Exploring the Ohio Learning Standards for Computer Science

Ohio's Learning Standards
Computer Science

ADOPTED JULY 2022

Ohio | Department of Education

Department of Education & Workforce

Purpose:

🛡 To equip Ohio educators with a clear understanding of the Ohio Learning Standards for Computer Science.

🛡 To engage educators in meaningful discussions, share insights, and address questions related to the standards.

🛡 To provide practical strategies, resources, and examples for implementing the standards.

Computer Science Standards

Strands

- Computing Systems
- Networks and Internet
- Algorithmic Thinking and Programming
- Data and Analysis
- **Artificial Intelligence**
- Impacts of Computing

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ADDITIONAL TOPICS

- Artificial Intelligence
- Quantum computing
- Internet of Things
- Enhancement of Cybersecurity

The Strands

Computing Systems

Addresses how devices, including hardware and software, interact to accomplish tasks and how students can troubleshoot computing systems when they do not work as intended.
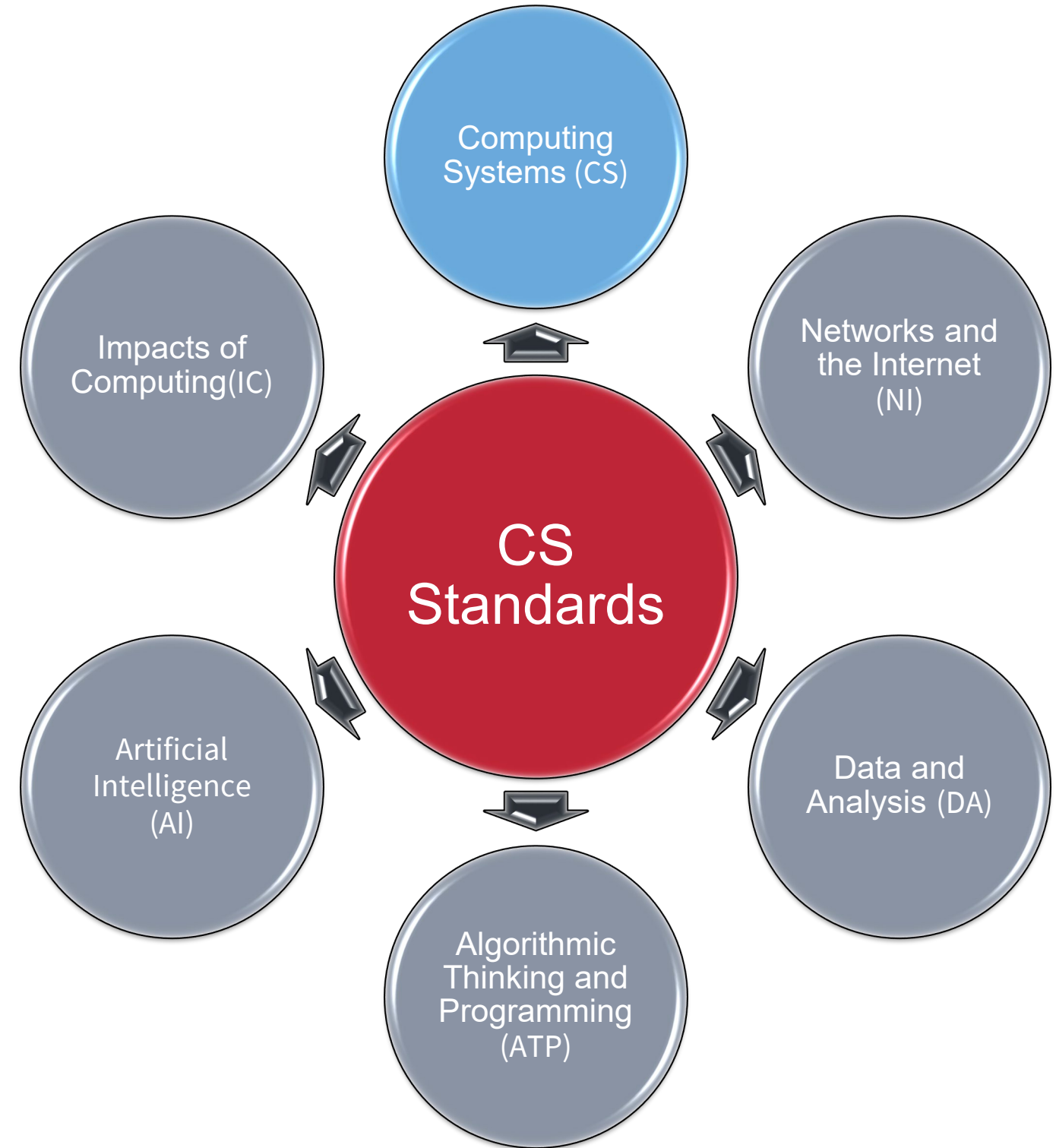
The Strands

