



# Lego Farm Animal Kanban game

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## KANBAN game

- Form teams of 5 people.
- Goal: create as many animals possible with minimal waste of material.
- We will play 3 rounds of unknown lengths.

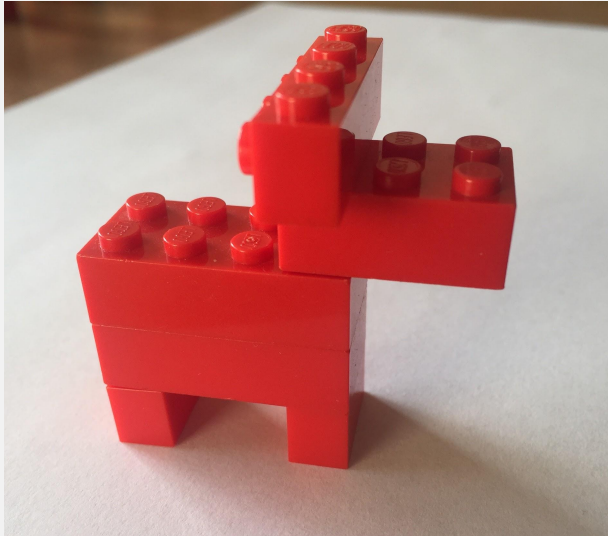


## Teams of 5 people

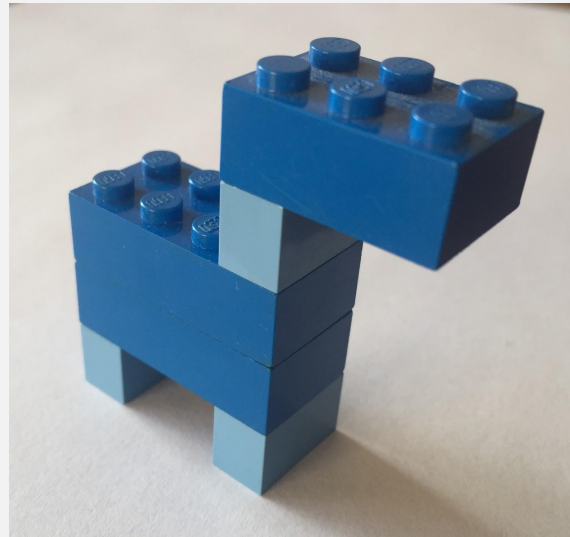
- **Leg builder:** gather the legs
- **Body builder:** two blocks on top of each other
- **Head builder:** build the head
- **Transporter:** put the animal on transport and wait 30 seconds
- **Quality assurance:** keep score and take the animals apart



