

---

# MATHEMATICS TOOL-KIT

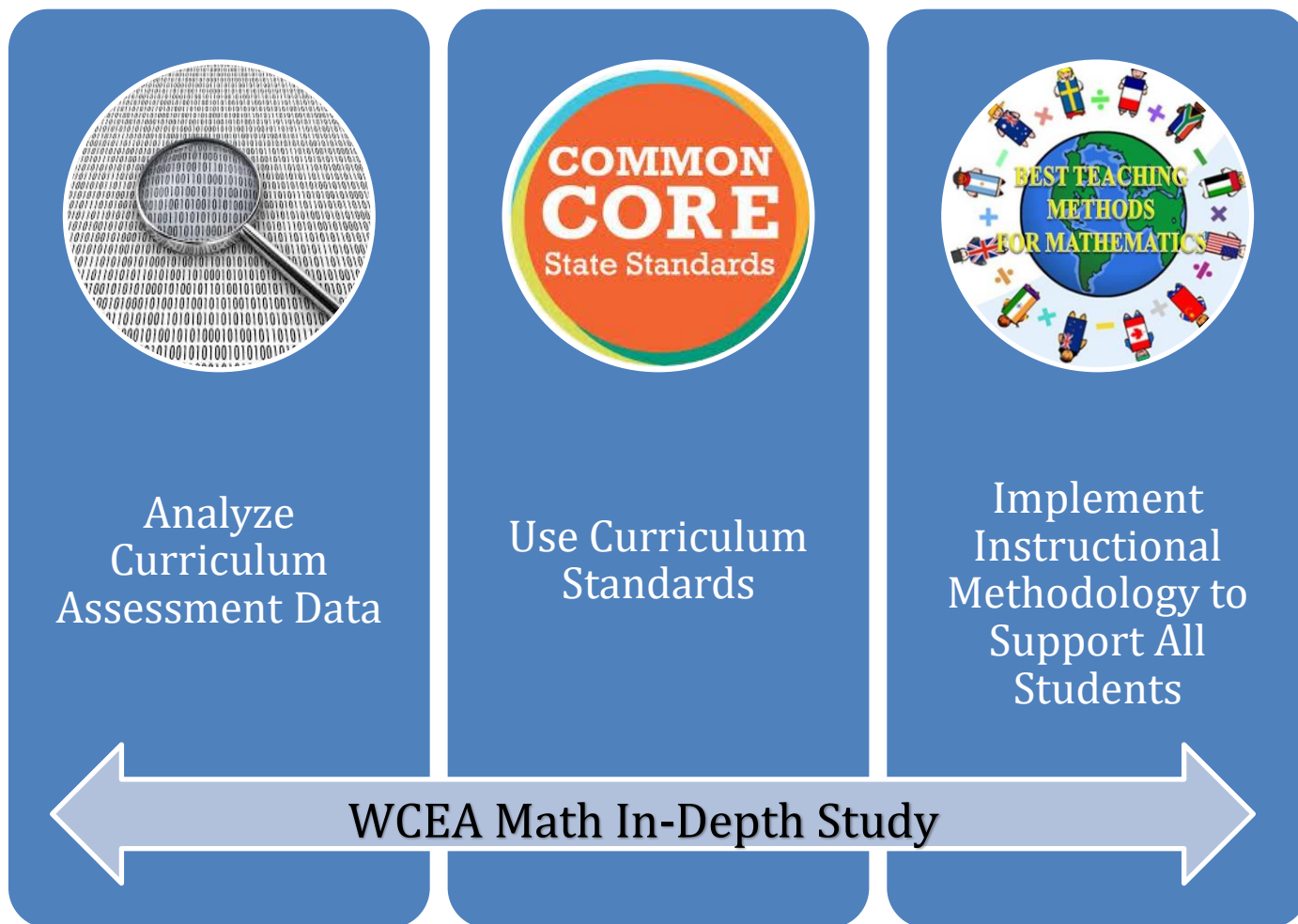
---

**APRIL 1, 2016**

**Thank you to our Mathematics Committee! Throughout the 2015-2016 school year, the following members have gathered four times for a full day of research and discussion. We also want to thank the principals of each of the schools who have encouraged teacher attendance at these committee meetings. We hope that the following resources will be helpful to those completing the accreditation self-study.**

