

FRACTION TASK CARDS



Creative yet
Rigorous!!

Three sample task cards are displayed, each with a blue and white checkered border and a white center. The cards are titled "Frantic Fractions Pattern Block Challenge" and feature a pattern block and its value.

Card 1 (Left): Features a yellow hexagon. The text reads: "If [hexagon] = 1 whole... Then: 1. Create a design worth $5\frac{2}{3}$. 2. Trace your design. 3. Color it to match the pattern block you used. 4. 'Convince Me' that your design is worth $5\frac{2}{3}$."

Card 2 (Middle): Features a red trapezoid. The text reads: "If [trapezoid] = 1 whole... Then: 1. Create a design worth $6\frac{1}{3}$. 2. Trace your design. 3. Color it to match the pattern block you used. 4. 'Convince Me' that your design is worth $6\frac{1}{3}$."

Card 3 (Right): Features a blue diamond. The text reads: "If [diamond] = 1 whole... Then: 1. Create a design worth $4\frac{1}{2}$. 2. Trace your design. 3. Color it to match the pattern block you used. 4. 'Convince Me' that your design is worth $4\frac{1}{2}$."


Develop Deep Understanding
PRINT & GO

BY: LEAH POPINSKI

About This Packet

20 Hands-On Task Cards

Frantic Fractions Pattern Block Challenge #1

If  = 1 whole...

Then:

1. Create a design worth $3\frac{1}{2}$.
2. Trace your design.
3. Color it to match the pattern blocks you used.
4. "Convince Me" that your design is worth $3\frac{1}{2}$.


Frantic Fractions Pattern Block Challenge #2

If  = 1 whole...

Then:

1. Create a design worth $5\frac{1}{2}$.

Frantic Fractions Pattern Block Challenge #14

 = 1 whole...

Then:

Create a design worth $\frac{2}{3}$.

Trace your design.

Color it to match the pattern blocks you used.

"Convince Me" that your design is worth $\frac{2}{3}$.

Frantic Fractions Pattern Block Challenge #4

 = 1 whole...

Create a design worth $5\frac{1}{3}$.

Trace your design.

Color it to match the pattern blocks you used.

"Convince Me" that your design is worth $5\frac{1}{3}$.

"I used this activity as a station during my station time. Actually I was observed as well using this activity and my principal loved it! Thanks for making an activity that is so hands on!"
-Brittany M.

If  = 1 whole...

Then:

1. Create a design worth $\frac{5}{6}$.

2. Trace your design.

Frantic Fractions Pattern Block Challenge #8

 = 1 whole...

Create a design worth $4\frac{1}{2}$.

Trace your design.

Color it to match the pattern blocks you used.

"Convince Me" that your design is worth $4\frac{1}{2}$.

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Teacher Support

★ Detailed Teacher Notes and Tips Include Authentic Student Examples

TEACHER NOTES CONTINUED

There are:

- 20 different challenge task cards aligned to Common Core Standards 3.NF.2, 4.NF.3, and 5.NF.1
- a Convince Me page for writing about mathematical thinking
- triangle paper for recording work
- student work samples and an assessment with an answer key for use after students have completed the task cards
- Essential Questions and Enduring Understandings Posters

Task cards may be printed in color or gray scale.

The only materials necessary are: center task cards, Pattern Blocks, math journal, pencil.

To complete the tasks, students:

Choose an activity and complete the required design in at least one way.

Trace their design in their math journal or onto the included triangle paper.

Write a "convince me" statement that explains how their design matches the challenge activity, and may then color the design to match the Pattern Blocks used.

Thanks so much!!!

And, as always...

HAVE FUN MATHING!
+LEAH

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TEACHER NOTES

- ★ These center task cards will challenge and strengthen your students' understanding of fractions while still allowing for hands-on investigation and creativity. Students build fractional knowledge using the relationships between Pattern Blocks for halves, thirds, and sixths.

I used these centers in my classroom as soon as I began my fraction unit. After working in the centers, students understood the meaning of equivalent fractions and could easily visualize adding and subtracting thirds, sixths, and halves as well as improper fractions and mixed numbers! The depth of their understanding was amazing. They could answer fractional question "in their heads" and automatically applied their understandings and made connections to other fractional concepts that I had not yet taught. Their ability to visualize benchmark fractions was truly impressive.