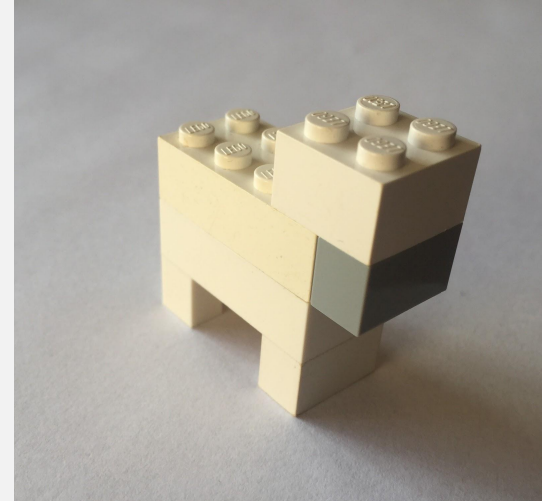
## Create 4 types of animals



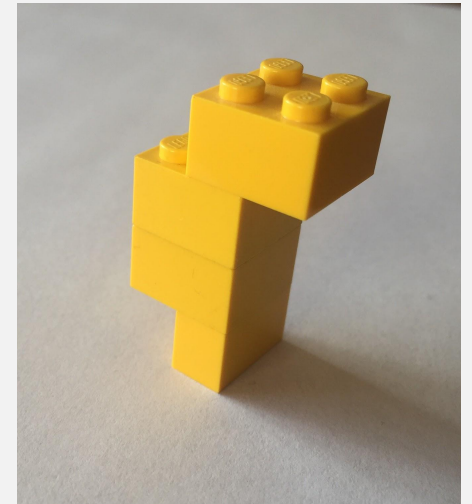
Cow



Horse



Sheep



Duck

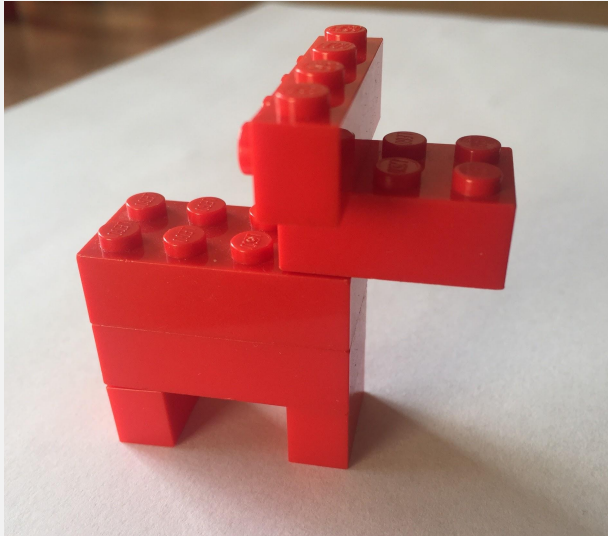




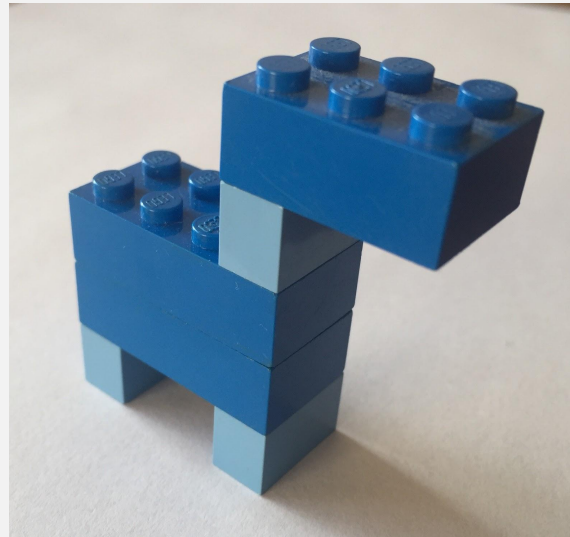
## Four types of animals to build, transport and dismantle

- color of the blocks does not matter
- animal bodies are always 2 blocks high
- transport takes 30 seconds (keep track of time yourself) (the animal needs to stay in transport for 30 seconds, only then you may unload the animal)
- maximum of 3 animals can be transported at the same time (i.e. 1 animal per truck)
- after transport: dismantle the animal and put the individual blocks back into the supply square

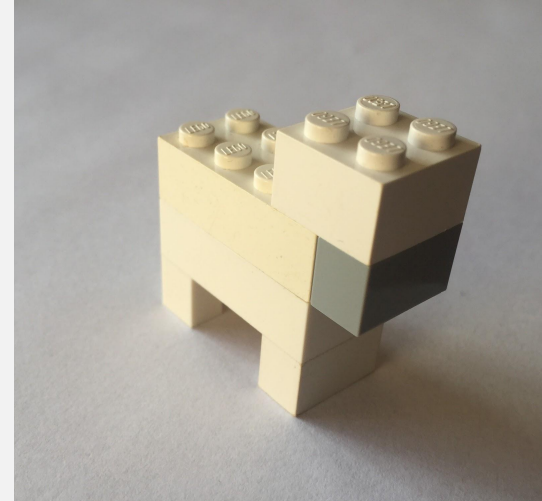
## Round 1: let's play!