Networks and the Internet Addresses how devices and networks connect to share information and resources and how students can apply cybersecurity concepts to protect information.
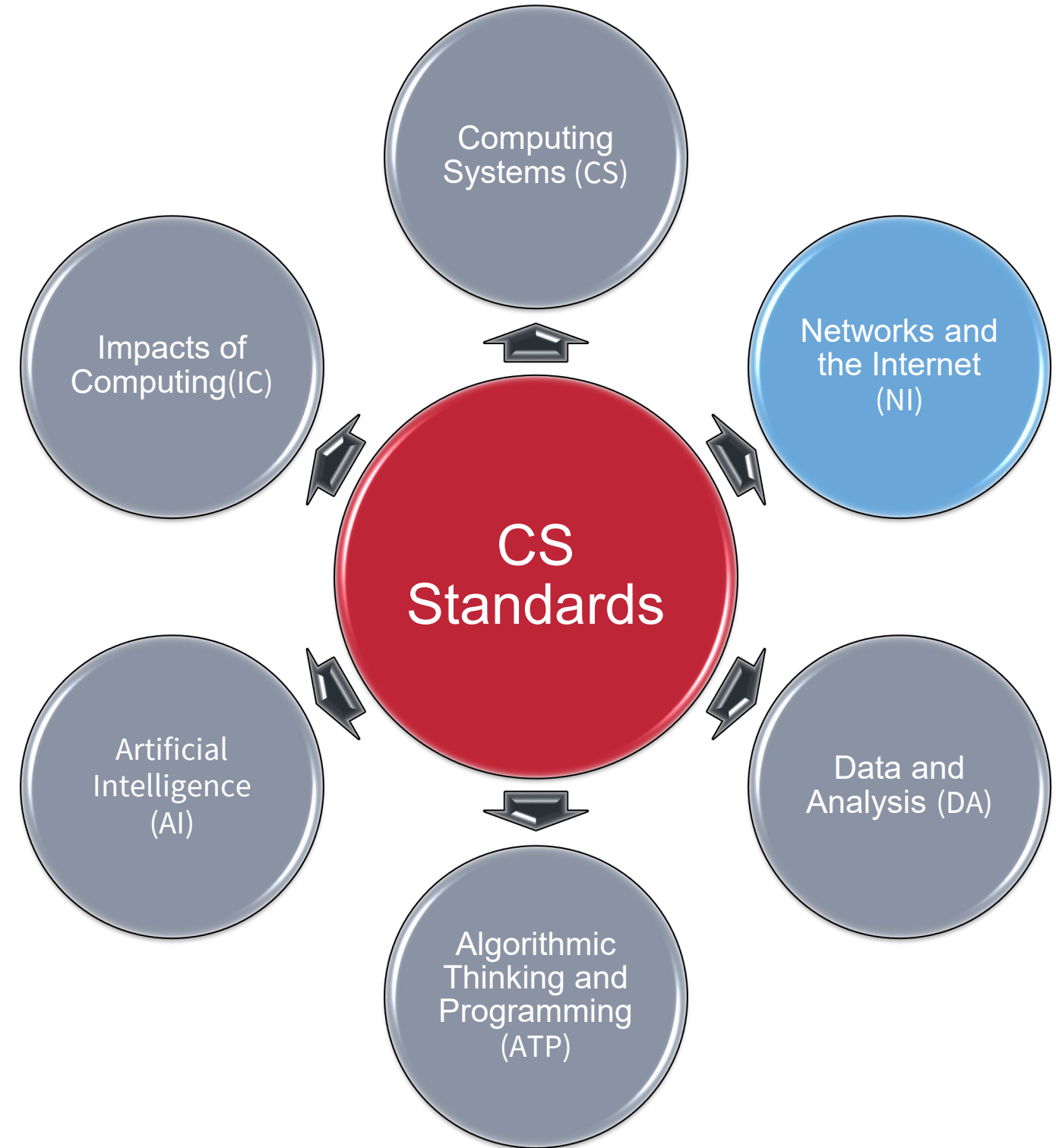
The Strands

