Script Code	v22cb07ma0211_sc
Screenplay Status	TL Review
Title	Multiplication of Decimal Numbers(II)
Grade	7
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Editor **Final Sign-off**	Shruti Kumari Vishnu Dev
Mini **Takeaway** **Key** **Takeaway**	1. Multiplication of decimal numbers by 10, 100, and 1000 Multiplication of decimal numbers
Research Doc.	Link
Pitch Doc.	Link
Word Count	925
Presenter	Aashay Chandrakant Mane
Characters	Presenter
Locations	Drawing room

Presenter Outfit	Smart Casuals
Props	No Prop Required
Sub strand	Algebra II

SCENE:1

FSA:
Fade in to show a small town with hardly anyone walking on the road, like wild west towns.

Cut to. A small and old kANGAROO (FLIPPY) walking with a small bag in his hand.

Cut to. The FLIPPY stops by a grocery shop. Behind the counter we see a CHIMP (GUGO).

FLIPPY
Hey, GUGO! How much for these candies?

GUGO leans forward to take a closer look at the candies. He

leans back and says…

GUGO
These cost two point nine three rupees per candy, how many do you want?

FLIPPY looks into his wallet and turns back to GUGO.

FLIPPY
I’m not sure. Can you tell me what would be the price for ten candies,
(beat)
or a hundred,
(beat)
or a thousand candies?

FLIPPY is trying to calculate how much that’ll come to by looking above.

GUGO
Okay! So ten candies will cost you twenty nine point three rupees,
(beat)
a hundred of these will cost you two hundred ninety three rupees,
(beat)
…and a thousand of these are worth two thousand nine hundred thirty rupees.

FLIPPY
Wow! That was pretty quick!

GUGO
Well, it’s nothing but multiplying a decimal number by ten, hundred, and thousand.

GUGO points to the

right. A slider comes from the right and cuts the animation.

FSA ENDS.

SCENE:2

INSERT MoG:

Transition to the presenter.

PRESENTER

Hey everyone, GUGO was pretty fast, wasn't he?
Well, you can also be that quick. Let me tell you how…

INSERT ENDS.

SCENE:3

INSERT MoG:

On cue with "Consider a decimal number…" add the following beside the presenter.(ref)

4.7

PRESENTER

Consider a decimal number, four point seven.

On cue with "…fraction?" add the following beside the presenter.(ref)

PRESENTER

How will you represent it as a fraction?
Let's see!

Retain the previous Mog on cue with " …Here, there is only…" highlight "7" in "4.7.

PRESENTER

Here, there is only one digit in the decimal part of decimal

number four
point seven.

On cue with "So it will be expressed…" add the following text. (ref)

$4.7 = \frac{47}{10}$

PRESENTER
So, it will be expressed as forty-seven by ten.

On cue with "And the converse…" add the title "Decimal" in a text cloud as shown in the reference.(ref)

PRESENTER
And the converse of the same is also true.

On cue with "...Forty seven by ten can be written…" reverse the order of the previous solution as shown below. (ref)

PRESENTER
That is, forty-seven by ten can be written as four point seven.

On cue with "… convert the decimal numbers seven point one eight…" add the following text beside the presenter.
7.18 ××××××× 3.417

PRESENTER
Suppose we have to convert the decimal numbers seven point one eight and three point four one seven into fractions,
(beat)
then what will we get?

Retain the previous MoG "Correct! …" add the following beside the presenter.[Ref]

$7.18 = \frac{718}{100}$

PRESENTER
Correct! Seven point one eight can be expressed as seven hundred eighteen by hundred as it has two digits in the decimal part.

Retain the previous MoG and on cue with "Similarly…" add the following text beside the presenter. [Ref]

$3.417 = \frac{3417}{1000}$

PRESENTER
Similarly, there are three digits in the decimal part of three point four one seven.
(beat)
So, it can be expressed as three thousand four hundred seventeen by one thousand.

