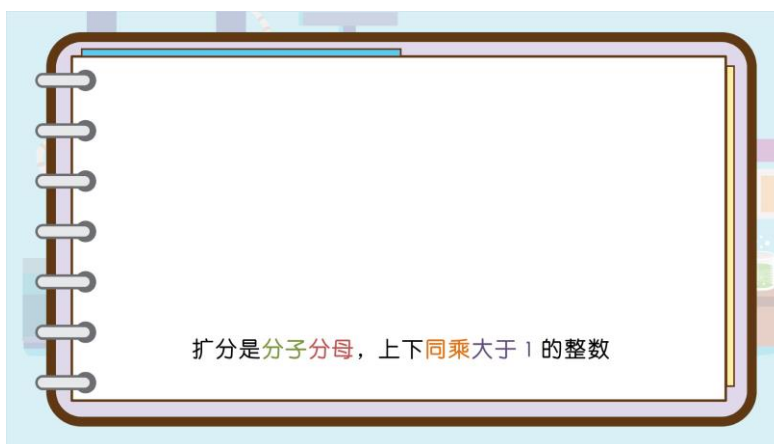


302B - 约分与最简分数

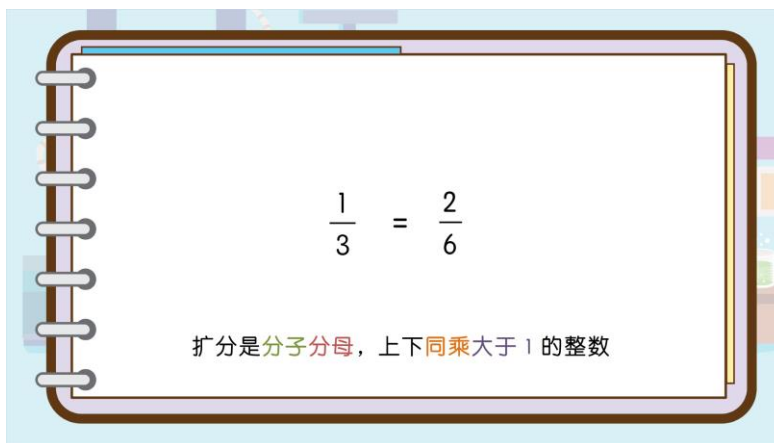
1. 约分

1.1 Untitled Slide

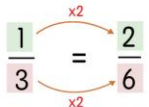


Notes:

1.2 Untitled Slide

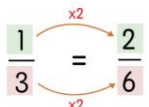


1.3 Untitled Slide



扩分是分子分母，上下同乘大于1的整数

1.4 Untitled Slide



大小不变

分数的大小不变，也称为等值分数

1.5 Untitled Slide

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

那如果把分数反过来，大小也不变！

1.6 Untitled Slide

$\frac{2}{6} = \frac{1}{3}$ 大小不变

没错！小龙有认真听课呢

1.7 Untitled Slide

但要怎么变呢？想一想！

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

A. 分子和分母，上下减2 B. 分子和分母，上下除2

1.8 Untitled Slide

大小不变 $\frac{2}{6} = \frac{1}{3}$ 大小不变

分数好像变小了，但分数的大小不变

听起来有没有很熟悉啊？

1.9 Untitled Slide

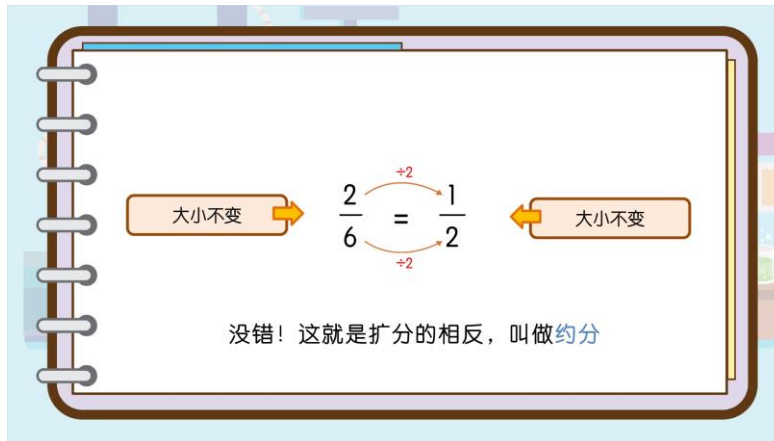


Diagram illustrating the simplification of the fraction $\frac{2}{6}$ to $\frac{1}{2}$. The fraction $\frac{2}{6}$ is on the left, followed by an equals sign, and then the fraction $\frac{1}{2}$ on the right. Above the equals sign, a red curved arrow points from 2 to 1, labeled "+2". Below the equals sign, a red curved arrow points from 6 to 2, labeled "-2". To the left of $\frac{2}{6}$ is an orange box with the text "大小不变" (Size unchanged) and an arrow pointing right. To the right of $\frac{1}{2}$ is an orange box with the text "大小不变" (Size unchanged) and an arrow pointing left. Below the diagram, the text reads: "没错! 这就是扩分的相反, 叫做约分" (That's right! This is the opposite of expanding the fraction, called simplification).

1.10 Untitled Slide

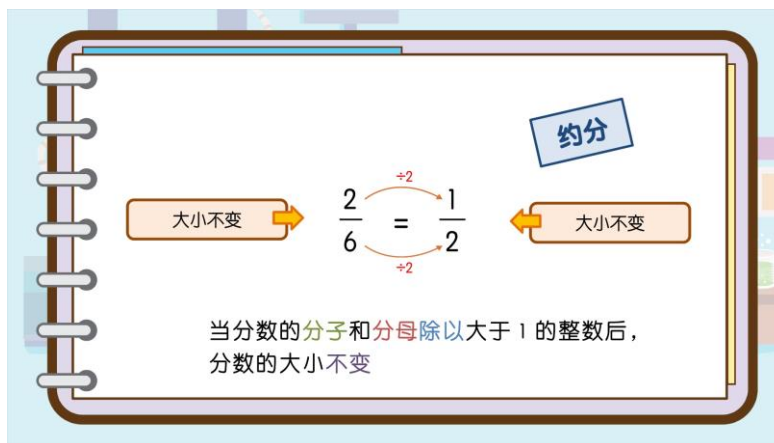


Diagram illustrating the simplification of the fraction $\frac{2}{6}$ to $\frac{1}{2}$. The fraction $\frac{2}{6}$ is on the left, followed by an equals sign, and then the fraction $\frac{1}{2}$ on the right. Above the equals sign, a red curved arrow points from 2 to 1, labeled "+2". Below the equals sign, a red curved arrow points from 6 to 2, labeled "-2". To the left of $\frac{2}{6}$ is an orange box with the text "大小不变" (Size unchanged) and an arrow pointing right. To the right of $\frac{1}{2}$ is an orange box with the text "大小不变" (Size unchanged) and an arrow pointing left. Above the diagram, there is a blue box with the text "约分" (Simplification). Below the diagram, the text reads: "当分数的分子和分母除以大于1的整数后, 分数的大小不变" (After dividing the numerator and denominator of a fraction by an integer greater than 1, the size of the fraction remains unchanged).