Data and Analysis

Addresses how data can be collected and stored; analyzed and communicated; and used to make more accurate predictions.
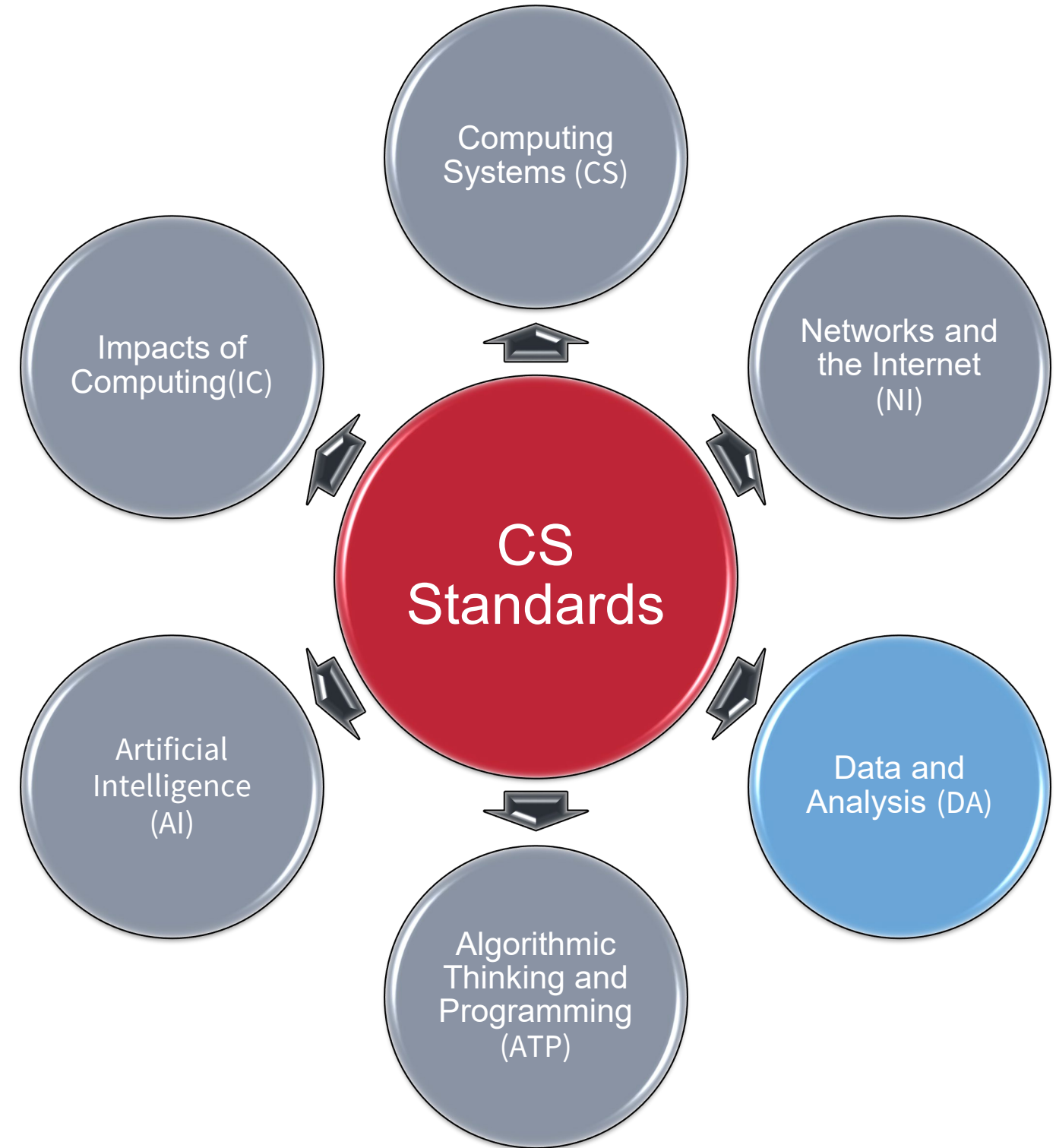
The Strands

