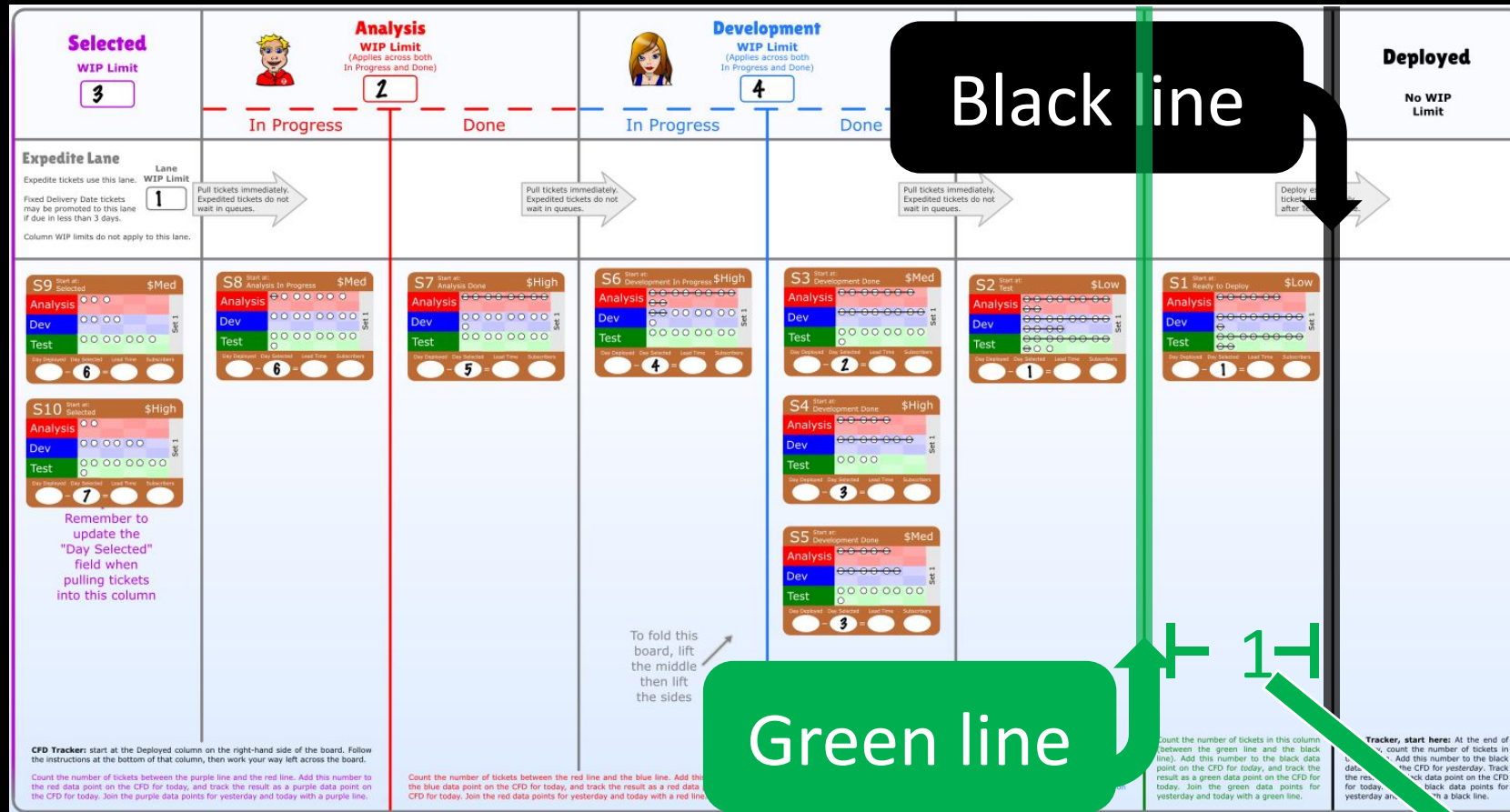


Zero tickets have passed the
... and there is a black point

This means that, as at the end



Understand the CFD as at the end of Day 8 (that is, now – at the start of the game)