1.11 Untitled Slide

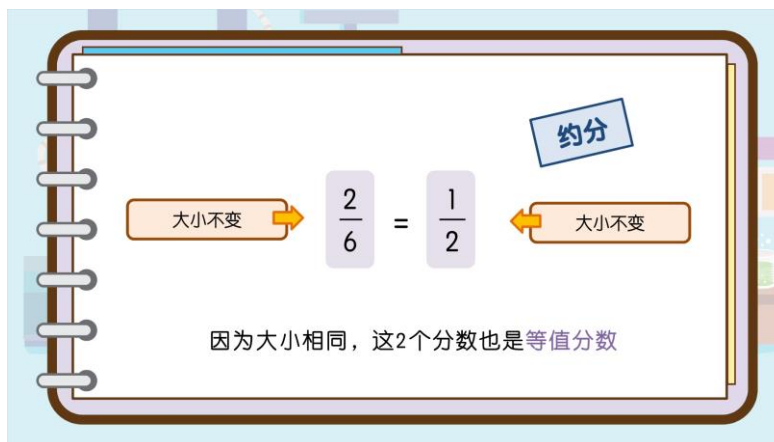
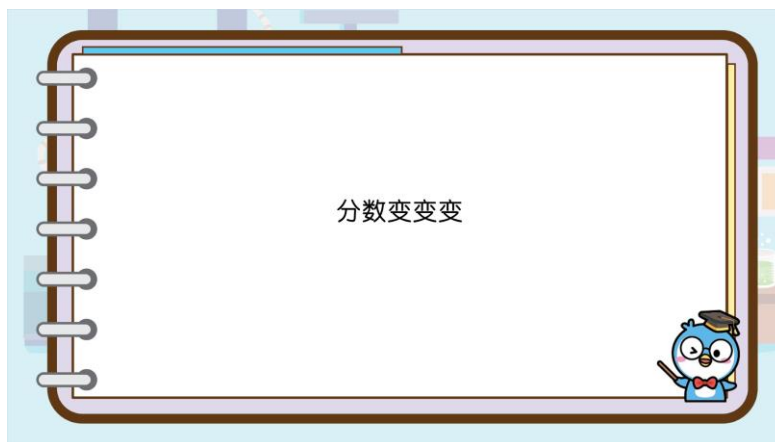


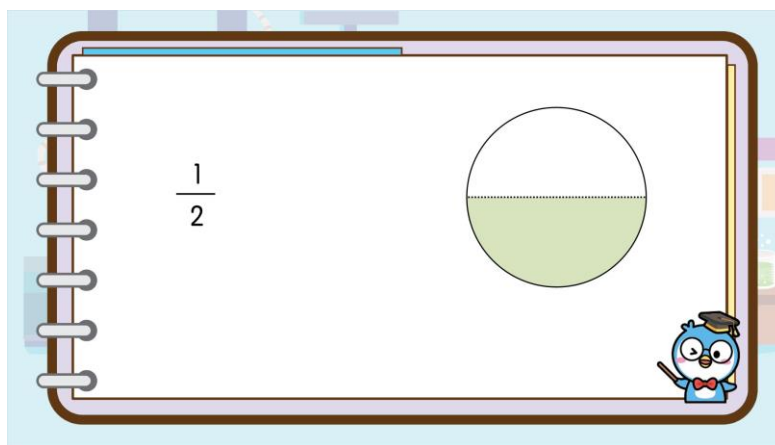
Diagram illustrating the simplification of the fraction $\frac{2}{6}$ to $\frac{1}{2}$. The fraction $\frac{2}{6}$ is on the left, followed by an equals sign, and then the fraction $\frac{1}{2}$ on the right. Above the equals sign, a red curved arrow points from 2 to 1, labeled "+2". Below the equals sign, a red curved arrow points from 6 to 2, labeled "-2". To the left of $\frac{2}{6}$ is an orange box with the text "大小不变" (Size unchanged) and an arrow pointing right. To the right of $\frac{1}{2}$ is an orange box with the text "大小不变" (Size unchanged) and an arrow pointing left. Above the diagram, there is a blue box with the text "约分" (Simplification). Below the diagram, the text reads: "因为大小相同, 这2个分数也是等值分数" (Because the sizes are the same, these two fractions are also equivalent fractions).

2. 分数变化与最简分数

2.1 Untitled Slide



2.2 Untitled Slide



2.3 Untitled Slide

$$\frac{1}{2} \xrightarrow{\times 2} \frac{2}{4} \xleftarrow{\times 2}$$

分数扩分，分子分母同乘2，把每份再多分成2份

2.4 Untitled Slide

$$\frac{1}{2} \xrightarrow{\times 2} \frac{2}{4} \xleftarrow{\times 2}$$

大小不变

2.5 Untitled Slide

$$\frac{1}{2} \xrightarrow{\times 2} \frac{2}{4} \xrightarrow{\times 2} \frac{4}{8} \xleftarrow{\times 2}$$

再扩分，分子分母同乘2，把每份再多分成2份

2.6 Untitled Slide

Slide 2.6 illustrates the concept of equivalent fractions using a number line and a circular area model. The number line shows the fraction $\frac{1}{2}$ being multiplied by 2 to get $\frac{2}{4}$, and then $\frac{2}{4}$ being multiplied by 2 to get $\frac{4}{8}$. The circular area model shows a circle divided into 8 equal sectors, with 4 sectors shaded green, representing $\frac{4}{8}$.

