|  |
| --- |
| **K-12 Unit Planner for Iowa Core MATH** |
| **UNIT PLANNER with Resource HyperLINKS *and* Alignment to the Achieve K-12 Math** [**EQuIP Dimensions**](http://misiciowa.org/wp-content/uploads/2015/06/63A_EQuIP_Rubric_Math_K-8.pdf) **(see below)** |
| * Dimension **I** Alignment to the Depth of the Core is in **red**.
* Dimension **II** Key Shifts in the Core is in **green**.
 | * Dimension **III** Instructional Support is in **purple**.
* Dimension **IV** Assessment is in **orange.**
 |
| **Teacher:** | **Subject:** | **Grade:** |
| [**UNIT**](http://misiciowa.org/wp-content/uploads/2015/06/Unit_Planner_Title_and_Time_Guidance.docx)**:** | [**Time Frame**](http://misiciowa.org/wp-content/uploads/2015/06/Unit_Planner_Title_and_Time_Guidance.docx)**:** |
| [**CURRICULUM**](http://misiciowa.org/wp-content/uploads/2015/06/CA-Math-Curriculum-Framework.pdf) **/** [**LEARNING TARGETS**](http://www.ascd.org/publications/educational-leadership/mar11/vol68/num06/Knowing-Your-Learning-Target.aspx) |
| * Targets a set of grade-level CCSS mathematics standard(s) to the full depth of the standards for teaching and learning. ([K](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-K-FlipBook-Revised-Fall-2014.pdf), [1](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-1st-Flipbook-Revised-Fall-2014.pdf), [2](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-2-FlipBook-Revised-Fall-2014.pdf), [3](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-3-FlipBook-Revised-Fall-2014.pdf), [4](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-4-FlipBook-Revised-Fall-2014.pdf), [5](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-5-FlipBook-Revised-Fall-2014.pdf), [6](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-6-FlipBook-Revised-Fall-2014.pdf), [7](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-7-FlipBook-Revised-Fall-2014.pdf), [8](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Kansas-8-FlipBook-Revised-Fall-2014.pdf), [HS](http://misiciowa.org/wp-content/uploads/2015/06/Flip-Book-High-School-Math.pdf))
* [Standards for Mathematical Practice](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Practices-Park-City-Summer-2011-Institute-Hancock-Handout.pdf) that are central to the lesson are identified, handled in a grade-appropriate way, and [well connected](http://www.insidemathematics.org/common-core-resources/mathematical-practice-standards) to the content being addressed.
* Presents a [balance of mathematical procedures and deeper conceptual understanding](http://achievethecore.org/dashboard/300/search/1/2/0/1/2/3/4/5/6/7/8/9/10/11/12/page/855/annotated-lessons-list-pg) inherent in the CCSS.

**Instructional Shifts Considered:*** **Focus:** Lessons and units targeting the [major work of the grade](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-K-to-12-Emphasis.pdf) provide an especially in-depth treatment, with especially high expectations. Lessons and units targeting supporting work of the grade have visible connection to the major work of the grade and are sufficiently brief. Lessons and units do not hold students responsible for material from later grades.
* **Coherence:**  The content develops through reasoning about the new concepts on the basis of previous understandings. Where appropriate, provides opportunities for students to connect knowledge and skills within and across clusters, domains and learning progressions.
 |
| [**ESSENTIAL QUESTIONS**](http://www.ascd.org/publications/books/109004/chapters/What-Makes-a-Question-Essential%EF%BF%BD.aspx) **/ BIG UNDERSTANDING** |
|  |
| [**Code**](https://iowacore.gov/iowa-core/subject/mathematics) | [**Iowa Core**](http://misiciowa.org/wp-content/uploads/2015/06/Iowa-Core-Mathematics-with-DOK-pdf-2010.pdf) **Content Standard** | [**Standards of Mathematical Practice**](http://misiciowa.org/wp-content/uploads/2015/06/Mathematical-Practices-Graphic.pdf) |
|  |   | Check all that will be [explicitly addressed / taught](https://www.mydigitalchalkboard.org/portal/default/Content/Viewer/Content?action=2&scId=306591&sciId=18252) within this unit:* Making sense of problems / persevere
* Reason abstractly
* Construct viable arguments / critique others
* Model
* Use appropriate tools
* Attend to precision
* Look for / make use of structure
* Look for / express regularity in repeated reasoning
 |
|  |   |
|  |   |
|  |   |
|  |   |

