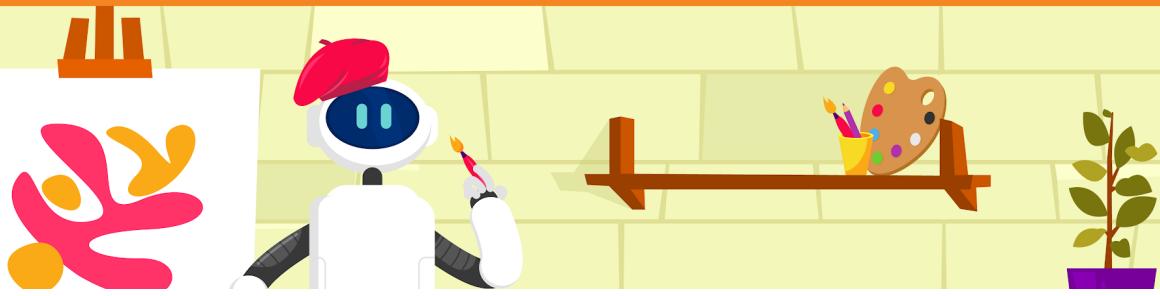
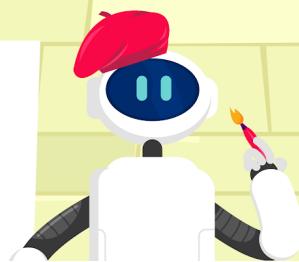


| | |
|---------------------------------|-----------|
| Warm-up | 4 |
| Teacher Activity - TA | 5 |
| Student Activity - SA | 12 |
| Advanced Activities - AA | 20 |
| Advanced Activity - 1 | 20 |
| Advanced Activity - 2 | 23 |
| Advanced Activity - 3 | 27 |
| Create Activity - CA | 30 |
| Wrap Up | 35 |
| Applet Links | 37 |
| GLOSSARY | 37 |



| | | |
|--------------------|---|--|
| Topic | Meet The Decimals 2 | |
| Class Description | <p>Narrative - You and Artie, the artist robot, have teamed up to make the best robot-made painting ever.</p> <p>Math - The lesson extends the previous understanding that in a multi-digit whole number, a digit at one place represents ten times what it represents at the place to its right. This further extends to representation of decimal in standard form, number name, and expanded form. Thereafter, it connects decimals and fractions to percentages through equivalent fractions and grid models (real-life context).</p> | |
| Class | M2-G5-C8 | |
| Class time | 60 mins | |
| Goal | <ol style="list-style-type: none">1. (-1) Recall: Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. 4.NBT.A.12. (0) Core: Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. 5.NBT.A.3.A3. (+1) Advanced: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life. 6.RP.A.3.C4. (+2) Accelerate: Use proportional relationships to solve percent problems. 7.RP.A.3.C | |
| Resources Required | <ul style="list-style-type: none">• Teacher Resources<ul style="list-style-type: none">○ Earphone with mic○ Tablet-Stylus• Student Resources<ul style="list-style-type: none">● Earphone with mic (optional)● Paper- Pen● Tablet-Stylus (Optional) | |
| Class structure | <ol style="list-style-type: none">1. Warm-Up2. TA3. SA/AA4. Create5. Wrap Up | <ol style="list-style-type: none">1. 3 Mins2. 25 Mins3. 15 Mins4. 10-12 Min5. 3 Mins <p>(Use discretion)</p> |

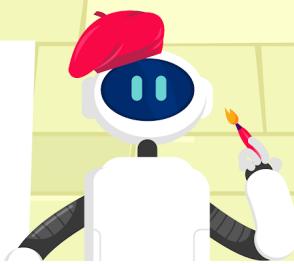


Warm-up

Warm-up (3 min)

- Connect with the student
- Get the student to talk and express

| Applet Screenshot | Whiteboard (if any) | Learning Experience Probing Qs |
|-------------------|---------------------|--|
| | | <p>Ask:</p> <ul style="list-style-type: none">• Have you ever tried making art with paint? <p>Say:</p> <ul style="list-style-type: none">• A lot of instruction manuals tell you how to create new shades, like mix 2 swatches of red and 1 swatch of green to get a dark brownish yellow color. <p>Ask:</p> <ul style="list-style-type: none">• Do you think these two ways, that is, mixing 2 swatches of red and 1 swatch of green or 1 swatch of green and 2 swatches of red, of expressing quantities have the same meaning? -They have a similar meaning. In math, we can represent an amount or quantity in various forms. <p>Ask:</p> <ul style="list-style-type: none">• In how many ways we can write a number, like 55?<ol style="list-style-type: none">1. Usually, a number can be represented in three different ways,2. Standard form- 553. Expanded form- $5 \times 10 + 5 \times 1$4. Number name form- Fifty-five• Do you think a decimal number can also be represented in different forms? <p>Say:</p> <ul style="list-style-type: none">• Well, today we are going to learn all about decimals and how to express them in different ways. Also, we're going to participate in Build-a-Bot while doing it!• Build-a-bot is a world famous competition |



| | | |
|--|--|--|
| | | <p>where students like you build a robot and have the robot perform something.</p> <ul style="list-style-type: none"> • Your robot is Artie, an excellent artist. We just need to get it ready to start the painting, and amaze the judges! |
|--|--|--|