**Committee Members:**

**Liz Allen – Queen of Angels School, Port Angeles**  
**Katy Boone – Our Lady of the Lake School**  
**Chelsea Bourdess - St. Terese Catholic Academy, Seattle**  
**Christina Burnaby, St. Vincent DePaul School, Federal Way**  
**Janet Chamberlain – Queen of Angels School**  
**Steve Dougherty - Assumption St. Bridget School, Seattle**  
**Angela Ensminger – St. Madeleine Sophie School, Bellevue**  
**Gwen Gotshall – St. Joseph School, Vancouver**  
**Lisa Latta - Archbishop Murphy High School, Everett**  
**Lynda Lundquist - Christ the King School, Seattle**  
**Jessie McNamee – Our Lady of Fatima School, Seattle**  
**Patti Melton – St. Thomas More School, Lynwood**  
**Ali Mullin – Our Lady of Fatima School, Seattle**  
**Allie Savio – Our Lady of Guadalupe School**  
**Jamie Walker - St. Pius X School, Montlake Terrace**



## Preface

The Mathematics Standards Committee works to assist all schools in the Archdiocese to develop a process to implement math practices and review standards for the annual in-depth study. The sections included in this tool-kit that correspond directly with the In-Depth Study:

- Analyze curriculum and assessment data
- Use curriculum standards
- Identify instructional methodology to support all students

The Western Catholic Education Association have identified five In-Depth Study Outcomes:

1. To look carefully at each curriculum area by reviewing how and to what extent the school's curriculum supports high achievement of all students
2. To identify significant accomplishments that have had a positive impact on student achievement
3. To identify areas that should be address to increase student learning
4. To assist schools in completing the Self-Study for school accreditation
5. To assist schools in making the connection between In-Depth Studies and school accreditation

It is our hope that this tool-kit will offer support to schools investing in content area in-depth studies.

## MATH IN-DEPTH STUDY – Tool-Kit



### Task 1: Analyzing Curriculum Assessment Data that leads to High Achievement by All Students

Accreditation Factor #6: Data Analysis and Action to Support High Achievement of all Students – *The school uses educationally sound assessment processes to collect data. The school disaggregates and analyzes student performance data and uses the analysis as a basis for instructional/curricular improvement.*

#### Discussion Question:

A. What national, norm-referenced, criteria-referenced, and/or standards based assessment data is being collected? What are some examples of assessments?

1. Resource: [Sample Grade Level Test Items from Smarter Balanced](#)

Topic: Assessments

Grade Level: 3-12

Purpose: Samplers from the Smarter Balanced Consortia

Review and Possible Uses: Tool for understanding Smarter Balanced testing. Test items are helpful to show how the questions address a particular standard. Good resource for teachers who are creating assessments and are looking for sample questions. Caution: too much information shown about how the items were constructed.

2. Resource: [End of Course Exams 7-12](#)

Topic: Assessment

Grade Level: 7-12

Purpose: Sample Test Booklets are provided for students who will take a math EOC exit exam. The EOC exit exams are designed to provide information on student progress toward achieving the goals described by the Smarter Balanced High School assessment. Information about the Smarter Balanced assessments can be found online using the provided links. Wonderful website with multiple links.

Review and Possible Uses: Teachers can download copies of practice tests and sample items.

#### Discussion Questions:

B. How is the data disaggregated and analyzed?

C. What trends exist in the data over the past 3-5 years (see ISL Appendix B for some gathering/analysis forms)? What are the possible causes?

