Public Schools of North Carolina

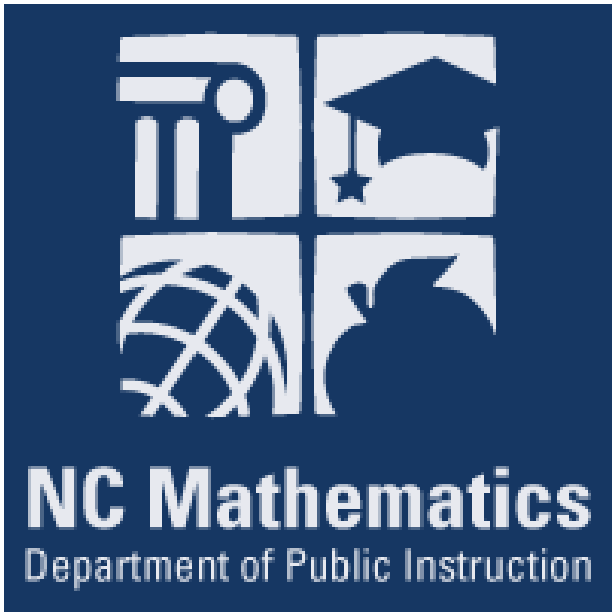
NC Textbook Commission Meeting

March 20, 2020

OPENING

- Welcome
- Approval of Minutes
- Roll Call
- Content Area Overviews and Criteria Training
- Subcommittee Update
- Next Steps

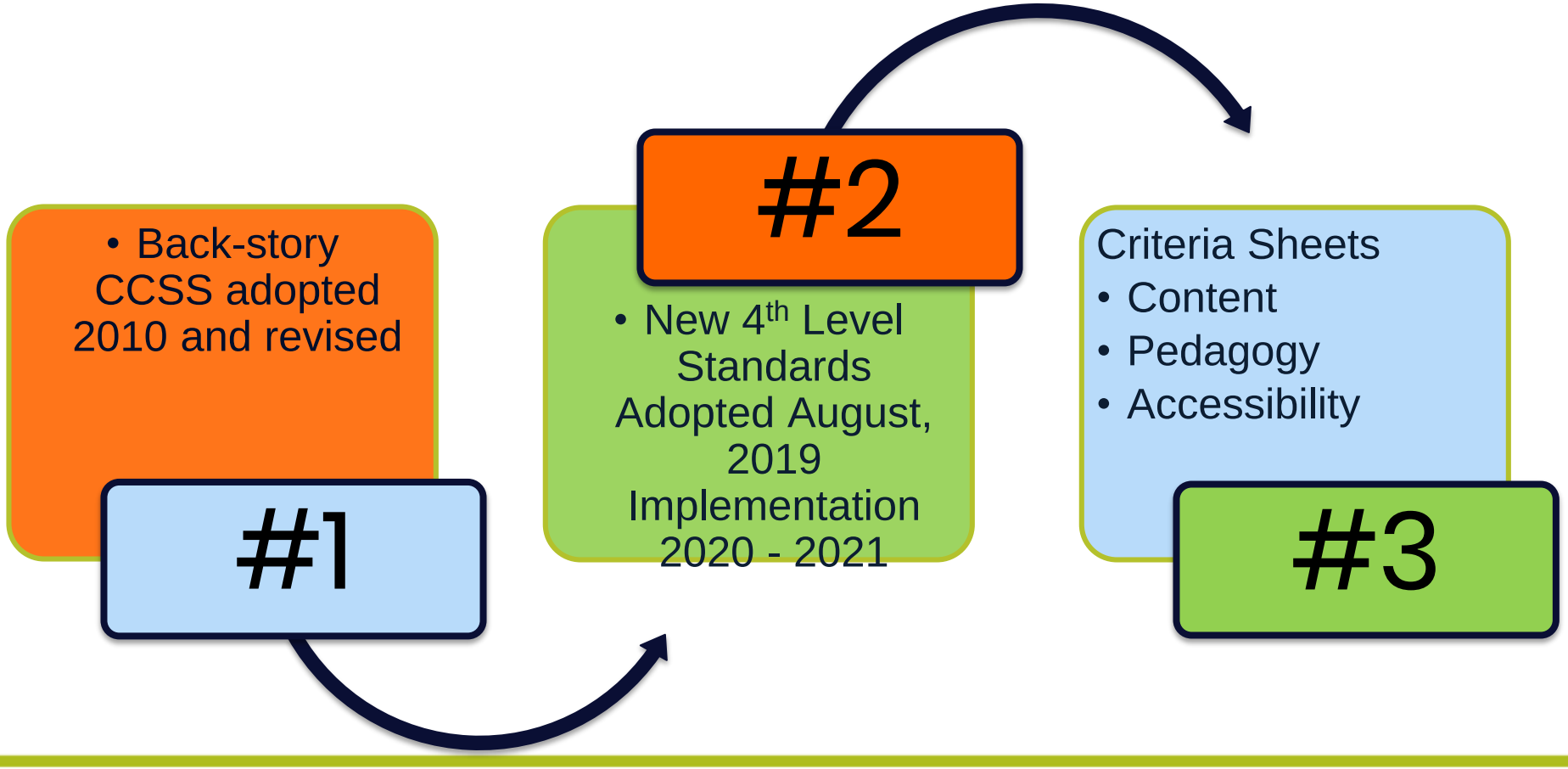
9-12 Mathematics Overview and Criteria



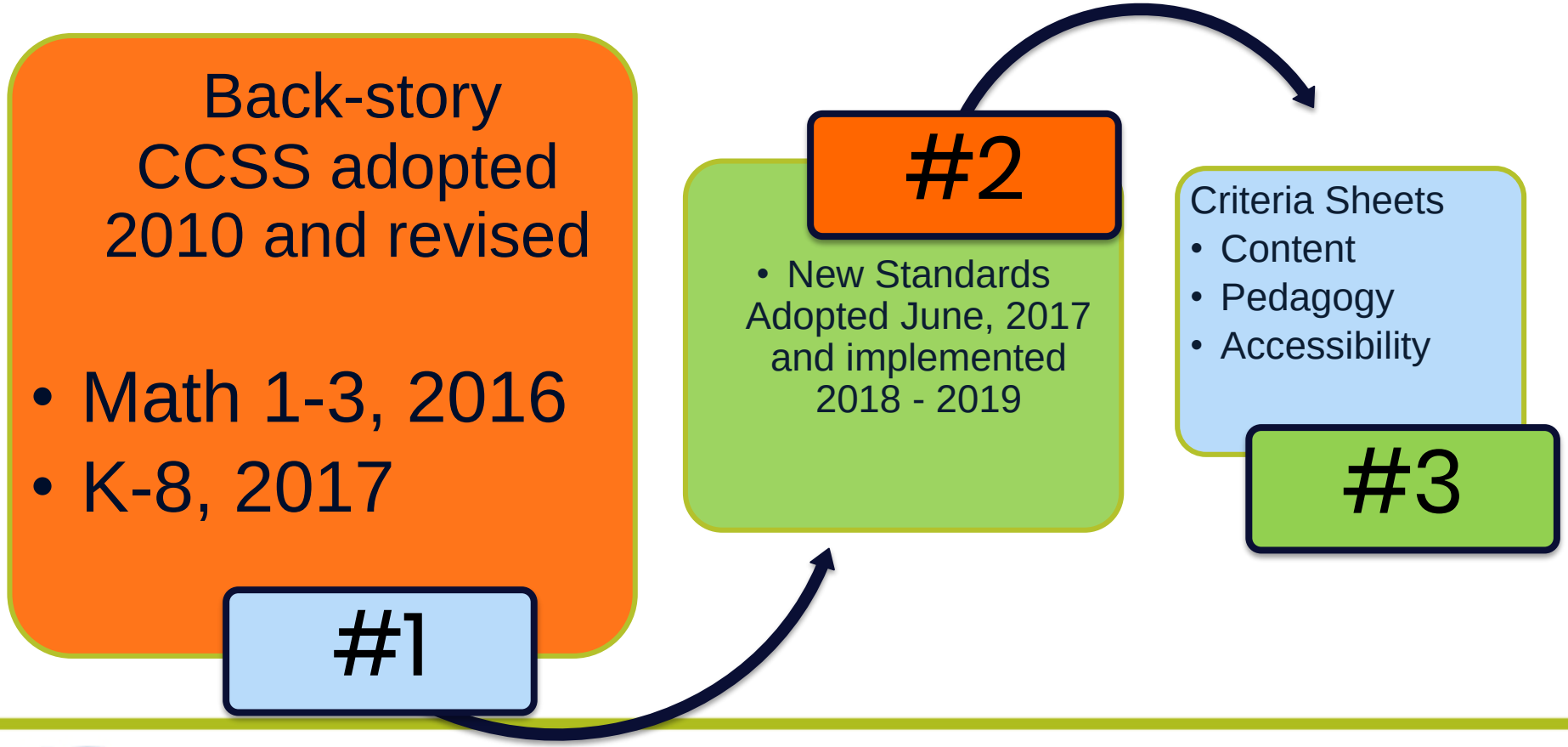
March 20, 2020

NCDPI Mathematics Team

Beverly G. Vance, Section Chief
K-12 Mathematics/Science/STEM
Standards, Curriculum & Instruction Division