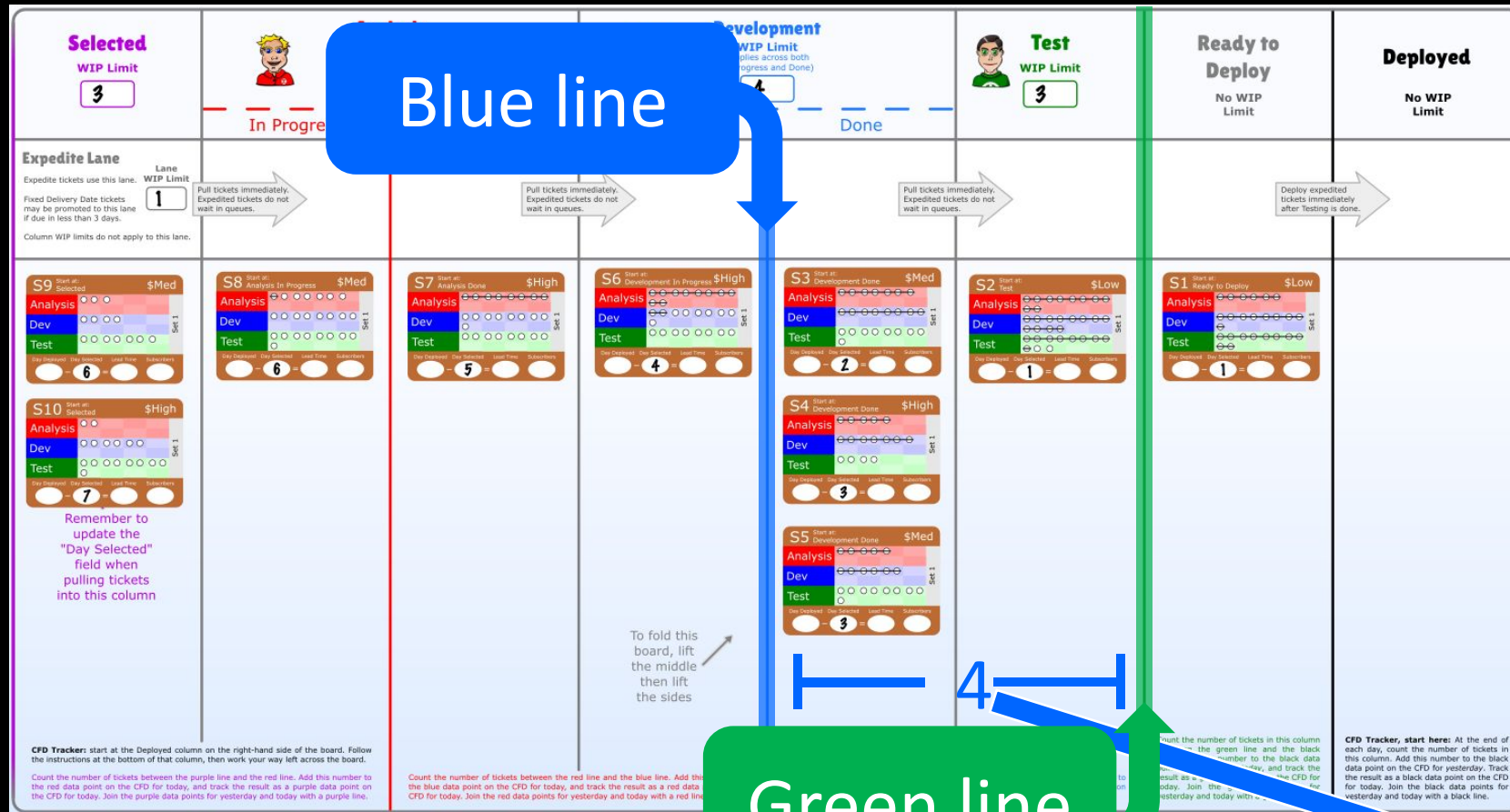


There is one ticket between the green line and the black line on the board ...

... so we count up 1 from the black point to the green point on the CFD.

This means that, as at the end of Day 8, one ticket has finished Test, but has not yet been deployed.

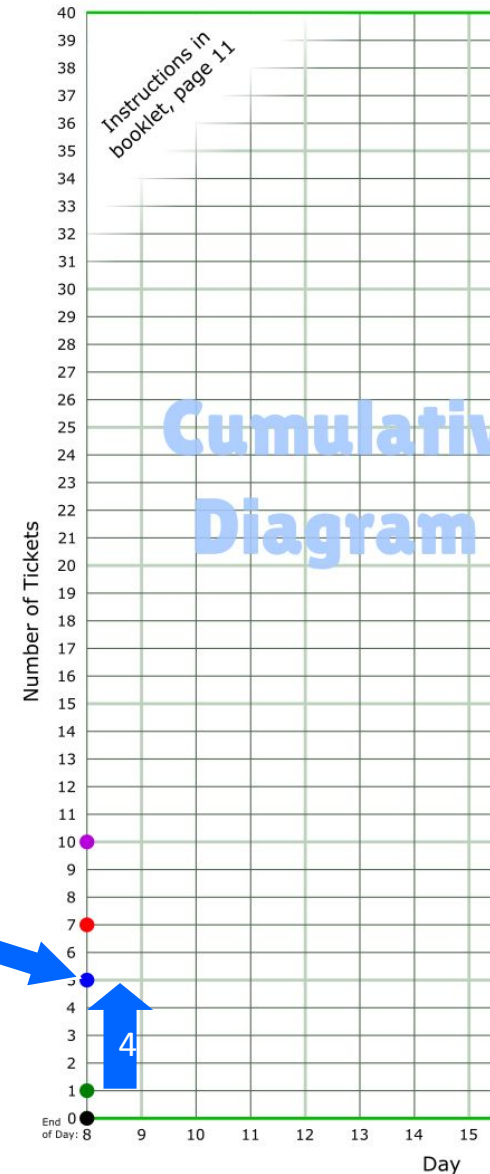
Understand the CFD as at the end of Day 8 (that is, now – at the start of the game)



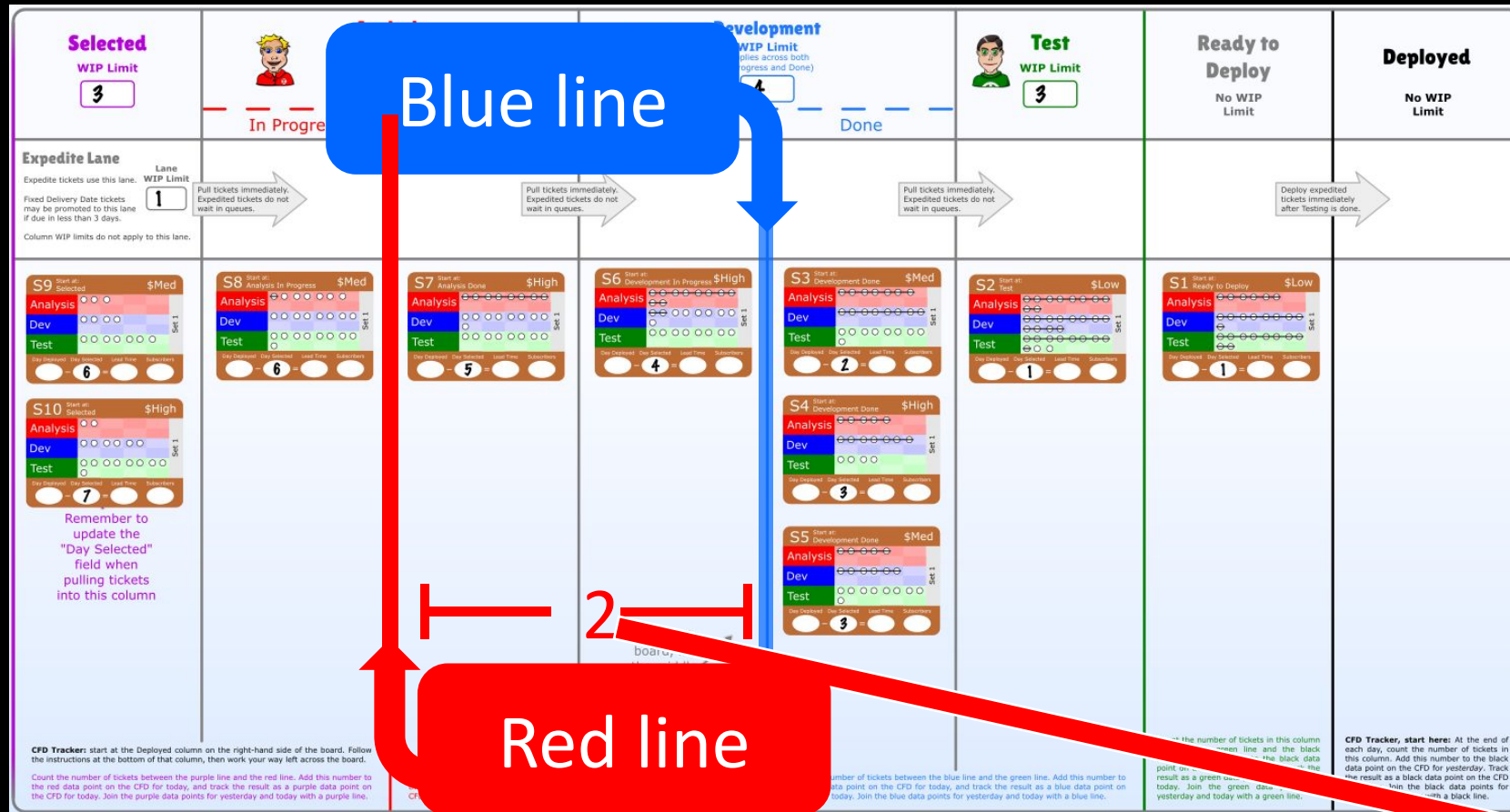
There are four tickets between the blue line and the green line on the board ...

