



Public Schools of North Carolina

2011 Leadership Seminar

NCCTM

State Mathematics Conference

NC Department of Public Instruction

Common Core State Standards

Ensuring that we are all

Life Long Learners



Frequently Asked Questions

What is DPI going to do?

What will the assessments look like?



Race to the Top

As spelled out in the RttT grant, we are committed to produce the following:

- Unpacking
- Crosswalks
- Summer Institutes
- Learning Modules
- Graphic Organizers
- Progressions/Content Maps



Continued....

- Leadership training in RESAs in Spring and Fall
- Webinars throughout the year
- Collaboration on Teacher Effectiveness Assessments



September 12, 2011
Holiday Inn Express
N. Wilkesboro
Region 7

December 1, 2011
Greensboro Coliseum
Greensboro, NC
Region 5

October 4, 2011
NCSBA Building
Raleigh, NC
Region 3

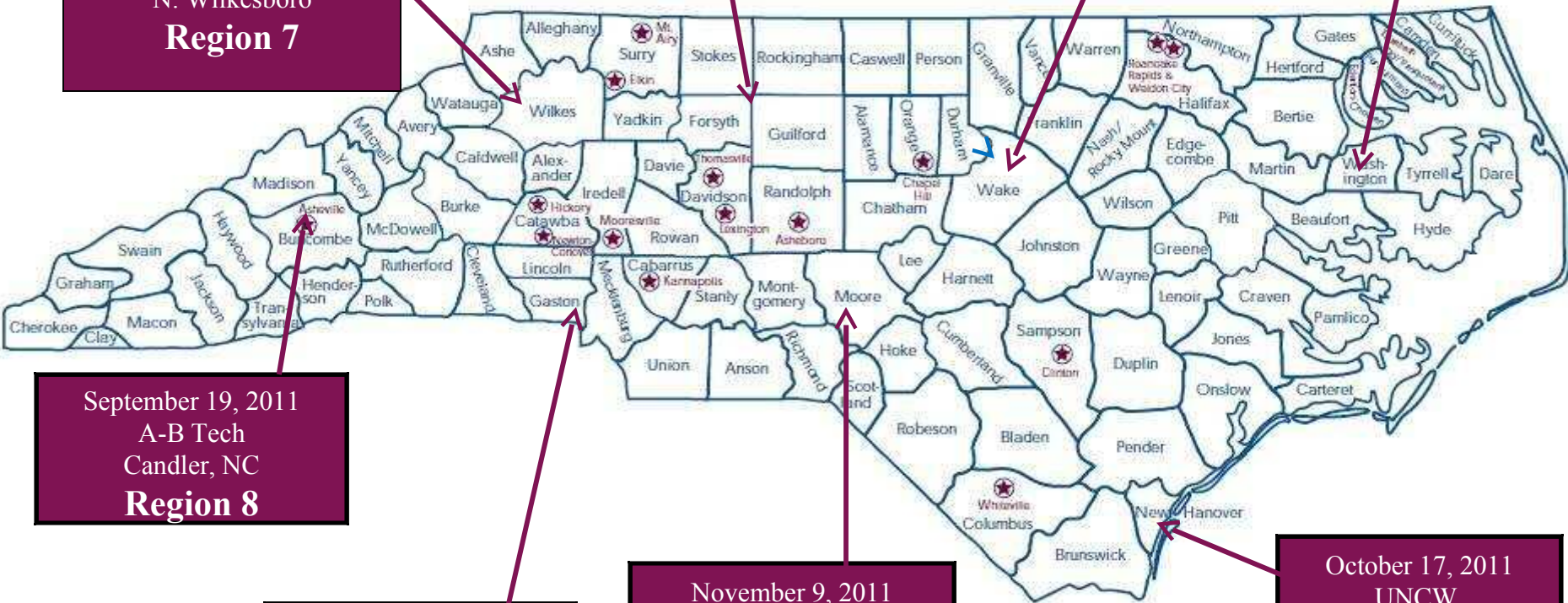
November 15, 2011
Vernon James Research Ctr
Plymouth, NC
Region 1