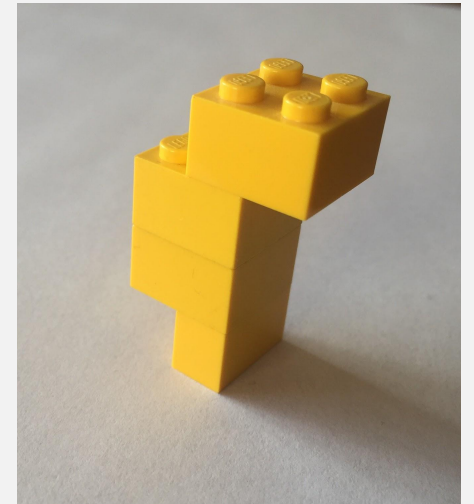
Cow



Horse



Sheep



Duck



## Points system

- **Cow**: 10 points
- **Horse**: 10 points
- **Sheep**: 10 points
- **Duck**: 10 points
  
- For every unused **leg**: -1 point
- For every unused **body**: -4 point
- For every unused **head**: -4 point
  
- Each **completed animal** not arrived yet: -10 points

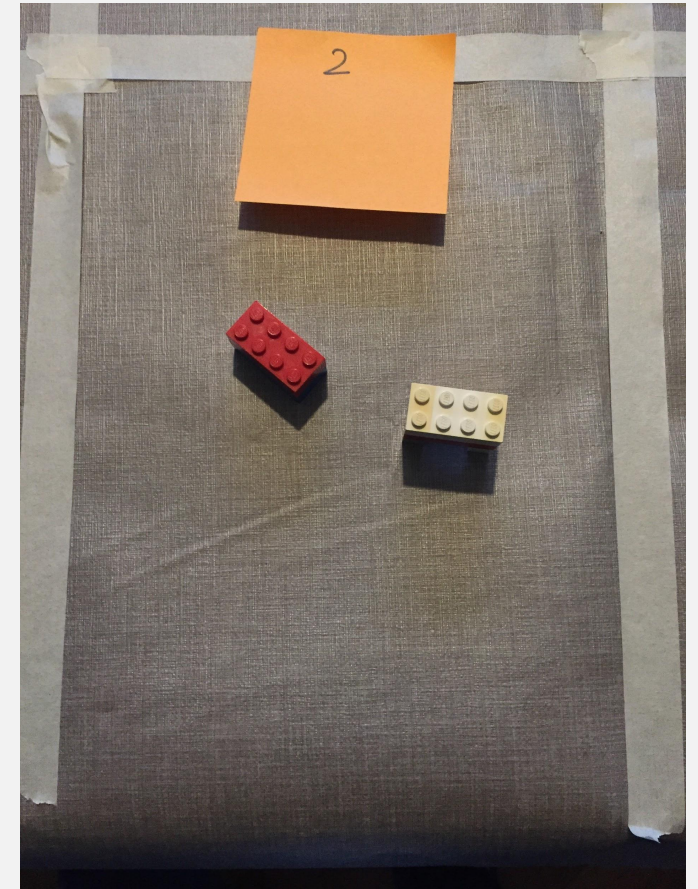
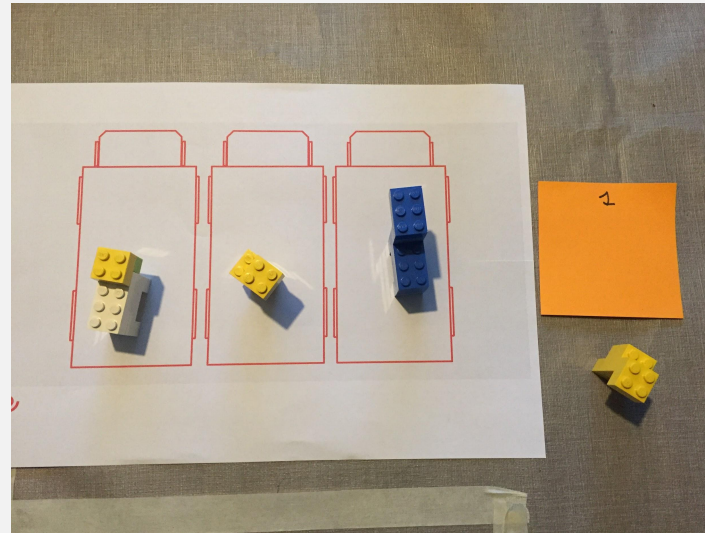
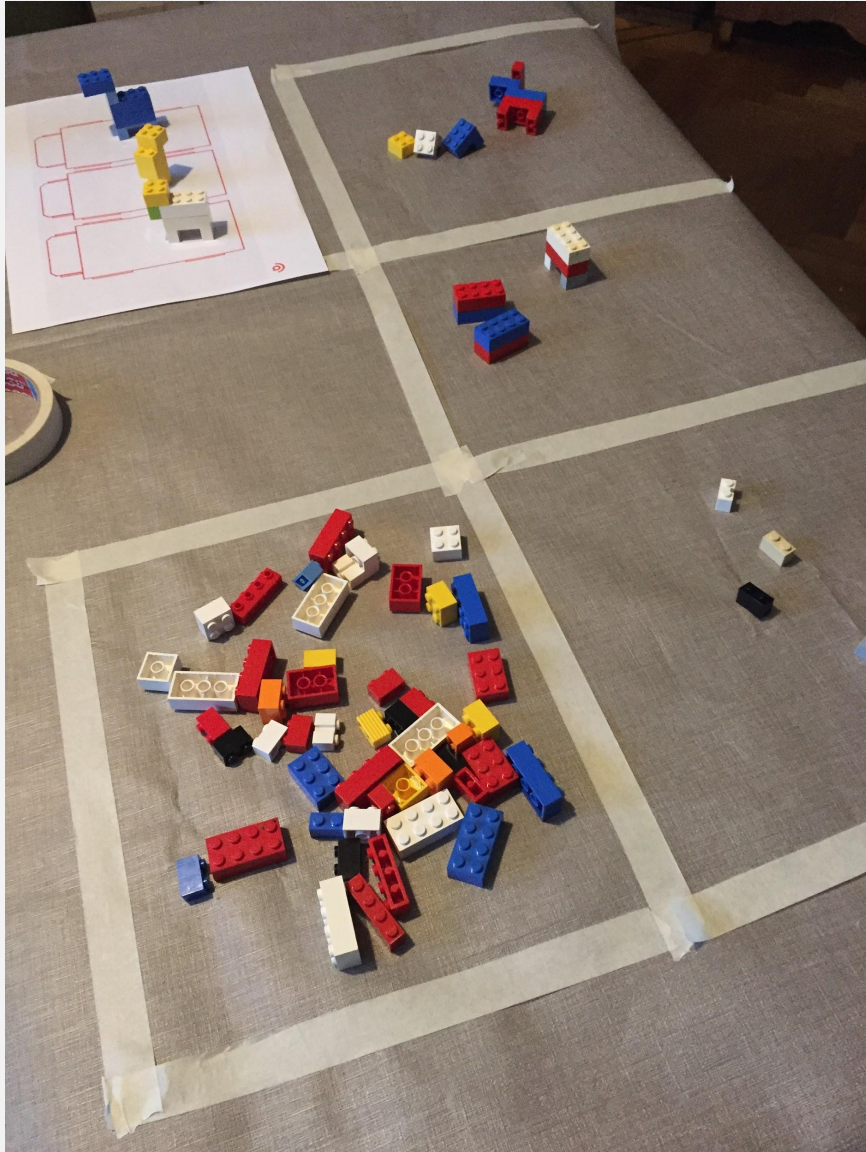