Algorithmic Thinking and Programming
Addresses program development, including the use of algorithms, variables, control structures and modules.
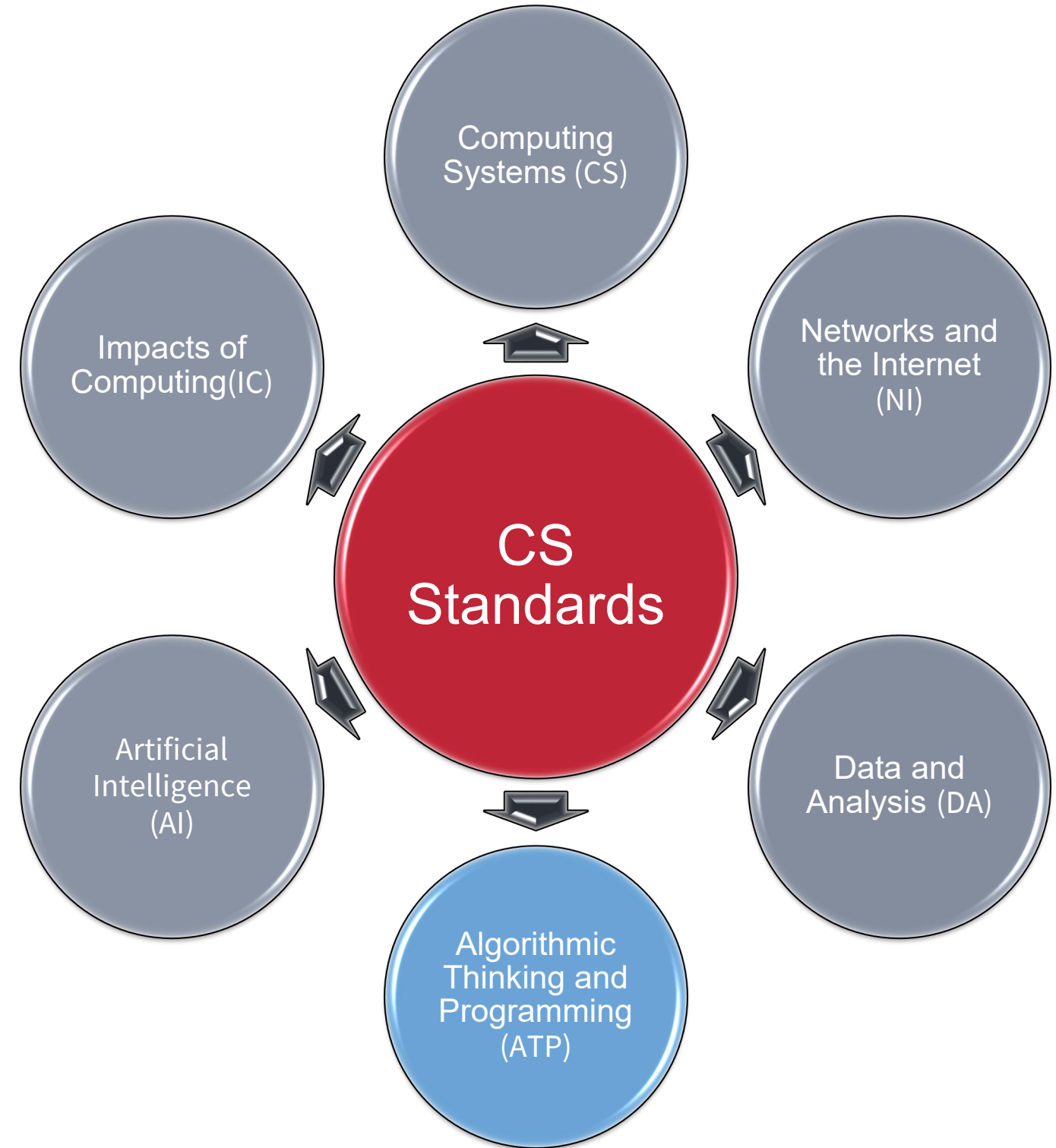
The Strands