|  |
| --- |
| [**Iowa’s**](https://iowacore.gov/iowa-core/subject/21st-century-skills) **Core** [**21st Century Skills**](http://misiciowa.org/member-resources/by-subject/): Which standards/skills will be [incorporated](http://www.p21.org/storage/documents/P21_Math_Map.pdf) in the instructional design? |
| [**Employability Skills**](http://www.p21.org/about-us/p21-framework/266) | [**Financial**](http://misiciowa.org/wp-content/uploads/2015/06/CA-Mathematics-30-Appendix-B-Financial-Literacy-and-Math-Education.pdf)[**Literacy**](http://www.p21.org/about-us/p21-framework/257) | [**Health Literacy**](http://www.p21.org/about-us/p21-framework/259) | [**Civic Literacy**](http://www.p21.org/about-us/p21-framework/258) | [**Technology Literacy**](http://www.p21.org/about-us/p21-framework/350) |
| 1. [Communication](http://www.p21.org/about-us/p21-framework/261)
2. Flexibility
3. Leadership and responsibility
4. Self-direction
5. Productivity and accountability
 | 1. Financial planning
2. Financial instruments
3. Debt
4. Risk management options
5. Financial security
6. Ethical behavior
 | 1. Functional health skills
2. Health goals
3. Wellness goals
4. Health risks
5. Active lifestyles
 | 1. Rights and responsibilities
2. Constitutional government
3. Branches of government
4. Powers of government
5. Political action
6. Law and public policy
7. Political systems
8. US [world affairs](http://www.p21.org/about-us/p21-framework/256)
 | 1. [Creativity and innovation](http://www.p21.org/about-us/p21-framework/262)
2. Communication and collaboration
3. Research and Information Fluency
4. [Critical thinking, problem solving](http://www.p21.org/about-us/p21-framework/260), & decision making
5. Digital citizenship
6. Technology operations & concepts
 |

|  |
| --- |
| [**ACADEMIC**](http://education.illinoisstate.edu/downloads/casei/AV-2-4%20Appendix_A32-35.pdf) **VOCABULARY:** * Uses and encourages precise and accurate mathematics, academic language, terminology and concrete or abstract representations (e.g. pictures, symbols, expressions, equations, graphics, models) in the discipline.
 |
| [**Vocabulary Words**](http://misiciowa.org/wp-content/uploads/2015/06/Instructional_Guide_for_Academic_Vocabulary.pdf)**:** | **How Vocabulary will be Taught:** |
|  |  |

[**INSTRUCTION**](http://misiciowa.org/wp-content/uploads/2015/06/CA-Mathematics-24-Instructional-Strategies.pdf)**:**

