

# 5TH GRADE

# POWER



# Problems & Homework

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Name: \_\_\_\_\_ POWER PROBLEMS HOMEWORK 5.NF.1

Answer each question below.

1.) Create a list of 5 fractions that have the same value as $\frac{1}{4}$ .	2.) Freddy needs to add $\frac{2}{3}$ . He plans on changing the denominators to 18 before adding. Is there a better way to solve this problem?
3.) What multiplication problem is represented by this picture? $3\frac{3}{5} + 5\frac{2}{5} = \frac{6}{5} + \frac{7}{5} = \frac{13}{5} = 2\frac{3}{5}$	4.) Yolanda thinks that multiplying two denominators together always provides the least common denominator. But this is not always true. Can you think of two examples that would show her that this is not true?

Name: \_\_\_\_\_ POWER PROBLEMS HOMEWORK 5.NF.2

Answer each question below.

1.) Write a word problem using subtraction that could be described by this picture: 	2.) Sonia draws the following model to represent $1\frac{8}{12}$ . Is this model accurate? Why or why not? 
3.) Kelly mixed 2.25 gallons of grape juice with $1\frac{4}{5}$ gallons of cranberry juice to make a punch for her Halloween party. At the end of the party $\frac{1}{20}$ of a gallon was left. How much punch was consumed by the guests?	4.) Taylor looks at a pattern that can be folded to make a cube. She concludes that each face of a cube is $1\frac{1}{12}$ " of the total surface area of a cube. Is Taylor correct? Why or why not? 

Name: \_\_\_\_\_ POWER PROBLEMS HOMEWORK 5.NF.3

Answer each question below.

1.) Write a word problem involving division that could be represented by this picture: 	2.) Your sister gives you 7 sheets of stickers and asks you to share them equally between yourself and 5 friends. Mark this diagram to show you can share the stickers. 
3.) Martin and Davina are working on a problem. Martin thinks the answer is $\frac{1}{2}$ . Davina's solution is the same thing as Martin's problem and shows his example: $5 \div 10 = .5$ Is Martin correct? Is this true for all numbers?	4.) A teacher buys a 10-pound bag of candy. If there are 24 students in his class, will each student get more or less than a half-pound of candy? Explain your answer.

Name: \_\_\_\_\_



POWER PROBLEMS  
HOMEWORK 5.NF.1

Answer each question below.

1.) Create a list of 5 fractions that have the same value as  $\frac{1}{2}$ .

2.) Freddy needs to add  $\frac{2}{3}$  and  $\frac{5}{6}$ . He plans on changing the denominators to 18 before adding. Is there a better way to solve this problem?

3.) What multiplication problem is represented by this picture?

$$3\frac{3}{5} + 5\frac{2}{5} = \frac{6}{5} + \frac{7}{5} = \frac{13}{5} = 2\frac{3}{5}$$

4.) Yolanda thinks that multiplying two denominators together will always provide the least common denominator. But this is not correct. Can you think of two examples that would show her that this is not true?

# POWER Problems HD

## What is included?

- 28 conceptual based math questions
- Quality prompts and word problems that promote rigorous thinking
- 4 questions per standard
- Each standard is formatted to one page
- Easy prep
- Answer keys

# WHAT ARE POWER PROBLEMS?



**PURPOSEFUL** - These problems are meant to keep students focused, while strengthening initiative and perseverance.



**OPPORTUNITIES** - These prompts can be used in a variety of ways. P.O.W.E.R problems can be used to introduce a lesson, spiral review, or as formative assessments.

## WITH



**ENGAGEMENT** - Power Problems are real word applicable and designed to hook students with interest and presentation. The complexity of problems promotes problem solving skills.



**RIGOR** - Tasks are specifically designed to challenge students and assess conceptual understanding of curriculum versus procedural understanding. Students will need to apply more than just a "formula."

# WHY USE POWER PROBLEMS?

BUILD STAMINA WITHIN  
YOUR STUDENTS



## **MORE THAN JUST A COOKIE CUTTER TEXTBOOK APPROACH**

- P.O.W.E.R problems are designed to challenge your students with their open ended presentation. Majority of problems that come from textbooks and workbooks assess procedural understanding of curriculum. Some textbooks even provide step by step instructions where the textbook is thinking for the students and taking away that "productive struggle" for children. When we rob students of that event, we rob them of their ability to reason, problem solve, and see beyond a standard algorithm. P.O.W.E.R problems are meant to show students that there are different ways to answer one question in math. With these tasks students take ownership and are part of the problem solving process versus filling in blanks in a textbook.

# HOW TO USE POWER PROBLEMS

YOUR KIDS. YOUR  
CHOICE. FLEXIBILITY.



**TO INTRODUCE A LESSON** - P.O.W.E.R problems can be used to introduce a new skill. In this case your students will experience a "productive struggle." Their problem solving skills and prior knowledge will kick in. Often times most of my students will have the incorrect answer or no answer at all. I then have someone explain their method/reasoning and allow my students to critique their peer's answer. This makes for great accountable talk discussions. If I see that most students do not have an answer I will assist the class in getting to a specific point and then allow them to finish independently.



**SPIRAL REVIEW** - Avoid your students forgetting standards by using P.O.W.E.R problems to spiral review previously taught lessons.



**FORMATIVE ASSESSMENTS** - You can use these problems to assess mastery and levels of understanding.