Artificial Intelligence

Addresses machine learning, natural interaction, perception, representation and reasoning and societal impacts.
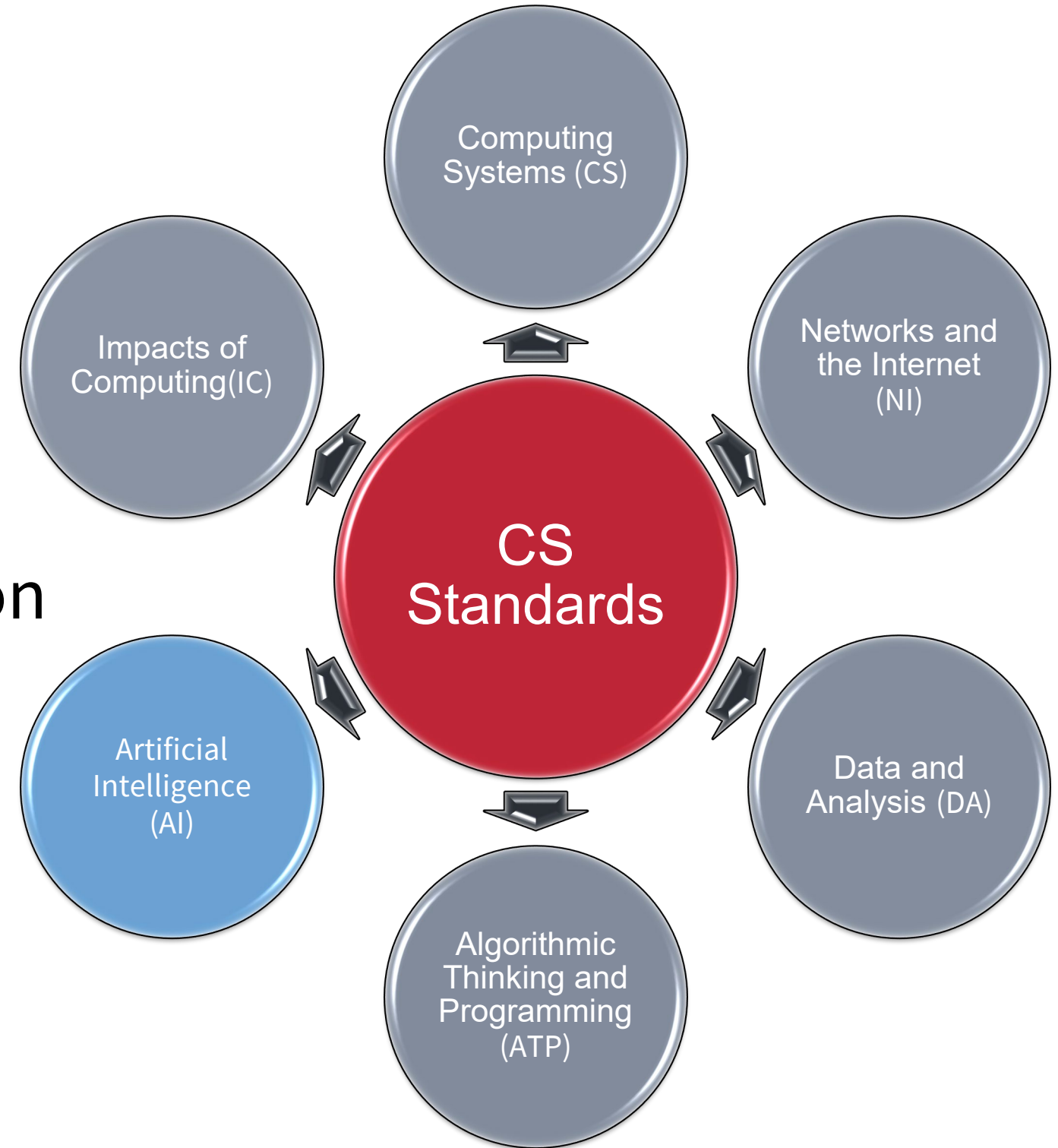
The Strands