September 19, 2011
A-B Tech
Candler, NC
Region 8

November 14, 2011
UNC Charlotte
Charlotte
Region 6

November 9, 2011
Sandhills RESA
Moore County
Region 4

October 17, 2011
UNCW
Wilmington, NC
Region 2



Fall RESA PD

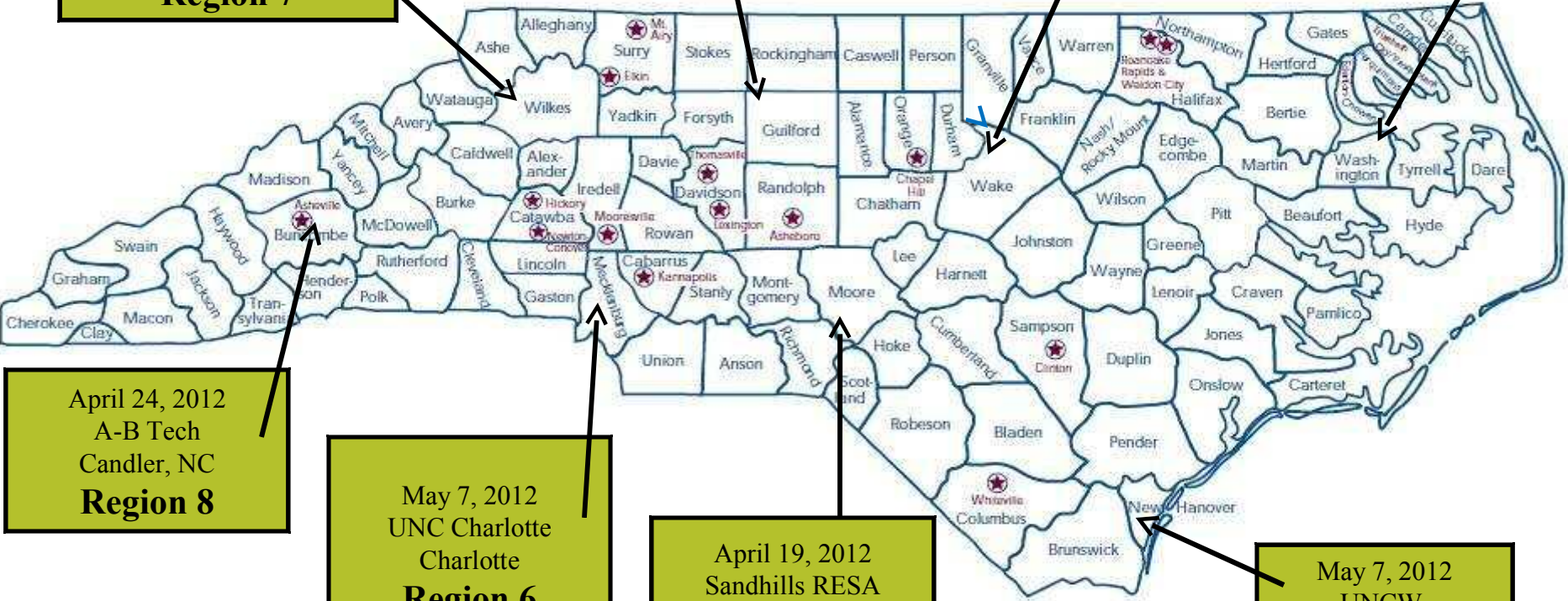


May 3, 2012
Holiday Inn Express
N. Wilkesboro
Region 7

March 22, 2012
Greensboro Coliseum
Greensboro, NC
Region 5

May 2, 2012
NCSBA Building
Raleigh, NC
Region 3

May 8, 2012
Vernon James Research Ctr
Plymouth, NC
Region 1



April 24, 2012
A-B Tech
Candler, NC
Region 8

May 7, 2012
UNC Charlotte
Charlotte
Region 6

April 19, 2012
Sandhills RESA
Moore County
Region 4

May 7, 2012
UNCW
Wilmington, NC
Region 2

Tentative Dates Spring RESA PD

Additionally, support to LEAs

We are beginning work on a Virtual Library to include resources for on-going, site based, work embedded PLC professional learning experiences.



Old Boxes

Materials previously produced at the direction of DPI will be modified or re-invented. These include:

- Strategies
- Week by Week Essentials
- Indicators
- Observation Profiles



www.ncdpi.wikispaces.net

Public Schools of North Carolina
State Board of Education
Department of Public Instruction

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- Recent Changes
- Manage Wiki

Home

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- Middle School Mathematics
- High School Mathematics
- Conference Presentations
- Recognition in Mathematics
- Summer 2011 Institute
- Fall 2011 RESA K - 5 PD
- Fall 2011 RESA 6 - 12 PD
- Contact Information

★ home page discussion (1) history notify me

Mathematics

North Carolina Common Core and Essential Standards

Welcome to the North Carolina Mathematics Wiki

Please reference the pages in the navigation bar for links to various mathematics resources for teachers, administrators, teacher educators and others who are interested in the mathematics education of North Carolina's students.