|  |
| --- |
| **RICH MATHEMATICAL** [**TASKS**](http://www.insidemathematics.org/classroom-videos/public-lessons) |
| * [Uses](https://www.teachingchannel.org/videos/common-core-language-in-classroom) and encourages [precise and accurate](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Language-Changes-NC-Math-Professor-PDK-article.pdf) mathematics, academic language, terminology and concrete or abstract representations (e.g. pictures, symbols, expressions, equations, graphics, models) in the discipline.
* [Addresses instructional expectations and is easy to understand and use.](http://www.insidemathematics.org/common-core-resources/mathematical-content-standards/standards-by-grade/high-school-statistics-and-probability)
* Recommend and facilitate a mix of instructional approaches for a variety of learners such as using multiple representations (e.g. including models, using a range of questions, checking for understanding, flexible grouping, pair-share).
 | * Gradually remove supports, requiring students to demonstrate their mathematical understanding independently.
* Demonstrate [an effective sequence and a progression of learning](http://achievethecore.org/page/254/progressions-documents-for-the-common-core-state-standards-for-mathematics-detail-pg) where the [concepts or skills advance and deepen over time](https://www.illustrativemathematics.org/fractions_progression).
* Expect, support and provide guidelines for procedural skill and fluency with core calculations and mathematical procedures (when called for in the standards for the grade) to be performed quickly and accurately.
 | * Includes clear and sufficient guidance to support teaching and learning of the targeted standards, including when appropriate, the [use of technology](http://misiciowa.org/wp-content/uploads/2015/06/CA-Mathematics-26-Technology-in-the-Teaching-of-Mathematics.pdf) and media.
* Engages students in productive struggle through relevant, thought-provoking questions, [problems](http://www.insidemathematics.org/classroom-videos/number-talks) and tasks that stimulate interest and elicit mathematical thinking.
 |
| **Instructional Shift Considered:****RIGOR:** [Requires students](http://misiciowa.org/wp-content/uploads/2015/06/CA-Mathematics-23-Universal-Access.pdf) to engage with and demonstrate challenging mathematics with appropriate balance among the following:* **Procedural Skill Fluency:** Expects, supports and provides guidelines for procedural skill and fluency with core calculations and mathematical procedures (when called for in the standards for the grade) to be performed quickly and accurately.
* **Application:** Provides opportunities for students to independently apply mathematical concepts in real-world situations and solve challenging problems with persistence, choosing and applying an appropriate model or strategy to new situations.
* [**Conceptual**](http://misiciowa.org/wp-content/uploads/2015/06/CCSS-Math-Teaching-Mathematics-Conceptually-SEDL.pdf) **Understanding:** Develops [students’ conceptual understanding](https://mathreasoninginventory.com/Home/VideoLibrary) through tasks, brief problems, questions, multiple representations and opportunities for students to write and speak about their understanding.
 |
| **Instructional Strategies and** [**Activities**](http://maccss.ncdpi.wikispaces.net/Elementary) | [**Standards**](https://nsdl.org/search/standards/D10003FB/) |
| Rigor: 🞎 Deep Understanding 🞎 Application 🞎 Fluency |  |
| Rigor: 🞎 Deep Understanding 🞎 Application 🞎 Fluency |  |
| Rigor: 🞎 Deep Understanding 🞎 Application 🞎 Fluency |  |
| Rigor: 🞎 Deep Understanding 🞎 Application 🞎 Fluency |  |
| Rigor: 🞎 Deep Understanding 🞎 Application 🞎 Fluency |  |
| Rigor: 🞎 Deep Understanding 🞎 Application 🞎 Fluency |  |

