Using Evidence to Find Misconceptions and Do Something About Them

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Write >, <, or = in the circle to compare the fractions. Explain how they could be compared without common denominators.

$\frac{5}{6}$ ◯ $\frac{2}{8}$

Tell how you compared the fractions.

Write >, <, or = in the circle to compare the fractions. Explain how they could be compared without common denominators.

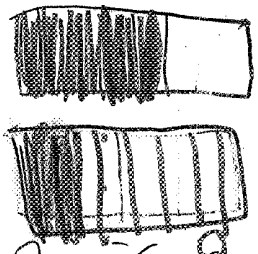
$\frac{3}{8}$ ◯ $\frac{3}{4}$

Tell how you compared the fractions.

STUDENT WORK 1

Write >, <, or = in the circle to compare the fractions. Explain how they could be compared without using common denominators.

$\frac{5}{6}$ < $\frac{2}{8}$



Tell how you compared them without common denominators.

First, The denominator in $\frac{2}{8}$ is 8. The denominator in $\frac{5}{6}$ is 6. So I compared 8 and 6 and 8 is greater than 6. So $\frac{2}{8}$ is greater than $\frac{5}{6}$.

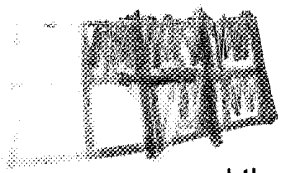
$\frac{3}{8}$ > $\frac{3}{4}$

Tell how you compared them without common denominators.

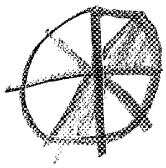
I compared them by looking at the denominators in $\frac{3}{4}$ and $\frac{3}{8}$. The denominator $\frac{3}{4}$ is 4. The denominator in $\frac{3}{8}$ is 8. 8 is larger than 4.

STUDENT WORK 2

Write >, <, or = in the circle to compare the fractions. Explain how they could be compared without using common denominators.

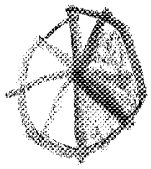


$\frac{5}{6}$ > $\frac{2}{8}$

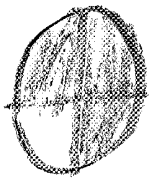


Tell how you compared them without common denominators.

$\frac{2}{8}$ is not a half and $\frac{5}{6}$ is over a half.



$\frac{3}{8}$ < $\frac{3}{4}$



Tell how you compared them without common denominators.

I thought $\frac{3}{8}$ is near half and $\frac{3}{4}$ is near one.

STUDENT WORK 4

Write >, <, or = in the circle to compare the fractions. Explain how they could be compared without using common denominators.

$\frac{5}{6}$ > $\frac{2}{8}$

Tell how you compared them without common denominators.

$\frac{5}{6}$ is only 1 more to make a whole but with $\frac{2}{8}$ you need a lot more.

$\frac{3}{8}$ < $\frac{3}{4}$

Tell how you compared them without common denominators.

With $\frac{3}{8}$ it is almost 1 half but its not and $\frac{3}{4}$ you add $\frac{1}{4}$ and you get 1 hole.

STUDENT WORK 3

Write >, <, or = in the circle to compare the fractions. Explain how they could be compared without using common denominators.

$\frac{5}{6}$ (<) $\frac{2}{8}$

Tell how you compared them without common denominators.

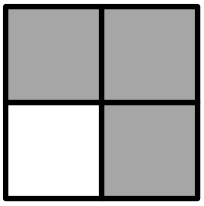
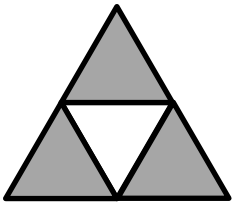
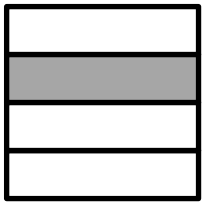
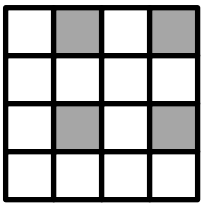
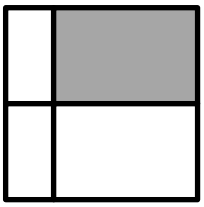
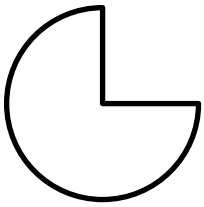
I compared them by looking at both denominators first. For $\frac{5}{6}$, it was 6. For $\frac{2}{8}$, it was 8. 8 is greater than 6. 2 is not greater than 5, but that is not what matters. What matters is the denominators, not the numerators. So, $\frac{2}{8}$ is greater than $\frac{5}{6}$.

$\frac{3}{8}$ (<) $\frac{3}{4}$

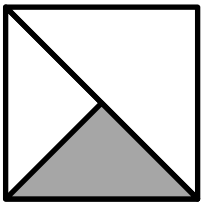
Tell how you compared them without common denominators.

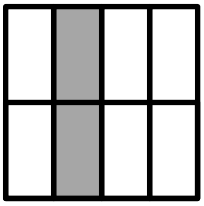
I compared them by looking at both of the denominators. For $\frac{3}{8}$, the denominator is 8. For $\frac{3}{4}$, the denominator is 4. I know that 8 is greater than 4. I looked at the numerators and they were both 3. So the denominators do not matter. The denominators do. So, $\frac{3}{8}$ is greater than $\frac{3}{4}$.

Circle the figures that show $\frac{1}{4}$.

Tell how you know if each of the figures below show $\frac{1}{4}$.





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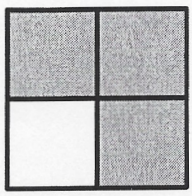
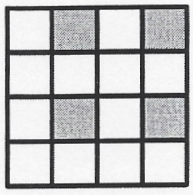
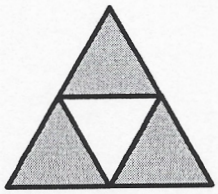
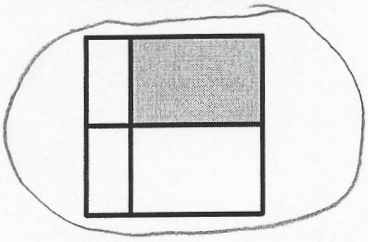
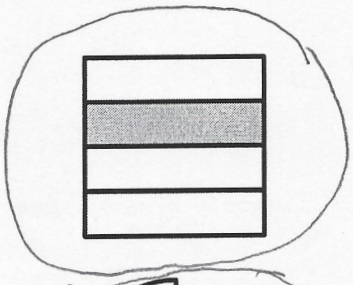
Circle the figures that show $\frac{1}{4}$.

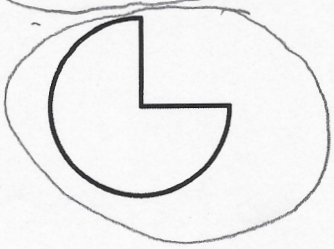




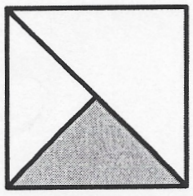




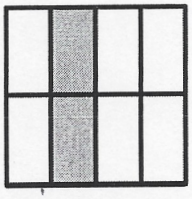




Tell how you know if each of the figures below show $\frac{1}{4}$.



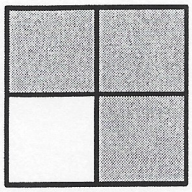
This figure doesn't = $\frac{1}{4}$ because there aren't 4 parts.

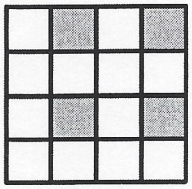


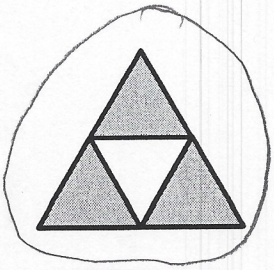
This figure doesn't show $\frac{1}{4}$ because there aren't 4 parts, and it is shaded in 2 times.

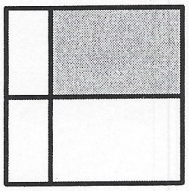
STUDENT WORK 2

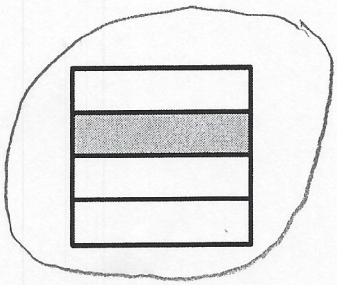
Circle the figures that show $\frac{1}{4}$.

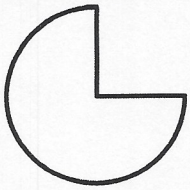






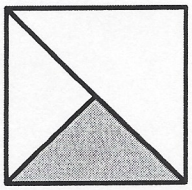




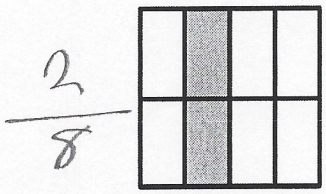


Tell how you know if each of the figures below show $\frac{1}{4}$.

$\frac{1}{3}$



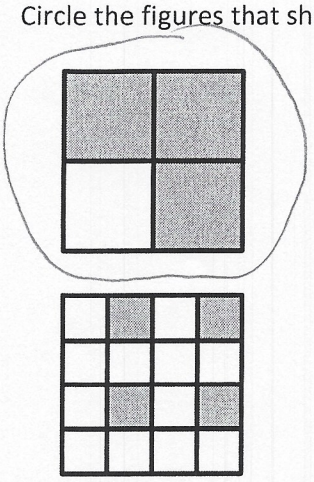
I know that the $\frac{1}{3}$ is not $\frac{1}{4}$ because the block is divided into 3 parts and not 4 parts.

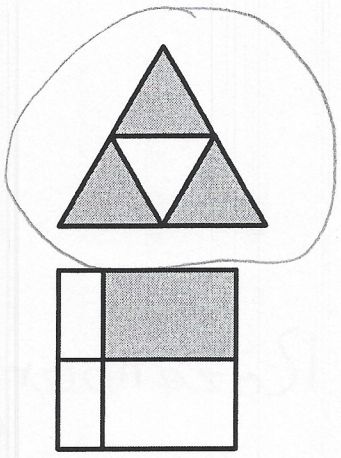


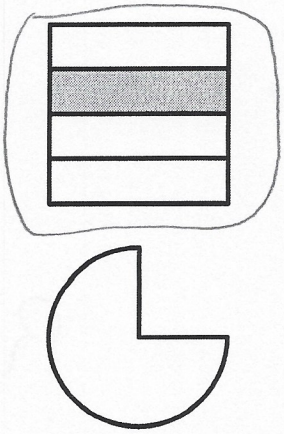
I know that the $\frac{2}{8}$ is not $\frac{1}{4}$ because the block is divided into 8 parts and not 4 parts.

STUDENT WORK 3

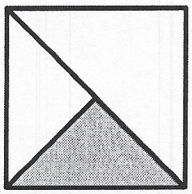
Circle the figures that show $\frac{1}{4}$.



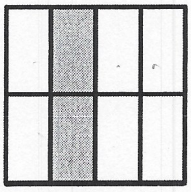




Tell how you know if each of the figures below show $\frac{1}{4}$.

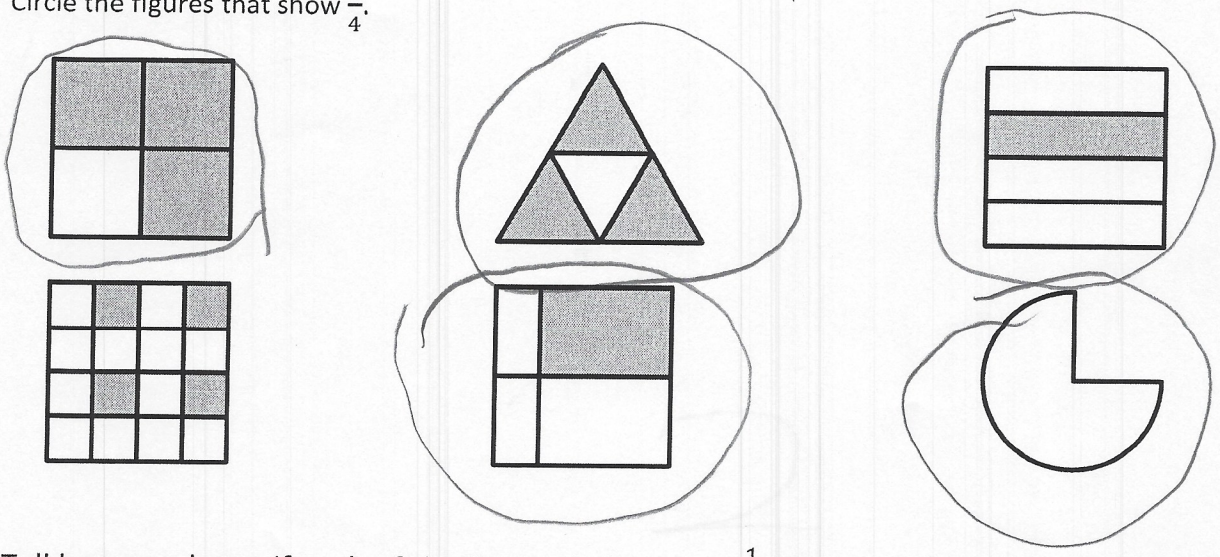


no. thay do not show 1 beca use on the first one $\frac{1}{4}$ it show $\frac{1}{3}$ and the 2 on it shows $\frac{2}{8}$.

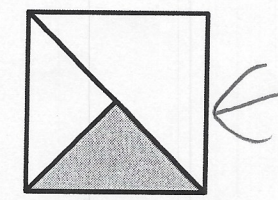


STUDENT WORK 4

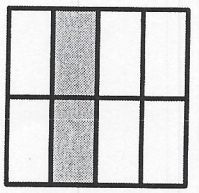
Circle the figures that show $\frac{1}{4}$.



Tell how you know if each of the figures below show $\frac{1}{4}$.



The first square does show $\frac{1}{4}$ because one is shaded and the others are not



This is not $\frac{1}{4}$ because there are eight fractions

Danny knows 5 x 7 = 35.

How can she use that to find 7 x 4?

Use pictures, numbers, or words to explain your thinking.

STUDENT WORK 1

Danny knows 5 x 7 = 35.

How can she use that to find 7 x 4?

Use pictures, numbers, or words to explain your thinking.

by Subtracting 35-1=34.

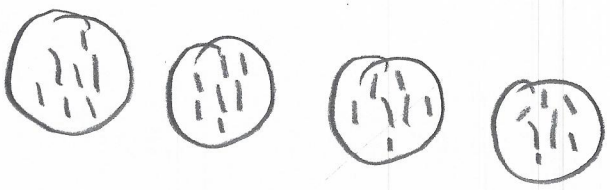
STUDENT WORK 2

Danny knows 5 x 7 = 35.

How can she use that to find 7 x 4?

Use pictures, numbers, or words to explain your thinking.

She can do 7x2=14 and 14x2=28. So 7x4=28.



7x4=28

STUDENT WORK 3

Danny knows 5 x 7 = 35.

How can she use that to find 7 x 4?

Use pictures, numbers, or words to explain your thinking.

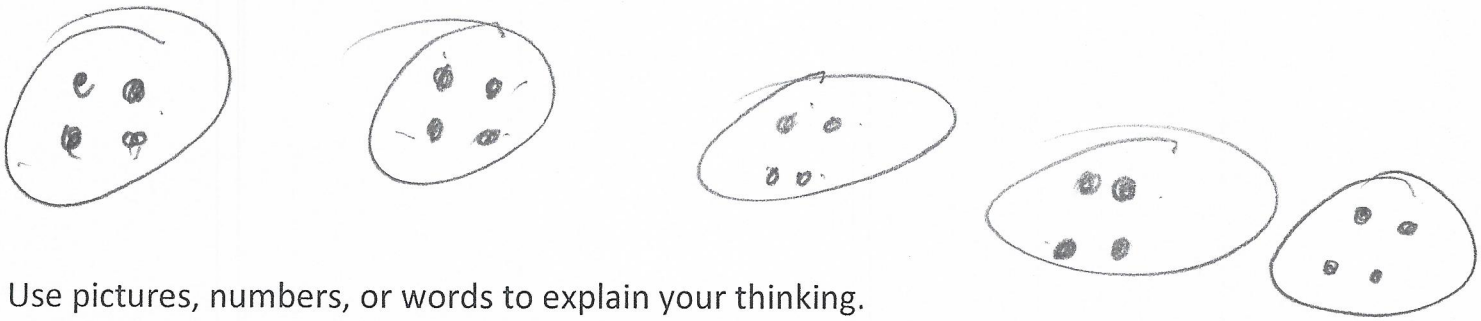
Danny say she knows 5x7 = 35. She can subtract 35 from 7 = 28. So 7x4=28

$$5 \times 7 = \begin{array}{r} \cancel{2}\,\cancel{8}\,\cancel{1}5 \\ -\ 7 \\ \hline 28 \end{array}$$

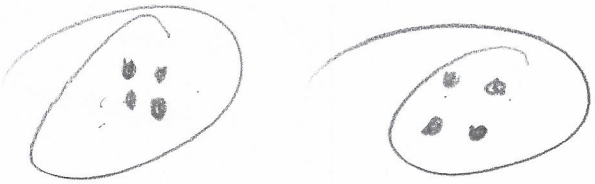
STUDENT WORK 3

Danny knows 5 x 7 = 35.

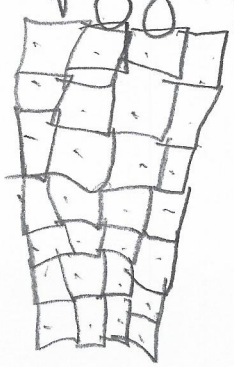
How can she use that to find 7 x 4?

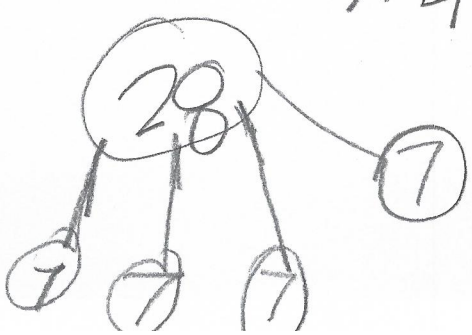


Use pictures, numbers, or words to explain your thinking.



Danny can use an array but she already knows 7X5 and that's the same as 7X4 it's like Danny just took 1 from the 5 to make it 4 but they put the 4 at the end and put the 7 in front. So 7 X 4 = 28.





Amy is stuck with 234 + 599.

Lisa says she can just think of it as 233 + 600.

Do you agree with Lisa? Tell why you agree or disagree.

Does Lisa's idea always work?
Give another example to prove why it does or doesn't work.

Amy is stuck with 234 + 599.

Lisa says she can just think of it as 233 + 600.

Do you agree with Lisa? Tell why you agree or disagree.

I agree with Lisa because if you just take one away from twohardred thirty four its two hundred thirty three and if you add one to five hundred ninty nine you get six hundred.

Does Lisa's idea always work?
Give another example to prove why it does or doesn't work.

Lisa's idea does not always work because if you don't have ninty nine in your problem it won't be a number in the hundreds that is how it won't work.

Sac-Young

Amy is stuck with 234 + 599.

Lisa says she can just think of it as 233 + 600.

Do you agree with Lisa? Tell why you agree or disagree.

I agree because 234 - 1 = 233 and 599 + 1 = 600 so you could just do 233 + 600 which equals 833

234 + 599

Does Lisa's idea always work?
Give another example to prove why it does or doesn't work.

Yes, because you could always subtract 1 in a problem and add 1 in any problem.

Amy is stuck with 234 + 599.

Lisa says she can just think of it as 233 + 600.

Do you agree with Lisa? Tell why you agree or disagree.

I aggree with Lisa. I aggree because 599 is closer to 600 and 233 is esyer, and if you do this you would add one and subract one and that would make it the same answer.

Does Lisa's idea always work?
Give another example to prove why it does or doesn't work.

224 + 699 = 923

Same ▽ 0

223 + 700 = 923

$\begin{array}{r} {}^{1}{}^{1} \\ 224 \\ +699 \\ \hline 923 \end{array}$ $\begin{array}{r} 223 \\ +700 \\ \hline 923 \end{array}$

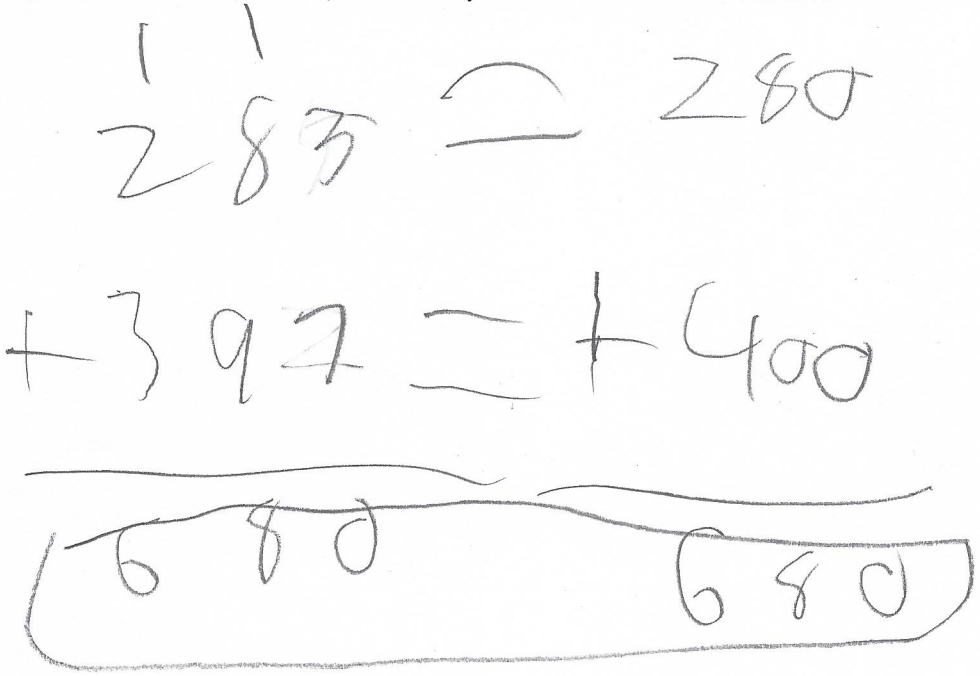
Amy is stuck with 234 + 599.

Lisa says she can just think of it as 233 + 600.

Do you agree with Lisa? Tell why you agree or disagree.

I agree because the numbers still are worth the same they are just different numbers.

Does Lisa's idea always work?
Give another example to prove why it does or doesn't work.



It will Probaly always work.