... so we count up 4 from the green point to the blue point on the CFD.

This means that as at the end of Day 8, four tickets have finished Development, but have not yet finished Testing.



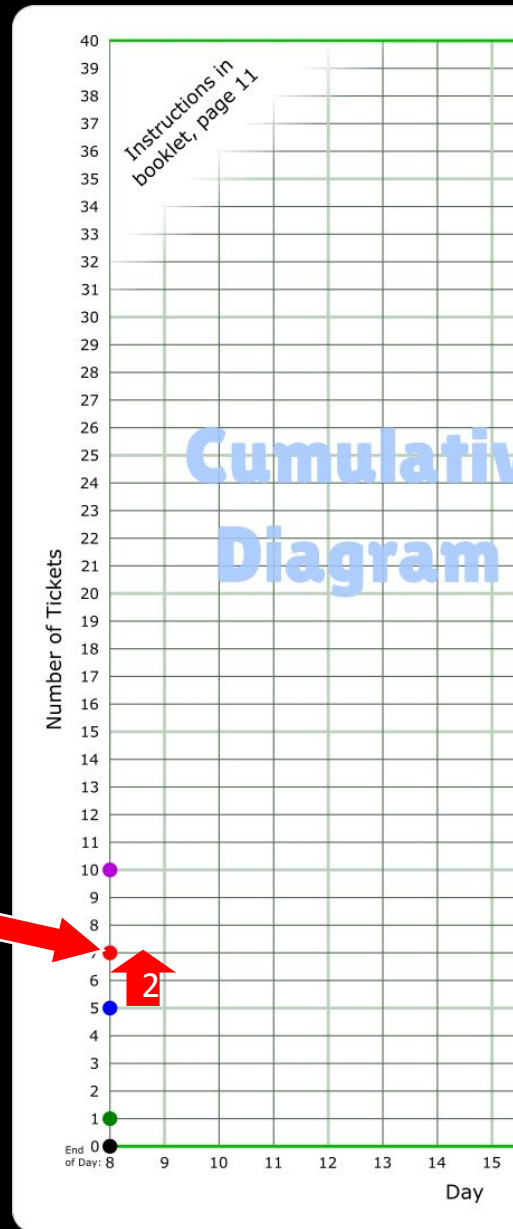
Understand the CFD as at the end of Day 8 (that is, now – at the start of the game)



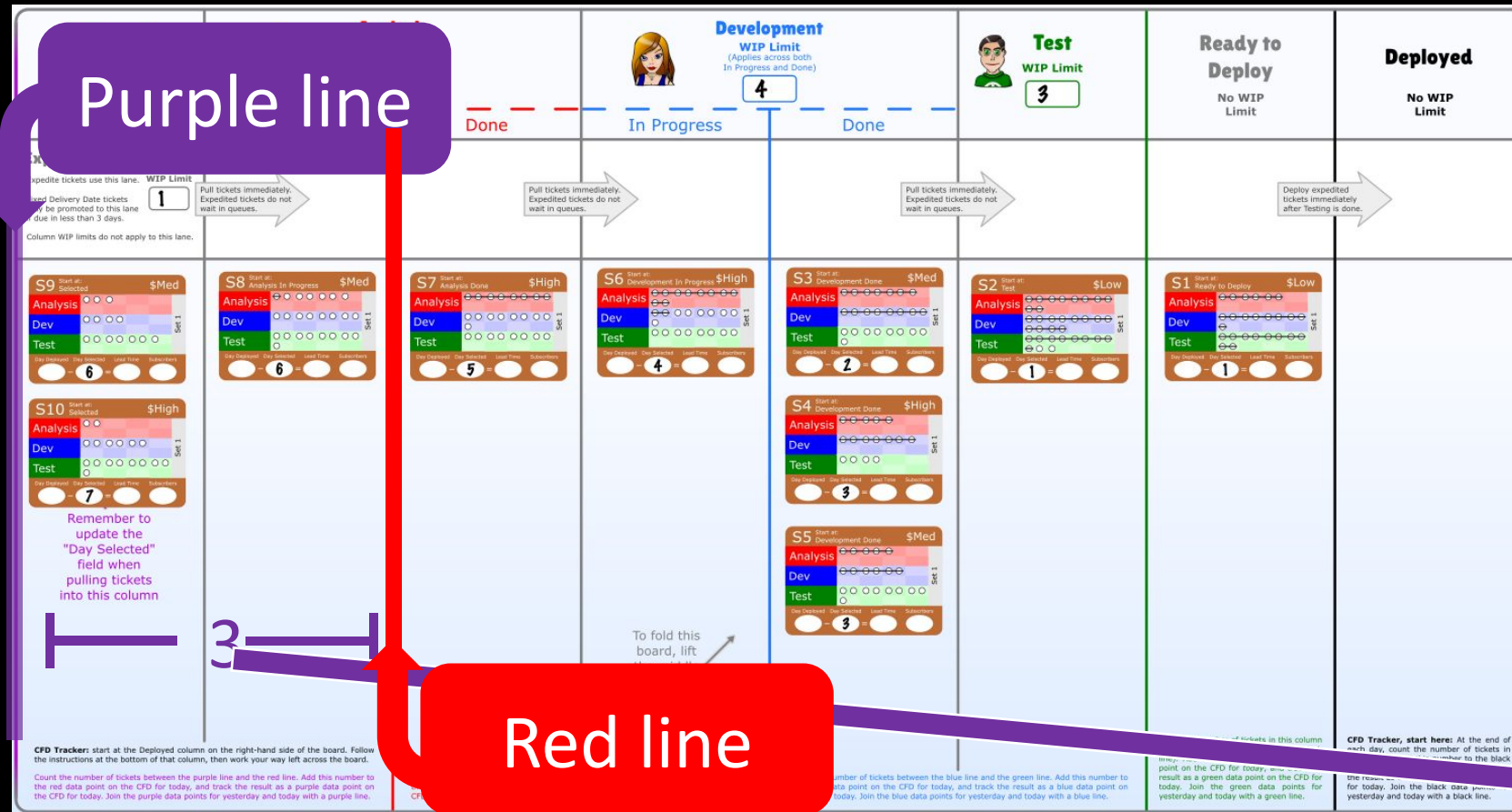
There are two tickets between the red line and the blue line on the board ...

