Network by Analogy

Supposing that students are ordering goods sending to their school via Royal Mail,

- each student as a host with MAC Address and
- each postman as a router,
- the college admin as a switch,
- the school as a LAN ...

Layer	...	is equivalent to ...	Note
	World	WAN	
	School	LAN	
App	School address lookup	**D**omain **N**ame **S**ystem	<IP address, name (.edu)>
Transport	Type of delivery	Fast UDP [dst port] Secure TCP [src,dst <port & IP>]	[Demultiplex]
	Department	IP + Port No.	application ports in a host
	Adjust sending rate	Flow Control Congestion Control	avoid student overflow avoid delivery man overflow
Network	Delivery man	Router	
	School IP	LAN IP (unique)	NAT IP (unique) v4: 32 ; v6: 128 bits <IP>
	Apartment	Subnet of IP	**111.111**.0.0/16
	Student uid	Host IP	IP Dynamic Config v4: DHCP ; v6: SLAAC
	Porter	**A**ddress **R**esolution **P**rotocol	<IP addr, MAC addr>
Link	Admin	Switch	
	Student's name	host MAC Address	48 bits <MAC>
Physical	Delivery van	Copper, Glass, Fiber optic	
	Student	Host	Sender / Receiver Host