Textbook Commission Meeting:
9-12 Mathematics Criteria Training

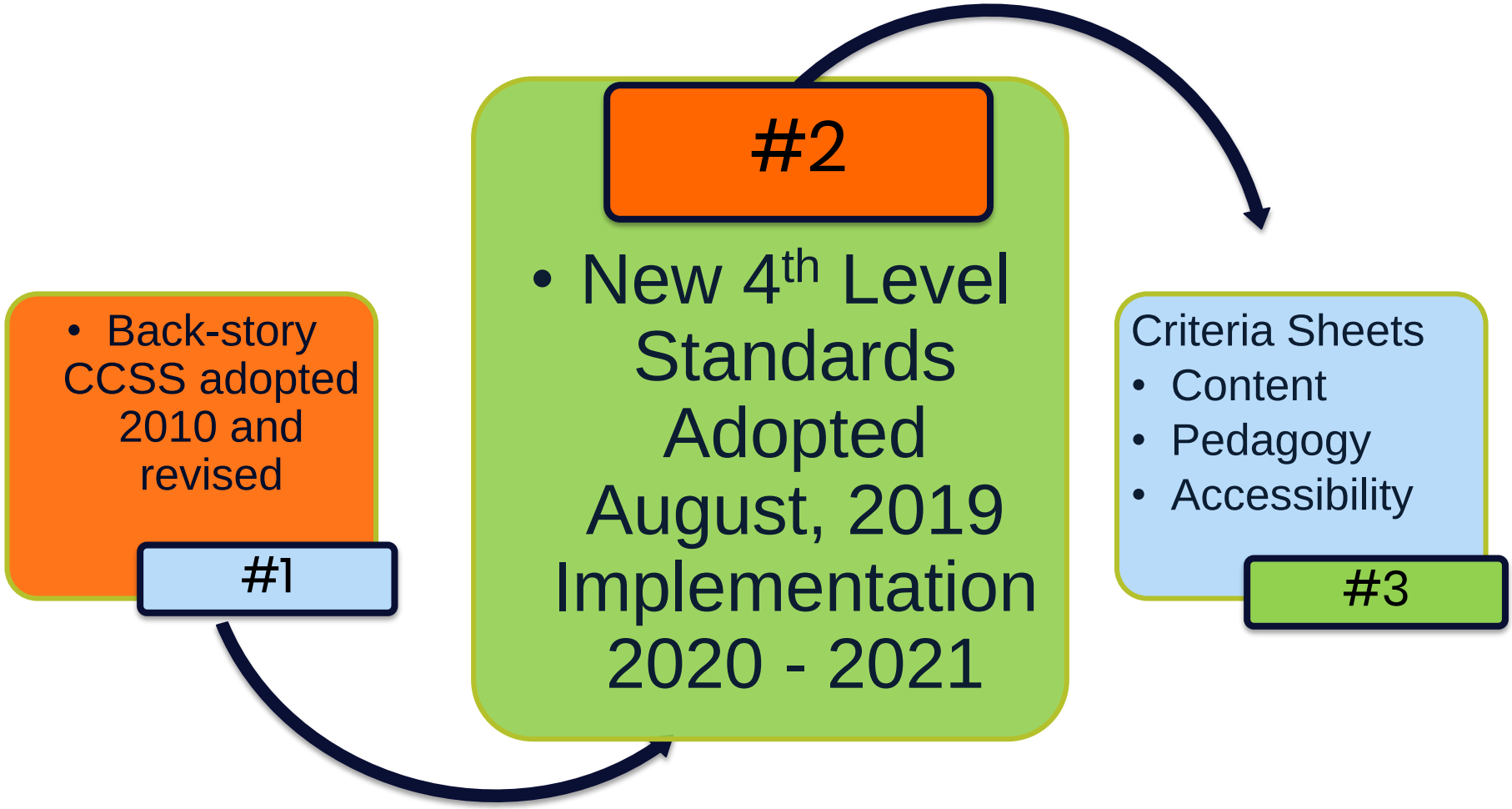


1. Back-story

NC Mathematics Writing Team

Instructional Coaches	Curriculum Directors	Administrators
Teachers	Higher Ed	Accountability Staff
EC & EL Curriculum Staff	School Readiness Staff	External Business Stakeholders

Textbook Commission Meeting:
9-12 Mathematics Criteria Training



2. New Standards: 4th Level Mathematics

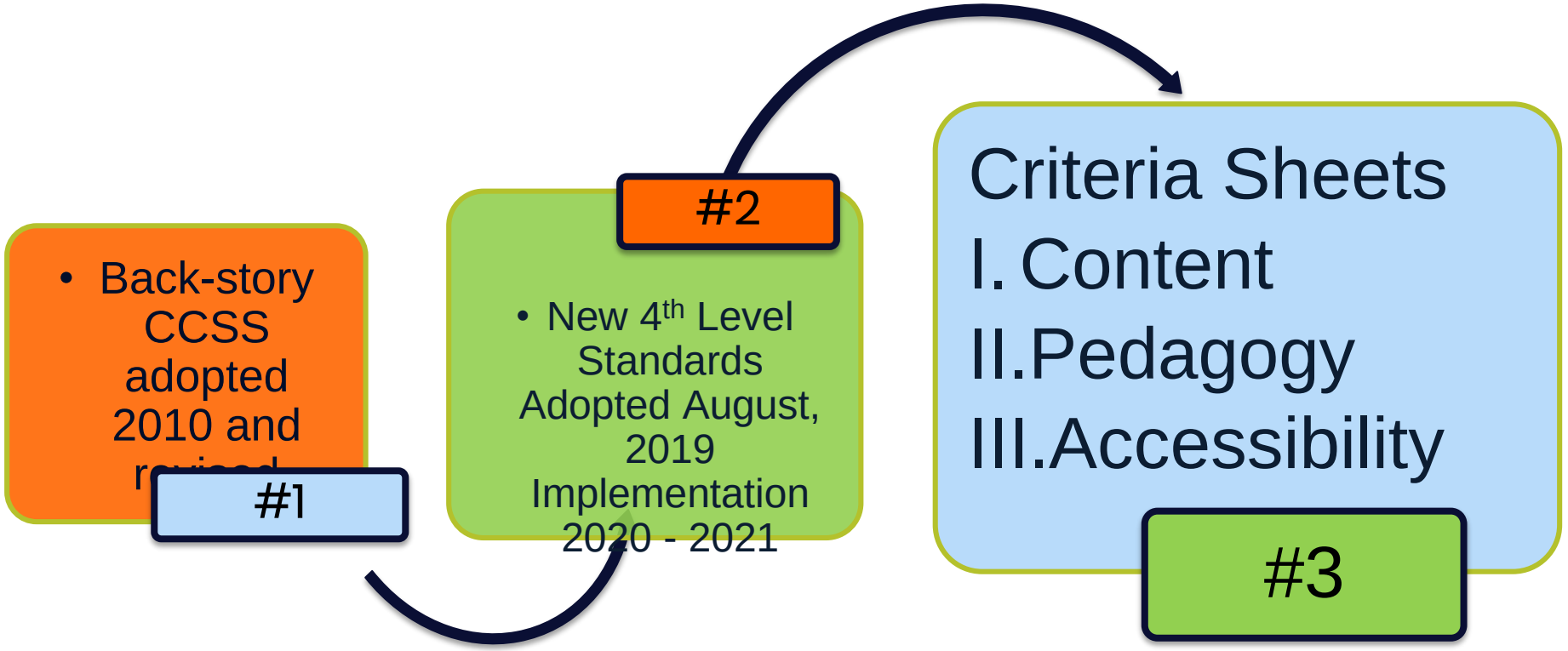
- Recommendations Approved by the SBE 2019
  - ✓ Revised Precalculus Standards
  - ✓ Revised Discrete Mathematics Standards that connect more closely to computer programming/coding; New standards – Discrete Mathematics for Computer Science
  - ✓ Created NC Math 4 Standards that build on NC Math 3
- Revised Bloom's Taxonomy used to develop 4th Level Math Standards
- New Standards documents include course description to assist with aligning the fourth course with the student's post high school plans.

Professional Development

	4th Level Mathematics: State Implementation Plan

Professional Development and Resources	• **Professional Development Plan -** Face to Face, Virtual, Blended
	  ◦ RBT Training
	  ◦ Understanding the Standards
	• **Resources**
	  ◦ Parent Guides
	  ◦ Unpacking
	  ◦ Glossary
	  ◦ Crosswalks
	  ◦ Indicators
	• **Collaboration** - District and Regional Support and Charters
	  ◦ Communication
	  ◦ Delivery

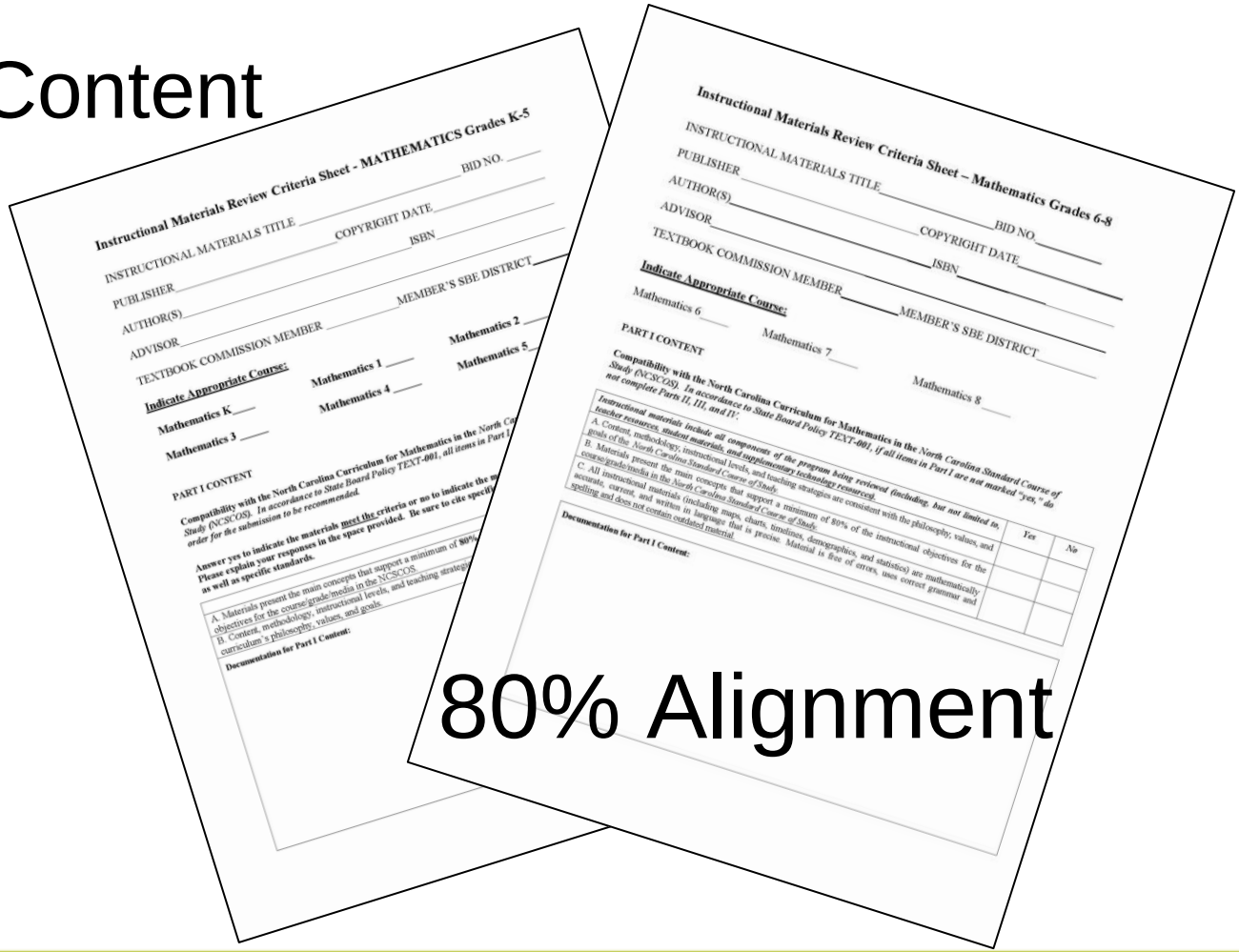
Textbook Commission Meeting:
9-12 Mathematics Criteria Training



3.Criteria Sheets

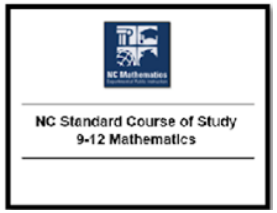
9-12 Mathematics Instructional Materials Review

Part I: Content

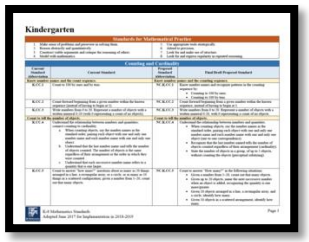


Standards Documents

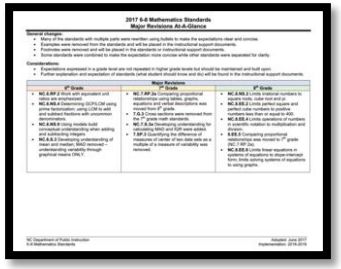
- 9-12 Standards Documents



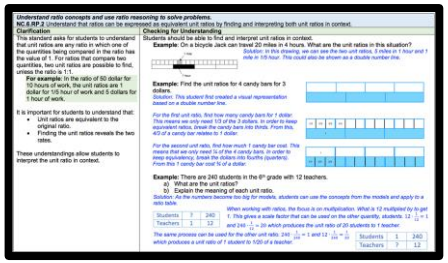
- Standards Comparisons



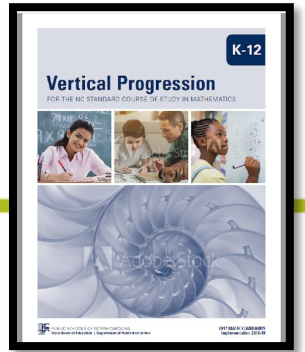
- Major Revisions



- Unpacking Documents



- Vertical Progression Document



The Unpacking Documents

Sample Task

Understand ratio concepts and use ratio reasoning to solve problems.
NC.6.RP.2 Understand that ratios can be expressed as equivalent unit ratios by finding and interpreting both unit ratios in context.