... so we count up 2 from the blue point to the red point on the CFD.

This means that as at the end of Day 8, two tickets have finished Analysis, but have not yet finished Development.



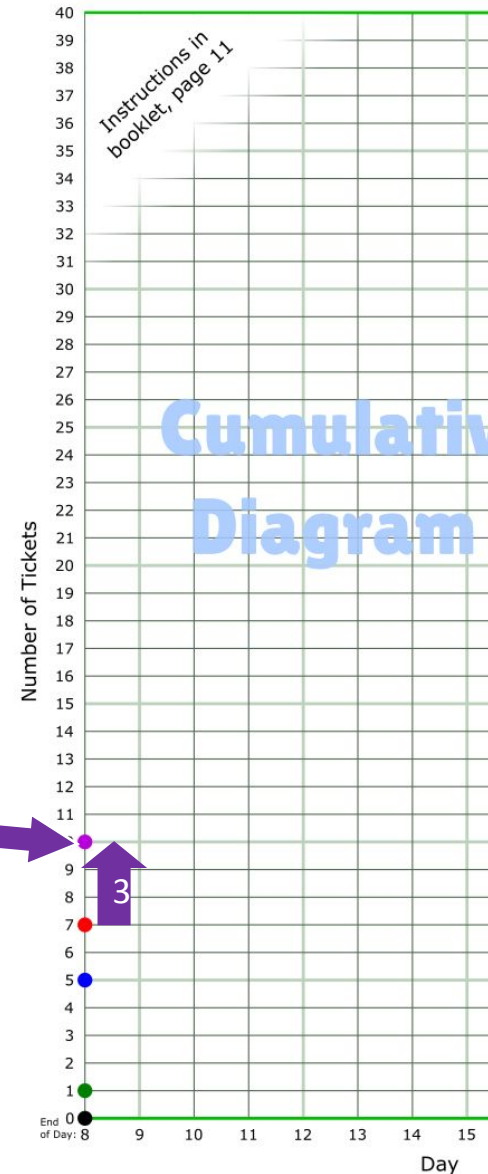
Understand the CFD as at the end of Day 8 (that is, now – at the start of the game)



There are three tickets between the purple line and the red line on the board ...

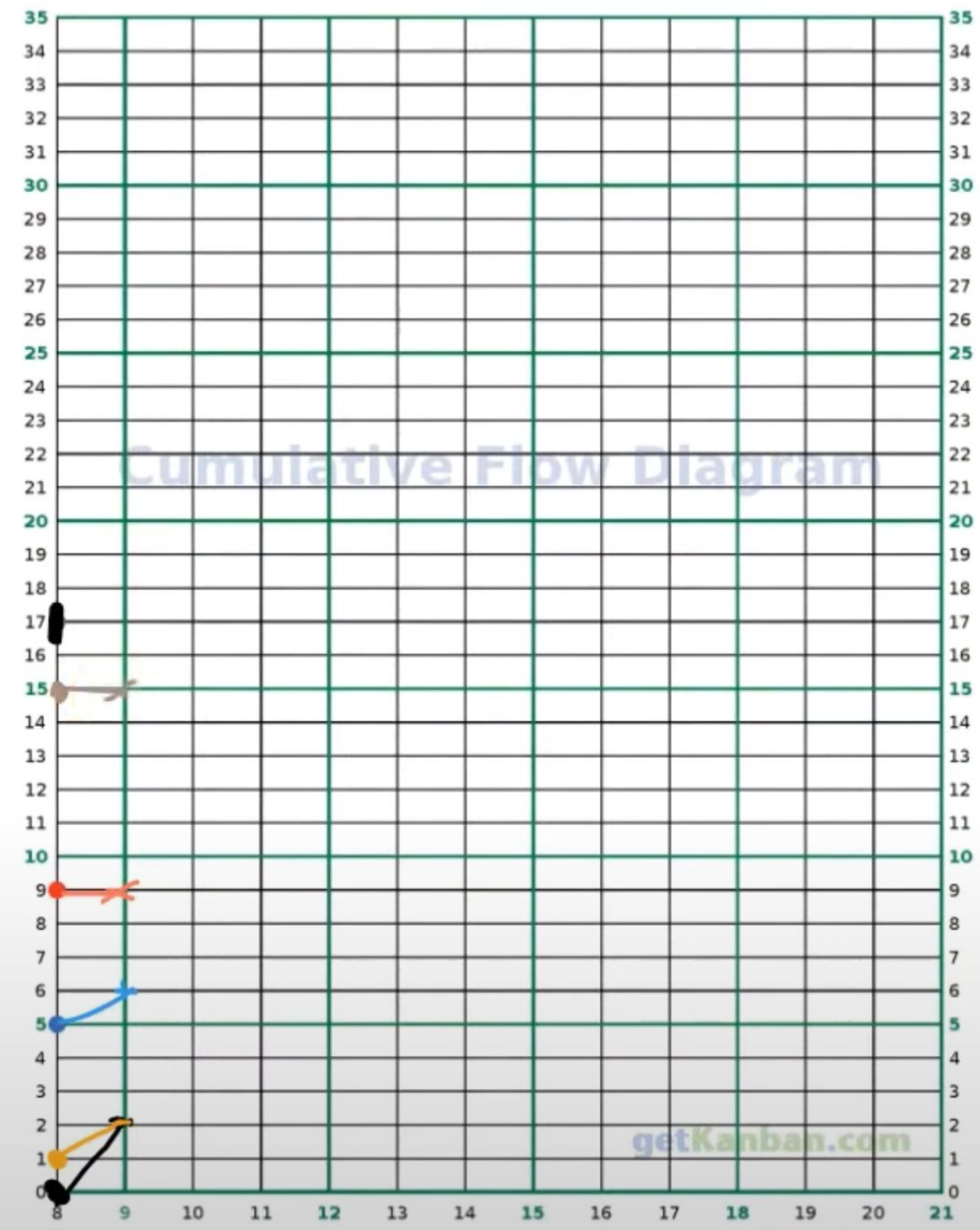
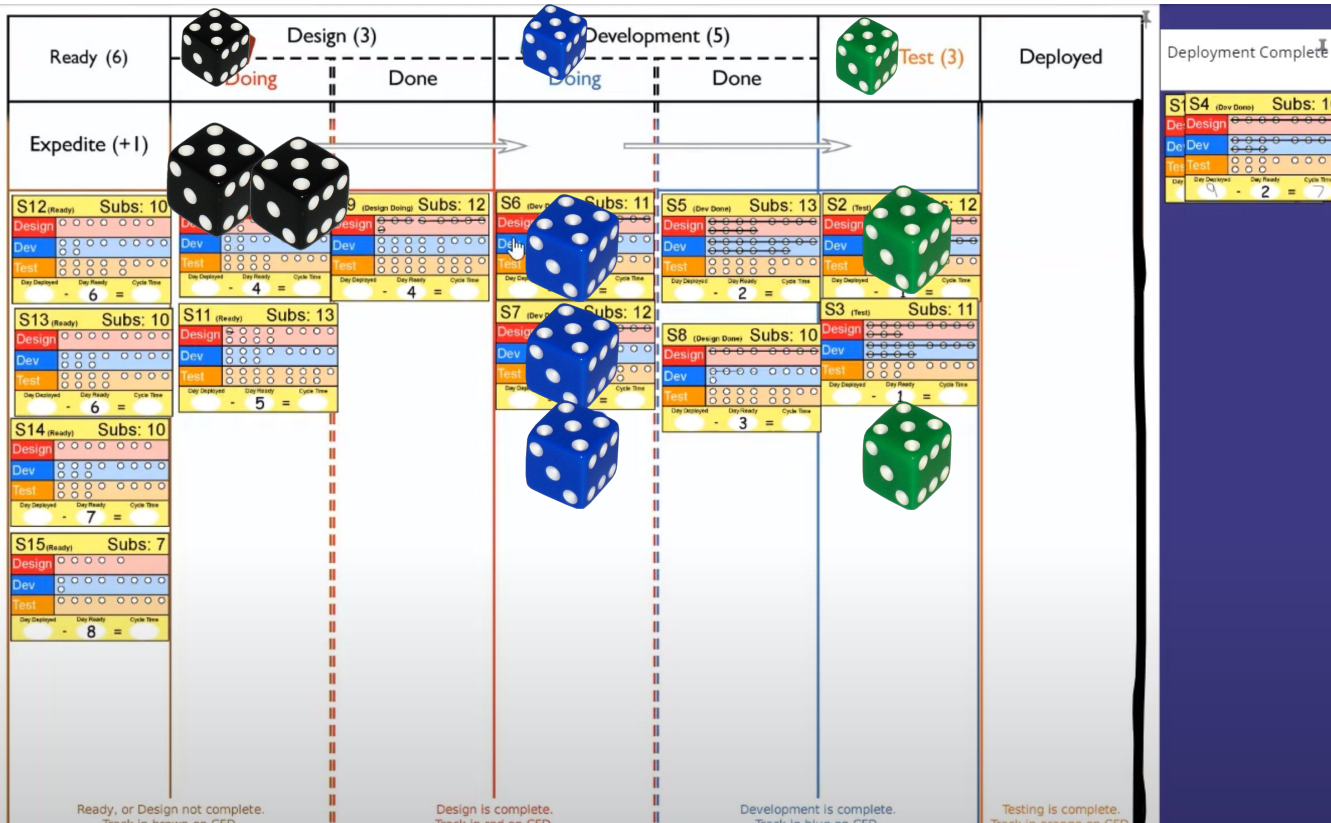
... so we count up 3 from the red point to the purple point on the CFD.