[North Carolina Council of Teachers of Mathematics](#)

[National Council of Teachers of Mathematics](#)

Webinars

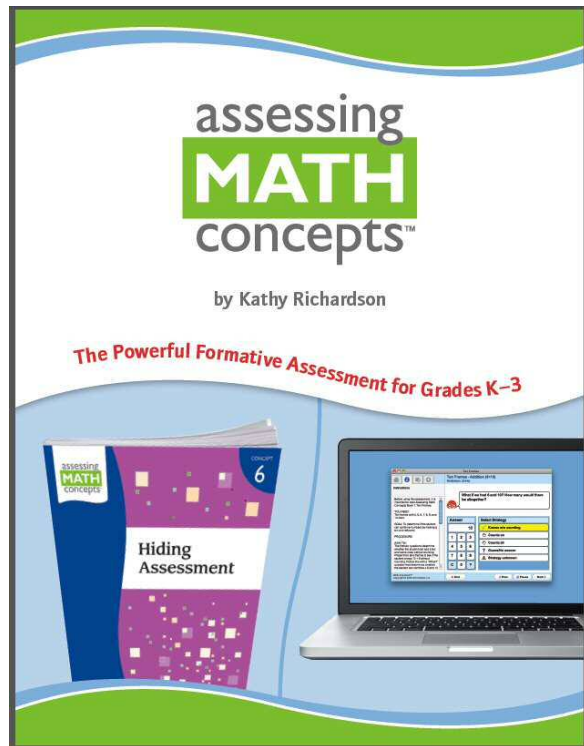
Dates:

- November 17 (Math 1 Standards)
- January 10 (Topic TBD)
- February 9 (Topic TBD)
- March 8 (Topic TBD)

All webinars will be from 3:30 – 4:30



NCDPI K-2 Math Pilot



- Governor Perdue
 - Summer 2009
 - K-2 Diagnostic Assessment
 - Technology Supported
- 3 Primary Goals
 1. Determine existing knowledge & skills of students; learning gaps
 2. Determine range within class, grade level, school
 3. Analyze data & adjust instruction



NCDPI K-2 Math Pilot

- Kathy Richardson's *Assessing Math Concepts* (AMC)
 - Continuum of assessments
 - Focuses on important core concepts and related “Critical Learning Phases”
 - Designed to help teachers provide more effective instruction
 - Gathers data electronically (web-based, palm)
 - Creates data reports to provide teachers, principals and families with individual, small group and whole class information



NCDPI K-2 Math Pilot Schools

- **Aulander Elementary**
 - **Aurelian Springs**
 - **Bellamy Elementary**
 - **Cliffdale Elementary**
 - **Crossnore Elementary**
 - **Hazelwood Elementary**
 - **Manteo Elementary**
 - **Riverside Elementary**
 - **Scotland Neck Primary**
 - **Smithfield Elementary**
 - **Sternberger Elementary**
 - **Weldon Elementary**
 - **Williamston Primary**
- Bertie
 - Halifax
 - New Hanover
 - Cumberland
 - Avery
 - Haywood
 - Dare
 - Avery
 - Halifax
 - Charlotte/Mecklenburg
 - Guilford
 - Weldon
 - Martin



NCDPI K-2 Math Pilot

For additional information:

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Carolyn Guthrie

carolyn.guthrie@dpi.nc.gov

Math Perspectives

www.mathperspectives.com



K-5 Units

Students learn mathematics by exploring mathematically-rich tasks and sharing strategies, ideas, and approaches with one another. (practices)

The phases of the lesson:

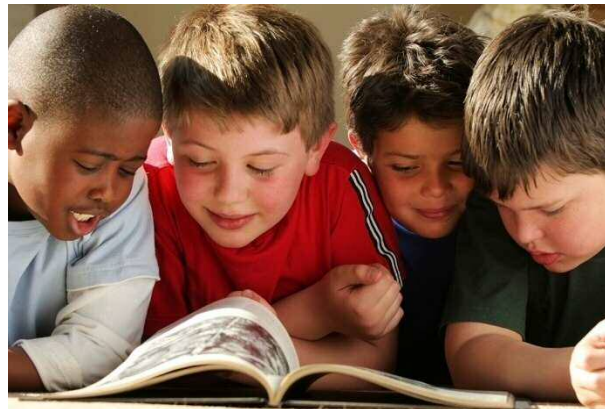
- Engage
- Explore
- Explain
- Elaborate



Unit Focus

Kindergarten

Understanding addition as putting together and adding to, and understand subtraction as taking apart and taking from.



Unit Focus

First Grade

Extend the counting sequence.

