

CoLAB IT Pathways
Software Development KSAs for Curriculum Alignment

3. Networking Fundamentals

	KSA Description	Knowledge, Skill, or Ability?	Bloom's Taxonomy Level?	Cross-cutting KSAs
a	Explain DNS traffic.	Knowledge	2	
b	Understand OSI model and how it applies to an example.	knowledge	2	Cyber
c	Identify the layers of the OSI Model.	Knowledge	2	
d	Summarize the responsibilities of each layer of the OSI Model.	Knowledge	2	
e	Explain how the OSI Model is applied to Networking.	Knowledge	3	
f	Configure IPv4 classful subnets.	Skill	1	
g	Compare public IP addresses and Private IP addresses.	Knowledge	2	
h	Identify IPv4 address network ID (Class A, Class B, Class C).	Knowledge	2	
i	Interpret classless network ID (CIDR block notation).	Knowledge	2	
j	Explain domain naming conventions (UNC path, FQDN, host name).	Knowledge	3	
k	Compare Network Address Translation and Port Address Translation (NAT vs PAT).	Knowledge	2	
l	Draw network diagram.	Skill	3	
m	Analyze the output from networking utilities (e.g. Netstat, Tracert, Traceroute, Ping	Ability	3	

	IPConfig, IFConfig).			
n	Discuss network software integration (client software (e.g. Windows 10 or Ubuntu) and server software).	Ability	3	
o	Discuss network hardware integration (workstations, desktop, mobile devices).	Knowledge	2	
p	Communicate best practices for troubleshooting networking issues (layers 1-2 at HS level) (7-step model).	Knowledge	3	