Clarification

This standard asks for students to understand that unit ratios are any ratio in which one of the quantities being compared in the ratio has the value of 1. For ratios that compare two quantities, two unit ratios are possible to find, unless the ratio is 1:1.

For example: In the ratio of 50 dollar for 10 hours of work, the unit ratios are 1 dollar for 1/5 hour of work and 5 dollars for 1 hour of work.

It is important for students to understand that:

- Unit ratios are equivalent to the original ratio.
- Finding the unit ratios reveals the two rates.

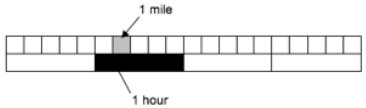
These understandings allow students to interpret the unit ratio in context.

Unpacking & Clarification

Checking for Understanding

Students should be able to find and interpret unit ratios in context.

Example: On a bicycle Jack can travel 20 miles in 4 hours. What are the unit ratios in this situation?



Solution: In this drawing, we can see the two unit ratios, 5 miles in 1 hour and 1 mile in 1/5 hour. This could also be shown as a double number line.

Example: Find the unit ratios for 4 candy bars for 3 dollars.

Solution: This student first created a visual representation based on a double number line.

For the first unit ratio, find how many candy bars for 1 dollar. This means we only need 1/3 of the 3 dollars. In order to keep equivalent ratios, break the candy bars into thirds. From this, 4/3 of a candy bar relates to 1 dollar.

For the second unit ratio, find how much 1 candy bar cost. This means that we only need ¼ of the 4 candy bars. In order to keep equivalency, break the dollars into fourths (quarters). From this 1 candy bar cost ¾ of a dollar.

Example: There are 240 students in the 6th grade with 12 teachers.

a) What are the unit ratios?
b) Explain the meaning of each unit ratio.

Solution: As the numbers become too big for models, students can use the concepts from the models and apply to a ratio table.

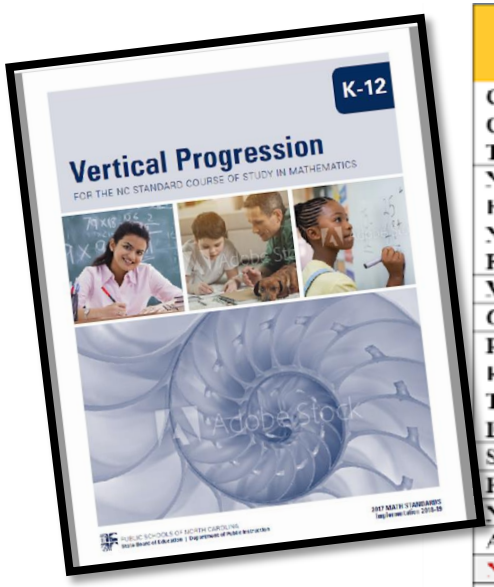
Students	?	240
Teachers	1	12

When working with ratios, the focus is on multiplication. What is 12 multiplied by to get 1. This gives a scale factor that can be used on the other quantity, students. $12 \cdot \frac{1}{12} = 1$ *and* $240 \cdot \frac{1}{12} = 20$ *which produces the unit ratio of 20 students to 1 teacher.*

The same process can be used for the other unit ratio. $240 \cdot \frac{1}{240} = 1$ *and* $12 \cdot \frac{1}{240} = \frac{1}{20}$ *which produces a unit ratio of 1 student to 1/20 of a teacher.*

Students	1	240
Teachers	?	12

K-12 Standards Vertical Progression



Major Strands of NC Standard Course of Study for K-12 Mathematics

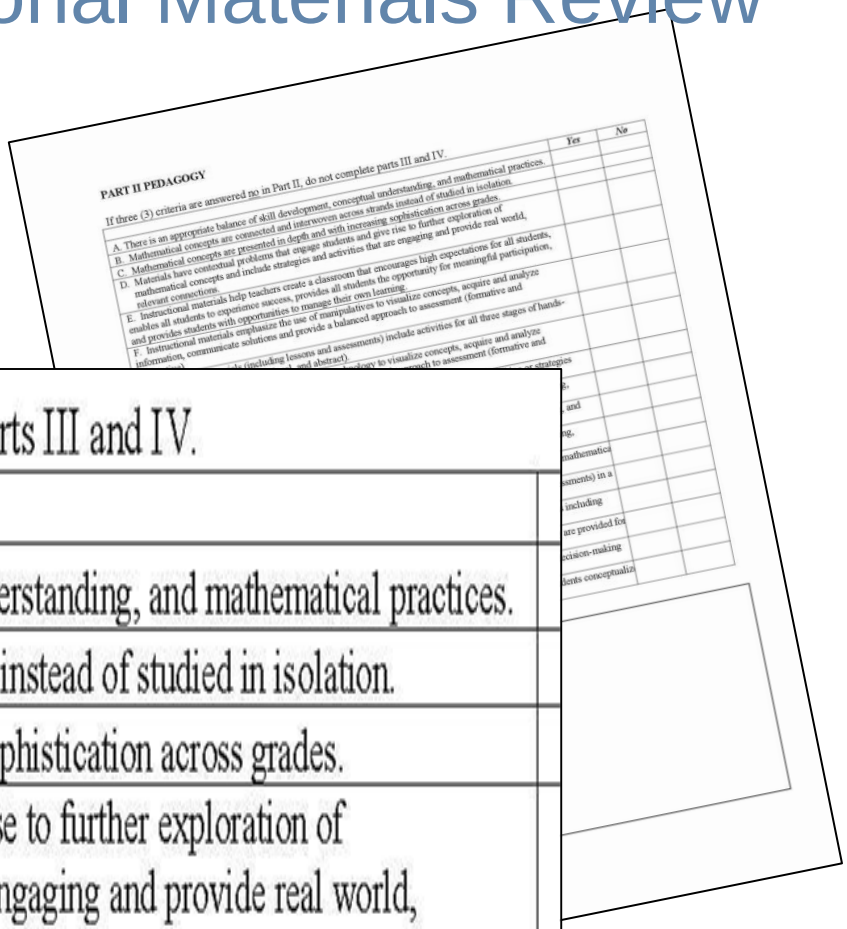
STRAND	GRADES/COURSE														Strand Abbreviations
	K	1	2	3	4	5	6	7	8	M1	M2	M3	M4	DCS	PC	
Counting and Cardinality	✓															CC
Operations and Algebraic Thinking	✓	✓	✓	✓	✓	✓										OA
Number and Operations in Base Ten	✓	✓	✓	✓	✓	✓										NBT
Number and Operations-Fractions				✓	✓	✓										NF
Measurement and Data	✓	✓	✓	✓	✓	✓										MD
Geometry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				G
Ratio and Proportional Relationships							✓	✓								RP
The Number System							✓	✓	✓							NS
Expressions and Equations							✓	✓	✓							EE
Statistics and Probability							✓	✓	✓	✓	✓	✓	✓	✓		SP
Functions									✓	✓	✓	✓	✓	✓	✓	F
Number and Quantity										✓	✓	✓	✓	✓	✓	N
Algebra										✓	✓	✓	✓	✓	✓	A
Number and Quantity													✓			N
Algebra and Functions													✓			AF
Statistics and Probability													✓			SP
Number and Quantity														✓		N
Functions														✓		F
Statistics & Probability														✓		SP
Graph Theory														✓		GT
Logic														*✓		L
Number and Quantity															✓	N
Algebra															✓	A
Functions															✓	F

*New Strand

3.Criteria Sheets

9-12 Mathematics Instructional Materials Review

Part II: Pedagogy



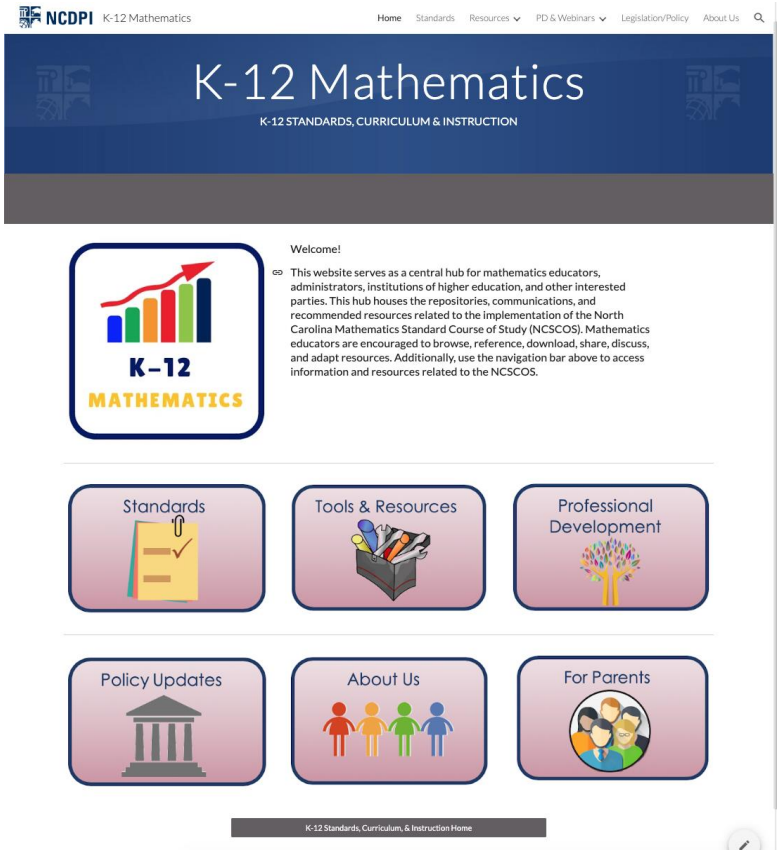
If three (3) criteria are answered no in Part II, do not complete parts III and IV.