## Kanban principles

- Visualize workflow
- Minimize the amount of "Work in Progress" (WIP)
- Manage "flow" (from left to right)
- Evaluate on a regular basis, introduce feedback loops
- Make process agreements explicit
- Improve together



# Visualize your own workflow



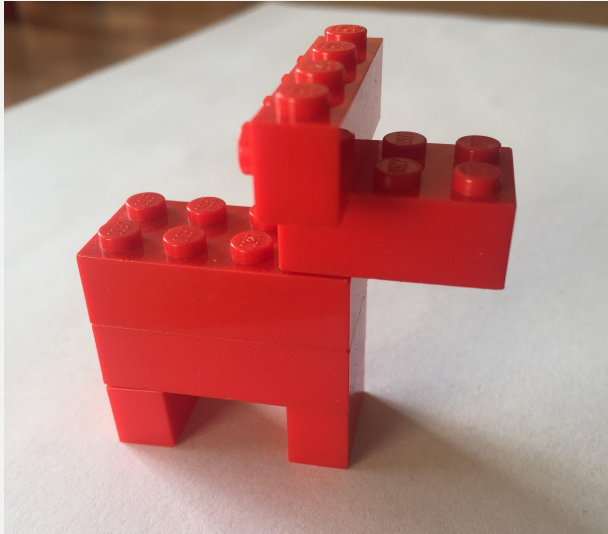


# Principles of Kanban

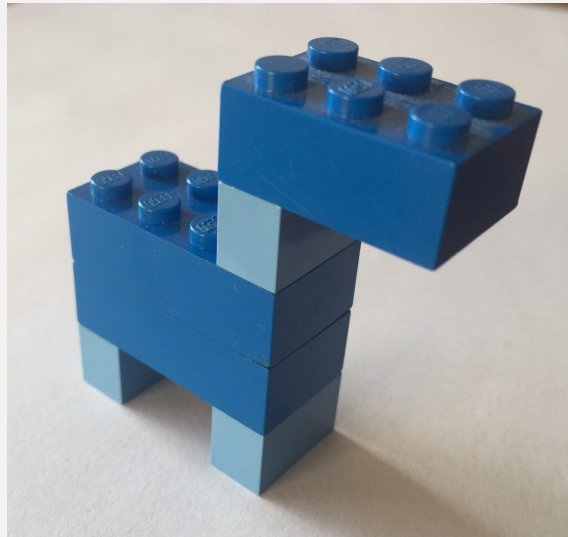
- Visualize your workflow
  - what is your workflow?
  - make a station for each step
- Limit work in progress (WIP)
  - where did work pile up?
  - choose a WIP limit and mark it with a post-it for each station
- Manage flow
  - the points system rewards an animal that was finished and penalizes animals (or parts of animals) not done



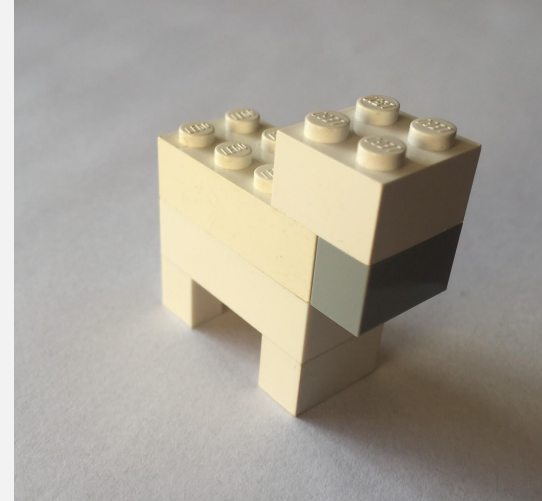
## Round 2: let's play!



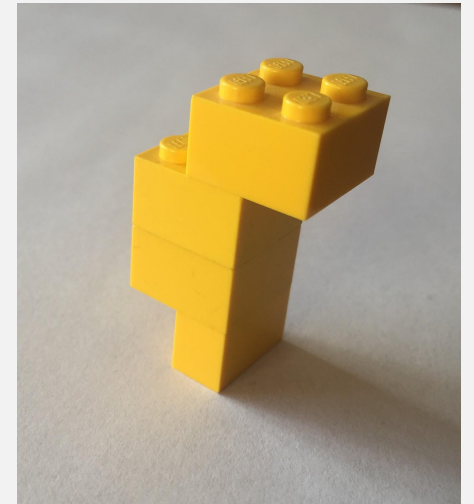
Cow



Horse



Sheep



Duck

Use the backlog!



## Points system

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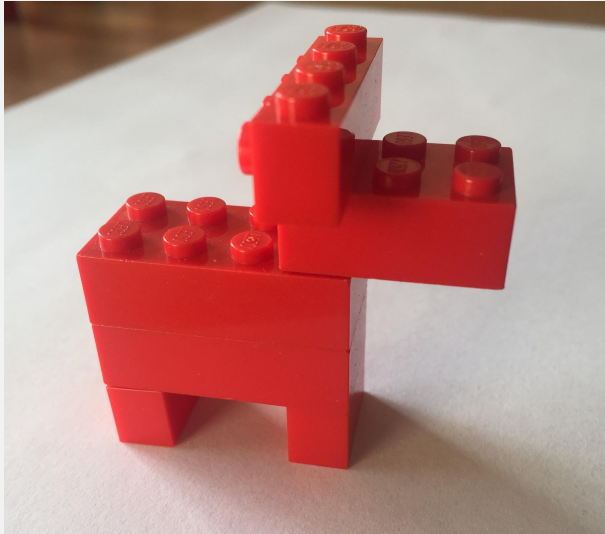