Impacts of Computing

Addresses computing's influence on our world by examining the relationship between computing and culture, computing's impact on social interaction, and legal and ethical implications of computing.
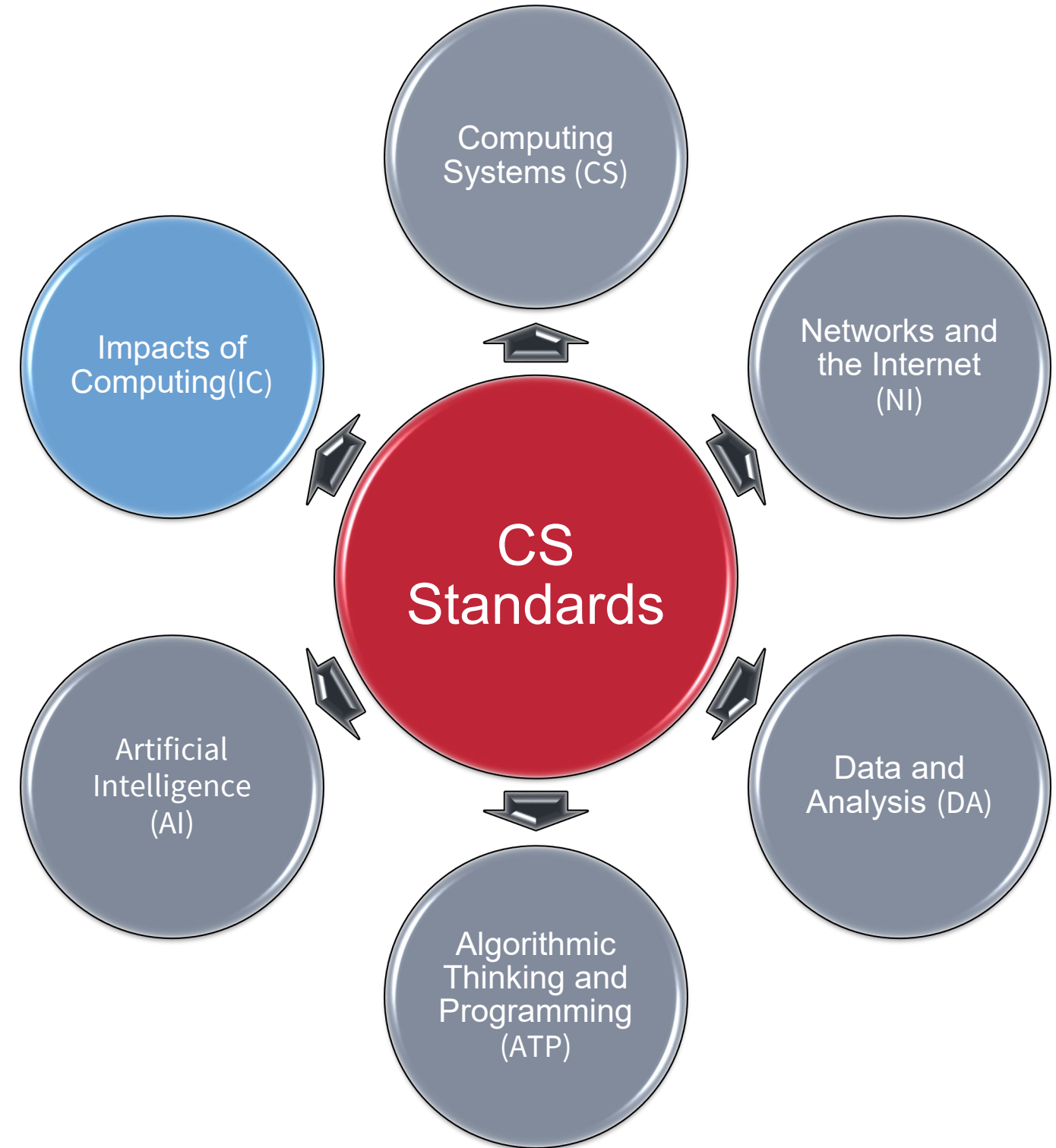
K-8 CS Standards Structure
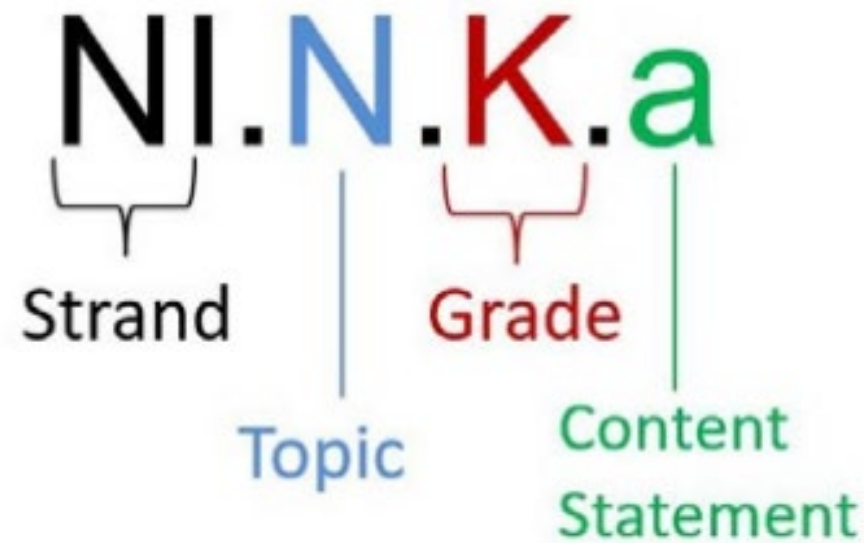
- Strand - Networking and the Internet **(NI)**
- Topic – Networking **(N)**
- Grade - Kindergarten **(K)**
- Content Statement **(a)**