A. There is an appropriate balance of skill development, conceptual understanding, and mathematical practices.
B. Mathematical concepts are connected and interwoven across strands instead of studied in isolation.
C. Mathematical concepts are presented in depth and with increasing sophistication across grades.
D. Materials have contextual problems that engage students and give rise to further exploration of mathematical concepts and include strategies and activities that are engaging and provide real world, relevant connections.
E. Instructional materials help teachers create a classroom that encourages high expectations for all students

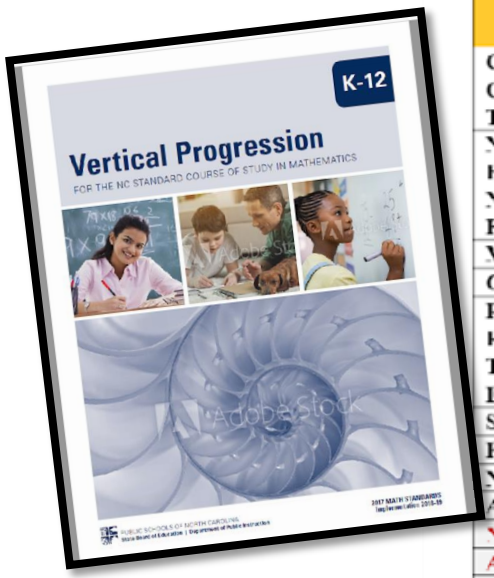
Instructional Materials Review Criteria Sheet: Mathematics 9-12

K-12 Mathematics Google Site

This hub houses the repositories, communications, and recommended resources related to the implementation of the North Carolina Mathematics Standard Course of Study (NCSCOS). NCDPI provides training for LEA teams on the appropriate use of the Tools & Resources.



K-12 Standards Vertical Progression



guides the progression of rigor while reviewing resources

Major Strands of NC Standard Course of Study for K-12 Mathematics

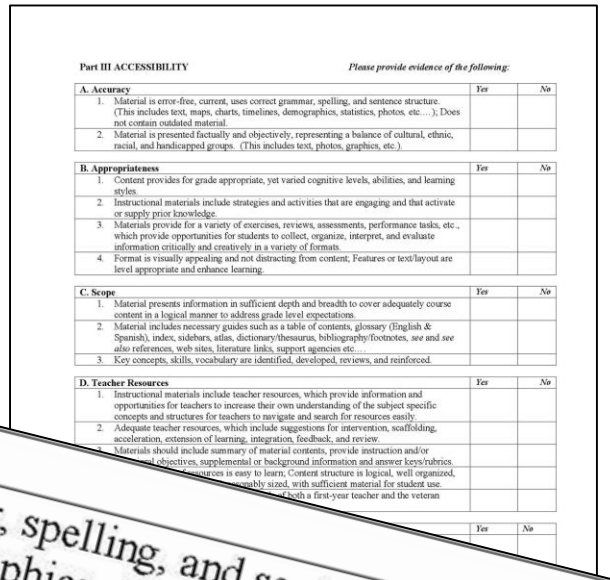
STRAND	GRADES/COURSE														Strand Abbreviations
	K	1	2	3	4	5	6	7	8	M1	M2	M3	M4	DCS	PC	
Counting and Cardinality	✓															*CC*
Operations and Algebraic Thinking	✓	✓	✓	✓	✓	✓										*OA*
Number and Operations in Base Ten	✓	✓	✓	✓	✓	✓										*NBT*
Number and Operations-Fractions				✓	✓	✓										*NF*
Measurement and Data	✓	✓	✓	✓	✓	✓										*MD*
Geometry	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				*G*
Ratio and Proportional Relationships							✓	✓								*RP*
The Number System							✓	✓	✓							*NS*
Expressions and Equations							✓	✓	✓							*EE*
Statistics and Probability							✓	✓	✓	✓	✓	✓	✓	✓		*SP*
Functions									✓	✓	✓	✓	✓	✓	✓	*F*
Number and Quantity										✓	✓	✓	✓	✓	✓	*N*
Algebra										✓	✓	✓	✓	✓	✓	*A*
Number and Quantity													✓			*N*
Algebra and Functions													✓			*AF*
Statistics and Probability													✓			*SP*
Number and Quantity														✓		*N*
Functions														✓		*F*
Statistics & Probability														✓		*SP*
Graph Theory														✓		*GT*
Logic														*✓		*L*
Number and Quantity															✓	*N*
Algebra															✓	*A*
Functions															✓	*F*

**New Strand*

3.Criteria Sheets

9-12 Mathematics Instructional Materials Review

Part III: Accessibility



Part III ACCESSIBILITY *Please provide evidence of the following:*

A. Accuracy	Yes	No
1. Material is error-free, current, uses correct grammar, spelling, and sentence structure. (This includes text, maps, charts, timelines, demographics, statistics, photos, etc…); Does not contain outdated material.		
2. Material is presented factually and objectively, representing a balance of cultural, ethnic, racial, and handicapped groups. (This includes text, photos, graphics, etc.).		

B. Appropriateness	Yes	No
1. Content provides for grade appropriate, yet varied cognitive levels, abilities, and learning styles.		
2. Instructional materials include strategies and activities that are engaging and that activate or supply prior knowledge.		
3. Materials provide for a variety of exercises, reviews, assessments, performance tasks, etc., which provide opportunities for students to collect, organize, interpret, and evaluate information critically and creatively in a variety of formats.		
4. Format is visually appealing and not distracting from content; Features or text/layout are level appropriate and enhance learning.		

C. Scope	Yes	No
1. Material presents information in sufficient depth and breadth to cover adequately course content in a logical manner to address grade level expectations.		
2. Material includes necessary guides such as a table of contents, glossary (English & Spanish), index, sidebars, atlas, dictionary/thesaurus, bibliography/footnotes, *see* and *see also* references, web sites, literature links, support agencies etc….		
3. Key concepts, skills, vocabulary are identified, developed, reviews, and reinforced.		

D. Teacher Resources	Yes	No
1. Instructional materials include teacher resources, which provide information and opportunities for teachers to increase their own understanding of the subject specific concepts and structures for teachers to navigate and search for resources easily.		
2. Adequate teacher resources, which include suggestions for intervention, scaffolding, acceleration, extension of learning, integration, feedback, and review.		
3. Materials should include summary of material contents, provide instruction and/or [illegible] objectives, supplemental or background information and answer keys/rubrics [illegible] resources is easy to learn; Content structure is logical, well organized, [illegible] reasonably sized, with sufficient material for student use.		
[illegible] both a first-year teacher and the veteran		

	Yes	No

A. Accuracy

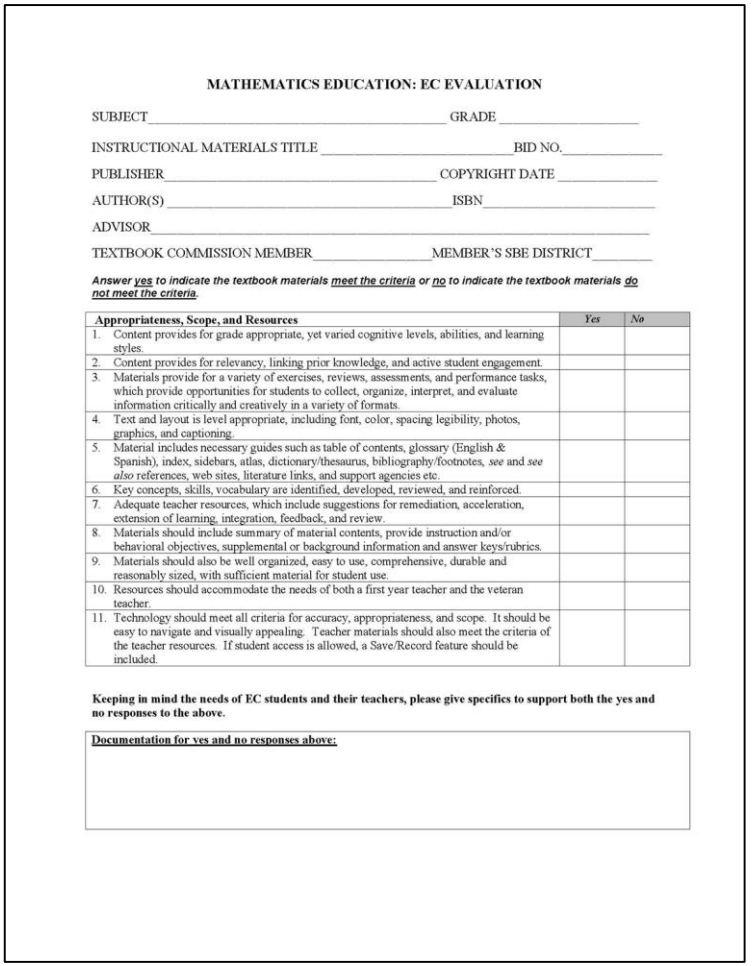
1. Material is error-free, current, uses correct grammar, spelling, and sentence structure. (This includes text, maps, charts, timelines, demographics, statistics, photos, etc.…); Does not contain outdated material.
2. Material is presented factually and objectively, representing a balance of cultural, ethnic, racial, and handicapped groups. (This includes text, photos, graphics, etc.).

What do we look for as Elements of Effective Mathematics Instruction?

- Accurate and error free
- Motivation
- Eliciting students' prior knowledge
- Intellectual engagement
- Early use of Modeling and moves to Algorithms
- Reasoning and Sense-making via the Standards for Mathematical Practices

Mathematics Education: EC Evaluation

Appropriateness, Scope, and Resources



MATHEMATICS EDUCATION: EC EVALUATION

SUBJECT_____ GRADE _____

INSTRUCTIONAL MATERIALS TITLE _____BID NO._____

PUBLISHER_____ COPYRIGHT DATE _____

AUTHOR(S) _____ISBN_____

ADVISOR_____

TEXTBOOK COMMISSION MEMBER_____MEMBER'S SBE DISTRICT_____

Answer yes to indicate the textbook materials meet the criteria or no to indicate the textbook materials do not meet the criteria.