3. Resource: [Getting Started with Data Teams \(pdf\)](#)

Topic: Data Teams

Grade Level: Administration

Purpose: Power Point Presentation with speaker notes on taking first steps in data teams

Review and Possible Uses: Schools could use this Power Point as a beginning step in working with data in schools.

4. Resource: [Data Analysis Screening and Information Recording Form \(pdf\)](#)

**Topic:** Recording data information

**Grade Level:** Teacher Use

**Purpose:** Guide and track discussion around identifying skills, goals, strategies and logistics for implementation.

**Review and Possible Uses:** For use in PLC's or grade level groups, possible use post each testing event.

5. Resource: [Data Decision Worksheet for Teams \(pdf\)](#)

**Topic:** Use of data to make SMART goals

**Grade Level:** All

**Purpose:** Worksheet for use by grade level teams to identify strengths and challenges using a pre-determined score.

**Review and Possible Uses:** Teams reflect on student scores, identify and design instructional strategies with the goal of increasing student learning. Simple tool.

6. Resource: [Data Carousel Activity - Observation and Reflection \(pdf\)](#)

**Topic:** Review of Data by Staff

**Grade Level:** For use by administration

**Purpose:** Teachers and Staff move in small groups between data sets (e.g. student learning - summative and/or formative, demographic, perception surveys re: student learning, school processes). As participants examine the data, observations are noted. Participants discuss the questions, and offer possible analysis. As a whole staff or in PLCs, participants identify two priority areas for each of the data sets.

**Review and Possible Uses:** Great for a fall and spring data review for staff and possibly school commission.

7. Resource: [Teacher Self-Assessment: Supporting Students' Use of Data](#)

**Topic:** Self-Assessment in the use of data

**Grade Level:** Administration and Teacher Use

**Purpose:** All who work in and with schools are encouraged to use this tool to self-assess their instructional practices related to helping students use their own data.

**Review and Possible Uses:** Teachers can use this reflection to encourage more intentional use of data with their students.

8. Resource: [Making Students Partners in Data-Driven Approaches to Learning](#)

**Topic:** Article discussing the importance of developing a classroom culture in which students are always collecting and analyzing information in order to improve.

**Grade level:** Middle to High School

**Purpose:** Article great for discussion in PLCs at middle and high school level

**Review and Possible Uses:** Use in conjunction with the self-assessment listed in H above.

9. Resource: [High Quality Data Checklist Math \(pdf\)](#)

**Topic:** Identify data used to improve student learning

**Grade Level:** All

**Purpose:** Essential questions help guide the grade level discussions – what data can answer the question, and how are we monitoring the data.

**Review and Possible Uses:** Use in conjunction with following resource as the discussion starter.

**Discussion Questions:**

- D. What curricular decisions have been made from the assessment data?**
- E. What process is in place to assess changes in assessment data caused by curricular changes?**
- F. What staff development activities, driven by assessment data, are planned to enhance student learning?**
- G. How will staff development activities be analyzed to determine what impact they have on student learning?**

**10. Resource: [Data-Based Decisions](#)**

**Topic:** Data based decisions – the kind of data and the different decisions that can be made as a result

**Grade Level:** Administrative and teacher use

**Purpose:** Article that gives a great overview of the different evidence one can review and the many decisions that can be made as a result. Great charts showing the links between purpose and methods of assessment as well as ideas for scheduling teacher collaboration.

**Review and Possible Uses:** Use with the school data team as an article for reflection and discussion on the use of and need for good data.

**11. Resource: [Math Quick Links](#)**

**Topic:** Math Resources of all Kinds

**Grade Level:** All

**Purpose:** From Tulare County Office of Education, a list of quick links that really stood out. “Chock full of great multimedia and/or incredibly helpful towards understanding the CCSS, these sites are listed in an easy access menu.”