Understand place value.

Use place value understanding and properties of operations to add and subtract.

Add and subtraction within 20.



Unit Focus

Second Grade

Represent and solve problems involving addition and subtraction

Understand place value.

Use place value understanding and properties of operations to add and subtraction.



Unit Focus

Third Grade

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.



Unit Focus

Fourth Grade

Extend understanding of fraction equivalence and ordering.

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.



Unit Focus

Fifth Grade

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.



Posting of units will begin January, 2012

at

www.ncdpi.wikispaces.net



Elementary Mathematics Add-on Licensure

- 18-hour Graduate program (6 courses)
- Participating Universities
 - East Carolina University
 - Appalachian State University
 - NC State University
 - UNC Chapel Hill
 - UNC Charlotte
 - UNC Greensboro
 - UNC Wilmington
- Dr. Sid Rachlin (rachlins@ecu.edu)



North Carolina Common Core High School Mathematics Standard Course of Study



Trajectory

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
Number and Operations								
Algebra								
Functions								
Geometry								
Modeling								
Probability and Statistics								



Math I, II, and III

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
Number and Operations	Green	Yellow	Yellow	Blue	Blue	Blue	Purple	Purple
Algebra	Green	Green	Green	Yellow	Yellow	Blue	Blue	Purple
Functions	Green	Green	Green	Yellow	Yellow	Blue	Purple	Purple
Geometry	Green	Green	Yellow	Yellow	Yellow	Yellow	Blue	Blue
Modeling	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Probability and Statistics	Green	Green	Yellow	Yellow	Blue	Blue	Purple	Purple



North Carolina Common Core Math I



QUESTIONS

Fill out an index card with the information below and drop it in a pumpkin.

An index card template with a yellow tab at the top. A red horizontal line separates the header from the body. The text on the card is as follows:

Grade Level

Questions?

Contact Information



Problem to Ponder

In a certain condominium $\frac{2}{3}$ of the women are married to $\frac{3}{5}$ of the men.

What fraction of the entire condominium are married?



Thank you, John Van de



Timeline for Common Core Mathematics Implementation

Common Core State Standards Adopted June, 2010

Year	Standards To Be Taught	Standards To Be Assessed
2011 – 2012	2003 NCSCOS	2003 NCSCOS
2012 – 2013	CCSS	CCSS (NC)
2013 – 2014	CCSS	CCSS (NC)
2014 – 2015	CCSS	CCSS (SBAC)



Mathematics Claims

The Smarter Balanced Assessment Consortium has released a document outlining four claims about what mathematically proficient students can do.

The claims are a synthesis of the Standards for Mathematical Practice, and form the guiding principles to be used in creating assessments.



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The Smarter Balanced Assessment Consortium has released a document outlining four claims about what mathematically proficient students can do.

The claims are a synthesis of the Standards for Mathematical Practice, and form the guiding principles to be used in creating assessments.



Mathematics Claim #1

Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.



Mathematics Claim #2

Students can frame and solve a range of complex problems in pure and applied mathematics.



Mathematics Claim #3

Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of others.



Mathematics Claim #4

Students can analyze complex, real-world scenarios and can use mathematical models to interpret and solve problems.