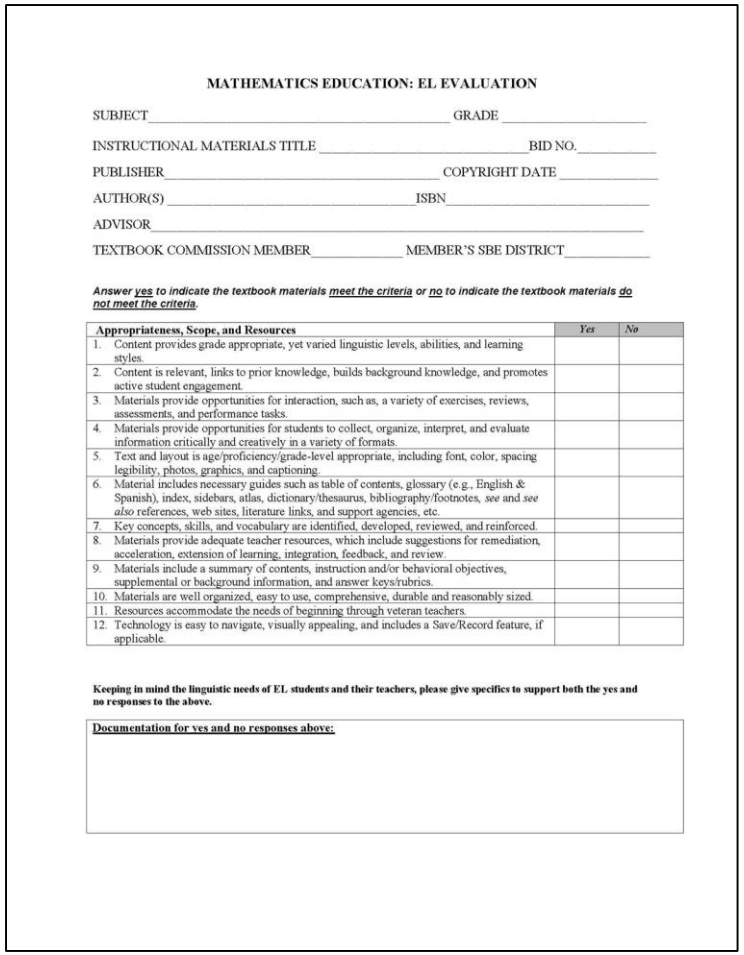
Appropriateness, Scope, and Resources	*Yes*	*No*
1. Content provides for grade appropriate, yet varied cognitive levels, abilities, and learning styles.		
2. Content provides for relevancy, linking prior knowledge, and active student engagement.		
3. Materials provide for a variety of exercises, reviews, assessments, and performance tasks, which provide opportunities for students to collect, organize, interpret, and evaluate information critically and creatively in a variety of formats.		
4. Text and layout is level appropriate, including font, color, spacing legibility, photos, graphics, and captioning.		
5. Material includes necessary guides such as table of contents, glossary (English & Spanish), index, sidebars, atlas, dictionary/thesaurus, bibliography/footnotes, *see* and *see also* references, web sites, literature links, and support agencies etc.		
6. Key concepts, skills, vocabulary are identified, developed, reviewed, and reinforced.		
7. Adequate teacher resources, which include suggestions for remediation, acceleration, extension of learning, integration, feedback, and review.		
8. Materials should include summary of material contents, provide instruction and/or behavioral objectives, supplemental or background information and answer keys/rubrics.		
9. Materials should also be well organized, easy to use, comprehensive, durable and reasonably sized, with sufficient material for student use.		
10. Resources should accommodate the needs of both a first year teacher and the veteran teacher.		
11. Technology should meet all criteria for accuracy, appropriateness, and scope. It should be easy to navigate and visually appealing. Teacher materials should also meet the criteria of the teacher resources. If student access is allowed, a Save/Record feature should be included.		

Keeping in mind the needs of EC students and their teachers, please give specifics to support both the yes and no responses to the above.

Documentation for yes and no responses above:

Mathematics Education: EL Evaluation

Appropriateness, Scope, and Resources



MATHEMATICS EDUCATION: EL EVALUATION

SUBJECT_____ GRADE _____

INSTRUCTIONAL MATERIALS TITLE _____BID NO._____

PUBLISHER_____ COPYRIGHT DATE _____

AUTHOR(S) _____ISBN_____

ADVISOR_____

TEXTBOOK COMMISSION MEMBER_____ MEMBER'S SBE DISTRICT_____

Answer yes to indicate the textbook materials meet the criteria or no to indicate the textbook materials do not meet the criteria.

Appropriateness, Scope, and Resources	*Yes*	*No*
1. Content provides grade appropriate, yet varied linguistic levels, abilities, and learning styles.		
2. Content is relevant, links to prior knowledge, builds background knowledge, and promotes active student engagement.		
3. Materials provide opportunities for interaction, such as, a variety of exercises, reviews, assessments, and performance tasks.		
4. Materials provide opportunities for students to collect, organize, interpret, and evaluate information critically and creatively in a variety of formats.		
5. Text and layout is age/proficiency/grade-level appropriate, including font, color, spacing legibility, photos, graphics, and captioning.		
6. Material includes necessary guides such as table of contents, glossary (e.g., English & Spanish), index, sidebars, atlas, dictionary/thesaurus, bibliography/footnotes, *see* and *see also* references, web sites, literature links, and support agencies, etc.		
7. Key concepts, skills, and vocabulary are identified, developed, reviewed, and reinforced.		
8. Materials provide adequate teacher resources, which include suggestions for remediation, acceleration, extension of learning, integration, feedback, and review.		
9. Materials include a summary of contents, instruction and/or behavioral objectives, supplemental or background information, and answer keys/rubrics.		
10. Materials are well organized, easy to use, comprehensive, durable and reasonably sized.		
11. Resources accommodate the needs of beginning through veteran teachers.		
12. Technology is easy to navigate, visually appealing, and includes a Save/Record feature, if applicable.		

Keeping in mind the linguistic needs of EL students and their teachers, please give specifics to support both the yes and no responses to the above.

Documentation for yes and no responses above:

Public Schools of North Carolina

NC Textbook Commission Meeting

Career and Technical Education

Learning that works for North Carolina
CTE™

March 20, 2020

Overview of Standards and Criteria

- Agricultural Education
- Business, Finance, and Marketing Education
- Career Development
- Computer Science and Information Technology Education
- Family and Consumer Sciences Education
- Health Science Education
- Trade, Technology, Engineering, and Industrial Education

Agricultural Education Pathways

- Animal Science
- Equine Science
- Natural Resources
- Plant Systems
- Power, Structural & Technical Systems
- Sustainable Agriculture Production

Business, Finance, and Marketing Education

- Accounting
- Entrepreneurship
- Financial Planning
- General Management
- Marketing Management
- NAF Academy of Finance
- Project Management
- Sales
- Sports & Entertainment Marketing
- SREB AC Career Pathway - Informatics
- Travel & Tourism

Computer Science and Information Technology Education

- Adobe Academy
- AP Computer Science
- Cisco Network Engineering
- Computer Engineering
- Computer Science Principles
- Digital Design and Animation
- Game Art Design
- NAF Academy of Information Technology
- Network Administration
- Network Security
- Python Programming
- SAS Programming

Family and Consumer Sciences Education

- Apparel and Textile Production
- Counseling and Mental Health
- Culinary Arts Applications
- Culinary Arts Internship
- Early Childhood Development & Services
- Food & Nutrition
- Food Products & Processing Systems
- Interior Design
- NAF Academy of Hospitality and Tourism
- Teaching/Training

Health Science Education

- Biomedical Technology
- Healthcare Professional
- PLTW Biotechnology Research & Development
- SREB AC Career Pathway - Health Informatics

Trade, Technology, Engineering, and Industrial Education

- Advanced Manufacturing
- Automotive Services
- Carpentry
- Collision Repair
- Drafting Architectural
- Drafting Engineering
- Drone Technology
- Electrical Trades
- Emergency Management
- Emergency Medical Technology
- Firefighter Technology
- HVAC/R

Trade, Technology, Engineering, and Industrial Education continued

- Law and Justice
- Masonry
- Metals Manufacturing
- PLTW Engineering
- Plumbing
- Public Safety

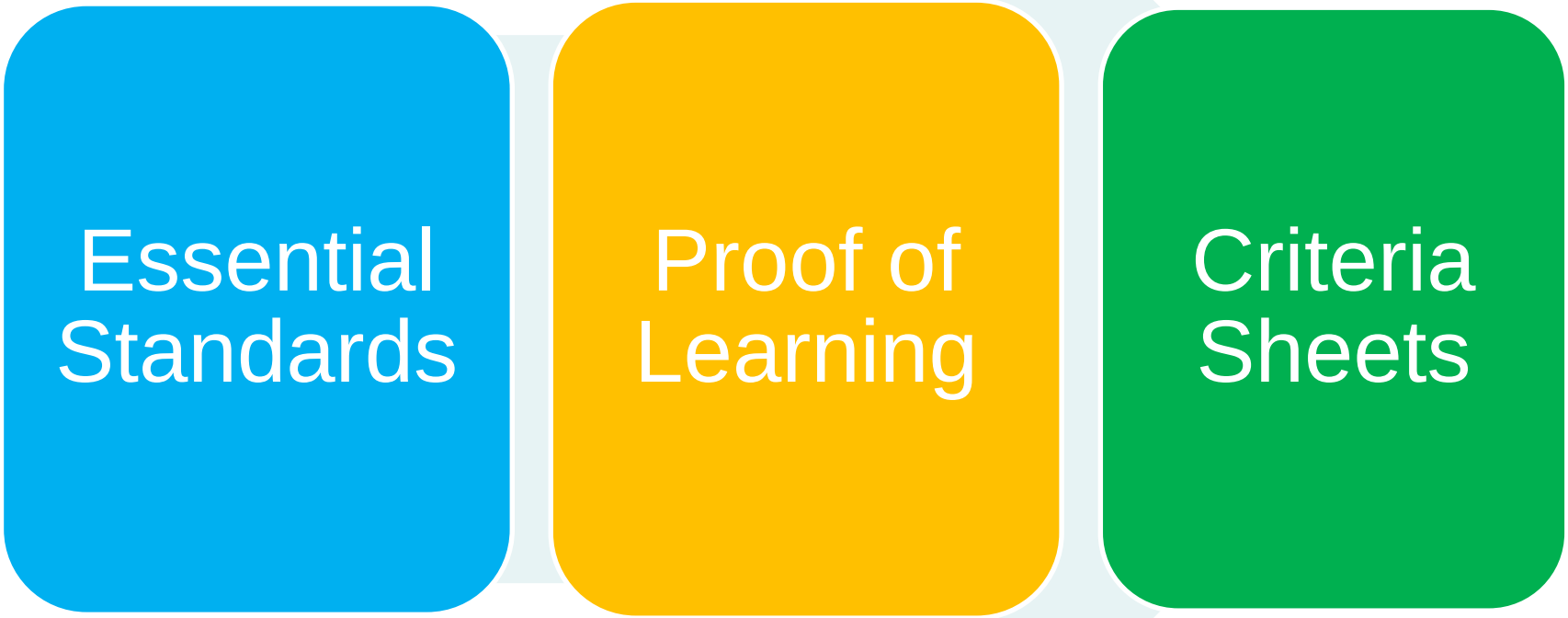
- SREB AC Career Pathway - Automated Materials Joining
- SREB AC Career Pathway - Aerospace Engineering
- SREB AC Career Pathway - Clean Energy Technology
- SREB AC Career Pathway - Energy and Power
- SREB AC Career Pathway - Global Logistics & Supply Chain Management
- SREB AC Career Pathway - Innovations in Science and Technology

Trade, Technology, Engineering, and Industrial Education continued

- SREB AC Career Pathway - Integrated Production Technologies
- Technology Engineering and Design
- Welding
- Woodworking