**Review and Possible Uses:** Many opportunities exist for teachers, parents and students to use this website, e.g. articles from math experts as well as opportunities for professional development at every level.

**12. Resource: [Where to Focus Grade Level Mathematics](#)**

**Topic:** Two page overview of what students should know

**Grade Levels:** K-5

**Purpose:** This document shows where students and teachers should spend the large majority of their time in order to meet the expectations of the Standards.

**Review and Possible Uses:** A two page document that shows the major, supporting, and additional clusters for each grade level, highlighting the major work in each grade. Second page of the document identifies all topics in grade K-8 in the progression that leads to middle school algebra.

**13. Resource: [Implementation Rubric Data-Driven Instruction and Assessment - pdf](#)**

**Topic:** Reflection Rubric on use of data in schools

**Grade Levels:** Administration and teachers

**Purpose:** The rubric is intended to be used to assess the present state of data-driven instruction and assessment in a school. The rubric specifically targets interim assessments and the key drivers leading to increased student achievement.

**Review and Possible Uses:** For use as a school begins an in-depth study or the data section of the self-study.

**14. Resource: [Data Use for Improved Learning Map of Key Capacities - pdf](#)**

**Topic:** Map of data use in a school

**Grade Levels:** Administration

**Purpose:** Map gives overview of the key users of data and the purposes

**Review and Possible Uses:** In a single frame, this visual gives both the users of the data and what is done with or to the data.

**15. Resource:** [Equity Reflection Tool - pdf](#)

**Topic:** Reflection questions for staff to consider and discuss regards to math placement equity

**Grade Levels:** Administration and teachers

**Purpose:** Key questions with area for note-taking on the topics of access to higher level math classes, consistency in grading, data driven practices, assessments and interventions/support.

**Review and Possible Uses:** For use with grade level PLC's or in whole group. Terrific questions to consider for consistency.

**Discussion Question:**

**H. To what extent is purchase of instructional materials, adoption of new programs, etc. based on student achievement of the SLEs and curriculum standards?**

**16. Resource:** [Textbook Review - Oregon State Study 2015](#)

**Topic:** A complete review of currently available textbooks based on alignment to the Common Core State Standards.

**Grade Level:** All

**Purpose:** This study/website is very helpful to schools considering new textbook adoptions.

**Review and Possible Uses:** Clear criteria and an assessment of textbooks using a rubric showing levels of compliance. Each textbook publishers has the opportunity to offer feedback on the review. Helpful to review prior to a textbook purchase.

**17. Resource:** [Publishers Criteria for K-8 Mathematics](#)

[Publishers Criteria for 9-12 Mathematics](#)

**Topic:** Criteria developed by the authors of the Common Core State Standards

**Grade Level:** K-8 and 9-12

**Purpose:** "These criteria were developed from the perspective that publishers and purchasers are equally responsible for a healthy materials market. Publishers cannot deliver focus to buyers who only ever complain about what has been left out, yet never complain about what has crept in. More generally, publishers cannot invest in quality if the market doesn't demand it of them nor reward them for producing it. The document is structured as follows: I. Focus, Coherence, and Rigor in the Common Core State Standards for Mathematics II. Criteria for Materials and Tools Aligned to the Standards III. Appendix: "The Structure is the Standards."

**Review and Possible Uses:** Great article written by the National Governors Assoc., the Council of Chief State School Officers, Achieve, the Council of Great City Schools and the national Association of State Boards of Education. Use as a base when a school is considering a new text.

**18. Resource:** [Archdiocese Survey of Textbooks 2015-2016 \(pdf\)](#)

**Topic:** Data compiled from the Archdiocesan Math Text Survey

**Grade Level:** K-8

**Purpose:** Feedback from teachers using the resource

**Review and Possible Uses:** While limited in number of responses, helpful for schools to review prior to textbook purchases. We will update this when the next survey is collated.



