

Jeanie Ritchie Grants - Funded by MPAEF

Jeanie Ritchie Grant Application 2018-2019	
Project Title:	Fraction Bootcamp
Lead Teacher/ Project Director Name:	Jocelyn Guerra
Email Address:	jguerra@mpcsd.org
Best Phone Number:	650.326.5164 x1134
Names of Other Teacher Participants (include school if project will span multiple campuses):	Heidi Hendrickson, Susan Preston, Erin Pindar and Mary Vandro
Principal's Name:	Sharon Burns
Director of Technology Name: (if applicable)	

Before this application is submitted, it is necessary for the principal to review it.

Has the review been completed? Yes No

Date of Review: 9/28/18

I have reviewed this proposal and am aware that it is being proposed for implementation and will be supported through the Technology Department.

Director of Technology Signature/Date: _____

Please Note: The Jeanie Ritchie grant process is anonymous. Your application will be considered according to an ID number only. Please do not include the name of your school in the body of your application. This title page will not be made available to the committee until the grants are awarded.

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Project Title:	
Fraction Bootcamp	
ID# (for office use only)	Type of Grant (check all that apply) <input checked="" type="checkbox"/> New <input type="checkbox"/> Repeat (_ # Years) <input checked="" type="checkbox"/> Teacher Initiated <input checked="" type="checkbox"/> In Class <input type="checkbox"/> Student Initiated <input type="checkbox"/> Before/After School <input type="checkbox"/> Field Trip <input type="checkbox"/> Lunchtime <input type="checkbox"/> Technology Support Approved
Grades Involved 4th grade	Number of Students Involved 100
Total Funding Requested \$602.91	Date(s) when will the project be conducted: End of January 2019
Project Description	
(Use this form or attach a separate sheet)	
<p>1. Goals: What are the goals of the project? What are you trying to teach? Understanding fractions is a key concept to mastering 4th grade math. Using fraction tiles will help students clearly visualize and be able to manipulate unit fractions from $\frac{1}{2}$ to $\frac{1}{12}$. The goal is students will gain understanding in the following areas:</p> <ul style="list-style-type: none"> ● Fluency in fractions ● Equivalency in fractions ● Building fractions from unit fractions ● decomposing fractions into unit fractions ● constructing visual models of fractions ● adding & subtracting fractions using a manipulative 	
<p>2. Core Activities: Describe what students will <u>do</u> as they participate in the project. How will the project accomplish its goals? Although the fraction tiles will be used throughout the school year to continue building understanding of key 4th grade fraction concepts, they will be introduced in a weeks long “Fraction Bootcamp” mini unit. The mini unit is made up of the following activities:</p> <p style="padding-left: 20px;">Activity 1 (Monday)</p> <ul style="list-style-type: none"> ● Learning Goal - Students will be able to understand fractions as a sum of unit fractions. Activity - Students will use the fraction tiles to explore building fractions out of unit fractions. They will write equations and draw visual models based on their fraction tiles to show specific fractional amounts ($\frac{2}{3}$, $\frac{3}{4}$, $\frac{3}{6}$, $\frac{5}{6}$, $\frac{2}{8}$, $\frac{3}{10}$, $\frac{7}{12}$) <p style="padding-left: 20px;">Activity 2 (Tuesday)</p> <ul style="list-style-type: none"> ● Learning Goal - Students will be able to decompose a fraction into different addition problems with at least one unit fraction. Activity - Students will use the fraction tiles to explore different ways to decompose a fraction using a unit fraction and a non-unit fraction. They will be given a fraction like $\frac{7}{8}$ and asked 	

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to show how they can build $\frac{7}{8}$ with unit and non-unit fractions. For example, $\frac{1}{8} + \frac{6}{8} = \frac{7}{8}$ or $\frac{1}{8} + \frac{1}{8} + \frac{5}{8} = \frac{7}{8}$, etc. A challenge activity will be to try the same concept but using subtraction.

Activity 3 (Wednesday)

- Learning Goal - Students will be able to add fractions with like denominators. Activity - Students will use the fraction tiles to explore adding fractions with like denominators together. They will build the fractions (like $\frac{3}{8} + \frac{2}{8}$) with the tiles, write an equation, draw a visual model and then find the sum. A challenge activity will be for students to try this with fractions that have unlike denominators.

Activity 4 (Thursday)

- Learning Goal - Students will be able to subtract fractions with like denominators. Activity - Students will use the fraction tiles to explore subtracting fractions with like denominators. They will build the fractions (like $\frac{7}{8} - \frac{3}{8}$) with the tiles, write an equation, draw a visual model and then find the difference. A challenge activity will be for students to try this with fractions that have unlike denominators.

Activity 5 (Friday)

- Learning Goal - Students will be able to create equivalent fractions. Activity - Students will use the fraction tiles to explore equivalent fractions through manipulating the tiles. They will compile a list of equivalent fractions and draw visual models to prove their findings. A challenge activity will be for students to find equivalent fractions for $\frac{1}{2}$ that go beyond the fraction tiles and construct a conjecture based on their mathematical thinking.

3. **Innovation:** To what standards and/or aspects of the curriculum is the project linked? In what ways does it go above and beyond what is normally required?

This is linked to the following 4th grade Common Core State math standards:

1. 4.NF.A.1 - Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \times a)}{(n \times b)}$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
2. 4.NF.A.2 - Compare two fractions with different numerators and denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, $<$, and justify the conclusions, e.g., by using a visual fraction model.
3. 4.NF.B.3.A - Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
4. 4.NF.B.3.B - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples:* $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

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This goes above and beyond what is normally expected because it gives students an opportunity to learn about fractions with a visual representation they can manipulate and then use to draw models of their thinking and the concepts they are learning.

4. Success Evaluation:

- a. If this is a new grant, how will you know that the program has been successful?

We will know the program was successful by comparing pre-test to post-test scores on the unit assessments from Math Expressions.

- b. If this is a repeat grant request, attach last year's completed evaluation form.
PLEASE NOTE: REPEAT APPLICATIONS WILL NOT BE CONSIDERED WITHOUT AN EVALUATION.
- c. If this is your 3rd year of funding, what steps are you taking to obtain funding from other sources? Funding from Jeanie Ritchie ends at year four.

- 5. Detailed Budget:** Include all expenses, e.g., sales tax, shipping, etc. If any materials can be re-used in future years, please indicate this in the information provided.

Fraction Tiles (100 sets) \$495.00 or \$4.95 per student
The fraction tiles can be reused every year indefinitely.
Shipping \$59.40
Sales Tax \$48.51
Total Cost: \$602.91
Click on the link to see the fraction tiles:
[Link to Fraction Tiles](#)

Please email questions, comments and your final application to Colleen Cutcliffe:
jeanieritchiegrants@mpaef.org.

Thank you for submitting a Jeanie Ritchie Grant Application!