

# DACUM RESEARCH CHART FOR SCHOOL NETWORK TECHNICIAN

## DACUM Panel Members

**Guillermo Amaya**  
Supervisor of Technology  
Placentia-Yorba Linda USD

**Reinaldo D. Cancel**  
Network Manager  
Hawthorne School District

**Calvin Goya**  
Network Analyst  
Orange County Department of Ed

**Thomas Howard**  
MIS  
Lakeside Union School District

**Bob Lybrand**  
Computer/Network Specialist  
Julian High School District

**Steven A. Werdeman**  
Network Planning Manager  
San Diego County Office of Ed

**Luis Wong**  
Technical Support Manager  
Imperial County Office of Ed

## DACUM Facilitator

**Todd Finnell**  
Director, Learning Technologies  
Imperial County Office of Education  
El Centro, CA

## *Purpose:*

*Install, configure and maintain local area and wide area network connectivity including network devices (e.g. switches, routers, servers) and related software.*

## **Produced by:**



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DACUM is an acronym for developing a curriculum. It is a two-day occupational analysis that provides a picture of what the worker does in terms of duties, tasks, knowledge, skills, and traits, and in the tools the worker uses.

TechSETS is one of four Statewide Education Technology Services (SETS) to provide support and/or resources for California schools as authorized by AB1761. These services are those that "are more efficiently and effectively provided on a statewide basis." A contract has been awarded by the California Department of Education to the San Diego County Office of Education, who has been working closely with the Imperial County Office of Education to develop TechSETS.

For more information on TechSETS, visit [www.techsets.org](http://www.techsets.org).

For additional information on the other SETS programs, visit the California Department of Education's informational site at [www.cde.ca.gov/sets](http://www.cde.ca.gov/sets).

<b>A</b>	<b>Maintain Network Infrastructure</b>	A-1 Evaluate Infrastructure Requirements	A-2 Conduct Site Survey	A-3 Develop Scope of Work	A-4 Verify Cable Path	A-5 Procure Materials	A-6 Install Cable Raceways	A-7 Install IDF Enclosures Racks
<b>B</b>	<b>Maintain Network Devices</b>	B-1 Evaluate Network Requirements	B-2 Configure Routers / Gateways	B-3 Configure Switches	B-4 Configure Wireless Access Points / Bridges	B-5 Configure Network Appliances	B-6 Configure VLANs	B-7 Perform Device Upgrades / Updates
<b>C</b>	<b>Maintain Network Servers</b>	C-1 Evaluate Server Requirements	C-2 Determine Server Specifications	C-3 Install Server Hardware	C-4 Install Server Operating System	C-5 Install Server Applications	C-6 Configure Network Services (e.g. DNS, DHCP)	C-7 Perform Server Upgrades / Updates
<b>D</b>	<b>Maintain Network Security</b>	D-1 Evaluate Network Vulnerabilities	D-2 Configure Firewalls	D-3 Configure Access Lists / Filters	D-4 Configure Encryption	D-5 Configure VPNs	D-6 Configure Permissions / Passwords	D-7 Configure Intrusion Detection Devices
<b>E</b>	<b>Maintain Data Backup</b>	E-1 Develop Backup / Restore Strategy	E-2 Perform Scheduled Backups	E-3 Review Backup Logs	E-4 Verify Backup Integrity	E-5 Secure Backup Media Offsite	E-6 Restore Data from Backup Media	E-7 Archive Network Device
<b>F</b>	<b>Monitor Network Activity</b>	F-1 Install Network Monitoring Tools	F-2 Configure Management Protocols	F-3 Monitor Bandwidth Usage	F-4 Monitor Data Circuits	F-5 Analyze Network Reports	F-6 Perform Network Troubleshooting	F-7 Report Network Concerns
<b>G</b>	<b>Maintain Network Documentation</b>	G-1 Maintain Network Equipment Inventory	G-2 Maintain Network Diagrams	G-3 Maintain Address Lists (e.g. IP, MAC)	G-4 Maintain Password Lists	G-5 Maintain Logs (e.g. Service, repair, updates)	G-6 Track Service Agreements / Warranties	G-7 Inventory Network Software Licenses
<b>H</b>	<b>Continue Professional Development</b>	H-1 Participate in Training	H-2 Research Online Resources	H-3 Review Professional Publications	H-4 Network with Other Professionals	H-5 Participate in Conferences	H-6 Participate in Professional Organizations	H-7 Pursue Technical Certification
<b>I</b>	<b>Perform Administrative Tasks</b>	I-1 Document Vendor Interactions	I-2 Participate in Meetings	I-3 Support Computer Technicians	I-4 Perform Preventative Maintenance	I-5 Influence Network Usage Policies	I-6 Recommend Technology Purchases	I-7 Perform Site Visits