## Task 2: Using Curriculum Standards – High Achievement by All Students Toward Clearly Defined SLEs and Curriculum Standards

Accreditation Factor #7 - *All students make acceptable and measurable progress toward clearly defined Schoolwide Learning Expectations and challenging, comprehensive, and relevant curriculum standards.*

### Discussion Questions

- I. **How does the school define and measure acceptable progress for all students in achieving curriculum standards? What is being done/can be done to help all disaggregate groups of students make acceptable progress?**

**19. Resource:** [Overview of the Math CCSS, Achieve the Core](#)

**Topic:** A two page overview of the Math CCSS including organization of the standards for kindergarten through middle and high school.

**Grade Level:** All

**Review and Possible Uses:** Short explanation of math CCSS. The overview/explanation is presented in a format that could be used to educated families. The K – 5 section is pretty thoroughly described, but the middle school explanation is not very in-depth (could be added to).

**20. Resource:** [Implementing the Common Core - A Workbook](#)

**Grade Level:** Administration

**Purpose:** Identification where school is in the implementation process. Very large document with a variety of grids to determine specific areas for growth in implementing CCSS Math.

**Review and Possible Uses:**

Useful for principles in tracking school wide progress in implementing CCSS. Appears straightforward to apply. Administration should allow time for math teachers to go through the evaluation process and develop an action plan for implementing the CCSS.

**21. Resource:** [Practice Standards Videos from Inside Mathematics](#)

**Grade Level:** All

**Purpose:** Videos that break open the math practice standards from each grade level, kindergarten – high school.

**Review and Possible Uses:**

Very solid collection of materials to help teachers understand what the math practice standards look like at each grade level. Could be used informally by teachers who are looking to incorporate practice standards more intentionally. Could also be used by math team/staff to plan strategies for more purposefully incorporating the practice standards, or as preparation for evaluating one another. In addition to videos, there are problems and assessments for content standards organized by grade level or by strand.



**Discussion Questions**

- J. How is Catholic Identity and faith formation integrated into the total curriculum (e.g., math, reading, science, social studies, physical education, and extracurricular activities such as sports, clubs, etc.)?

22. Resource: [Integrated Math and Religion Lessons - Examples](#)

**Topic:**

**Grade Level:** Grades K-12

**Purpose:** Sample lesson plans integrating Catholic Identity

**Review and Possible Uses:** Lesson plans at each grade level that intentionally integrate Catholic Identity. Great teacher samples for use in PLCs or grade level groups.

**Discussion Questions**

- K. How are curriculum standards being used as a foundation for instruction?

23. Resource: [User Name and Password for Rethink Mathematics Unit Plans from ReThink Mathematics](#)

**Topic:**

**Grade Levels:** K-12

**Purpose:** ReThink Mathematics contracted with the Archdiocese of Seattle to give our teachers access to Unit Plans.

**Review and Possible Uses:** Helpful for teachers and principals to create the Unit Plans and the pacing required in implementing Math CCSS.

24. Resource: [Learn Zillion](#)

**Topic:**

**Grade Level:** K-8

**Purpose:** Short Video Lessons of Math Concepts and a Curriculum Map by Units

**Review and Possible Uses:** For use by the teacher, parent or student to reinforce concepts given a specific math concept. The teacher also has access to the Unit Plans that specify number of days, lesson type and title associated with the standards.

25. Resource: [CCSS Video Library of Classroom Teachers by Standard](#)

**Grade Level:** All

**Topic:** A comprehensive library of teacher videos

**Purpose:** Short videos that could be used in conjunction with the teaching of a standard, exploration of teaching strategies including differentiating instruction.

**Review and Possible Uses:** For use throughout the school year. Video selected by standards as determined by the PLCs or administration.

**Discussion Questions:**

- L. What process is being used by the school to ensure comprehensiveness of the curriculum, i.e., that all important standards are being covered without unnecessary repetition?