On cue with "This means decimal numbers can…" add the TOS beside the presenter. (ref)

PRESENTER
This means decimal numbers can be expressed as fractions with denominators ten, hundred, thousand, and so on.

TOS:
Decimal numbers can be expressed as fractions with denominators 10, 100, 1000, and so on.

PRESENTER
Now, let’s see how to multiply a decimal number by ten, hundred , or thousand?

INSERT ENDS.

FSA (Section card): “Multiplication of Decimal Numbers by 10, 100, and 1000” . (ref)
FSA ENDS.

SCENE:4
INSERT MoG: On cue with “Consider a decimal number…: add the following text beside the presenter.(ref)
22.75

PRESENTER
Consider a decimal number twenty-two point seven five.

On cue with “Let’s multiply…” multiply 22.75 with 10.(ref)

PRESENTER
Let’s multiply it by ten with the help of a few simple steps.

INSERT ENDS

SCENE 5:

INSERT FSA

On cue with "Step 1…" add the following text and the TOS.(ref)

$22.75 = \frac{2275}{100}$

PRESENTER(V.O)

Step 1: Express the decimal number as a fraction.

(beat)

As there are two digits in the decimal part of twenty two point seven five,

(beat)

…so it can be expressed as two thousand two hundred seventy-five by hundred.

TOS:

Step 1: Express the decimal number as a fraction.

On cue with "Step 2…" add the following text and the TOS.(ref)

$\frac{2275}{100} \times 10$

On cue with "On multiplying, we…" add transform the previous text as $\frac{2275}{100} \times 10 = \frac{22750}{100}$.

PRESENTER(V.O)
Step 2: Multiply the fraction obtained in step 1 by ten.
(beat)
On multiplying, we get twenty-two thousand seven hundred fifty divided by hundred.

TOS:
Step 2: Multiply the fraction obtained in step 1 by 10.

On cue with "Step 3…" display the TOS.
Then on cue with "Now, twenty two thousand seven hundred…" display the following:.(ref)

22750 100 100

PRESENTER(V.O)
Step 3: Express this fraction into a decimal number.
(beat)
Now, twenty two thousand seven hundred fifty by hundred can be expressed like this.

TOS:
20000+2000+700+50+0
=

Step 3: Express this fraction into a decimal.
NOTE: Add appropriate duration for the following visuals to retain for at least 2 to 3 seconds.

Retain the previous MoG and on cue with "If you recall…" Add the following text and highlight them separately by their place values Ones, tenths, and hundred positions beside the TOS.(ref)

2000 50
700 0
20000
100
+ + + +
100 100 100 100

200 + 20 + 7+ + = 227.5 $^{5}_{10}{}^{0}_{100}$

PRESENTER(V.O)
If you recall, by using the place value system, we can express this as two hundred twenty-seven point five.

On cue with "So the product…" add the following text.[ref] $22.75 \times 10 = 227.5$

PRESENTER(V.O)
So the product of twenty-two point seven five and ten is two hundred twenty-seven point five.

FSA ENDS.

SCENE:6

On cue with "Let's see how to…" add the following (ref)
22.75×100

PRESENTER
Now that we have seen how to multiply a decimal number by ten,
(beat)
…let's see how to multiply the same decimal number, twenty-two point seven five, by hundred.

INSERT FSA:
Retain the previous MoG and on cue with " can be expressed as two thousand…" add the following: (ref)
$\_^{2275}$

$_{100} \times 100$

PRESENTER(V.O)
Can you recall step 1?
(beat)
Yes, express the decimal number as a fraction.
(beat)
As there are two digits in the decimal part of twenty two point seven five,
(beat)
…so it can be expressed as two thousand two hundred seventy-five by hundred.

TOS:
STEP 1: Express the decimal number as a fraction.

Retain the previous MoG and on cue with "This takes us to…" add the TOS (ref)
On cue with "On multiplying, we get two lakh", display the following: =-= = = 2275 ^{2275}

$_{100}^{100} \times 100^{2275 \times 100}_{227500}$ ^{100}

PRESENTER(V.O.)
This takes us to step 2, which is

multiplying the fraction obtained in step 1 by hundred.