Grade 4 SUMMATIVE ASSESSMENT TARGETS

Providing Evidence Supporting Claim #2 – Problem Solving

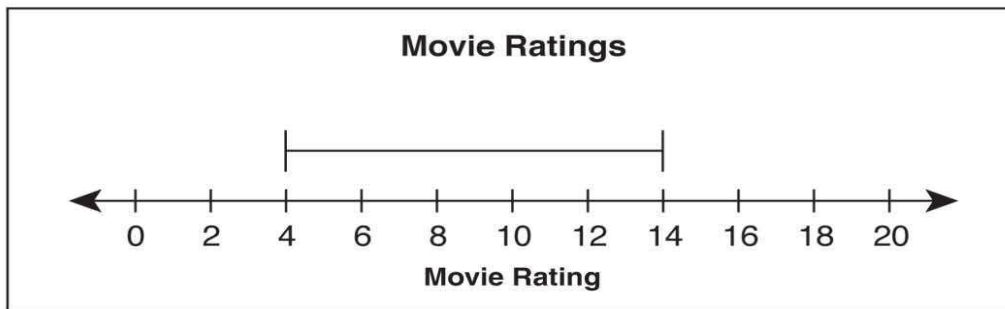
Grade 4 SUMMATIVE ASSESSMENT TARGETS
Providing Evidence Supporting Claim #2- Problem Solving
Mathematics Claim #2
Students can frame and solve a range of complex problems in pure and applied mathematics.
Content for this claim will be drawn from grade 4 clusters consistent with a content prioritization as described in Appendix A, and may be assessed using a variety of items and tasks, either in stand-alone fashion or in combination in short and longer constructed responses or an extended performance task. Specific assessment tasks or scenarios may draw upon more than one content standard.
Operations & Algebraic Thinking
1. SOLVE PROBLEMS using WHOLE NUMBERS: Given a scenario or context, plan and apply a strategy for arriving at a solution to a multistep problem using whole numbers, which may include: generating equations, diagrams, or other representations to support the solution, identifying patterns, and using the four operations Standards: 4.OA-3, 4.OA-4, 4.OA-5 (DOK 3)
Number & Operations Fractions
2. SOLVE PROBLEMS using FRACTIONS: Given a scenario or context, plan and apply a strategy for arriving at a solution to a multistep problem using addition, subtraction, or multiplication with fractions, mixed numbers, and/or decimal notation for fractions, which may include: generating equations or visual representations (e.g., diagrams, number lines, diagrams, area models) to support the solution Standards: 4.NF-3; 4.NF-4 (DOK 3)
Measurement & Data
3. SOLVE PROBLEMS using DATA: Given a scenario, context or data, plan and apply a strategy for arriving at a solution to a multistep problem involving distances, time intervals, liquid volumes, masses of objects, or money. Solutions may require: using units within the same system (customary or metric units), conversions of units in the same system, and use of equations, diagram, data tables, or other representations to support the solution Standards: 4.MD-2, 4.MD-3 (DOK 3)
4. SOLVE PROBLEMS using MEASUREMENT: Given a scenario or context involving area and/or perimeter, plan and apply a strategy for arriving at a solution to a multistep problem (e.g., what happens to area or perimeter when the dimensions of the figure are changed). Solutions may require: recognizing patterns, conversions of units in the same system, and strategies to calculate area or perimeter Standards: 4.MD-3 (DOK 3)



Fifteen students watched a movie and rated the movie on a scale of 1 (very bad movie) to 20 (very good movie). Their ratings are shown in the table.

- a. Using the data in the table, complete the box-and-whisker plot by adding the upper quartile, the lower quartile, and the median. A box will be formed with the three points indicated. You will be able to adjust the box once created if needed.

Click on the line to add the upper quartile, lower quartile, and median.



Submit

Movie Ratings

Student	Movie Rating
Andy	14
Bee	8
Cory	5
Doug	8
Jamal	5
Jasper	11
Jenn	12
Katie	13
Martin	9
Pat	11
Rose	13
Sam	4
Sofie	7
Thomas	12
Young	9

(continued)



- b. The teacher gave the movie a rating of 8. The teacher's rating was added to the ratings of the 15 students. Explain how the addition of the teacher's rating will affect the:
- minimum
 - maximum
 - upper quartile
 - lower quartile
 - median

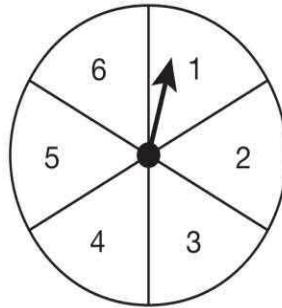
Enter response here



Submit



The spinner below is divided into six equal sections. Each section is marked with a number from 1 to 6.

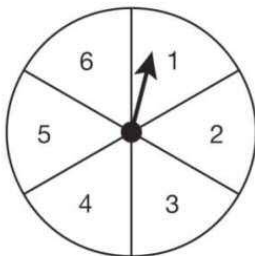


- a. The theoretical probability of spinning each number is $\frac{1}{6}$. Based on this probability, how many times should each number occur in 20 spins?

(continued)



You will now conduct an experiment by spinning the spinner 20 times. Use the spinner below to conduct the experiment. Use the spin button to run each trial, then tabulate the results on your scratch paper.



Spin

b. Create a frequency table in the template below that shows the results of the spins. Provide appropriate labels for the table.

Submit

(continued)



- c. Explain clearly why your answer from **part a** is different from or the same as the results given in the table above.

Enter response here

Submit

- d. If the spinner were spun 200 more times, how would the frequency of the results be affected?

Enter response here

Submit

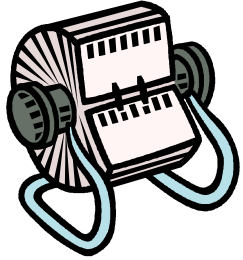


For further information...

Smarter Balanced Assessment Consortium

<http://www.k12.wa.us/smarter/>





DPI Contact Information

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