This means that as at the end of Day 8, three tickets have been pulled onto the board, but have not yet finished Analysis.

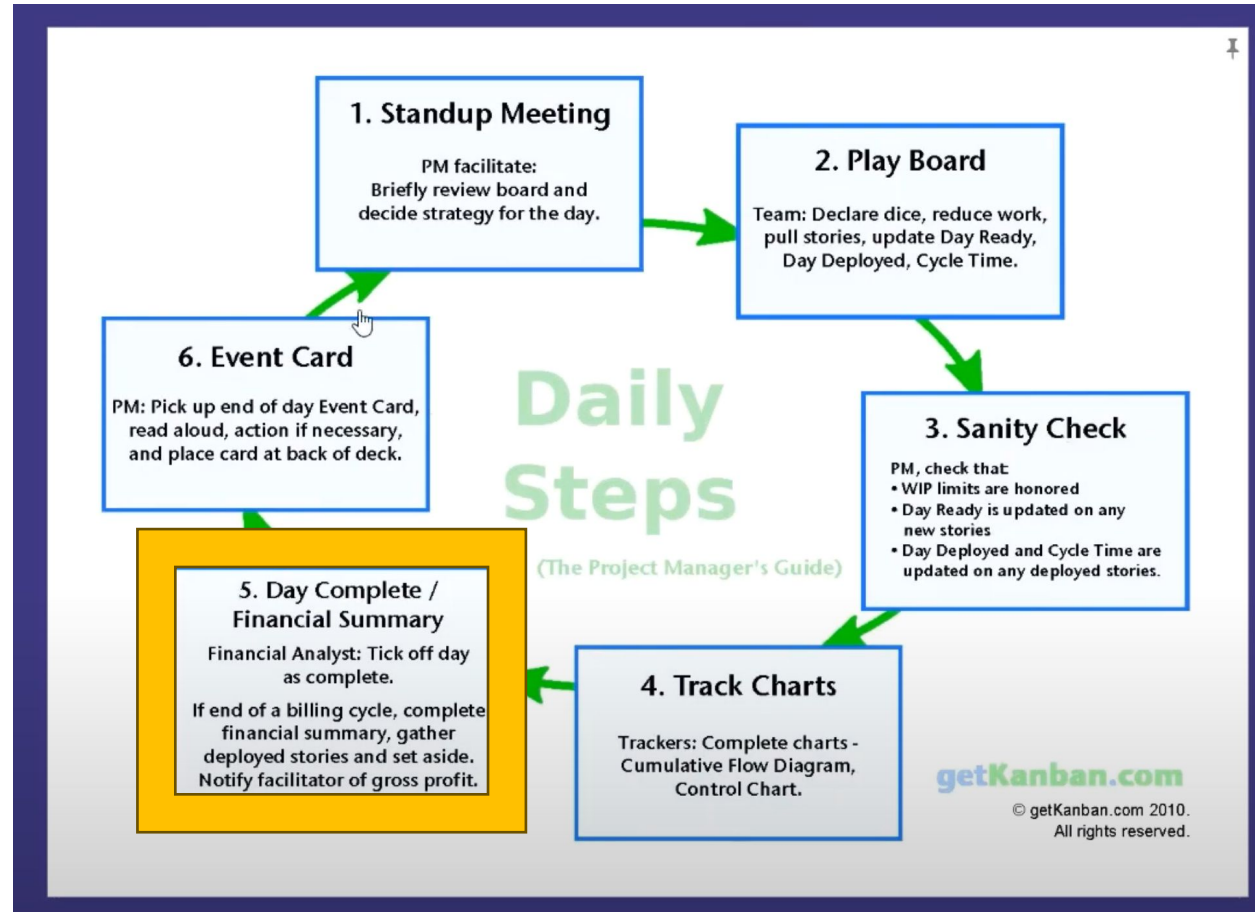


Count the number of cards

- After the
- orange, blue and red and brown line
- At the end of every day from 9 to 18



