

Monument Valley High School--Kayenta, AZ
AZ. State Common Core Standards for Algebra 1

<http://www.azed.gov/standards-practices/mathematics-standards-2/>

■ Specific Resources

Creating Equations:

1.) A-CED.2, 2.) A-CED.3

[Squares Upon Squares - Generalization, Pattern Recognition, Shape and Space](#)

<http://www.nctm.org/Conferences-and-Professional-Development/Principles-to-Actions-Toolkit/Resources/10-HS-Ziegler-LessonGuide-S-Pattern/>

Interpreting Functions:

3.) F-IF.4, 4.) F-IF.7a, F-IF.7b, F-IF.7c,

Sample Lesson for this topic.

<https://drive.google.com/open?id=0B1JhK3faIe5IfmFhOUi0Sk9oUHFzYTdwSnVoZGxaYnVDc1R6aXJLZGJab1VSVXFDdS03Ums>

Interpreting categorical and quantitative data:

5.) S-ID.7

NOTE: Tasks may require modification but have good hook value.

"Muddying the Waters" <http://map.mathshell.org/lessons.php?unit=9400&collection=8>

"Texting" <https://www.illustrativemathematics.org/content-standards/tasks/1028>

Interpreting Functions again:

6.) F-IF.3

<http://www.visualpatterns.org/> (patterns that can be written in recursive form)

<http://map.mathshell.org/download.php?fileid=1716>

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Linear, Quadratic, and Exponential Models:

7.) F-LE.3.

This task can be modified.

<http://map.mathshell.org/lessons.php?unit=9240&collection=8>

<http://illuminations.nctm.org/Lesson.aspx?id=3820>

A unit on linear and exponential functions

http://www.mathematicsvisionproject.org/uploads/1/1/6/3/11636986/sec1_mod3_linexpfunctions_se_901412.pdf

▣ **General Resources:**

- CME Textbooks <http://cmeproject.edc.org/>
- Which One Doesn't Belong (WODB.ca)
- NRICH Maths <http://nrich.maths.org/>
- Illuminations <http://illuminations.nctm.org/>
- Radical Math www.radicalmath.org/main.php?id=SocialJusticeMath
- YouCubed www.youcubed.org
- Visual Patterns <http://www.visualpatterns.org/>
- MARS/Shell Center for Math Education www.mathshell.org
- Jason Zimba's Wiring Diagram
<http://commoncoretools.me/2012/06/09/jason-zimbas-wiring-diagram/>
(Make sure to read the text from Zimba before looking at the large wiring diagram. He points out that this is only one way to think about the CCSS and should not be used as "official". It is also only K - 8)
- Illustrative Mathematics <https://www.illustrativemathematics.org/>
 - free tasks aligned to the CCSS.
 - Example "blueprints" for grades K - 5 (They are a good starting point for talking about what math in that grade could look like over the course of the year. Just the big ideas, not a full curriculum).
- Illustrative Mathematics teamed up with some other groups to capture teachers working collaboratively. The HS series focused on Modeling and you can see the first of the three videos here: <https://www.teachingchannel.org/videos/math-modeling-secondary-school-sbac>. The Middle school videos focus on Ratio and Proportional Reasoning.
- 3-act math tasks. You can find [a list of ones created by Dan Meyer here](#) where the standard they align to is listed. There's more middle grades than HS, but in a quick skim there is at least one that aligns with F-LE.3 and another for F-IF.4. If you want to learn more about the 3-act math format, check out [this post](#) from Dan.
- Geoff Krall blogs at emergentmath.com and he's been assembling [curriculum maps](#) that pull from sources of good activities and tasks from all over the web. They are listed by course (alg 1, geo, integrated 1, etc) and you can open up the HS ones and do a search for the specific standard or just scroll through to see the things he's found that align with specific standards. The links to the activities will take you to the teacher that created them and many have a run down from

the teacher about how it went in the classroom along with comments from others who tried the task and are reporting back.

- Next Summer the results of the [K-12 OER Collaborative](#) will be out in the world, which will be an alternative to the EngageNY materials. Arizona is a part of the Collaborative.
- Some Project Lead the Way classes embed a lot of hands-on learning and project-based learning: <https://www.pltw.org/>
- Anthony Rodriguez, who now teaches at Providence College, used to teach on a reservation in New Mexico. He details a hands-on project he created to pull in his students in and get them engaged that was very successful [here](#) (you'll have to click to download).

▣ **Progressions documents for vertical Common Core alignment**

<http://ime.math.arizona.edu/progressions/>

Videos for the 3-5 fractions progression:

www.illustrativemathematics.org/progressions

▣ **Recommended books:**

- What's Math Got to Do With It? -- Jo Boaler
- The Five Practices for Orchestrating Productive Mathematical Discussions -- Smith & Stein
- Crossing Rivers With Dogs: Problem-Solving -- Kyesh
- Powerful Problem Solving -- Max Ray-Riek

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