Then, when I directly taught these same concepts and moved into fractions on a number line, even my students who usually struggled had clear comprehension while other students were extending and asking their own questions!

Each task card may be completed in multiple ways which allows for differentiation.

- ★ The Common Core stresses the importance of moving from concrete fractional models to the representation of fractions using numbers and the number line. The concrete fractional models that are the foundation of this resource are an important initial component in developing the conceptual understanding of fractions.

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The 20 challenges in this resource are sequenced by difficulty. If you have not yet introduced fractions with Pattern Blocks, begin with some or all of these first 10 challenges that introduce the relationship between pattern blocks as fractional parts.

The tasks involve only fractions of one whole. There are no mixed numbers in these 10 challenges.

They support the Common Core Standard 3.NF.A.1.

CCSS.MATH.CONTENT.3.NF.A.1

Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity

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Teacher Support

★ Enduring Understanding Posters

- Break apart areas where students may demonstrate misunderstandings or misconceptions

Enduring Understanding

★ Included to:

- summarize important ideas and
- frame the big ideas that give importance to fractions.
- “unpack” areas of meaning where struggle to gain understanding misunderstandings and misconceptions about fractions.
- provide a conceptual foundation for fractions.
- present major curriculum goals and recurrent ideas about fractions

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Fractions

Enduring Understanding

The size of the whole must be considered when comparing fractions.

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★ Essential Question Posters

- target standards and help drive instruction

Essential Questions for Fractions

★ Included to:

- stimulate students' discussions, and promote deeper understanding
- target standards and help drive instruction.
- dig deep into the key topics/skills
- focus on the core ideas and understandings that anchor the applications of knowledge.
- target fraction standards and lessons and instruction

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Fractions

Essential Question


How do we explain how changing the size of the whole affects the size of a fraction?

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Format Supports Creativity and Differentiation

Students automatically seek their own level as tasks increase in difficulty.

Frantic Fractions Pattern Block Challenge #1

If  = 1 whole...

Then:

1. Create a design worth $3\frac{1}{2}$.
2. Trace your design.

Frantic Fractions Pattern Block Challenge #5

If  = 1 whole...

Then:

1. Create a design worth $3\frac{1}{2}$.
2. Trace your design.
3. Color it to match the pattern blocks you used.
4. "Convince Me" that your design is worth $3\frac{1}{2}$.

Frantic Fractions Pattern Block Challenge #14

If  = 1 whole...

Then:

1. Create a design worth $\frac{2}{3}$.
2. Trace your design.
3. Color it to match the pattern blocks you used.
4. "Convince Me" that your design is worth $\frac{2}{3}$.

"This is a big hit in my math rotations... Parent helpers even found it challenging and creative!"
-Rebecca T.

Assessment with Answer Key Included

Name _____ Date _____

FRACTION ASSESSMENT

1. What shape is $\frac{1}{3}$ of the hexagon? _____
2. What shape is $\frac{1}{6}$ of the hexagon? _____
3. What shape is $\frac{1}{3}$ of the trapezoid? _____
4. What shape is $\frac{1}{2}$ of the blue rhombus? _____
5. How much of the hexagon is covered with t
6. How much of the hexagon is covered with c
7. Use the Pattern Blocks to name the equivalent below.

a. $\frac{1}{2} = \underline{\hspace{1cm}}$

b. $\frac{1}{3} = \underline{\hspace{1cm}}$

c. $\frac{2}{3} = \underline{\hspace{1cm}}$

8. Use the Pattern Blocks to find the answers l

a. $\frac{1}{2} + \frac{1}{3} = \underline{\hspace{1cm}}$

b. $\frac{1}{2} + \frac{1}{6} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

c. $\frac{1}{3} + \frac{1}{6} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

FRACTION ASSESSMENT

Answer Key:

1. Blue Rhombus

2. Green Triangle

3. Green Triangle

4. Green Triangle

5. $\frac{2}{6}$ or $\frac{1}{3}$

6. $\frac{1}{3}$

7. a. $\frac{1}{2} = \frac{3}{6}$

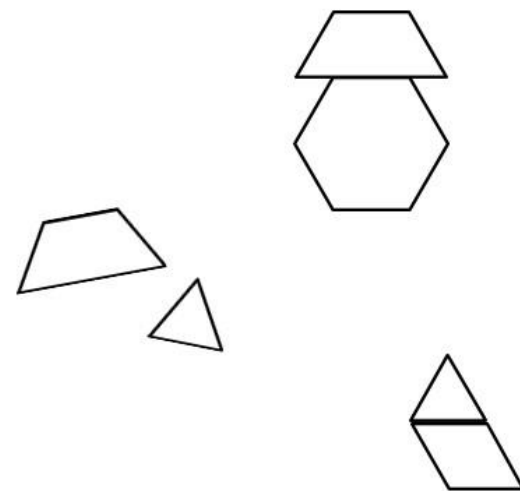
b. $\frac{1}{3} = \frac{2}{6}$

c. $\frac{2}{3} = \frac{4}{6}$

8. a. $\frac{5}{6}$

b. $\frac{4}{6} = \frac{2}{3}$

c. $\frac{3}{6} = \frac{1}{2}$



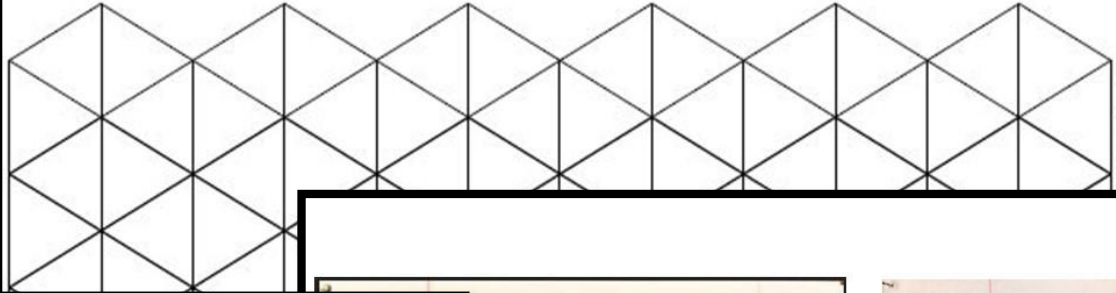
Student Work Samples + More

Convince Me Statements

Challenge # ____

Challenge # ____

Triangle Grid Paper



STUDENT WORK SAMPLES

Pattern Block Challenge #6

dancer

Kaitlyn

Convince Me:
1 hexagon = a whole
So I used 5 hexagons
and $\frac{5}{6}$ is made out
of 5 triangles. 6 triangles
= 1 hexagon.

Higher and Lower

CHALLENGE # 7

= 1

= 2

Convince Me:
• 2 trapezoids = 1 hexagon
so 1 hexagon = 2 wholes
• The 2 triangles are $\frac{1}{3}$

= $4 \frac{2}{3}$

Math Fractions Challenge 2

= 1 What is $5 \frac{1}{2}$?

1st way

Convince Me:
• 3 blue rhombi = 1 hexagon
so 1 hexagon = 3 wholes
• 1 green triangle = $\frac{1}{2}$ rhombus
• 3 wholes + 2 wholes + $\frac{1}{2}$
= $5 \frac{1}{2}$

rocket

2nd way

Convince Me:
1 + 1 + 1 + 1 + 1 + $\frac{1}{2}$ = $5 \frac{1}{2}$

Candy cane

Esmeralda

#6 Convince Me
Because 2 red = 1 yellow
= 1 yellow that makes 2
green is the same as
a red and you need 2
to have $\frac{2}{3}$. Put it toget
make $3 \frac{2}{3}$. $1 + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$

Sheldon

Teacher and Student Tested and Loved!

"A+++ One of my most favorite resources EVER!!!!"
-Shauna

"Was great for my observation!"
-Carrie G.

"Super way to incorporate fractions that is highly motivating! Very helpful!"
-Nancy S.

"...They challenged themselves to come up with different ways to create the fractions! Our principal & superintendent did a walk-through during this lesson. They both thought it was a fabulous hands-on way to explore fractions!"
-Sharon



Thank You!
-Leah

"I wish I could give this 5 stars. It is amazing what this activity is doing to solidify conceptual understanding. My students taught themselves skills such as adding fractions, just by playing with these challenges."
-Buyer