A-8 Install Wire Management Hardware	A-9 Install Termination Panels	A-10 Install Network Cabling	A-11 Terminate Network Cabling	A-12 Label Network Cabling / Connections	A-13 Perform Network Cable Testing	A-14 Update Network Documentation	A-15 Troubleshoot Cable Plant Problems
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B-8 Troubleshoot Network Devices	B-9 Replace Failed Equipment	B-10 Relocate Network Devices	B-11 Configure Network Printers / Copiers	B-12 Maintain Modem Banks	B-13 Maintain UPS Devices
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C-8 Maintain User Accounts	C-9 Review Server Logs
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D-8 Review System Logs	D-9 Install Security Updates	D-10 Restrict Unnecessary Protocols	D-11 Secure Network Equipment (Location)	D-12 Implement Antivirus Strategy	D-13 Verify Virus Definition Updates	D-14 Implement Virus Response Procedure	D-15 Review Antivirus Logs / Reports
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I-8 Verify Contractor Performance	I-9 Support Technology Planning
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## ***General Knowledge and Skills***

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Knowledge of Industry Standards (IEEE, EIA/TIA, etc.)  
Computer Skills  
Written/Oral Communication Skills  
Knowledge of Safety Requirements (Electrical, Hazardous Material, etc.)  
Analytical Skills  
Organizational Skills  
Driving Skills  
Problem-Solving Skills  
Knowledge of Various Network Operating Systems  
Knowledge of Various Desktop Operating Systems  
Interpersonal Skills  
Data Networking Skills  
Ability to communicate at various technical levels

## ***Worker Behaviors***

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Multitasking  
Stamina  
Team Player  
Problem solver  
Detail oriented  
Positive attitude  
Self-motivated  
Responsible  
Ethical  
Resourceful  
Professional appearance / demeanor  
Patient  
Flexible  
Respectful  
Tenacity  
Methodical  
Service oriented  
Efficient

## ***Tools, Equipment, Supplies and Materials***

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Multimeter  
Radios (communication device)  
Crimping tools  
Cable testers  
Network analyzers  
Network / Patch Cables  
Network monitoring software  
Laptop (computer)  
Basic hand tools  
Probe/Toner  
Termination tester  
CD-Burner  
Utility Resource CD  
Raceway (Cable trays)  
Tie downs  
Termination jacks  
Punch down tool  
Face plates  
Equipment vehicle  
Power tools  
Wire management devices  
Label Maker  
Fish tape / Telescopic Pole  
Air dusters / vacuum  
Cable caddy  
Reference materials  
Ladders  
worklights

## ***Future Trends and Concerns***

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Increasing Internet / Network monitoring and reporting  
Overlapping of duties  
Increasing training requirements  
Increasing specialization  
Increasing network demand and bandwidth usage  
As teachers develop increased technology skills, they demand more technical support  
Data/Voice/Video integration (Convergence)  
Dependence on network availability (Mission critical)  
Universal accessibility (Anytime / anywhere)