|  |
| --- |
| **SCAFFOLDING for SUCCESS** |
| * Provides appropriate level and type of scaffolding, differentiation, intervention and support for a broad range of learners.
* Supports diverse cultural and linguistic backgrounds, interests and styles
* Provides [extra supports](http://www.insidemathematics.org/classroom-videos/formative-re-engaging-lessons) for students working below grade level.
* Provides extensions for students with high interest of working above grade level.
 | * Recommend and facilitate a mix of instructional approaches for a variety of learners such as using multiple representations (e.g. including models, using a range of questions, checking for understanding, flexible grouping, pair-share).
 | * Gradually remove supports, requiring students to demonstrate their mathematical understanding independently.
 |
| **Scaffolding / Intervention Strategies:** | [**UDL**](http://www.udlcenter.org/aboutudl/whatisudl)[**Design for Learning**](http://udlwheel.mdonlinegrants.org/) **Guidelines** |
| [**Below Grade**](http://misiciowa.org/wp-content/uploads/2015/06/CA-Mathematics-31-Appendix-C-Possible-Adaptations-for-Students-with-Learning-Difficulties-in-Mathematics.pdf) **Level:** | I. Provide Multiple Means of[**Perception**](http://www.udlcenter.org/implementation/examples)1. Provide options for perception 1.1 Offer ways of customizing the display of information 1.2 Offer alternatives for auditory information 1.3 Offer alternatives for visual information 2. Provide options for language, mathematical expressions, & symbols 2.1 Clarify vocabulary and symbols 2.2 Clarify syntax and structure 2.3 Support decoding of text, mathematical notation, and symbols 2.4 Promote understanding across languages 2.5 Illustrate through multiple media 3. Provide options for comprehension 3.1 Activate or supply background knowledge 3.2 Highlight patterns, critical features, big ideas and relationships 3.3 Guide information processing, visualization and manipulation 3.4 Maximize transfer and generalizationII. Provide Multiple Means of [**Action and Expression**](http://www.udlcenter.org/implementation/examples)4. Provide options for physical action 4.1 Vary the methods for response and navigation 4.2 Optimize access to tools and assistive technologies 5. Provide options for expression and communication 5.1 Use multiple media for communication 5.2 Use multiple tools for construction and composition 5.3 Build fluencies with graduated levels of support for practice and  performance 6. Provide options for executive functions 6.1 Guide appropriate goal-setting 6.2 Support planning and strategy development 6.3 Facilitate managing information and resources 6.4 Enhance capacity for monitoring progressIII. Provide Multiple Means of [**Engagement**](http://www.udlcenter.org/implementation/examples) 7. Provide options for recruiting interest 7.1 Optimize individual choice and autonomy 7.2 Optimize relevance, value and authenticity 7.3 Minimize threats and distractions 8. Provide options for sustaining effort and persistence 8.1 Heighten salience of goals and objectives 8.2 Vary demands and resources to optimize challenge 8.3 Foster collaboration and community 8.4 Increase mastery-oriented feedback 9. Provide options for self-regulation 9.1 Promote expectations and beliefs that optimize motivation 9.2 Facilitate personal coping skills and strategies 9.3 Develop self-assessment and reflection |
| [**ELL**](http://ell.stanford.edu/teaching_resources/math)**:** |
| **Above Grade Level:** |
| [**ASSESSMENT**](http://misiciowa.org/wp-content/uploads/2015/06/CA-Mathematics-27-Assessment.pdf)**:** *The lesson/unit regularly* [*assesses*](http://achievethecore.org/page/1019/before-and-after-the-math-shifts-in-common-core-aligned-assessments) *whether students are mastering* [*standards-based*](http://edglossary.org/standards-based/) *content.* |
| * Is designed to elicit direct, observable evidence of the degree to which a student can [independently demonstrate](http://map.mathshell.org/materials/lessons.php) the targeted CCSS.
 | * Assesses student proficiency using methods that are accessible and [unbiased](http://www.isbe.net/common_core/pls/level2/html/assess-unbiased.htm), including the use of grade-level language in student prompts.
* Includes aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance.
 | * Use varied modes of curriculum-embedded assessments that may include pre-, [formative](http://www.isbe.net/common_core/pdf/da-form-asmt-chart.pdf), summative and [self-assessment](https://www.teachingchannel.org/videos/peer-teaching--2) measures.
 |
| [**Assessments**](http://map.mathshell.org/materials/pd.php)**:** | **Type** | **Standards** |
| P | [F](http://ohiorc.org/adlit/InPerspective/Issue/2014-05/Article/feature.aspx) | S | SA |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**P = Pre-Assessment F =** [**Formative**](http://map.mathshell.org/materials/background.php?subpage=formative) **S =** [**Summative**](http://map.mathshell.org/materials/background.php?subpage=summative)  **SA = Self-Assessment**

|  |
| --- |
| **COMMENTS / NOTES:** |
|  |

*This document was created by MISIC support staff in 2014 for the use by MISIC district members. Permission to reproduce by any MISIC member when authorship cited as* <http://misicimpact.org>

*Mid-Iowa School Improvement Consortium (MISIC) PO Box 368, 715 Main Street, Jewell, IA 50130 (office phone-515-827-9010)*

*MISIC Contact Information at* <http://misicimpact.org/>