Project manager, Keeping track of all the steps



Financial summaries

Add the total number of subscribers from the **deployed** card

S1	Subs	11
Design		
Dev		
Test		
Day Deployed	Day Ready	Cycle Time
9	1	= 8

S4 (Dev Done)	Subs	10
Design		
Dev		
Test		
Day Deployed	Day Ready	Cycle Time
9	2	= 11

Financial Summaries: Three Day Billing Cycle

Tick off days as they are completed

Billing cycle ended day

Billing cycle new subscribers (add up Subs from stories deployed in billing cycle)

Total subscribers to date

Billing cycle subscriber revenue

Billing cycle fines or cash payments

Billing cycle gross profit

Total gross profit to date (notify facilitator when calculated)

Gather up the stories deployed at the end of each billing cycle, and set aside.

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Tick the day that has been finished

9 10 11 12 13 14 15 16 17 18 19 20 21

9 12 15 18 21

9A 21 12A 15A 18A 21A

Copy 9A 9B + 12A 12B + 15A 15B + 18A 18B + 21A

9B 24 12B 15B 18B 21B

9B x \$100 12B x \$100 15B x \$100 18B x \$100 21B x \$100

9C 2100 12C 15C 18C 21C

Did you finish F1 by day 15? If not, put your \$2,200 fine here.

15D - 21D

Did you finish F2 by day 20? If so, make sure you include the 25 additional subscribers.

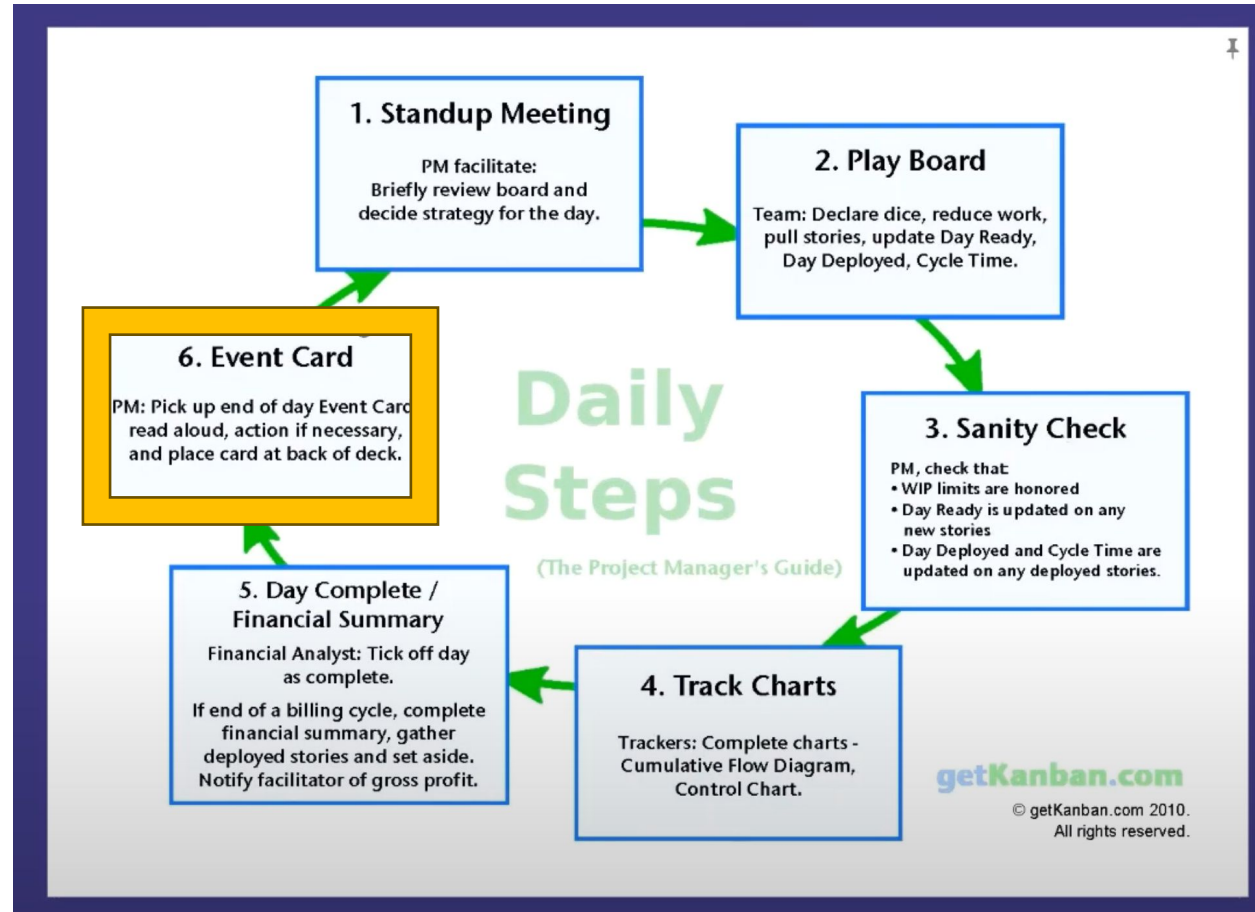
Copy 9C Copy 12C 15C + 15D Copy 18C 21C + 21D