9-12 CS Standards Structure

NI.N.9-12.F.a

Strand | Topic | Grade | Level | Content Statement

- Strand - Networking and the Internet **(NI)**
- Topic – Networking **(N)**
- Grade - Kindergarten **(K)**
- Level – (L)
- Content Statement **(a)**

9-12 CS Standards Structure

NI.N.9-12.F.a
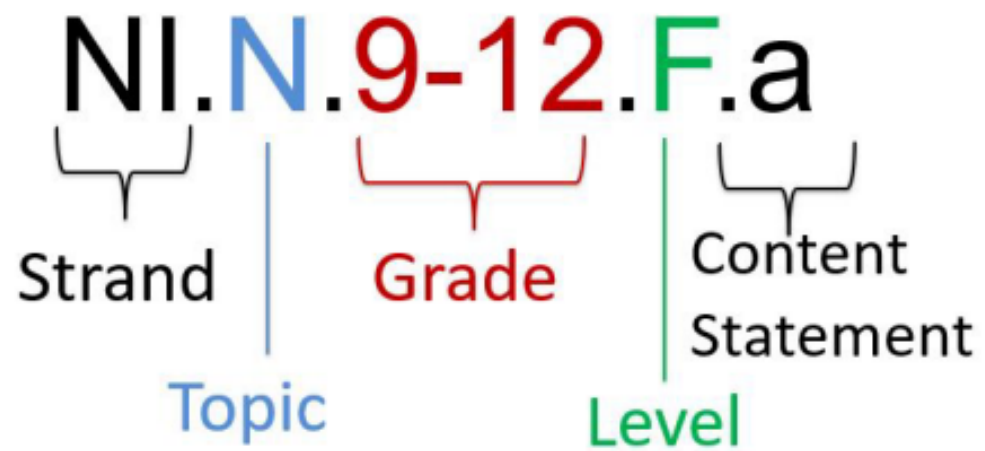
Strand | Topic | Grade | Level | Content Statement
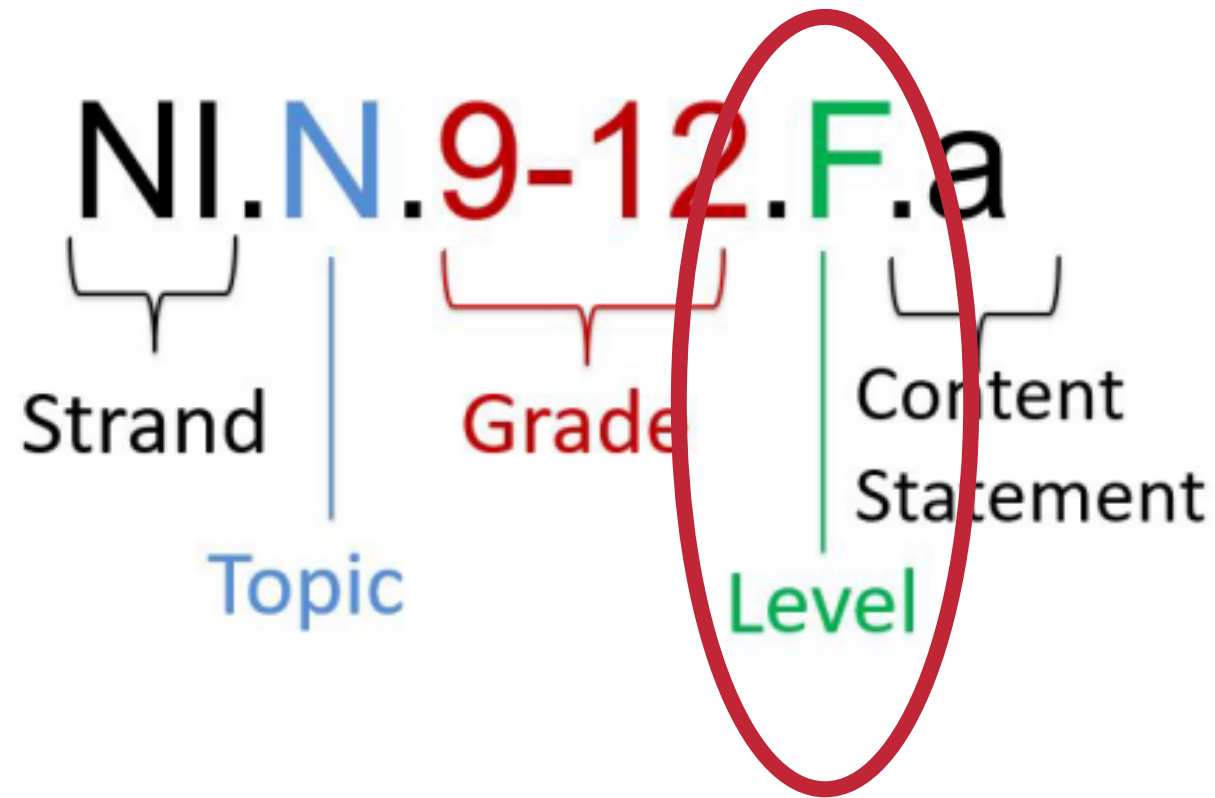
- Foundational
  - Introductory
  - Little or no experience
- Advanced
  - For students that have mastered foundational concepts
  - Typically, use of Higher DOK or Bloom's Verbs