(beat)

On multiplying, we get two lakh twenty-seven thousand five hundred by hundred.

TOS:

STEP 2: Multiply the fraction obtained in step 1 by 100.

Retain the previous MoG and on cue with "Now, step 3…" add the following text.(ref)

$$\frac{227500}{100} = \frac{200000+20000+7000+500+0+0}{100}$$

PRESENTER(V.O.)

Now, step 3 is to express the fraction as a decimal number.

(beat)

Now, two lakh twenty seven thousand five hundred by hundred can be expressed like this.

TOS:

STEP 3: Express the fraction as a decimal number.

NOTE: Add appropriate duration for the visuals to retain for at least 2 to 3 seconds.

Retain the previous MoG and on cue with "If you recall…" Add the following text and highlight them separately by their place values Ones, tenths, and hundred positions beside the TOS.

$$=\frac{200000}{100}+\frac{20000}{100}+\frac{7000}{100}+\frac{500}{100}+\frac{0}{100}+\frac{0}{100}$$

2000 + 200 + 70 + 5 + + = 2275.00 $^{0}_{100}{}^{0}_{100}$
= 2275.00

PRESENTER(V.O.)
If you recall, by using the place value system, we can express this as two thousand two hundred seventy-five.

On cue with "So the product of…" add the following text. [Ref]
$22.75 \times 100 = 2275$

PRESENTER(V.O.)
So the product of twenty-two point seven five and hundred is two thousand two hundred seventy-five.

FSA ENDS.

SCENE:7

PRESENTER
Now let's multiply twenty-two point seven five by thousand by following the same steps.

SCENE:8

INSERT MoG: On cue with "Consider the same decimal…" add the following beside the presenter.(ref)
22.75×1000

PRESENTER
Consider the

same decimal number
twenty-two point seven five and
multiply it by thousand.
(beat)
Now tell me, what should we do first?

INSERT ENDS.

SCENE:9

INSERT FSA:

Retain the precious MoG and on cue with "Correct…" add the TOS as shown in the reference. [ref]

PRESENTER(V.O.)
Correct! For step one, we will express
this decimal number into fraction.

TOS:

STEP 1: Express the decimal number as a fraction.

Retain the previous MoG and on cue with "It can be expressed as " add the following:.(ref)

$= \frac{2275}{100}$

PRESENTER(V.O.)
As there are two digits in the decimal
part of twenty-two point seven five,
(beat)
…it can be expressed as two thousand
two hundred seventy-five by hundred.

Retain the previous MoG and on cue with "Now, in step 2,…" the TOS .(ref)

On cue with "On multiplying, we get twenty-two lakh" add the following:

$= \frac{2275}{100} \times 1000 = \frac{2275 \times 1000}{100} = \frac{2275000}{100}$

PRESENTER(V.O.)
Now, in step 2, we will multiply the fraction obtained in step 1 by thousand.
(beat)
On multiplying, we get twenty-two lakh seventy-five thousand divided by hundred.

TOS:
STEP 2:
Multiply the fraction obtained in step 1 by 1000.

Retain the previous MoG and on cue with "This brings us to step 3…" add the following TOS

On cue with "Now, Twenty two lakh seventy" add the following:
(ref)
2275000 100

100

PRESENTER(V.O.)
This brings us to step 3, which is to express the fraction into a decimal number.
(beat)
Now, twenty two lakh seventy five thousand can be expressed like this…

TOS:
2000000+200000+70000+5000+0+0+0
=

STEP 3: Express the fraction as a decimal number.
NOTE: Add appropriate duration for the visuals to retain for at least 2 to 3 seconds.

Retain the previous MoG and on cue with "If you recall…" Add the following text and highlight them separately by their place values Ones, tenths, and hundred positions beside the TOS.