$\frac{1}{2} \xrightarrow{\times 2} \frac{2}{4} \xrightarrow{\times 2} \frac{4}{8}$

大小还是不变

2.7 Untitled Slide

Slide 2.7 illustrates the concept of equivalent fractions using a number line and a circular area model. The number line shows the fraction $\frac{1}{2}$ being multiplied by 2 to get $\frac{2}{4}$, and then $\frac{2}{4}$ being multiplied by 2 to get $\frac{4}{8}$. The circular area model shows a circle divided into 8 equal sectors, with 4 sectors shaded green, representing $\frac{4}{8}$.

$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

大小相同，它们都是等值分数

2.8 Untitled Slide

Slide 2.8 illustrates the concept of equivalent fractions using a number line and a circular area model. The number line shows the fraction $\frac{1}{2}$ being multiplied by 2 to get $\frac{2}{4}$, and then $\frac{2}{4}$ being multiplied by 2 to get $\frac{4}{8}$. The circular area model shows a circle divided into 8 equal sectors, with 4 sectors shaded green, representing $\frac{4}{8}$.

$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

把方向反过来

2.9 Untitled Slide

$$\frac{4}{8} = \frac{4 \div 2}{8 \div 2}$$

分数约分, 分子分母同除2, 把2份合成1份

2.10 Untitled Slide

$$\frac{4}{8} = \frac{4 \div 2}{8 \div 2} = \frac{2}{4}$$

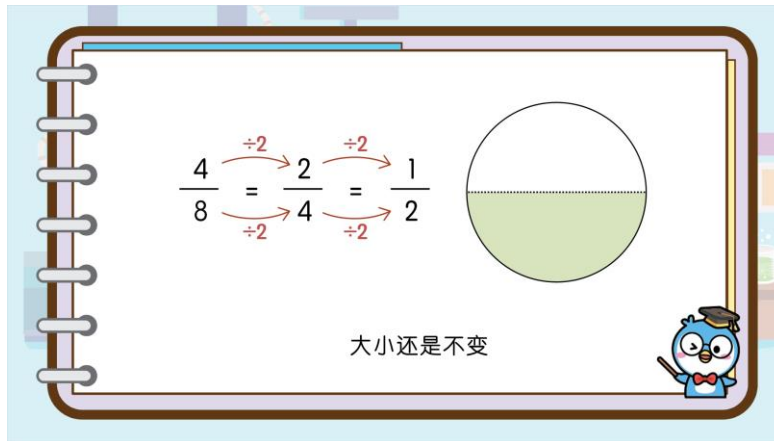
大小不变

2.11 Untitled Slide

$$\frac{4}{8} = \frac{4 \div 2}{8 \div 2} = \frac{2}{4} = \frac{2 \div 2}{4 \div 2} = \frac{1}{2}$$

再约分, 分子分母同除2, 把2份合成1份

2.12 Untitled Slide




$$\frac{4}{8} \xrightarrow{\div 2} \frac{2}{4} \xrightarrow{\div 2} \frac{1}{2}$$

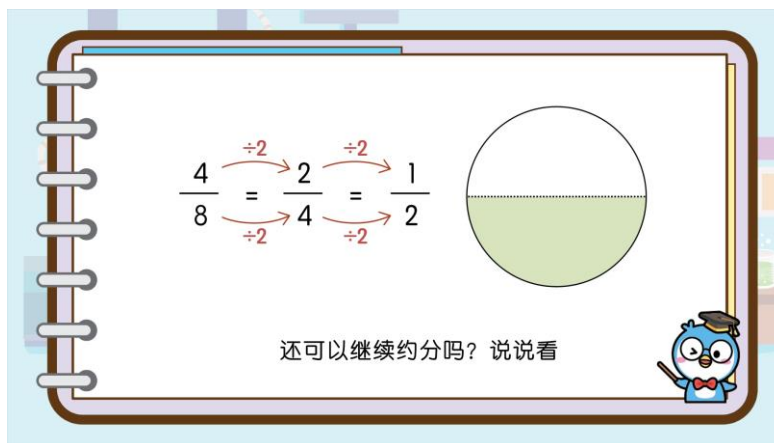
$$\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$$

A circle is divided horizontally into two equal halves. The bottom half is shaded green.