26. Resource: [Learning Targets Document by Expeditionary Learning \(Download document from OCS\)](#)

**Grade Level:** K-12

**Topic:** Teacher Developed Learning Targets

**Purpose:** "A group of 15 staff members wrote long-term learning targets aligned with the Common Core State Standards for Math and ELA. Our hope is that these targets help launch teachers into what we've learned is the most powerful work: engaging students with targets during the learning

process. We offer these targets as open educational resources (OER), intended to be shared publicly at no charge.

**Review and Possible Uses:** Immediate use for teachers at all grade levels to help unpack the Common Core State Standards.

**27. Resource:** [Curriculum Map Template](#)

**Grade Level:** Pre-K-8

**Topic:** Curriculum Map Template

**Purpose:** Blank Template that includes the Unit/ Organizing Principle, Unit Length, Essential Questions, Concepts Content, Learning Target/skills, Standards, Key Vocabulary, Resources and Assessments.

**Review and Possible Uses:** An initial template guide to help schools begin the curriculum mapping process. Categories may be adapted for the school use.

**28. Resource:** [Year-at-a-Glance, Units, Scope and Sequence Examples](#)

**Grade Level:** K-12

**Topic:** Sample Curriculum Framework Documents

**Purpose:** Samples include Year-at-a-glance, Sequenced Units and Elaborated Scope and Sequences

**Review and Possible Uses:** Great references as samples for all curriculum documents. Real world samples offer insight into the nuances and importance of each document. Shows 3 different ways to look at a year's worth of math for each grade level, from a really basic yearly overview to a detailed scope and sequence. Good for schools looking to shift from planning by textbook to planning by standards.

Caution: The planning layout was for more days than could occur during a normal school year.

**29. Resource:** [Math Content Standards at Each Grade Level - Sample Lessons](#)

**Topic:** Math Content Standards at each Grade Level

**Grade Level:** All

**Purpose:** These resources are organized by mathematical strand and refer to specific Common Core math content standards. Lessons for each strand are offered.

**Review and Possible Uses:**

- The strand format for this link would be useful to help provide continuity between grade levels. Getting the basic practices established as early as possible so students are familiar with format and expectations.
- The "Problems of the Month" could be used as enrichment for students who need extra challenge, or as interesting problem-solving day problems. While it looks like there are a few different Performance Assessments for each standard, looking closer reveals that there is a lot of overlap in the Performance Assessments (which makes sense, but might bother someone looking for an assessment of one specific standard).

**30. Resource:** [Curriculum Mapping - A Story of Units](#)

**Topic:** Curriculum Mapping

**Grade Level:** PK-5

**Purpose:** "*The [Curriculum Map and Overview \(visual overview of year-long curriculum overview\)](#) A Story of Units provides teachers with a clear picture of the modules at each grade level from Pre-Kindergarten to Grade 5. The following are detailed for each grade level: a summary of the year, the rationale for the module sequence, the major emphasis clusters, and an alignment chart which provides the length of each module and the associated standards.*"

**Review and Possible Uses:** "A Story of Units" is a curriculum aligned to CCSS. Unless using this curriculum, the maps might be only useful as a pacing/organization guide. It is interesting to see how the map shows pacing (number of days for a unit), the strand, grade levels, and how all of it fits together.

**31. Resource:** [Curriculum Mapping Examples](#)

**Topic:** Curriculum Mapping

**Grade Level:** All Grade Levels

**Description:** Examples of Maps across all grade levels.

**Review and Possible Uses:** This is a great curriculum map resource. It is easy to read, with a realistic time frame and could be easily modified to various texts and resources.

Maps for math are available K – 5 for the 2015-16 school year. Grades 6-8 have been moved to another link. Like the “Standards of Mathematical Practice” examples provided at each grade level – very helpful! The links to unit resources are also very useful. Each unit is sub-divided into typical sections (Big Questions, Topics, etc.), but also includes a Performance Task idea. The “EngageNY” resources are also known as “Eureka Math” (I believe), a non-profit K-12 math publisher.