Pathway Example

Python Programming Career Pathway (PYPR)				
Middle Grades Exploration	**Foundational Prerequisite**	**Prerequisite**	**Concentrator**	**Career Pathway Major**
BU012YA Computer Science Discoveries I BU012YB Computer Science Discoveries II BU012YC Computer Science Discoveries III BU022YA Minecraft Coding - Introductory BU022YB Minecraft Coding - Intermediate BU022YC Minecraft Coding - Advanced BU102YA Keyboarding and Basic Word Processing BU102YB Introduction to Office Productivity BU102YC Office Productivity Applications BU102YD Digital Literacy CC582YA Exploring Personal Characteristics and Careers CC582YB Exploring Careers and Employment		BP14 Python Programming I	BP16 Python Programming II	2A02 AP Computer Science OR WB41 CTE Advanced Studies INFO OR WB42 CTE Apprenticeship INFO OR WB43 CTE Internship INFO
	Supplemental Employability Skills Courses	BM10 Microsoft Word and PowerPoint CC45 Career Management OI00 IB Personal and Professional Skills		
	Supplemental Technical Courses	BI12 CompTIA IT Fundamentals BI10 Foundations of Information Technology BI05 IB Information Technology in a Global Society BP01 Introduction to Computer Science BM20 Microsoft Excel BM40 Microsoft Access BL53 App Development with Swift		
	Career & College Promise	Approved Career & College Promise Career Technical Education Pathway		
Intracurricular Career and Technical Student Organizations: Future Business Leaders of America (FBLA)				


Essential Standards
Proof of Learning
Criteria Sheets

Essential Standards

Proof of Learning

Criteria Sheets

Essential Standards Sample

HVAC/R I

Course Number: IL55

Recommended Maximum Enrollment: 20

Hours of Instruction: 135 (block) 150 (regular)

Prerequisite: IC00 Construction Core

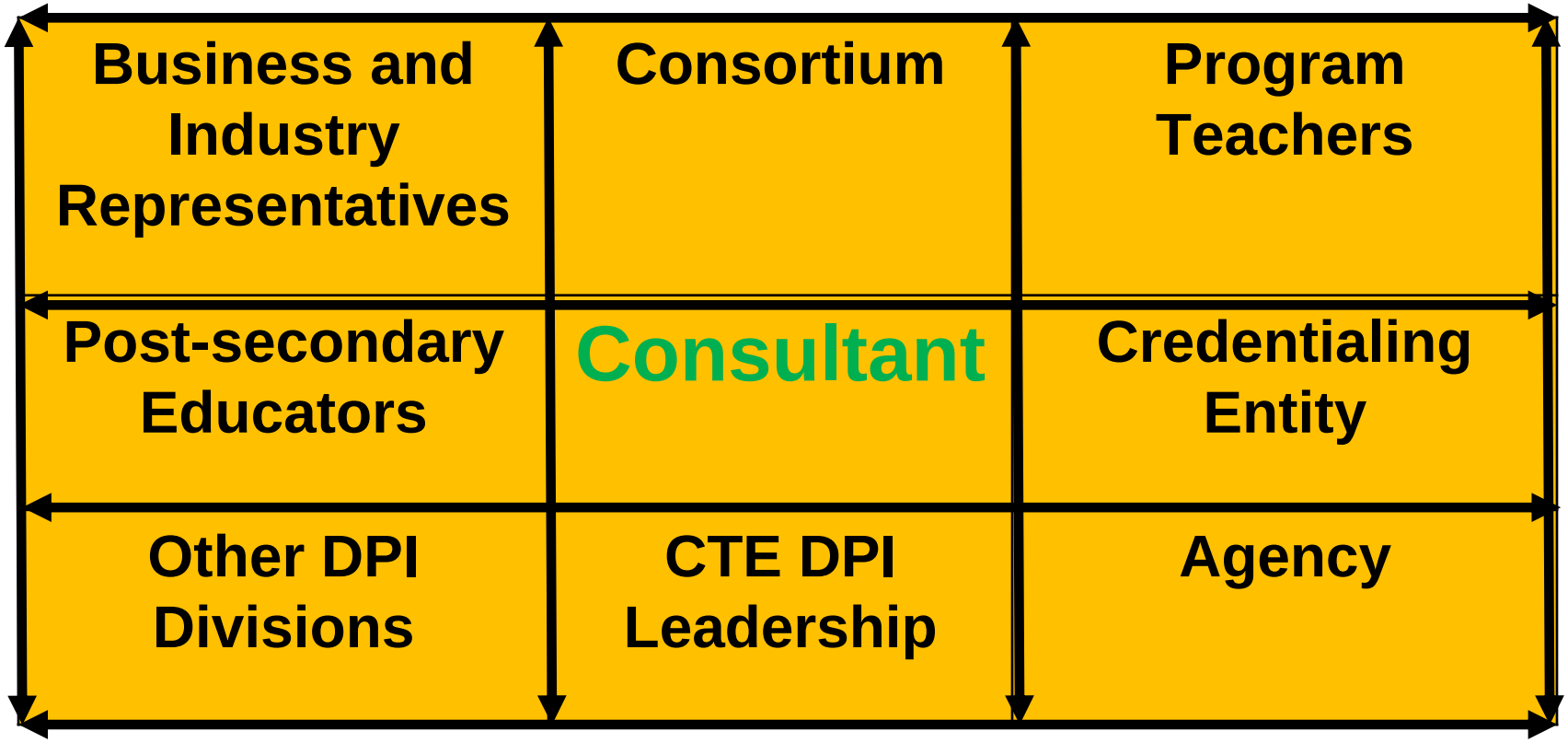
Aligned Career Technical Student Organization: SkillsUSA

Aligned Industry Credential: NC NCCER HVAC Level I

Description: This course is designed for students to develop basic HVAC terminology and technical aspects of HVAC with emphasis on the development of introductory skills to include Intro to HVAC, Trade Mathematics, Basic Electricity, Intro to Heating, Intro to Cooling, Intro to Air Distribution Systems, Basic Copper and Plastic Piping Practices, Soldering and Brazing, and Basic Carbon Steel Piping Practices. English language arts and mathematics are reinforced. *Due to potentially hazardous processes and equipment a maximum enrollment of 20 is recommended.

Work-based Learning Opportunities appropriate for this course include:				
Apprenticeship	Yes		**Job Shadowing**	Yes
Business and Industry Field Trip	Yes		**Mentorship**	Yes
Cooperative Education	Yes		**School Based Enterprise**	No
Entrepreneurial Experiences	No		**Service Learning**	Yes
Internship	Yes		****Work-based Learning descriptions can be found on page 3.**	

Essential Standards: Course Acquisition



Essential Standards: Course Acquisition continued

- Course User Guide
  - Blueprint
  - Essential Employability Skills
- Instructional Material
  - Curriculum Guide
  - Online Platform (external)

Course User Guide Sample

ES # and Obj #/Ind #	Essential Standards and Objective/Indicator Statements (The learner will be able to:)	Essential Standards or Objectives/ Indicators Weight Use link to access more information about the purpose of the weight percentages related to the assessment and instructional time	RBT Designation for Essential Standards or Objectives/Indicators
	Total Course Weight	100%	
1.00	Understand Introduction to HVAC (NCCER Module 03101).	**6%**	B2
2.00	Apply Trade Mathematics (NCCER Module 03102).	**8%**	C3
3.00	Apply Basic Electricity (NCCERModule 03106).	**11%**	C3
4.00	Understand Introduction to Heating (NCCER Module 03108).	**13%**	B2
5.00	Understand Introduction to Cooling (NCCERModule 03107).	**25%**	B2

Essential Standards

Proof of Learning

Criteria Sheets

Proof of Learning

A Proof of Learning is one of the following:

- **Credential** that covers at least 80% of the curriculum
- **NCTest or Third Party Assessment**
- **Performance Based Measurement**

Proof of Learning

Program Area	Course Code	Course	Status	Proof of Learning
BFM	MA52	Marketing Applications	Standard	NCTest
BFM	ME11	Entrepreneurship I	Pilot	PBM
BFM	ME12	Entrepreneurship II	Pilot	PBM
BFM	MH31	Sports and Entertainment Marketing I	Standard	NCTest
BFM	MH32	Sports and Entertainment Marketing II	Standard	NCTest
BFM	MI42	Multichannel Merchandising	Field Test	NCTest
BFM	MM51	Marketing	Pilot	PBM
CD	CC45	Career Management	Standard	Credential

Essential Standards

Proof of Learning

Criteria Sheets: courses or program

Criteria Sheets-Part I Content

Instructional Materials Review Criteria Sheet – Career and Technical Education
Program Area or Career Pathway(s): Technology, Trade, Engineering, and Industrial Education: Carpentry Career Pathway, Drafting Architectural Career Pathway, Electrical Trades Career Pathway, HVAC/R Career Pathway, Masonry Career Pathway, and Plumbing

INSTRUCTIONAL MATERIALS TITLE _____BID NO. ___

PUBLISHER_____ COPYRIGHT DATE _____

AUTHOR(S) _____ ISBN_____

ADVISOR _____TEXTBOOK COMMISSION MEMBER _____MEMBER'S SBE DISTRICT__

Indicate Appropriate Course:

___ IC00 Construction Core
___ IC11 Masonry I
___ IC41 Electrical Trades I
___ IC42 Electrical Trades II
___ IC43 Electrical Trades III
___ IC61 Drafting I
___ IC62 Drafting II - Architectural
___ IC63 Drafting III - Architectural
___ IL55 HVAC/R I
___ IL56 HVAC/R II
___ IL57 HVAC/R III
___ IL58 Plumbing I
___ IL59 Plumbing II
___ IL60 Plumbing III

Answer yes to indicate the materials meet the criteria or no to indicate the materials do not meet the criteria. Explain your responses. Be sure to cite specific page numbers, textual references as well as specific standards.

PART I: CONTENT

Compatibility with the North Carolina *Career and Technical Education Essential Standards*

In accordance to State Board Policy TEXT-001, all items in Part I must be marked "yes" in order for the submission to be recommended. If all criteria for Part I are not marked "yes" do not complete Parts II, III, and IV.

	Yes	*No*
A. Materials present the main concepts that support a minimum of **50%** of the instructional indicators or objectives for the course.		
B. Content, methodology, instructional levels, and teaching strategies are consistent with the course indicators or objectives.		
Documentation for Part I CONTENT		

Instructional Materials Review Criteria Sheet – Career and Technical Education
Program Area or Career Pathway(s): Trade, Technology, Engineering, and Industrial Education: Drone Technology

INSTRUCTIONAL MATERIALS TITLE _____BID NO.

PUBLISHER COPYRIGHT DATE _____

AUTHOR(S) _____ ISBN

ADVISOR _____TEXTBOOK COMMISSION MEMBER _____MEMBER'S SBE DISTRICT__

Indicate Appropriate Course:

___ID11 Drone Technology I **___ID12 Drone Technology II**

Answer yes to indicate the materials meet the criteria or no to indicate the materials do not meet the criteria. Explain your responses. Be sure to cite specific page numbers, textual references as well as specific standards.

PART I: CONTENT

Compatibility with the North Carolina *Career and Technical Education Essential Standards*

In accordance to State Board Policy TEXT-001, all items in Part I must be marked "yes" in order for the submission to be recommended. If all criteria for Part I are not marked "yes" do not complete Parts II, III, and IV.