大小还是不变



2.13 Untitled Slide




$$\frac{4}{8} \xrightarrow{\div 2} \frac{2}{4} \xrightarrow{\div 2} \frac{1}{2}$$

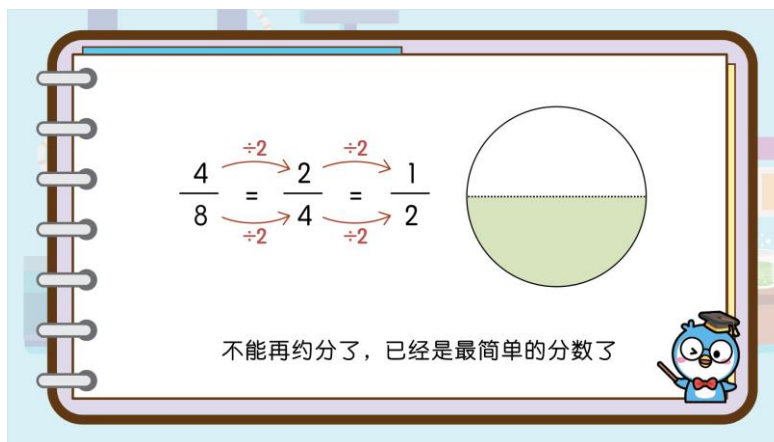
$$\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$$

A circle is divided horizontally into two equal halves. The bottom half is shaded green.

还可以继续约分吗？说说看



2.14 Untitled Slide




$$\frac{4}{8} \xrightarrow{\div 2} \frac{2}{4} \xrightarrow{\div 2} \frac{1}{2}$$

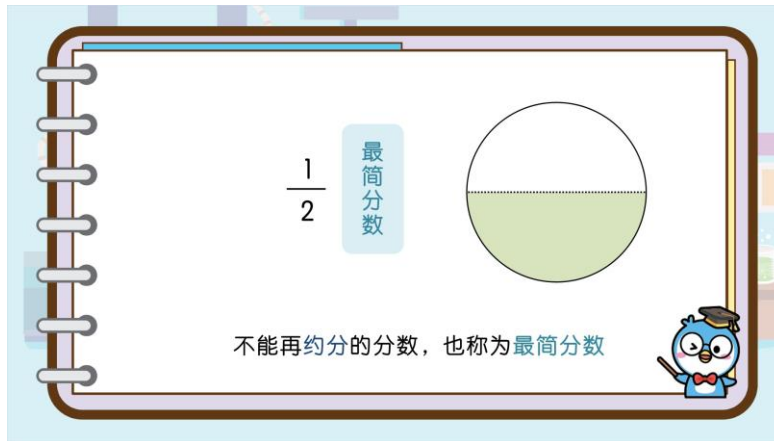
$$\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$$

A circle is divided horizontally into two equal halves. The bottom half is shaded green.

不能再约分了，已经是最简单的分数了



2.15 Untitled Slide



Slide 2.15 illustrates the concept of a simplest fraction. It features a spiral notebook with the fraction $\frac{1}{2}$ and a light blue box containing the text "最简分数" (Simplest Fraction). To the right is a circle divided horizontally, with the bottom half shaded green. Below these elements, a text box states: "不能再约分的分数，也称为最简分数" (A fraction that cannot be simplified further, also called a simplest fraction). A small blue cartoon character is in the bottom right corner.