**Creation of Document for OCS:**

These unit plan outlines are something to be emulated by the OCS (if that is our goal). Caution: Archdiocese does not use a common text, but other elements should be used.

**32. Resource:** [Transitioning to the CCSS - Gap Analysis, Curriculum Mapping, Unit Design](#)

**Grade Level:** All Grade Levels

**Description:** Video overview with accompanying documents to review the Math Practices and the Critical Areas of Focus and Math Standards for each grade level.

**Review and Possible Uses:** Good tools and resources for transitioning to CCSS. Provides templates for evaluating curriculum and alignment with CCSS and identify any gaps in the curriculum. Contains “Curriculum Map & Unit Organizer Templates.” There are also links to documents containing instructional methods and resources for all grade levels and topics within the grade level.

**33. Resource:** [Didax](#)

**Topic:** Resources for teachers

**Grade Level:** Pre-12

**Purpose:** This company has a lot of great materials and great resource books for teachers. They offer free downloads such as lesson plans, activities, and games on a regular basis that are practical and aligned with CCSS. One example is dice activities that help with concept development and computation practice.

**Review and Possible Uses:** For practical, on-target materials. The resources are great for teacher development of mathematical concepts and methods.

**Discussion Questions:**

**M. How do the teachers use long range curriculum planning (e.g., curriculum mapping) to ensure continuity of instruction and learning?**

**34. Resource:** [Progressions Map - Trajectories](#)

**Grade Levels:** K-8

**Purpose:**

- Know what to expect about students’ **preparation** from last year’s grade level.
- Understand how student conceptual growth progresses over time.
- Identify gaps in students’ understanding, and address them directly.
- Focus on **conceptual** development, and support **student thinking** and **discourse**.
- Identify clusters of **related concepts** at grade level.
- Engage in rich uses of classroom **assessment**.
- Know what **expectations** teachers in the next grade have for your students.
- Support cross-grade instructional planning, coordination, and formative assessment.

**Review and Possible Uses:**

Very cool visual. Great way to show how skills are interrelated and progress through grade levels. Also good visual for showing how later skills are dependent upon earlier skills. Is probably only

appealing to certain kinds of people. Provides in depth information across grade levels. Very dense material but good reference. This site would be very useful in helping to align and organize a K-8 math curriculum.

**35. Resource:** [Content Emphases by Cluster](#)

**Topic:** The table identifies the Major Clusters, Additional Clusters, and Supporting Clusters for each grade level.

**Grade Levels:** K-8

**Purpose:** Not all of the content in a given grade is emphasized equally in the standards. Some clusters require greater emphasis than the others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. In addition, an intense focus on the most critical material at each grade allows depth in learning, which is carried out through the Standards for Mathematical Practice. To say that some things have greater emphasis is not to say that anything in the standards can safely be neglected in instruction. Neglecting material will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade.



### Task 3: Instructional Methodology to Support High Achievement of All Students

Accreditation Factor #8: *The staff applies research based knowledge about teaching and learning in the instruction process. Assessment is frequent and varied, integrated into the teaching/learning process, and informs curriculum planning.*

#### Discussion Questions

**N. How are formative and summative assessments used to direct and evaluate the instruction/learning process?**

**36. Resource: [Whys and Hows of Assessment](#)**

**Topic:** What is the difference between formative and summative assessment?

**Grade Level:** All Grades

**Purpose:** Definitions of formative and summative with simple, easy to understand examples

**Review and Possible Uses:** For use in a staff meeting or PLC as a base for discussion on assessment.

**37. Resource: [ASCD Assessment Article](#)**

**Topic:** The Best Value in Formative Assessment

**Grade Level:** All

**Review and Possible Uses:** A great article from ASCD that captures the importance of formative assessments. Highlights the difference between summative and formative, placing special emphasis on the on-going development of formative classroom assessment. Could be used as a whole staff read or PLC read.