## Retrospective (1 min)

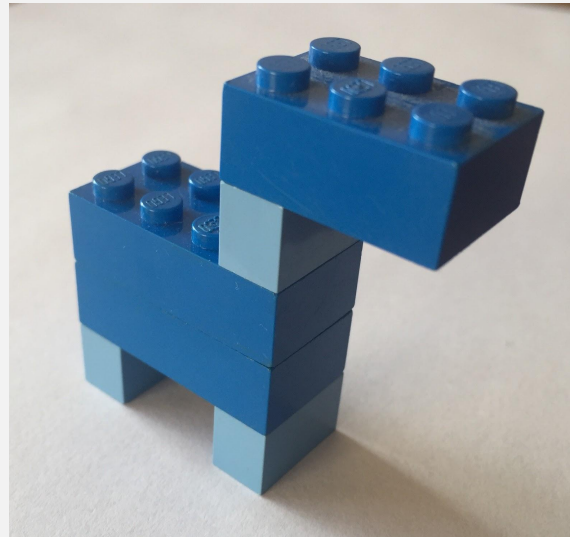
- What went well?
- Where did work pile up (=bottleneck)?
- Where can you still improve?
- Do you need to adjust your WIP limits?



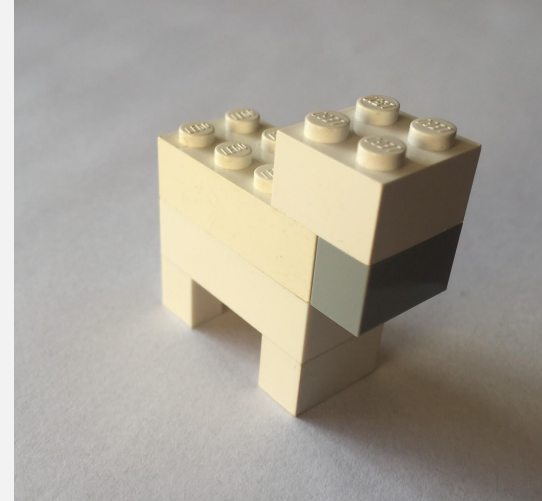
## Round 3: let's play!



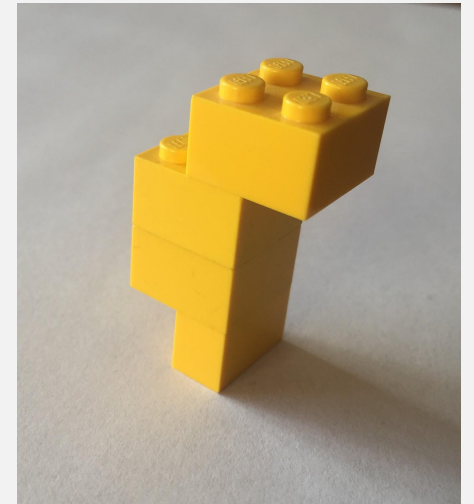
Cow



Horse



Sheep



Duck

Use the backlog!



## Points system

- **Cow**: 10 points
- **Horse**: 10 points
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- **Duck**: 10 points
  