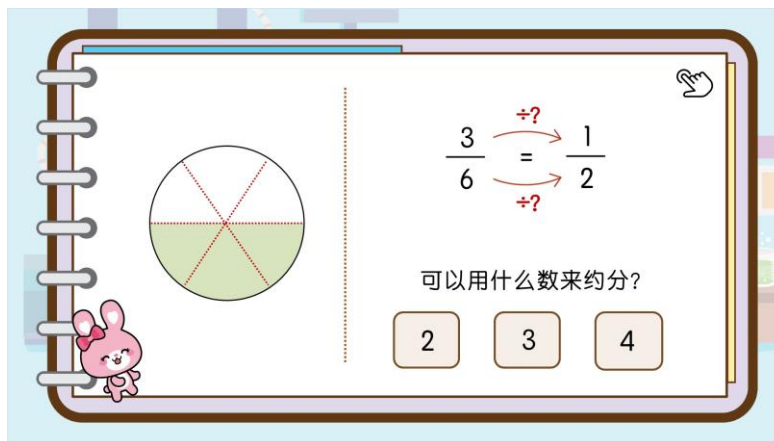
$\frac{1}{2}$

最简分数

不能再约分的分数，也称为最简分数

3. 练习

3.1 Untitled Slide




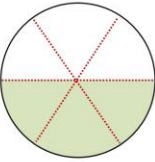
Slide 3.1 is an exercise for simplifying fractions. It shows a spiral notebook with a circle divided into six sectors, three of which are shaded green. To the right, a fraction simplification diagram shows $\frac{3}{6} = \frac{1}{2}$, with red arrows and "÷?" indicating the division of both numerator and denominator by 3. Below this, a text box asks: "可以用什么数来约分?" (What number can be used to simplify?). Three buttons with the numbers 2, 3, and 4 are provided for selection. A small pink cartoon character is in the bottom left corner, and a hand icon is in the top right corner.

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

可以用什么数来约分?

2 3 4


3.2 Untitled Slide


$$\frac{3}{6} \xrightarrow{\div 3} \frac{1}{2}$$

可以用什么数来约分?

2 3 4


3.3 Untitled Slide



哪个分数是最简分数?

$\frac{3}{6}$ $\frac{2}{5}$ $\frac{2}{4}$

3.4 Untitled Slide



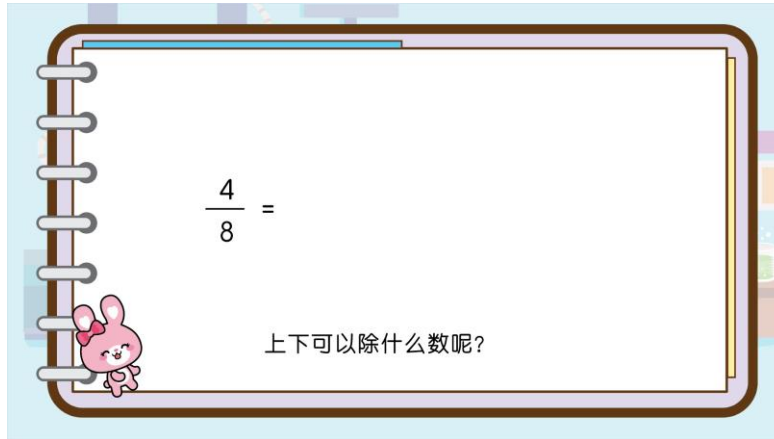
找出以下分数的最简分数

$\frac{4}{8}$

$\frac{2}{4}$ $\frac{1}{2}$ $\frac{1}{3}$

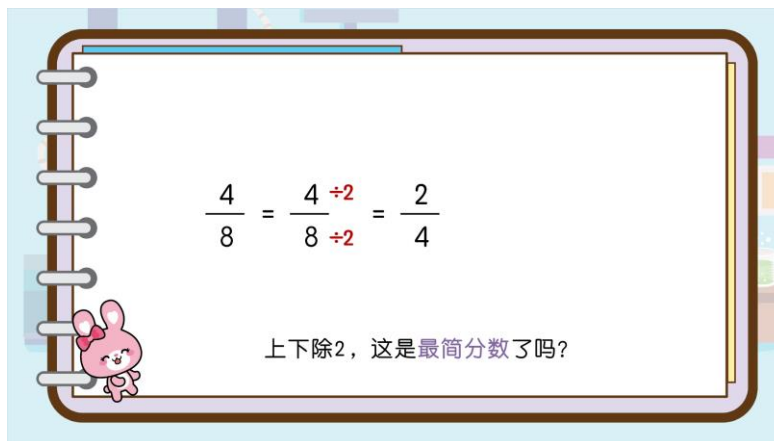
Notes:

3.5 Untitled Slide


$$\frac{4}{8} =$$

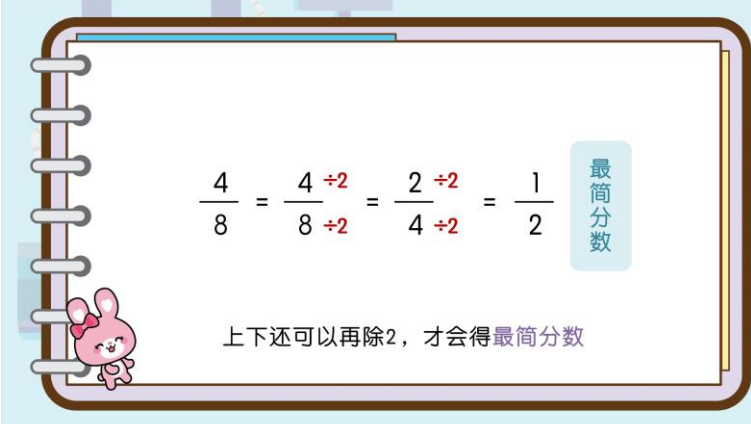
上下可以除什么数呢？

3.6 Untitled Slide


$$\frac{4}{8} = \frac{4 \div 2}{8 \div 2} = \frac{2}{4}$$

上下除2，这是最简分数了吗？

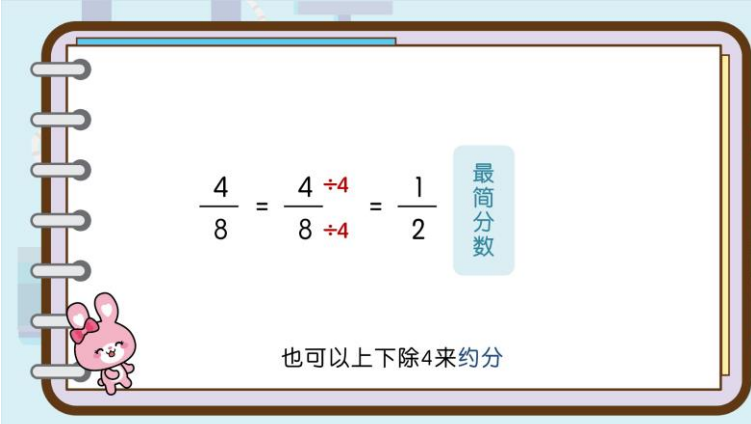
3.7 Untitled Slide


$$\frac{4}{8} = \frac{4 \div 2}{8 \div 2} = \frac{2 \div 2}{4 \div 2} = \frac{1}{2}$$

最简分数

上下还可以再除2，才会得最简分数

3.8 Untitled Slide


$$\frac{4}{8} = \frac{4 \div 4}{8 \div 4} = \frac{1}{2}$$

最简分数

也可以上下除4来约分

4. 总结

4.1 Untitled Slide

总结

约分：分数的分子和分母同除大于1的整数，分数好像变小，但分数的大小不变

大小不变

大小不变

$\frac{2}{4} = \frac{1}{2}$

Notes:

4.2 Untitled Slide

总结

大小相同的分数，也称为等值分数

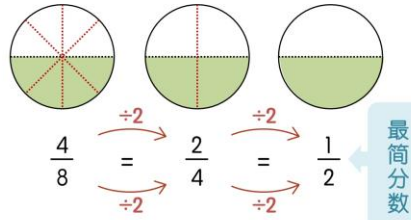
$\frac{4}{8} = \frac{2}{4} = \frac{1}{2}$

Notes:

4.3 Untitled Slide

总结

不能再约分的分数，也称为最简分数



Notes: