

Role of the Denominator –the Number we DividedBy.

Table of Contents

Teaching Plan Overview and Summary.....	page 2
Role of the Denominator - Number we Divided By.....	page 3

Differentiate and Assess

Not every student will be ready to investigate this concept at this Level and so we will need to differentiate to ensure every student is learning at their leading edge. Select the Differentiate button on this screen.

Integrate

Every mathematical concept is integrally related to other mathematical concepts. Teaching and learning related concepts simultaneously develops deep relational understanding. Select the Integrate button on this screen.

Intervene

Some students may not yet be ready to investigate this concept at any Level, and so we will need to provide some intervention. Select the Intervention button on this screen.

ROLE OF THE DENOMINATOR - NUMBER WE DIVIDED BY.




EXPLICIT TEACHING PLAN OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE EXPLICIT TEACHING PLAN, INCLUDING STRATEGIC QUESTIONS, AND DESCRIBING THE SEQUENCE WHICH WILL OCCUR OVER MULTIPLE LESSONS.

RESOURCES: PENCIL, PAPER

WHAT COULD WE DO?

Children:

- explain the fraction symbol, for example,
numerator, for example,  $\frac{1}{2}$
vinculum, for example,  $\frac{1}{2}$
denominator, for example,  $\frac{1}{2}$
- explain the symbol $\frac{1}{2}$ says half
- explain they have divided into 2 equal parts when they divide in half
- explain the denominator 2 tells us we divided by 2
- explain the symbol $\frac{1}{4}$ says quarter
- explain they have divided into 4 equal parts when they divide in quarters
explain the denominator 4 tells us we divided by 4

WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?

Children

- ask one another questions about explaining the denominator tells us the number we divided by, for example:
 - ▶ What are the parts of the fractions symbol?
 - ▶ Which part is the denominator?
 - ▶ What does this fraction say?
 - ▶ When we have divided into halves, how many parts have we divided into?
 - ▶ What does the denominator 2 in a half tell us?
 - ▶ What does this fraction say?
 - ▶ When we have divided into quarters, how many parts have we divided into?
 - ▶ What does the denominator 4 in a quarter tell us?

ROLE OF THE DENOMINATOR - NUMBER WE DIVIDED BY.

EXPLICIT TEACHING PLAN

FULL EXPLICIT TEACHING PLAN, EMBEDDING DEEP RELATIONAL UNDERSTANDING, METALANGUAGE, AND QUESTIONS THAT MAY BE USED OVER MULTIPLE LESSONS.

WHAT COULD WE DO?

Children think about, talk and listen to a friend about, then have the opportunity to share what they already know.

Display the unit fraction a half, for example,

$$\frac{1}{2}$$


WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?

- ▶ Today brings an investigation about fractions.
- ▶ What do you know about fractions?
- ▶ Talk about fractions with a friend.
- ▶ Is anyone ready to share what they are thinking about fractions?

- ▶ We've investigated fractions.
- ▶ And we found that when we have a fraction of something, we don't have the whole thing. We just have part of it.
- ▶ So we found that a fraction is a part.
- ▶ In Mathematics, we love to measure things!
- ▶ So when we measure the part, we call it a fraction!

- ▶ Today we're going to investigate the symbols that we use for fractions.
- ▶ We've investigated the symbols.
- ▶ And we found that we have symbols in maths so that everyone around the world can read maths, no matter what language they speak.
- ▶ What does this symbol say?
- ▶ Does this symbol say 'half'?

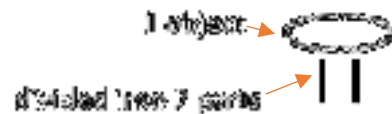
numerator, for example, $\xrightarrow{1}$
 vinculum, for example, $\xrightarrow{\quad}$
 denominator, for example, $\xrightarrow{2}$

Record an oval shape, for example, 

Record 2 lines beneath the shape, for example,



Point to the oval, then to the 2 lines, for example,



- ▶ Have you ever noticed that the symbol for fractions have 3 parts?
- ▶ The symbol for a fraction has a number on the top which we call a numerator.
- ▶ The symbol for a fraction has a number on the bottom which we call a denominator.
- ▶ The symbol for a fraction has a line between the numerator and the denominator which we call a vinculum.

- ▶ Let's start our investigation of the fraction symbol with the denominator!
- ▶ First, let's take a trip back 3 and half thousand years to when people first recorded fractions.
- ▶ The ancient Egyptians used fractions to divide up bread and drink.
- ▶ They recorded these fractions on a papyrus called the Rhind papyrus which archaeologists found.
- ▶ To show a half, they recorded a shape like this.

- ▶ And to show how many parts they divided this into, they drew lines beneath the shape like this.

- ▶ This symbol is saying that they had 1 object, and they divided it into 2 equal parts.

Display our symbol for a half next to the ancient Egyptian's symbol, for example,



Record, for example, $\frac{1}{2} = \div 2$

Circle the denominator in the fraction a half and the 2, for example,

Display the unit fraction a quarter, for example,

$$\frac{1}{4}$$

Point to the **numerator**, for example,

Point to the **vinculum**, for example,

Point to the **denominator**, for example,

- ▶ If we divide something into 2 equal parts what fraction will we have?
 - ▶ Will we have a half?
 - ▶ Let's look at the symbol we use today to show a half.
 - ▶ Do the symbols look a little similar?
 - ▶ Do we have 1 object?
 - ▶ Is our numerator 1?
 - ▶ Are the 2 lines telling us we divided the object into 2 equal parts?
 - ▶ Is our denominator 2?
 - ▶ What do you think the denominator is telling us?
 - ▶ Do you think the denominator is telling us that we have divided something into 2 equal parts?
 - ▶ When we have a half, have we divided by 2?
 - ▶ Is the denominator 2, because we have divided by 2?
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- ▶ What does this symbol say?
 - ▶ Does this symbol say 'quarter'?
 - ▶ If we divide a shape in quarters, how many equal parts did we divide it into?
 - ▶ Did we divide it into 4 equal parts?
 - ▶ What is the denominator?
 - ▶ Is the denominator, 4?

Display, for example, $\frac{1}{4} = \div 4$

Circle the denominator in the fraction a quarter and the 4, for example,

$$\frac{1}{4} = \div 4$$

- ▶ What do you think the denominator 4 is telling us?
- ▶ Do you think the denominator is telling us we divided by 4?
- ▶ Do you think the denominator is telling us the number we divided by?

When children investigate dividing by 2 or 4, they relate this to finding $\frac{1}{2}$ or $\frac{1}{4}$. This allows children to relate their understanding that the denominator 2 tells us we are dividing by 2, and the denominator 4 tells us we are dividing by 4.

This continues when children investigate dividing by other numbers.