#### Discussion Questions

**O. How does the teaching staff use a variety of instructional techniques to meet the needs of all learners? How is assessment matched to the learning style of the students?**

**38. Resource: [Linking Math Practices and Content](#)**

**Grade Level:** All

**Purpose:** The resources include instructional strategies and examples for each standard at each grade level as well as links to other valuable resources.

**Review and Possible Uses:** Good list of questions to ask students that develop each of the Process Standards for each grade level. Contains explanations of and examples for each of the Content Standards. Also gives some instructional strategies and common misconceptions. Good resources for teachers. It is nice that there are dates associated with each grade level to show when the resources were last updated.

- Pro: Summary of mathematical practice and questions to develop mathematical thinking. Example problems and links are helpful.
- Con: It appears that some of the flip books were created by a different author. Uniformity and quality among documents varies.

**39. Resource: [Math Studio Talk: Common Core Instruction Video Series](#)**

**Grade Level:** K-5

**Topic:** 14 Videos in the teaching of the Common Core organized by grade level standard

**Purpose:** “Welcome to “Math Studio Talk” a video series that provides games, activities and models to help students develop flexible thinking and deep understanding of math concepts from kindergarten to Grade 5. These videos not only provide tips that keep students engaged in math, but they also demonstrate key concepts that build students’ conceptual understanding and highlight the coherence in the standards from one grade to the next. Watch these video on your own or with your colleagues.”

**40. Resource: [Best Practices Math Strategies Document](#)**

**Topic:** Strengthening Student Educational Outcomes

**Purpose:** Technical Report on Best Practices and Strategies for Mathematics. Included in the identified strategies: tutoring (adult and cross-age,) extended learning time, professional development including PLCs, instructional coaches, family involvement, community partnerships and extended learning opportunities.

**Grade Level:** All

**Purpose:** Current (July 2015) overview of best practices in the teaching of math from OSPI, Washington State.

**41. Resource: [Math Skills and Social Justice Chart](#)**

**Topic:** Integration of social justice issues with specific math skills

**Grade Level:** Middle school and High School

**Purpose:** Math topics, social justice issues and helpful websites given to assist teachers and students in exploring issues from basic family budgets to union salaries to the lottery and war budgets.

**Discussion Questions:**

**P. How effective is the school’s supervision and evaluation procedures in order to promote professional growth of staff?**

**42. Resource: [Math-Rich Classroom Evidence Collection Form \(pdf\)](#)**

**Topic:** One page evidence collection form for the teacher or colleague

**Grade Level:** K-5

**Purpose:** A tool to collect evidence of math practices at use in the classroom. Easy to use. Observes the classroom environment, instruction and student engagement and performance seeking evidence for each of the criteria.

**Discussion Questions:**

**Q. What has the staff done to increase their knowledge of current research about teaching and learning strategies? What new teaching techniques have been implemented in the school as a result of this research? How does your school use PLCs?**

**43. Resource: [Math Practices – Look Fors as Classroom Indicators – \(pdf\)](#)**

**Topic:** Evidence of best practices in a math classroom

**Grade Level:** All

**Purpose:** One page overview of best practices based on the Math Practice standards. Teachers model what we want our students to develop as math habits of mind.

44. Resource: [Best Practices in the Math Classroom](#)

**Topic:** Article and links for teacher use on the best practices in the math classroom

**Grade Level:** Teachers

**Purpose:** A blog posting on the teaching channel with some great links to lesson that illustrate the best practices.

**Discussion Questions:**

R. What research-based best practices are being discussed, used, and monitored in your school?

What has been their impact on student learning?

45. Resource: [Math Smart Brief - A Newsletter w/Current Resources](#)

**Topic:** Math daily newsletter with current math related news and resources

**Grade Level:** Teachers

**Purpose:** Keep abreast of the latest in math research.