9E 2600 12E 15E 18E 21E

Copy 9E 9F + 12E 12F + 15E 15F + 18E 18F + 21E

9F 2100 12F 15F 18F 21F

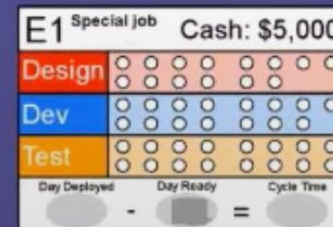
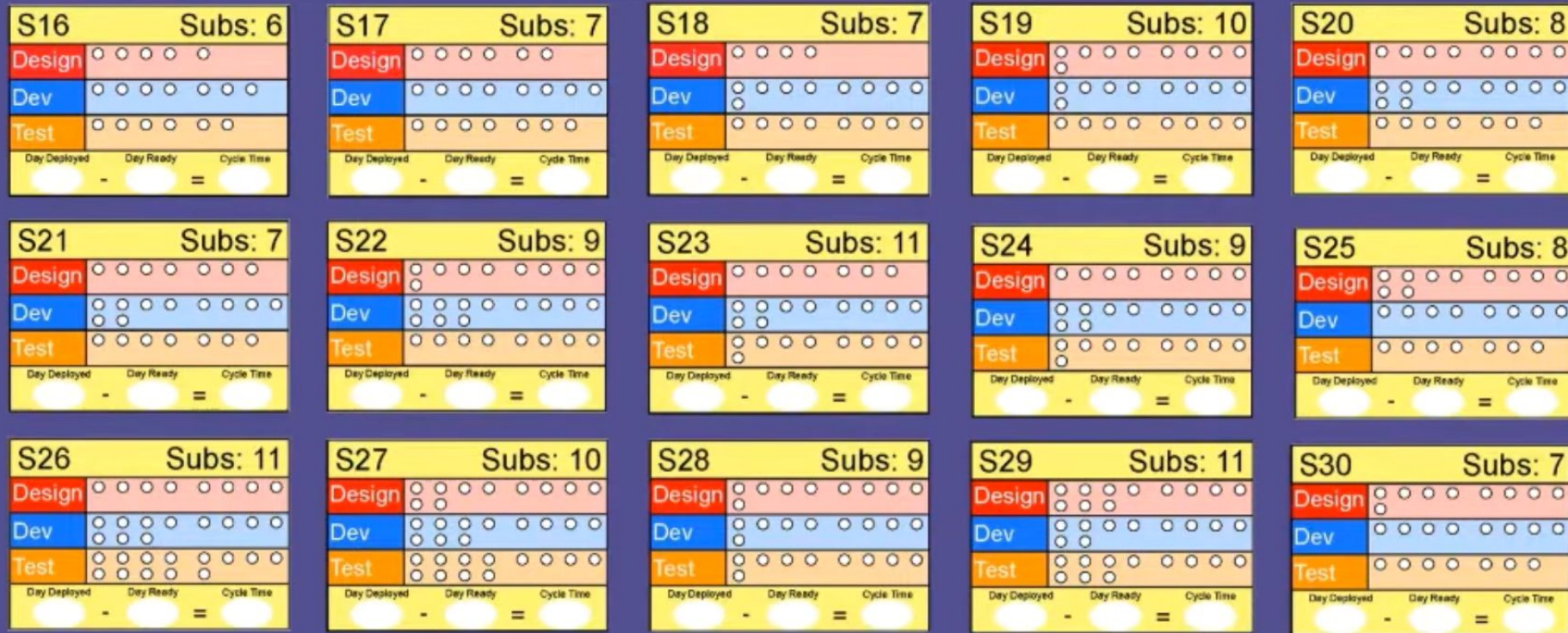
Project manager, Keeping track of all the steps



Each day a new event happens
Remove the event card



DEVELOPMENT CARDS



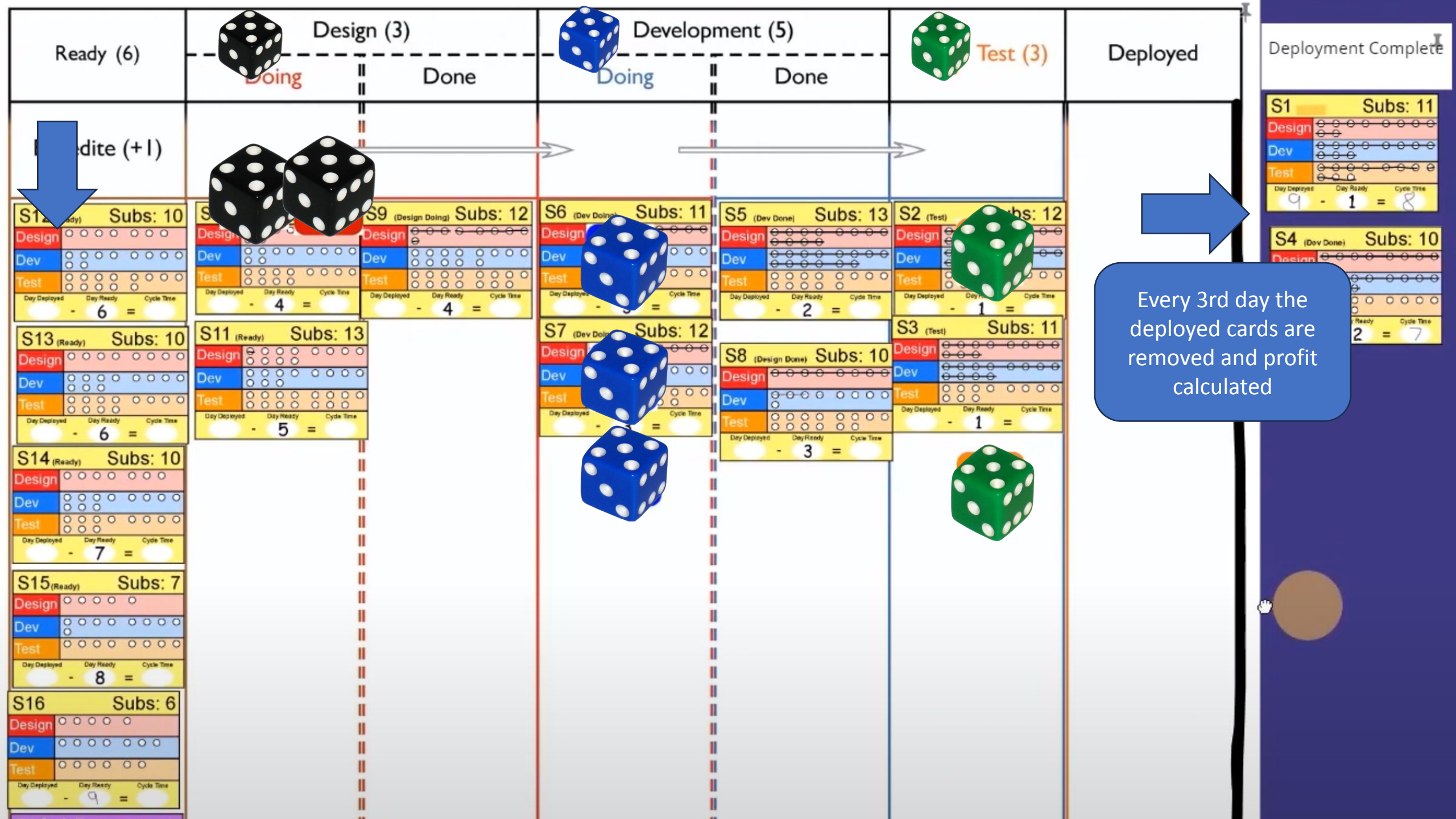
After calculating and plotting the results

- Move new ticket or cards from the available set of development and other cards , depending on the event .
- Continue playing the game for until day 18th and report the Final summary at the end of every 3rd day.

