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Technology Integration Workshop 2016

Unit Title: Equivalent fractions
Grade Level: *4*
Subject Area: *math*
Duration/Length/Number of class periods: *4 lessons*
Description: Students will pick 2 of the 3 choices (use iPad OR paper OR fraction circles) to demonstrate the ability to create a pair of equivalent fractions and explain why they are equal. Student can share at least one real world example of equivalent fractions. (cooking, painting, carpet)
Minnesota Standards 4.1.1.1 demonstrate fluency with multiplication and division 4.1.2.1 represent equivalent fractions using fraction models such as parts of a set, fraction circles, fraction strips, number lines and other manipulatives. Use the models to determine equivalent fractions.

What Enduring Understandings are desired? There are many ways to represent a number. • The problem in front of you is a member of a larger class of problems. • Number sense develops through experience. • Operations create relationships between numbers.
What Essential Questions will be considered? When in the real world, and why, do I use fractional comparisons? • How does comparing fractions describe the relationship between them? How does multiplication help me solve math problems?
Students will know / be able to: In addition to seeing another reason to memorize multiplication facts, students will share how equivalent fractions are used in the real world and use technology or manipulatives to create equivalent fractions. Students will do this when given a single fraction AND by using their own example.

Description *Units must include at least one of each formative, summative, introductory activity and learning activity. Check the appropriate box; one per row.*	Formative	Summative	Introductory Activity	Learning Activity	Student Technology IntUsed	Teacher Technology Used	ISTE Standards
Day 1We do fractions all year, so intro would depend on group/timing: Hersey bar fractions (one candy bar for each student) or cup of Skittles can be a fun way to review or establish fraction vocab and practice			**X**				
Day 2 review fraction vocab: numerator, denominator, represents less than one. Use Quizlet Scatter Game APP with would be a fun way to test vocab or match fraction with point on number line	X				**X**		**4b**
Day 2 using fraction circles, SchoolKit explore equivalent fractions : table groups, pairs, teacher circulate or work with individual/table Day 2 homework: where are fractions used in the real world?				**X**			
Day 3 discussion of real-world fractions (cooking, measuring) Teacher uses student example(s) to extend discussion. For example, if a cookie recipe calls for ½ cup of something, and you want to double the recipe, what does this mean?				**X**			**4a,c**
Day 4 individual (small) white boards to write a fraction and show, using multiplication, how to create an equal or equivalent fraction. Higher achieving students can do this with an iPad and draw and voice record* their step-by-step instructions for teaching a peer. (*this would have already been modeled by teacher during the term)					**X**	**X**	**2b**
Day 4 google form with 5 problems related to equivalent fractions and one essay about how equivalent fractions exist in the real world		**X**					

Materials, tools and resources
iPads, white boards, Fraction circle set, Schoolkit Math (free app), Khan Academy https://goo.gl/latxkt, FunBrain http://goo.gl/un6aCG , National Library of Virtual Manipulatives http://goo.gl/MR2vQQ (similar to Schoolkit), activity from Alabama Learning Exchange http://goo.gl/Li6hJj , activity with IXL https://goo.gl/gtL01V , practice with http://goo.gl/EucNYd

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Additional credit given to SweeTarts team