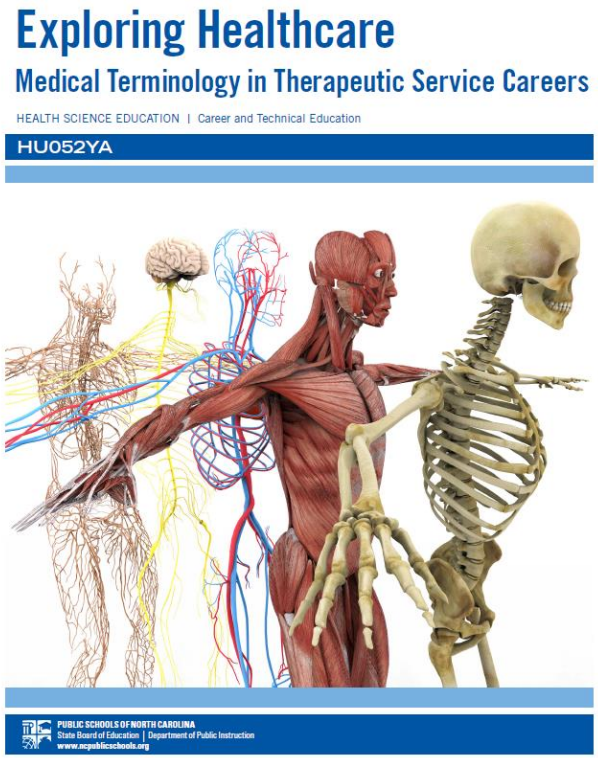
	Yes	*No*
A. Materials present the main concepts that support a minimum of **50%** of the instructional indicators or objectives for the course.		
B. Content, methodology, instructional levels, and teaching strategies are consistent with the course indicators or objectives.		
C. Content reflects the drone industry requirements needed to meet Federal, state, and local requirements. ID11: FAA 14 CFR Part 107		
D. Content provides professional skills needed in the specific drone industry criteria.		
Documentation for Part I CONTENT		

Standards Documents

Course User Guide

ES # and Obj #/Ind #	Essential Standards and Objective/Indicator Statements (The learner will be able to:)	Essential Standards or Objectives/ Indicators Weight Use link to access more information about the purpose of the weight percentages related to the assessment and instructional time	RBT Designation for Essential Standards or Objectives/Indicators
	Total Course Weight	100%	
1.00	Understand Introduction to HVAC (NCCER Module 03101).	6%	B2
2.00	Apply Trade Mathematics (NCCER Module 03102).	8%	C3
3.00	Apply Basic Electricity (NCCERModule 03106).	11%	C3
4.00	Understand Introduction to Heating (NCCER Module 03108).	13%	B2
5.00	Understand Introduction to Cooling (NCCERModule 03107).	25%	B2

Curriculum Guide



Standards Documents continued

Moodle PLC

ME12 Entrepreneurship II Inherently Honors and Credentials: Concepts of Entrepreneurship & Management or Venture Entrepreneurial Expedition or Entrepreneurship and Small Business (ESB) Certification Exam

- ME12 Entrepreneurship II general forum
- ME12 Entrepreneurship II files shared by teachers
- ME12 Entrepreneurship II curriculum materials: blueprint and curriculum guide

Instructional Partner Online Platform

Curriculum / Instruction

- Action Briefs (Trends)
- Course Guides
- Curriculum Builder (online)
- LAP Modules
- MBA Learning Center (online)
- Program-of-Study Kits
- Rubrics
- Speaker Materials - Conclave

Criteria Sheets-Part II: Pedagogy

PART II PEDAGOGY

Program Area or Career Pathway(s)	***Yes***	***No***
A. Materials include a variety of activities for multiple teaching and learning styles.		
B. Materials include optional capstone activities.		
C. Content supports integration of CTSO activities.		
D. Content includes 21st century skills.		
E. Content supports work-based learning.		
F. Content supports career and college opportunities.		
Documentation for Part II PEDAGOGY		

Criteria Sheet-
Part III: Accessibility

A. Accuracy	*Yes*	*No*
1. Information is error-free and current.		
2. Materials model correct use of grammar, spelling, and sentence structure.		
3. Materials represent a balance of cultural, ethnic, racial, gender, and individuals with disabilities.		
4. Information is presented factually and objectively in context.		
5. Pictures, photographs, and illustrations are bias-free and non-stereotypical.		
6. Maps, charts, timelines, demographics, and statistics are current.		

Criteria Sheet-
Part IV: Technology

.

Part IV TECHNOLOGY ***(If applicable.)***

Technology-based materials (requiring the use of electronic materials)	***Yes***	***No***
A. Accuracy		
1. Information is error-free and current.		
2. There is an objective, balanced presentation of content.		
3. Correct use of grammar, spelling, and sentence structure is present.		
4. Links to related websites and resources provide relevant, authentic, and appropriate content.		
5. Accurate and authoritative information is provided.		
B. Appropriateness		
1. Concepts, activities, and vocabulary in student activities are relevant to students' abilities.		
2. Information is relevant to the North Carolina Standard Course of Study and Essential Standards.		

Questions or Comments

Public Schools of North Carolina

Exceptional Children (EC) and English as a Second Language (ESL) Considerations

North Carolina Department of Public Instruction

Public Schools of North Carolina

Exceptional Children (EC) Considerations

Beverly Colwell
Beverly.Colwell@dpi.nc.gov
Educational Consultant
Exceptional Children Division
North Carolina Department of Public Instruction

EC Areas of Eligibility

- Autism Spectrum Disorder
- Deaf-Blindness
- Deafness
- Developmental Delay
- Emotional Disability
- Hearing Impairment
- Intellectual Disability
- Multiple Disabilities
- Orthopedic Impairment
- Other Health Impairment
- Specific Learning Disability
- Speech or Language Impairment
- Traumatic Brain Injury
- Visual Impairment

EC Federal Requirements

- Federal policy mandates that Students With Disabilities (SWD) receive instruction with their non disabled peers to the fullest extent possible; 99% of EC students are instructed in and assessed on the same standards as their grade level peers and therefore require access to grade level textbooks.

EC Federal Requirements

- Students with the most significant cognitive disabilities or 1% of the EC student population are instructed in and assessed on modified grade level standards; they also require access to grade level textbooks.

EC Federal Requirements

- Students may require instructional accommodations to fully participate in the general education setting; considerations for accommodations must be based on the individual needs of each student and documented in the student's Individualized Education Program (IEP).

Public Schools of North Carolina

English Learner (EL) Considerations

Ivanna M T Anderson

ivanna.anderson@dpi.nc,gov

Xatli Stox

xatli.stox@dpi.nc.gov

English Language Development Website

bit.ly/NCELsWebsite

EL Federal Requirements

Meaningful participation in educational programs and services is guaranteed by law (Office of Civil Rights).

"To help ensure that English learners, including immigrant children and youth, attain English language proficiency and meet the same standards that all children are expected to meet" (Section 3102(1), Title III of the Every Student Succeeds Act (ESSA).

English Learners in NC

- Top 5 languages: Spanish, Arabic, Chinese, Vietnamese, and Hindi/Urdu
- 2019 EL Headcount: 128,060 approx. 8% of the total student population.
- All 116 LEAs and 150 Charter Schools with at least 1 EL.
- ELs:
  - 70% of ELs are born in the U.S.
  - 30% Immigrants and Recently Arrived

English Language Development (ELD) Standards

Language & Content

- **Language proficiency** involves the **language** associated with the content areas.

- **Content knowledge** reflects the declarative (what) and procedural knowledge (how) associated with the **content**.

English Language Development Standards

Social & Instructional Language

Standard 1

Language of Language Arts

Standard 2

Language of Mathematics

Standard 3

Language of Science

Standard 4

Language of Social Studies

Standard 5

Academic Language

Standards

ELD

- Academic language development
- Language-based
- Reflective of the varying stages of second language acquisition
- Representative of social and academic language contexts

State Content

- Academic achievement
- Content-based
- Reflective of conceptual development
- Representative of the school's academic curriculum

EC and ESL Differences

EC

- Specially Designed Instruction
- Alternate formats to meet needs of student's disability (vision, hearing, intellectual)

ESL

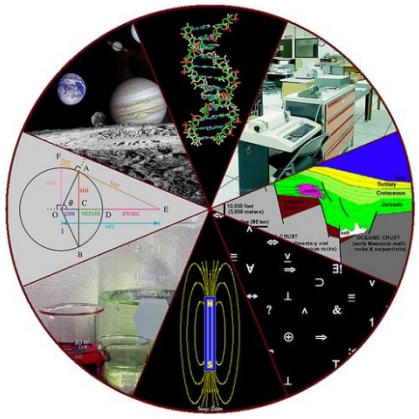
- Native language support

Universal Design for Learning

Questions to Consider for ALL students:

Do the textbooks and materials enable educators to offer flexible learning opportunities through multiple means of engagement, representation, and action & expression?

Are there suggestions for strategies to remediate, enhance, reinforce concepts?



Language Access Textbooks should:

- Include a variety of linguistic supports
- Focus on key vocabulary and language functions
- Provide opportunities for the use of visuals and technology
- Promote building background knowledge
- Promote oral language development associated with the content areas.
- **EL**: Include native language support (when possible)

Content Access & Accommodations

Textbooks should support the use of accommodations/modifications to enhance content knowledge through the use of:

- Realia (concrete objects), manipulatives and hands-on materials
- Modeling
- Graphic Organizers/Advance Organizers
- Technology

Content Access & Accommodations

Textbooks should support the use of accommodations/modifications to enhance content knowledge through the use of:

- Differentiated Instruction
- Authentic Assessment Tools
- **EC:** Specially Designed Instruction
- **EC:** Alternate formats (easily adaptable to meet the needs of a variety of disability areas such as vision, hearing, and cognitive disabilities)

Access and Accessibility Tools

Textbooks should support instructional strategies that promote:

- Activating and bridging prior knowledge and/or experience
- Access to authentic texts
- Metacognitive development
- Higher order thinking skills
- Contextualization
- Building schema to enhance understanding
- Linguistic modality integration (listening, speaking, reading, and writing)

Differentiation

Textbooks should support differentiation for ALL learners in the following areas:

- **Content:** Knowledge, skills students are learning
- **Process:** Vary the learning activities: flexible grouping, graphic organizers, diagrams, charts, maps
- **Product:** Vary complexity of the assignment/product
- **Environment:** classroom setting, location, space, materials