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## Debrief

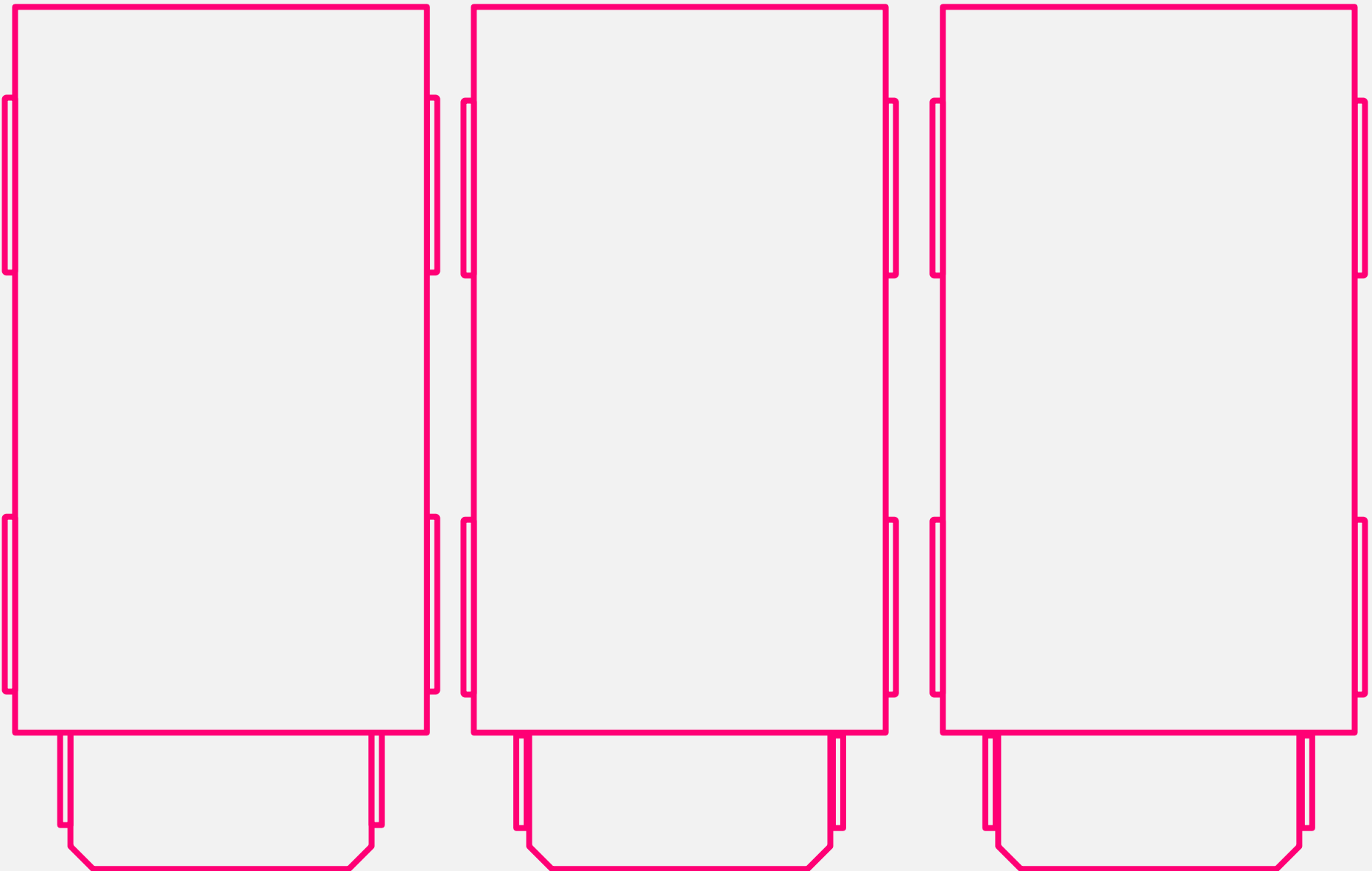
- What went well?
- When and where did work pile up (=bottleneck)?
- Where did you introduce improvements?
- What was the difference between the different rounds?
- Did you experience flow? In which round?
- Did you change your WIP limits after round 2?
- Did anything change when you started using the backlog?



# Material



**Maximum of 3 animal transports at the same time**



**Transport takes 30 seconds**





	number of ANIMALS				SCORE
ROUND 1					
ROUND 2					
ROUND 3					



## Team ...

	number of ANIMALS		not done: ANIMALS		not done: LEGS		not done: HEADS of BODIES		Total SCORE
ROUND 1	X 10	=	X -10	=	X -1	=	X -4	=	
ROUND 2	X 10	=	X -10	=	X -1	=	X -4	=	
ROUND 3	X 10	=	X -10	=	X -1	=	X -4	=	

Cow	Cow	Cow
Cow	Cow	Sheep
Cow	Cow	Sheep
Sheep	Sheep	Sheep
Sheep	Sheep	Sheep

Duck	Duck	Duck
Duck	Duck	Duck
Duck	Horse	Horse
Horse	Horse	Horse
Horse	Horse	Horse

# Example of scoresheet with 3 teams

	Team A	Team B	Team C
ROUND 1	148	117	145
ROUND 2	188	212	180
ROUND 3	310	310	247