9-12 Standards Structure

NI.N.9-12.F.a Evaluate and select networking devices to establish scalable communications.

NI.N.9-12.A.a Construct a networking devices map solution for a real-world scenario to establish communication between distant devices.

9-12 CS Standards Structure Graduation Credit Implications

Applying Credit from an Advanced Computer Science Course to Satisfy Credit for:

- Algebra 2/Math 3 or Its Equivalent
- Advanced Science Course

To be considered at an advanced level, a computer science course must:

- Include Ohio's 9-12 advanced-level standards; and
- Be recorded as advanced in the EMIS Course Level Element field (CN080)

Ohio CS Courses

Courses should include appropriate Content Statements

K-8 CS COURSES

101355 Robotics K-8
290245 Computer Science K-8
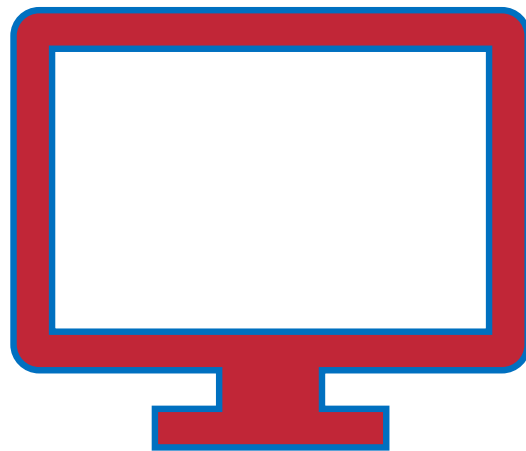
HIGH SCHOOL CS COURSES

290250 Computer Science
290310 Computer Science with In-Depth Study
290325 Specific Topics in Computer Science
290170 Networking
290180 Computer Service
299999 Other Computer Science
290200 Computer Programming
290160 Website Development
101350 Robotics
102500 Industrial Computer Applications
290210 Artificial Intelligence
290220 Cybersecurity Education

Resources and Support

- [Department of Education and Workforce Computer Science Page](#)
- [State Board Of Education, Office of Licensure](#)
- [CSTA - Ohio](#)

Next Webinar:

Unlocking Ohio's Learning Standards for Computer Science

Description: Gain a deeper understanding of Ohio's Learning Standards for Computer Science, break down strands and indicators into actionable steps, and explore strategies for aligning instruction with these standards. Engage in collaboration and practical applications to enhance teaching practices.

Date: Wednesday, June 11, 2025
Time: 3:00 PM – 4:15 PM
[Registration Link](#)

QUESTIONS?

EDUCATION.OHIO.GOV

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Department of Education & Workforce