

2025-2026 Competitive Events Guidelines

Networking Infrastructures



Networking Infrastructures challenges members to demonstrate their knowledge of network administration and infrastructure through an objective test. This event covers topics such as network design, protocols, hardware, and security, highlighting the importance of reliable connectivity in today's digital workplace.

Event Overview

Division	High School
Event Type	Individual
Event Category	Objective Test
Event Elements	50-minute test, 100-multiple choice questions

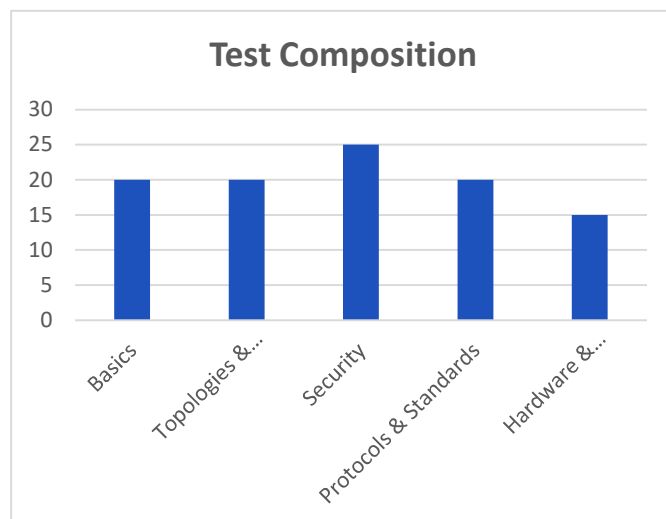
Educational Alignments

Career Cluster Framework Connection	Digital Technology
NACE Competency Alignment	Career & Self-Development, Critical Thinking, Technology

Knowledge Areas

- Networking Basics
- Network Topologies and Architecture
- Network Security
- Network Protocols and Standards
- Network Hardware and Connectivity

Test questions are based on the knowledge areas and objectives outlined for this event. Detailed objectives can be found in the study guide included in these guidelines.



Region

Each chapter may enter two students in this event. Testing is school-site and proctored with careful monitoring to ensure the integrity of the test.

State

Top three (3) qualifiers of each region are eligible to compete at the State Leadership Conference.

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National

Required Competition Items

<u>Items Competitor Must Provide</u>	<u>Items FBLA Provides On-site</u>
- Sharpened pencil - Fully powered device for online testing - Conference-provided nametag Photo identification - Attire that meets the FBLA Dress Code	- One piece of scratch paper per competitor - Internet access - Test login information (link & password provided at test check-in)

Important FBLA Documents

- Competitors should be familiar with the Competitive Events [Policy & Procedures Manual](#), [Honor Code](#), [Code of Conduct](#), and [Dress Code](#).

Eligibility Requirements

To participate in FBLA competitive events at the National Leadership Conference (NLC), the following criteria must be met:

- Membership Deadline:** FBLA national membership dues must be paid to the specific division by 11:59 p.m. Eastern Time on March 1 of the current school year.
- Repeat Competitors:** Members may only compete in an event at the NLC more than once if they have not previously placed in the top 10 of that event at the NLC. If a member places in the top 10 of an event at the NLC, they are no longer eligible to compete in that event at future NLCs, unless the event has been modified beyond a name change. Chapter events are exempt from this procedure.
- Conference Registration:** Members must be officially registered for the NLC and must pay the national conference registration fee to participate.
- Official Hotel Requirement:** To be eligible to compete, competitors must stay within the official FBLA housing block.
- State Entry Limits:** Each state may submit up to four entries per event.
- Event Participation Limits:** Each member may participate in:
 - One individual or team event, and
 - One chapter event (e.g., *Community Service Project* or *Local Chapter Annual Business Report*).
- Competitor Responsibility:** Only registered competitors are permitted to plan, research, prepare, and set up their presentations. Advisers and others may not assist.
- Participation Requirement:** To be eligible for an award, each competitor must complete all components of the event at the National Leadership Conference.
- Identification at Check-in:** Competitors must present valid photo identification (physical or digital) that matches the name on their conference name badge. Acceptable forms include a driver's license, passport, state-issued ID, or school ID.
- Late Arrivals:** Competitors will be allowed to compete until such time that the results are finalized, or participation would impact the fairness and integrity of the event, as determined by Competitive Events staff. Five penalty points will be assessed for late arrivals in any competitive event.

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- **Event Schedule Notes:**
 - Some events may begin before the Opening Session.
 - All schedules are posted in local time for the NLC host city.
 - Schedule changes are not permitted.

Event Administration

- **Test Duration:** 50 minutes
- **Format:** This event consists of an online objective test that is proctored and completed on-site at the National Leadership Conference (NLC).
- **Materials:** Reference or study materials are not permitted at the testing site.
- **Calculators:** Personal calculators are not allowed; an online calculator will be available within the testing platform.
- **Question Review:** Competitors may flag questions within the testing platform for review prior to the finalization of results at the NLC.

Scoring

- Each correct answer is worth one point.
- No points are deducted for incorrect answers.
- Tiebreakers are determined as follows: (1) The number of correct responses to 10 pre-selected tiebreaker questions will be compared. (2) If a tie remains, the number of correct responses to 20 pre-selected questions will be reviewed. (3) If a tie still remains, the competitor who completed the test in the shortest amount of time will be ranked higher.
- Results announced at the National Leadership Conference are considered official and will not be changed after the conclusion of the National Leadership Conference.

