UNDERSTANDING FRACTIONS

Common Core Standard 3.NF.A.1 – Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.

Hook
Fractions A over B
Numerator A, denominator B (talking fractions)
B is the number of equal parts
A is the number of shaded parts
You can use any number for your A
You can use any number for your B (except 0)
Fractions A over B
Numerator A, denominator B

Verse 1
Let's take a circle, cut it into 8 equal parts
Each part is 1/8th of the circle
There are 8 total parts so that's B or your denominator
The bottom is B
If we shade 3 parts then A is 3
That's 3 out of 8 parts, the fraction reads 3/8th
Now let's take a square
Cut it into 4 equal parts, equal shares
There are 4 total parts so 4 is your denominator
Bottom number's your denominator
If we shade 2 parts then A is 2
A is your numerator so your numerator's 2
2 shaded out of 4 total parts so the fraction is 2/4th
2 out of 4
Denominators are your total parts
And the numerators are the shaded parts
We talking fractions

Hook

Verse 2
If you have a cake and you cut it into 6 equal parts
Each piece is 1/6th of the cake
If you have a pie and you cut it into 5 equal parts
Each piece is 1/5th of the pie
If you have a pizza
Cut into 4 equal parts, each slice is 1/4th of the pizza
If you have a square
Cut in B equal parts, each part is 1 over B parts of the square
Take the fraction 5/6th
In a circle make 6 equal parts and shade 5 parts
Take the fraction 9/10th
In a square make 10 equal parts and shade 9 parts
Remember your denominator is the total equal parts
That the whole is broken into
And your numerator is the part
That you have from the whole that's what you shade
Time to get into fractions

Hook

FRACTIONS ON A NUMBER LINE

Common Core Standard 3.NF.A.2 – Understand a fraction as a number on a number line; represent fractions on a number line diagram

Take a fraction “a” over “b”
Now it’s that time to put it on a number line
Cut the section in “b” equal parts
“a” are the number of parts we shade on the number line

Verse 1
Wanna graph a fraction on a number line?
First thing you do is look at the denominator
That’s the number of your equal parts
In your interval from 0 to 1, it’s not hard
Take the fraction 2/3
Since 3 is your denominator
Cut your interval into 3 equal parts
Now check your numerator
Numerator’s 2, that’s how many parts you shade
Let’s try another one, how about 5/8?
Start with your denominator which is 8
Break your interval into 8 equal parts
5 is your numerator so you shade 5 parts
How about 1/4? 4 is your denominator
Break your interval into 4 equal parts
Now check your numerator which is one
So the total parts you shade is just 1

Hook
Take a fraction “a” over “b”
Now it’s that time to put it on a number line
Cut the section in “b” equal parts
“a” are the number of parts we shade on the number line
“b” the total parts “a” is what we shade
“b” the total parts “a” is what we shade
Intervals from 0 to 1
Broken into “b” equal parts on a number line

Verse 2
If parts of a number line are shaded
Can you tell me the fraction of the interval shaded?
Ready? Here we go
If the interval is cut in 4 equal parts
And 3 were shaded
That’s 3 shaded out of 4 parts
So the fraction is 3/4
Let’s do a few more
Here the interval is broken into 5 equal parts
And 2 are shaded
That’s 2 shaded out of 5 parts so the fraction is 2/5
Yep, every day I shine
‘Cause I can read a fraction on a number line
Got a interval broken into 3 equal parts
With only one part shaded
That’s one shaded part out of 3 parts
So the fraction is 1/3
Number of your total equal parts is the denominator
And the shaded parts are the numerator, yeah

Hook

FRACTIONS

California Standard 7NS1.2 – Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.

Chorus
Listen up class, I'm 'bout to teach a lesson
Don't get mad, don't start stressin'
It's so easy oh it's so easy
It's so easy oh it's so easy
We're about to add and subtract fractions
We 'bout to multiply and divide 'em too
It ain't nothing in this world that you can't do
If you work really hard all dreams come true

Verse 1
Yeah yeah it's time for some action
We're about to add and subtract fractions
Nah, don't be a procrastinator
Act fast, get you a common denominator
That's right, imma teach you all the game
Yes, the numbers at the bottom gotta be the same
When rewriting fractions with common denominators
You must find the first multiple that they have in common
But now we have a new problem that we gotta work out
With new numerators too
Well how did you get the new numerators?
Just multiply each fraction by the number of multiples
But don't get emotional, just add and subtract
But don't change the numbers on the bottom that's a fact
Just evaluate the terms above the vinculum
That's the fraction bar, say it's easy y'all

Chorus

Verse 2
Verse number two, multiplying and dividing
You're doing real well, now just keep trying
Top times top and bottom times bottom
Real simple rules for multiplying
Y'all can divide too, it's not difficult
Just multiply by the reciprocal
Well what does that mean?
First change the signs
When you see divide, turn to multiply
Then flip the second fraction upside down
And just multiply, I think you got it now
Top times top and bottom times bottom
Real simple rules for multiplying
Now you can do it too
Go on 'head and break it down
Even if you're shy
Or the class clown
Compliments of Mr. Queen
Now you can live your dreams
So on the next test go ahead and do your thing

Chorus

EQUIVALENT FRACTIONS

Common Core Standard 4.NFA 1– Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

Intro
1/2 and 2/4, equivalent fractions
2/3 and 4/6, equivalent fractions
8/12 and 2/3 equivalent fractions
6/10 and 3/5, equivalent fractions

Verse 1
Take any fraction multiply your numerator
By a number greater than 1
Then take the same number, multiply with the denominator
Get a fraction that's equivalent
Let's look at 3/5
Multiply by 2 over 2, get 6 over 10
So 3/5 and 6/10 are equivalent
Pick a number multiply with your numerator and denominator
For equivalent fractions
Mr. D drove half a mile
Cut the mile into 2 equal parts, I drove 1 space
Multiply by 4 over 4
You get 4/8 of a mile that's Mr. Q-U-E's place
Mr. Q's mile is cut in 8 equal parts
Then he went 4 spaces, let's see where we are
Mr. D and Mr. Q
Went the same distance
What it means is 1/2 and 4/8 are equivalent

Chorus
Just gotta multiply or you can divide
This is how you can find equivalent fractions
They have the same value
Multiply or divide
This is how you can find equivalent fractions

Verse 2
Take a fraction
Divide the numerator by a factor that is greater than 1
That it shares with the denominator
Then you gotta take the same factor
And divide with the denominator
Try 5/10
Divide by 5 over 5, get 1 over 2
So 5/10 and 1/2 are equivalent
Take your factor and divide it
With the numerator and denominator for equivalent fractions
If a pizza was cut in 6 equal slices and you took 4
Is it the same amount
If it was cut in 3 equal slices and you took 2
Let's see if 4/6 and 2/3 are equivalent
4/6 divide by 2 over 2 is 2/3
So 4/6 and 2/3 are equivalent
It's the same amount of pizza 'cause it's part of a whole
So it means that the portions are equivalent

Chorus

SIMPLIFYING FRACTIONS

Common Core Standard 3.NF.3.B – Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.

Hook
We talking fractions
Gotta simplify your fractions
The key is the greatest common factor, GCF
Wanna simplify your fractions?
Divide by the greatest common factor, GCF
When you wanna simplify
All you gotta do is divide by the greatest common factor
All you do is divide the numerator and denominator
By the greatest common factor

Verse 1
The GCF or the greatest common factor
Is the key to simplifying fractions
The lowest term is the largest number that divides
The numerator and denominator evenly
Take the fraction 3/6
Step 1: list the factors of 3 and 6
Factors of 3 are 1 and 3
Factors of 6 are 1, 2, 3, and 6
3 is the greatest factor they both share
So 3 is the greatest common factor
Now divide both numerator and denominator
By 3 to get a simplified fraction
And your fraction 3/6
Divide by 3 over 3, you'll get 1/2
When you simplify 3/6 you get 1/2
It's like that when you simplify fractions
The fraction 8/10
Divide by 2 over 2 simplifies to 4/5
The fraction 6/9
Divide by 3 over 3 simplifies to 2/3
Take 3/18
Divide by 3 over 3, it simplifies to 1/6
Take 5/15
Divide by 5 over 5, it simplifies to 1/3

Hook

Verse 2
If you have 6 tennis shoes out of 10 total shoes
The fraction of tennis shoes is 6/10
Can you simplify?
Yes, first find the GCF which is 2
Now all you gotta do is divide 6 and 10 by 2
You will get 3/5, that's it
When you simplify 6/10 you get 3/5
These 2 fractions are equivalent
If you have a team of 8 and 4 are boys
Then the fraction of boys is 4/8
Can I simply?
Is what I always ask
I simplify so I always pass
GCF of 4 and 8 is 4
So divide the 4 and 8 by 4 you get 1/2
When you simplify 4/8 to lowest terms you get 1/2

Hook

COMPARING FRACTIONS

Common Core Standard 3NF3D – Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Verse 1
These fractions right here (1/2 and 1/8) I can compare
Compare any fractions anytime, anywhere
Numerators the same, check out denominators
Which one is greater? Which one is smaller?
Look at two whole pizzas, cut them up in equal pieces
One made of two pieces, the other has eight
Which one is greater? Which one is less?
Eight equal pieces is smaller than two equal pieces
Cut from a pizza

Chorus
A fraction is something that's cut up into equal parts
Comparing, comparing two fractions this is where you start
Numerator the same, look at denominators
Which one is bigger? That fraction is smaller

Verse 2
When comparing fractions
I have to use greater than, less than, or equal to
Look at the numerators, they're the same so I look at the bottom, oooh
I'll give an example: we both have an apple pie
I cut mine up in 5 equal pieces, you cut yours up into 3 equal pieces
Now take a look and see
At what fractions we have, I have 1/5, you have 1/3
1/5 is less than 1/3
Because if you take one of my pieces and one of yours
My piece is smaller (yep) comparing, comparing, comparing
I'll draw a picture to show all my work
Make diagrams, it will help, it won't hurt

Chorus
A fraction is something that's cut up into equal parts
Comparing, comparing two fractions this is where you start
Denominators are the same, check numerators
Which number is bigger? That fraction is bigger

Verse 3
When comparing fractions
I have to use greater than, less than, or equal to
Look at denominators they're the same so I look at the top
Here's an example: 2/8 and 4/8
These fractions show how much cake we ate
Which one is less and which one is greater?
Since we can see the bottoms are the same
The fraction is greater with the bigger numerator
2/8 is less than 4/8, you can do fractions anytime, anyplace.

Chorus
A fraction is something that's cut up into equal parts
Comparing, comparing two fractions this is where you start
Numerators the same, look at denominators
Which one is bigger? That fraction is smaller.
A fraction is something that's cut up into equal parts
Comparing, comparing two fractions this is where you start
Denominators the same, check numerators
Which one is bigger? That fraction is bigger

MULTIPLYING AND DIVIDING FRACTIONS

CCSS 6.NSA.1 Create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3.

Top times top, bottom times bottom
All you need to do when you multiply fractions
Top times top, bottom times bottom
But don't forget the rules when you divide fractions

Verse 1
In a class of 30 students, 2/5 wanna rap
And 2/3 of those students also want to act
What fraction of the students wanna rap and act?
And how many students both wanna rap and act?
Gotta multiply the fractions
2/5 x 2/3, yo its time to get it cracking
Top times top, bottom times bottom
Get 4/15 try to simplify the fraction
You can't, so out of 30 students
4/15 the fraction of those that wanna rap and act
Now take 30 which is 30 over 1
Times it by 4/15 you're almost done
Top times top, bottom times bottom
Get 120 over 15 like that
Divide you'll get 8 it's a wrap
8 is how many students out of 30 that wanna rap and act

Hook
Top times top, bottom times bottom
All you need to do when you multiply fractions
Top times top, bottom times bottom
But don't forget the rules when you divide fractions
Switch division make it multiplication
Then flip the second fraction
Don't forget to flip the fraction
Then top times top, bottom times bottom
Real easy but one thing about fractions

Bridge
Gotta simply, don't forget to simplify (x2)

Verse 2
If you have 4/5 of a gallon of juice
How many jars will be used?
If each jar can hold 1/10 of a gallon of juice the word
Each is a real important clue
It means divide, 4/5 divided by 1/10
There are some real important rules that you can't forget
When dividing fractions gotta change division
To multiplication, please pay attention
Then flip the 2nd fraction which is known as reciprocal
4/5 divided by 1/10 becomes 4/5 times 10/1
It's that quick, multiplying these fractions is not difficult
Top times top, you'll get 40
Bottom times bottom, you'll get 5
Now you must divide
40/5 is 8 and that's the number of the
1/10 of a gallon jars it would take

Hook

Bridge

ADD AND SUBTRACT FRACTIONS

CCSS 5.NAF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

Verse 1
Let's look at 2 pizzas
Student A ate 2/5, student B ate 1/3
How much did they eat together?
Wanna add these fractions?
Make the bottoms match first
Take both denominators, list the multiples
Take the first one, they have the same
This is how you find the Least Common Multiple
New denominator: 15, now they are the same
5 goes into 15 three times, multiply 2/5 by 3/3
3 fits into 15 five times
Multiply 1/3 by 5/5
2/5 = 6/15, 1/3 = 5/15
Bottoms match, now add the numerators
Amount of pizza ate was 11/15

Hook (x2)
LCM, least common multiple is where you begin
Bottoms must be the same
Denominators need to be the same
To subtract or add fractions

Bridge
Make the bottoms match, gotta make the bottoms match
Make the bottoms match, gotta make the bottoms match
Make the bottoms match, gotta make the bottoms match
Make 'em match, now it's time to subtract

Verse 2
3/4 of your birthday cake
You wanna give one half of that away
Imma show you how to figure out what you have left
Make the bottoms match, no LCM let's try another way
Multiply your denominators, get 4 x 2, yo is 8
Then cross multiply 2 times 3
And 4 times 1 for your new numerators that's great
Get 6/8 – 4/8 answer is the left over cake, cake
Since the bottoms match subtract the numerators
Amount of cake, cake left yo is 2/8
It's your birthday, day is all yours but 2/8
Must be simplified, of course
Divide 2/8 by 2/2, amount of birthday cake left is 1/4

Hook (x2)

Verse 3
Yo, let's hit the track, say I ran 5 ¼ you ran 2 ½ laps
Total distance of that
Add the two mixed numbers for the total laps on the track
First add the whole numbers: 5 and 2, that's 7
Yeah, that's a lot of laps, but you can't quit, no restin'
Time for some action, now we gotta add the fractions
1/4 + 1/2 LCM of 2 and 4 yo is 4
1/4 stays the same but one half we gotta change
Equivalent fractions is the way, multiply 1/2 by 2/2
Get 2/4 you know what to do, add 1/4 and 2/4
Get ¾ and the total laps ran was 7 ¾

Hook (x2)

IMPROPER FRACTIONS

Common Core Standard 5NS2.3 – Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less), and express answers in the simplest form.

Verse 1
We about to make a mixed number improper
Just multiply the whole number times the bottom
Then add that to the number on the top
And an improper fraction is what you got
Now remember playa, keep that denominator
And all that work you did is your numerator
Now let's try it out, here we go, we can't stop
Covert 2 3/5 show me what you got
2 times 5, yep the answer's 10, then add 3...13, let's put it in
The numerator and 5 is your denominator
13/5 you know it's right when the top is greater
And the top is greater, so your work's complete
And if your answer's right, stand to your feet
Put your pencils up, get a standing ovation
Now look at you, a true math sensation

Chorus
Mixed to improper, improper to mixed
If you wanna learn it do it just like this
Mixed to improper, multipy and add
Improper to mixed, divide and subtract
Yeah, I'm learning my math
I used to be bad, now I can pass
Yeah, I wanna be successful
Just like Drake I wanna be successful

Verse 2
Now let's make an improper mixed, c'mon do this example: 20/6
Listen to this: I N F O. Just divide the fraction use N I D O
Set up division problem with a little house
Numerator inside, denominator out
How many times does 6 go into 20?
3 times and your remainder is 2
Your denominator was six so write it like this: 3 2/6
3's the whole number so you write it big
2 was your remainder kids
6 was the denominator so it stays the same
Just remember that the bottom number can't change
I wanna learn this so I can get a good grade
Imma try my best, make sure that I behave
So I can culminate and walk across the stage

Chorus

Bridge
I can do it I'm the best, I will never stop
Imma keep climbing til I reach the top
Top of my class, I know I'm gonna pass
I can multiply, divide, add, and subtract
Check my paper, I double checked my paper
So I know it's correct, I study hard for my test
I like the feeling of success
Mama put this on the 'frigerator, I'm proud of my paper

FRACTIONS TO DECIMALS

CCSS 7.NAS2.D Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

Verse 1
Say you got a dollar, want to share it with your 3 friends?
Yo, it's 4 of you, let's see what you each get
1/4 TIBO time, top in bottom out
Long division's what we talkin' bout
1 goes in, the 4 is out
Now check to see if 4 can fit into 1
It can't, so you gotta add a decimal up top
And put a zero on the back of 1
Now the 1 becomes 10
4 divides 10 two times
Put the 2 up top then multiply
2 x 4 is 8, put it under 10 then subtract
You'll get 2 then check again
Can 4 divide 2? No
So add another zero, now 2 becomes 20
Can 4 divide 20? Yes
5 times, put the 5 up top and multiply
5 times 4, yo, is 20
Put it under 20
Subtract, you'll get zero
Answer is .25
¼ is .25
Since we said money, what it represents?
That each of your friends gets 25 cents

Hook
Top in, bottom out
TIBO time, division's what we're talking about
Numerator in, denominator out
NIDO time division's what we're talking about
1/5, .20, 1/2, .5, 1/3, .3, 9/10, .9
Take a fraction to a decimal, let's work it out
Long division's really what we're talking about

Verse 2
Say you throw a party, got 3 sodas and 4 people
How much soda do they get to make their cups equal?
3/4, let's write it as a decimal
NIDO time, the way to change a fraction to a decimal
Numerator in, denominator out
3 is the numerator, so the 3 goes inside the house
Denominator 4 Is outside
Got our problem set up, it's time to divide
Check if 4 can fit into 3
It can't, put a decimal up top
And put a zero on the back of 3 to make it 30
4 goes into 30 7 times
7 goes up top, now it's time to multiply
7 and the 4
28 drop it under 30, subtract you'll get 2
Can 4 divide 2? No it can't so add a zero to the 2
And make it 20, now 4 divides 20
5 times, put the 5 up top
Multiply by 4 you'll get 20 now drop it under 20
Subtract you'll get zero, answer is .75
They get 3/4 of a soda which is .75

RESPECT

I'm so respectful (x4)

Verse 1
If you want to get respect, you got to give it
Like the Golden Rule says
Treat others like you want to be treated
Yo, it's all on you
You want to be heard in your class
Don't talk over your teacher
Rule number one: listen when someone is speaking
And when they're speaking
You should always pay attention
I'm talking face to face, eye to eye when you listen
Use your indoor voice when inside of your class
Use appropriate language, come on, show some class
You know I'm always in my seat
Looking fresh and clean, awake, never asleep
I respect my teacher
I show respect, make people proud of me
R-E-S-P-E-C-T, showing respect is the key, hey!

Hook (x2)
Respect, respect, respect, that's all I know
Respect, respect, respect, I always show
Respect, respect, respect, and nothing else
Always show respect to others and respect myself

R-E-S-P-E-C-T, always show respect now
R-E-S-P-E-C-T, others and yourself now
R-E-S-P-E-C-T, always show respect now
R-E-S-P-E-C-T, others and yourself, hey

Never call adults by their first name
Make sure you show them respect
And don't just say mister, missus, or miss
Unless last names come with
That's how you call an adult
When I hold a conversation, do I use curse words? No
If you show respect, you'll get respect
Keep your mind right and stay focused
Won't touch you or your objects
Unless you give me a notice
I go to class before the bell rings
With pen and paper and I take notes
Stay in my seat and I do my work
Get A's and B's 'cause I'm focused
Make sure I listen when a teacher's speaking
I'm so respectful
Don't ever curse in conversations
I'm so respectful
Don't touch things that are not mine
I'm so respectful
I call adults by last names
I'm so respectful

Hook (x2)

I'm so respectful (x4)