200000 5000 0
70000 0 0
2000000
=—+ + + + + +
100 100 100 100 100
100 100 0 0 0
= 20000 + 2000 + 700 + 50 + + +
100
100
100
= 22750.000

PRESENTER(V.O.)
If you recall, by using the place value system,
(beat)
…we can express this as twenty-two thousand seven hundred fifty.

SCENE:10
INSERT MoG:
On cue with "So the product of…" add the following text beside the presenter.[Ref]

$22.75 \times 1000 = 22750$

PRESENTER
And the product of twenty-two point seven five and one thousand is

twenty-two thousand seven hundred
fifty.

INSERT ENDS.

SCENE:11

INSERT FSA

On cue with "Now have a look at these products." display

$22.75 \times 10 = 227.5$

$22.75 \times 100 = 2275$

$22.75 \times 1000 = 22750$

On cue with "When we multiply …" highlight the decimal points in the following text.(ref)

$22.75 \times 10 = 227.5$

PRESENTER(V.O.)
Now have a look at these products.
(beat)
Did you observe any pattern here?
(beat)
When we multiply the decimal number by ten, the decimal point gets shifted to the right by one place.

Retain the previous MoG and on cue with "And when we multiply…" highlight the decimal points in the following text..(ref) $22.75 \times 100 = 2275$

PRESENTER(V.O.)
And when we multiply it by hundred, the decimal point gets shifted to the right by two places.

Retain the previous MoG and on cue with "And as we…" highlight the decimal points in the following text..(ref)
$22.75 \times 1000 = 22750$

PRESENTER(V.O.)
And as we multiply the decimal number by thousand, the decimal point gets shifted to the right by three places.

FSA ENDS.

SCENE:12

INSERT MoG:

On cue with " …in general…" add the following TOS. beside the

presenter. (ref)

PRESENTER
From these, we can say that… in general,
(beat)
…when a decimal number is multiplied by ten, hundred, or thousand, the digits in the product remain the same as in the decimal number,
(beat)
…but the decimal point in the product is shifted to the right by as many places as there are zeros over one.[NCERT 7]

TOS:

When a decimal number is multiplied by 10, 100 or 1000, the digits in the product remain the same as in the decimal number, but the decimal point in the product is shifted to the right by as many places as there are zeros over one.

INSERT ENDS.

SCENE:13

INSERT MOG:

On cue with "And this might…" add the following text beside the presenter.[ref]

$2.93 \times 10 = 29.3$

$2.93 \times 100 = 293.0$

$2.93 \times 1000 = 2930.0$

PRESENTER

And this might be the trick used by GUGO to calculate the cost of ten, hundred, and thousand candies.

INSERT ENDS.

SCENE:14

PRESENTER

And that concludes all about multiplication of decimal numbers by ten, hundred, and thousand.

(beat)

So let's summarise what we learnt in this video.

FSA(SUMMARY): [Ref]

PRESENTER

When a decimal number is multiplied by ten, hundred, or thousand, the digits in the product remain the same as in the decimal number,

(beat)

…but the decimal point in the

product
is shifted to the right by as many
places as there are zeros over one.

TOS :
When a decimal number is multiplied by 10, 100, or 1000, the digits in the product remain the same as in the decimal number, but the decimal point in the product is shifted to the right by as many places as there are zeros over one.

FSA ENDS.

SCENE:15

INSERT MoG:
On cue with "Wasn't the multiplication…" show the following as shown in the reference. **[Ref]**

$2.93 \times 10 = 29.3$

$2.93 \times 100 = 293$

$2.93 \times 1000 = 2930$

PRESENTER
Wasn't the multiplication of a decimal number by ten, hundred and thousand easy?

Retain the following MoG in the left side of the presenter and on cue with "Now if we have to perform…" add the following on the right side of the presenter as shown in the reference. [ref]

$2.93 \div 10$

$2.93 \div 100$

$2.93 \div 1000$

PRESENTER
Now if we have to perform division of a decimal number by ten, hundred, and thousand instead of multiplication, then what shall we do?
(beat)

video to know about
it!

INSERT ENDS.