Penalty Points

- Competitors may be disqualified if they violate the Code of Conduct or the Honor Code.
- Five points are deducted if competitors do not follow the Dress Code or are late to the testing site.

Recognition

- A maximum of 10 entries (individuals or teams) may be recognized per event.

Americans with Disabilities Act (ADA)

- FBLA complies with the Americans with Disabilities Act (ADA) by providing reasonable accommodations for competitors. Accommodation requests must be submitted through the conference registration system by the official registration deadline. All requests will be reviewed, and additional documentation may be required to determine eligibility and appropriate support.

Electronic Devices

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- Unless approved as part of a documented accommodation, all cell phones, smartwatches, electronic devices, and headphones must be turned off and stored away before the competition begins. Visible devices during the event will be considered a violation of the FBLA Honor Code.

Sample Preparation Resources

- Official sample test items can be found in [FBLA Connect](#). These sample items showcase the types of questions that may be asked on the test and familiarize competitors with the multiple-choice item options.

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Study Guide: Knowledge Areas and Objectives

Networking Basics (20 test items)

1. Discuss characteristics and types of LANs (e.g., SOHO, enterprise, datacenter)
2. Discuss the functions of the physical and data link layers of the OSI model
3. Discuss the functions of the network and transport layers of the OSI model
4. Discuss the functions of the session, presentation, and application layers of the OSI model
5. Explain how data travels across networks (e.g., packets, routers, switches)
6. Describe how devices receive an internet connection (e.g., ISP, equipment, cabling)
7. Describe the purpose of IP addresses, MAC addresses, and subnetting
8. Discuss differences between IPv4 and IPv6
9. Identify IPv4 address classes

Network Topologies and Architecture (20 test items)

1. Give examples of peer-to-peer and client-server networks
2. Discuss the characteristics of different types of networks (e.g., LAN, MAN, WAN)
3. Recommend network topologies according to business requirements (e.g., bus, mesh, star)
4. Explain characteristics of network topologies (e.g., star, bus, ring, mesh)
5. Discuss wireless connectivity options for small and large-scale networks
6. Explain use cases for Infrastructure, Platform, and Software as a Service (IaaS, PaaS, and SaaS)
7. Discuss benefits, costs, and risks associated with cloud architectures
8. Explain factors that affect range, speed, and reliability of wireless connections
9. Describe characteristics of 5G networks

Network Security (25 test items)

1. Explain the differences between risks, vulnerabilities, exploits, and threats
2. Identify internal and external sources of risk and vulnerabilities (e.g., zero day, employees, outdated software)
3. Describe basic forms of network security (e.g., user management, permissions, encryption, authentication)
4. Discuss malware protection measures (e.g., antivirus, filtering, patch management)
5. Describe characteristics of DoS attacks and forms they can take (e.g., botnets, overload, DDoS)
6. Describe common network attacks (e.g., phishing, spoofing, poisoning)
7. Describe confidentiality, integrity, and availability
8. Describe vulnerability mitigations (e.g., closing ports, updating software, antivirus)
9. Explain the importance of hashing, digital signatures, and certificates in network security
10. Describe characteristics of authentication methods (e.g., MFA, SSO, remote authentication)

Network Protocols and Standards (20 test items)

1. Explain common transfer protocols (e.g., FTP, SFTP, SMTP)
2. Explain the relationship between DNS, DHCP, and IP addresses
3. Describe 802.11 wireless standards (e.g., range, speed, frequency)
4. Describe characteristics of 802.3 wired standards (e.g., range, speed, frequency)
5. Characterize TCP and UDP
6. Describe dynamic routing protocols (e.g., BGP, EIGRP, OSPF)

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7. Identify well-known ports reserved for specific protocols (e.g., port 22 reserved for SFTP and SSH)
8. Describe the use of network address translation (NAT) by networked devices
9. Describe wireless encryption standards (e.g., WPA2, WPA3)

Network Hardware and Connectivity (15 test items)

1. Discuss the functions of common network devices (e.g., modems, routers, switches)
2. Discuss the function and characteristics of network adapters (e.g., NIC, virtual adapters, PCIe adapters)
3. Describe Ethernet cable types (e.g., STP, UTP, coaxial)
4. Describe fiber optic cable types and connectors
5. Analyze the benefits of rack and blade server infrastructures
6. Describe the equipment needed to connect to the internet
7. Discuss the use of NAS and RAID hard drive configurations

References for Knowledge Areas & Objectives

Association for Computing Machinery. *Information Technology Curricula 2017*.

<https://www.acm.org/binaries/content/assets/education/curricula-recommendations/it2017.pdf>

CompTIA. *CompTIA A+ Certification Exam Core 1 Objectives*. [https://partners.comptia.org/docs/default-source/resources/comptia-a-220-1101-exam-objectives-\(3-0\)](https://partners.comptia.org/docs/default-source/resources/comptia-a-220-1101-exam-objectives-(3-0))

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IBM. *What is network infrastructure?* <https://www.ibm.com/think/topics/network-infrastructure>

Microsoft. *Fundamentals of computer networking*. <https://learn.microsoft.com/en-us/training/modules/network-fundamentals/>