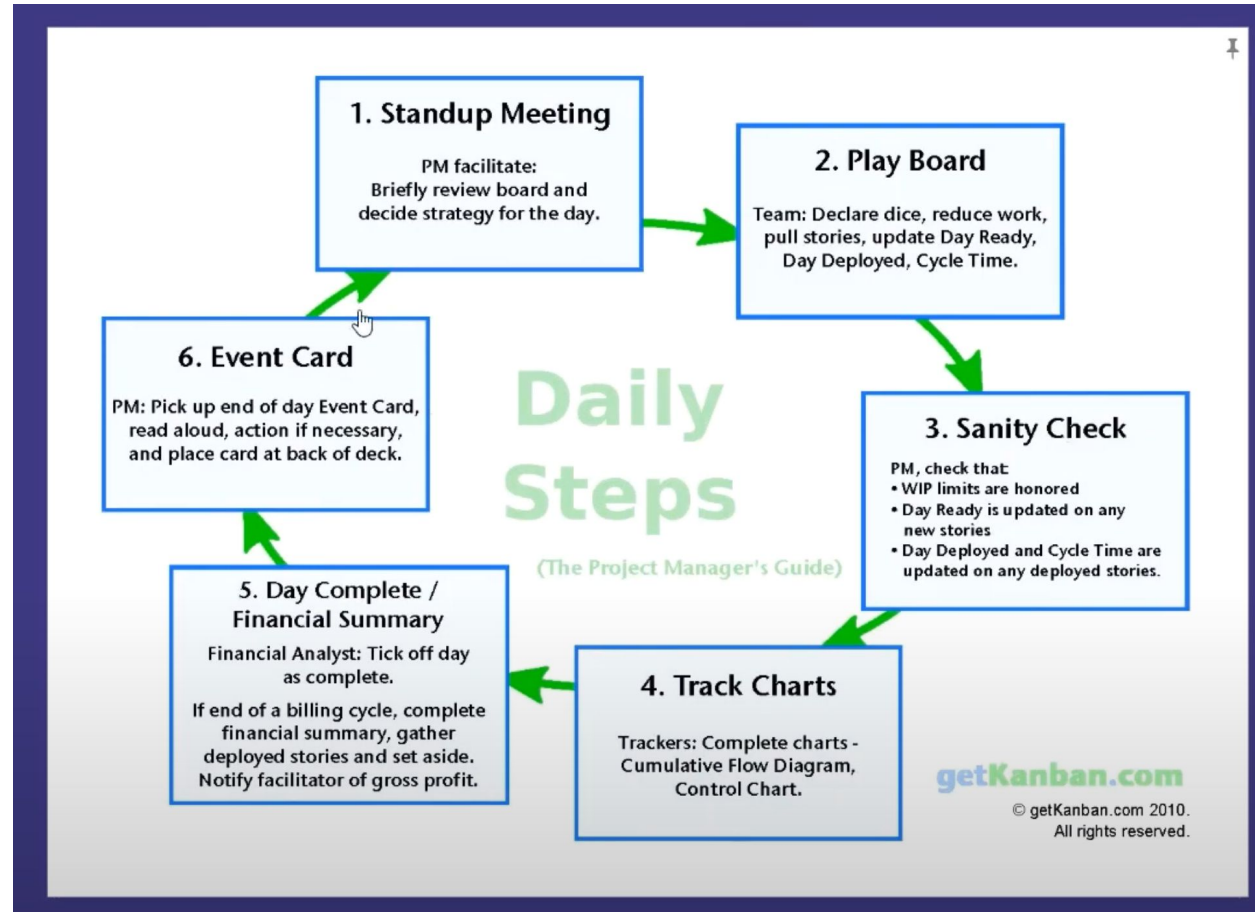
S16 Subs: 6	
Design	○ ○ ○ ○ ○
Dev	○ ○ ○ ○ ○ ○ ○
Test	○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- 9 =

F1 Sec. Audit Due day: 15 Fine:\$2,200	
Design	○ ○ ○
Dev	○ ○ ○ ○ ○ +
Test	○ ○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- 9 =

Ready (6)	
Expedite (+1)	
S12 (Ready) Subs: 10	
Design	○ ○ ○ ○ ○ ○ ○
Dev	○ ○ ○ ○ ○ ○ ○
Test	○ ○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- 6 =
S13 (Ready) Subs: 10	
Design	○ ○ ○ ○ ○ ○ ○
Dev	○ ○ ○ ○ ○ ○ ○
Test	○ ○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- 6 =
S14 (Ready) Subs: 10	
Design	○ ○ ○ ○ ○ ○ ○
Dev	○ ○ ○ ○ ○ ○ ○
Test	○ ○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- 7 =
S15 (Ready) Subs: 7	
Design	○ ○ ○ ○ ○ ○ ○
Dev	○ ○ ○ ○ ○ ○ ○
Test	○ ○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- 8 =
S16 Subs: 6	
Design	○ ○ ○ ○ ○
Dev	○ ○ ○ ○ ○ ○ ○
Test	○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- =
F1 Sec. Audit Due day: 15 Fine:\$2,200	
Design	○ ○ ○
Dev	○ ○ ○ ○ ○ +
Test	○ ○ ○ ○ ○ ○ ○
Day Deployed	Day Ready = Cycle Time
	- =



Project manager, Keeping track of all the steps



Previous Exam Questions (2020)

1.3 Agile

Which one of these statements is **wrong**?

Select one alternative:

- ☐ Kanban focuses on iterations called Work-In-Progress
- ☐ Agile development is both incremental and iterative
- ☐ In Kanban a task should be finished as soon as possible
- ☐ Scrum focuses on iterations called Sprints

Maximum marks: 2

Previous Exam Questions (2017)

List and describe the four most popular agile meetings

- Sprint planning
- Daily standup meeting
- Sprint review meeting
- Sprint retrospective meeting

Previous Exam Questions (2016)

Exercise 3 (20%)

Give a description of the following overall lean principles:

- Satisfying the customer
- Flow
- Visualization
- Avoiding waste
- Supporting change

Visualization

Tracking development progress is essential for any project both in Lean and Agile frameworks. The primary idea standing behind it is to provide **visual** clue of current progress status for everyone involved in the project. There are certain tools and techniques that exist to achieve this, for example:

- Burndown charts - **visual**izes amount of work which is left to do before estimated delivery time
- Kanban (board) - an agile software development framework which emphasizes **visual**ization of work in progress

Reflections on Kanban?