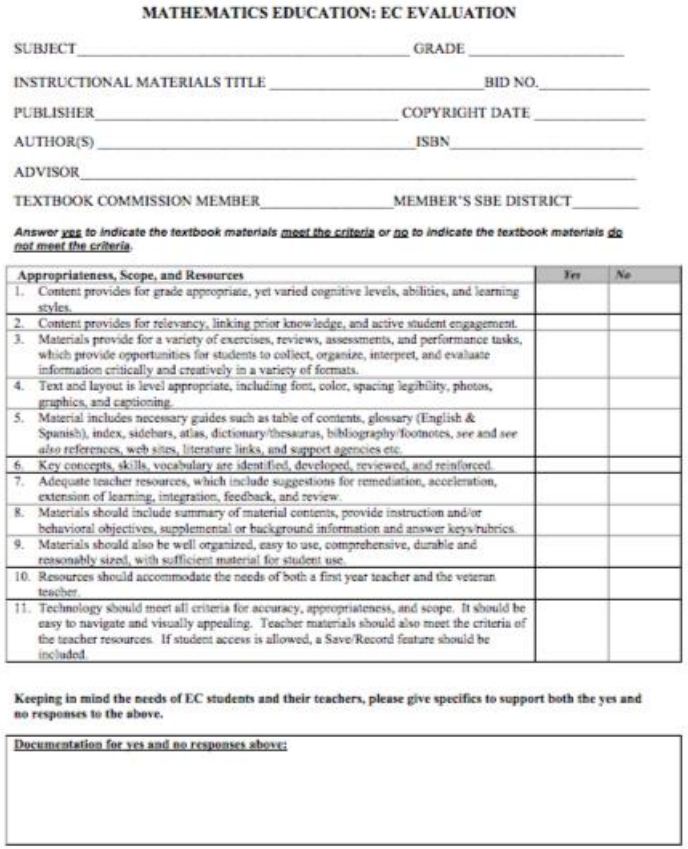
Cultural Diversity

Textbooks should support cultural diversity in the following areas:

- Register
- Genre/Text type
- Topic
- Task/Situation
- Participants' identities and social roles

EC Evaluation Criteria

- 11 items in a “yes” or “no” format to be considered for EC during the textbook selection process
- Space to document specific support for the “yes” or “no” responses



MATHEMATICS EDUCATION: EC EVALUATION

SUBJECT_____ GRADE _____

INSTRUCTIONAL MATERIALS TITLE _____ BID NO._____

PUBLISHER_____ COPYRIGHT DATE _____

AUTHOR(S) _____ ISBN_____

ADVISOR_____

TEXTBOOK COMMISSION MEMBER_____ MEMBER'S SBE DISTRICT_____

Answer yes to indicate the textbook materials meet the criteria or no to indicate the textbook materials do not meet the criteria.

Appropriateness, Scope, and Resources	Yes	No
1. Content provides for grade appropriate, yet varied cognitive levels, abilities, and learning styles.		
2. Content provides for relevancy, linking prior knowledge, and active student engagement.		
3. Materials provide for a variety of exercises, reviews, assessments, and performance tasks, which provide opportunities for students to collect, organize, interpret, and evaluate information critically and creatively in a variety of formats.		
4. Text and layout is level appropriate, including font, color, spacing legibility, photos, graphics, and captioning.		
5. Material includes necessary guides such as table of contents, glossary (English & Spanish), index, sidebars, atlas, dictionary/thesaurus, bibliography/footnotes, *see* and *see also* references, web sites, literature links, and support agencies etc.		
6. Key concepts, skills, vocabulary are identified, developed, reviewed, and reinforced.		
7. Adequate teacher resources, which include suggestions for remediation, acceleration, extension of learning, integration, feedback, and review.		
8. Materials should include summary of material contents, provide instruction and/or behavioral objectives, supplemental or background information and answer keys/rubrics.		
9. Materials should also be well organized, easy to use, comprehensive, durable and reasonably sized, with sufficient material for student use.		
10. Resources should accommodate the needs of both a first year teacher and the veteran teacher.		
11. Technology should meet all criteria for accuracy, appropriateness, and scope. It should be easy to navigate and visually appealing. Teacher materials should also meet the criteria of the teacher resources. If student access is allowed, a Save/Record feature should be included.		

Keeping in mind the needs of EC students and their teachers, please give specifics to support both the yes and no responses to the above.

Documentation for yes and no responses above:

EC Evaluation Criteria

- **Content**
  - Grade appropriate, varied cognitive levels, abilities, and learning styles
  - Relevant, linking to prior knowledge, active student engagement
  - Key concepts, skills, vocabulary are identified, developed, reviewed, and reinforced

EC Evaluation Criteria

- **Materials**
  - Include a variety of exercises, reviews, assessments, performance tasks
  - Provide opportunities for students to collect, organize, interpret and evaluate information
  - Include summary of content, instruction, and objectives, supplemental or background information
  - Include guides, such as contents, glossary, dictionary, bibliography/footnotes, references, websites, literature links, support agencies
  - Include sufficient material, well organized, easy to use, comprehensive, durable and reasonably sized

EC Evaluation Criteria

More on Materials

You will note that math particularly requests materials that

- promote opportunities for two-way and in-depth student discourse about math; not just procedures
- include examples that foster in-depth understanding of math that are clearly evident throughout

EC Evaluation Criteria

- **Resources**
  - Should accommodate first year and veteran teachers
- **Text**
  - should contain appropriate font, color, spacing, legibility, photos, graphics, and captioning
- **Technology**
  - Student text and teacher resources should meet criteria for accuracy, appropriateness, and scope

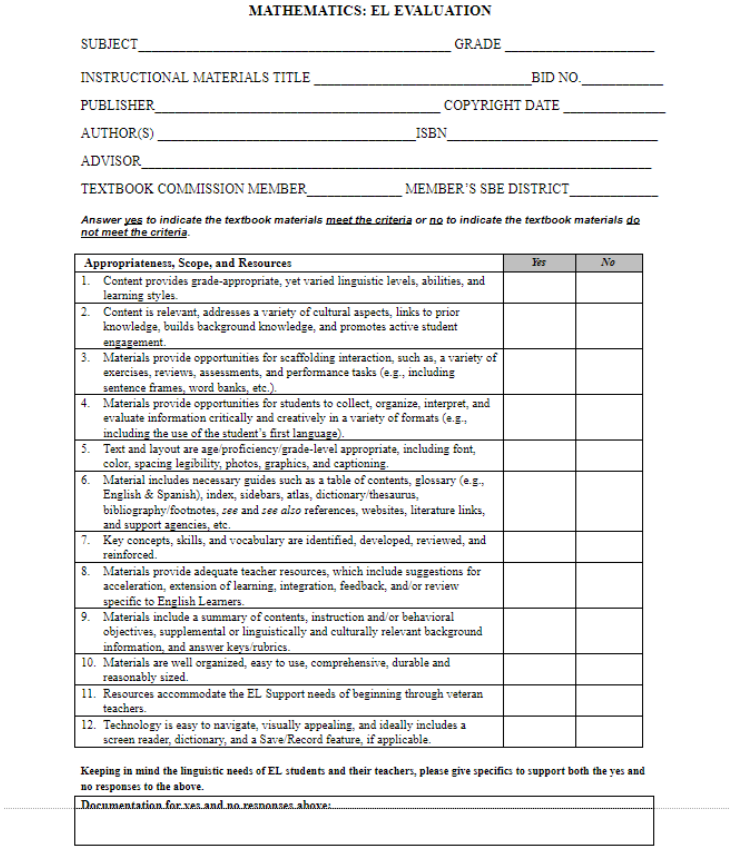
EC Resources

- EC Disability Resources
- Specially Designed Instruction (SDI)
- cast.org
- Differentiated Instruction Resources

EL Evaluation Criteria

12 Items to rate “yes” or “no” for meeting the criteria.

Support for each response considering the linguistic needs of ELs



MATHEMATICS: EL EVALUATION

SUBJECT_____ GRADE _____

INSTRUCTIONAL MATERIALS TITLE _____BID NO._____

PUBLISHER_____ COPYRIGHT DATE _____

AUTHOR(S) _____ISBN_____

ADVISOR_____

TEXTBOOK COMMISSION MEMBER_____ MEMBER'S SBE DISTRICT_____

Answer yes to indicate the textbook materials meet the criteria or no to indicate the textbook materials do not meet the criteria.

Appropriateness, Scope, and Resources	*Yes*	*No*
1. Content provides grade-appropriate, yet varied linguistic levels, abilities, and learning styles.		
2. Content is relevant, addresses a variety of cultural aspects, links to prior knowledge, builds background knowledge, and promotes active student engagement.		
3. Materials provide opportunities for scaffolding interaction, such as, a variety of exercises, reviews, assessments, and performance tasks (e.g., including sentence frames, word banks, etc.).		
4. Materials provide opportunities for students to collect, organize, interpret, and evaluate information critically and creatively in a variety of formats (e.g., including the use of the student's first language).		
5. Text and layout are age/proficiency/grade-level appropriate, including font, color, spacing legibility, photos, graphics, and captioning.		
6. Material includes necessary guides such as a table of contents, glossary (e.g., English & Spanish), index, sidebars, atlas, dictionary/thesaurus, bibliography/footnotes, *see* and *see also* references, websites, literature links, and support agencies, etc.		
7. Key concepts, skills, and vocabulary are identified, developed, reviewed, and reinforced.		
8. Materials provide adequate teacher resources, which include suggestions for acceleration, extension of learning, integration, feedback, and/or review specific to English Learners.		
9. Materials include a summary of contents, instruction and/or behavioral objectives, supplemental or linguistically and culturally relevant background information, and answer keys/rubrics.		
10. Materials are well organized, easy to use, comprehensive, durable and reasonably sized.		
11. Resources accommodate the EL Support needs of beginning through veteran teachers.		
12. Technology is easy to navigate, visually appealing, and ideally includes a screen reader, dictionary, and a Save/Record feature, if applicable.		

Keeping in mind the linguistic needs of EL students and their teachers, please give specifics to support both the yes and no responses to the above.

Documentation for yes and no responses above:

ESL Evaluation Criteria

- **Content**
  - Grade appropriate, varied cognitive levels, abilities, and learning styles
  - Relevant, linking to prior knowledge, active student engagement
  - Key concepts, skills, vocabulary are identified, developed, reviewed, and reinforced

EL Evaluation Criteria

- Materials:
  - Include both print and digital resources
  - Consider whole-class study, small-group work, and individual student extensive study
  - Allow students to interact with words, images, and ideas in ways that develop their abilities in multiple literacies.

EL Evaluation Criteria

- Materials:
  - Provide support and differentiate instruction according to students' needs.
  - Gradually advance the level of language practice (considering emerging, developing, and expanding ELs) and engage students in complex, cognitively demanding tasks.

Resources

- NCDPI ELD Website
- WIDA ELD Standards
- Double the Work
- EL Tool Kit (Chapters 4-5)
- Newcomer Toolkit (Chapter 3)

Ivanna MT Anderson Ivanna.Anderson@dpi.nc.gov

Xatli Stox Xatli.Stox@ncdpi.nc.gov

THANK YOU!!

EQUALITY VERSUS EQUITY

In the first image, it is assumed that everyone will benefit from the same supports. They are being treated equally.

In the second image, individuals are given different supports to make it possible for them to have equal access to the game. They are being treated equitably.

In the third image, all three can see the game without any supports or accommodations because the cause of the inequity was addressed. The systemic barrier has been removed.

Questions

- Thank you!
- Your participation in the textbook adoption process is greatly appreciated.

Contact

Beverly Colwell - EC
Beverly.Colwell@dpi.nc.gov

Ivanna M T Anderson - ESL
ivanna.anderson@dpi.nc,gov

Xatli Stox - ESL
xatli.stox@dpi.nc.gov