Teacher Activity - TA

Core Concepts

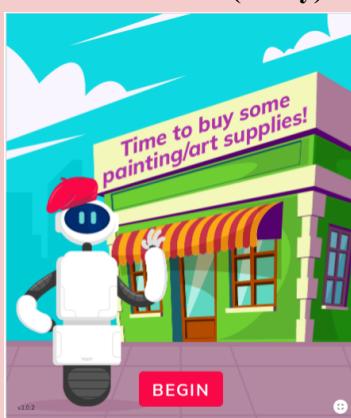
- **(-1) Recall:** Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
- **(0) Core:** Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.
- **(+1) Advanced:** Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

Teacher Activity (25 mins)

Mandatory

- Allow the child to ‘do’ the activities.
- Provide the support where needed.
- **Please skip Q6 for 1:many classes but continue with Q6 if it is a 1:1 class.**

Narrative Outline (Entry):

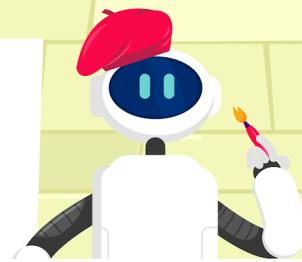


If Artie needs to start drawing, it's going to need some special art supplies first. Let's run to the store!

TA Q1 - The value of the digit 6 in the hundreds place is _____ times the value of 6 in the tens place.

Say :

- Before we get started with the purchases, let's quickly brush up some basics.



Question Screenshot -

0-01

The value of the digit 6 in the hundreds place is _____ times the value of 6 in the tens place.

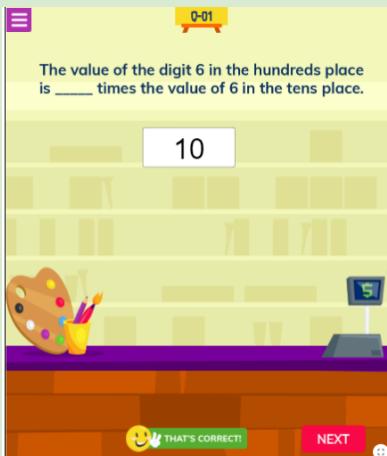


Answer Screenshot -

0-01

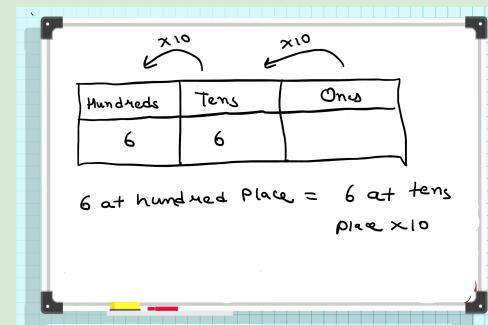
The value of the digit 6 in the hundreds place is _____ times the value of 6 in the tens place.

10



TA-Q1

(WB 1)



Steps :

- Hundreds place is how many times the tens place? (WB 1)
 - a. 10
- How many times the value of digit 6 will be in hundreds place as compared to tens place?
 - a. 6 at hundred place = 6 at tens place $\times 10$
 - b. 10

Knowledge Points/Evidence of Learning: Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

TA Q2- The tens place value position is _____ times of its next lesser place value position.

Say:

- Here's another question to brush up the concept.

Steps :

- What is the next lesser place value to the tens place value? (WB 1)



Question Screenshot -

Q-02

The tens place value position is ___ times of its next lesser place value position.

CHECK

Answer Screenshot -

Q-02

The tens place value position is ___ times of its next lesser place value position.

10

THAT'S CORRECT!

NEXT

TA-Q2

(WB 1)

| Hundreds | Tens | Ones |
|----------|------|------|
| | | |

$\times 10$ $\times 10$

Value at tens place = Value at ones place $\times 10$

(WB 2)

| Tens | Ones |
|------|------|
| | |

$\times \frac{1}{10}$ $\times \frac{1}{10}$

(WB 3)

| Tens | Ones |
|------|------|
| | |

$\times 10$ $\times 10$

| Tens | Ones | Tenths |
|------|------|--------|
| | | |

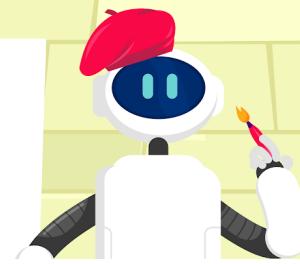
$\times 10$ $\times 10$

a. Ones place value

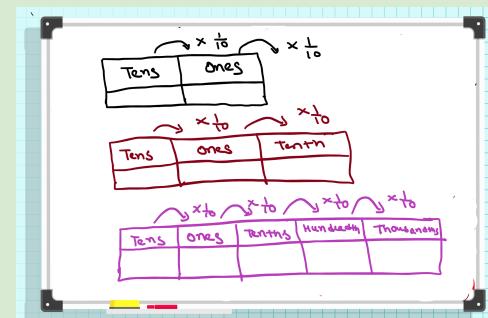
- Tens place value is how many times that of ones place value?
 - a. Value at tens place = value at ones place $\times 10$ (WB 2)
 - b. 10

Probing Questions -

- Is there any place value less than tens place?
 - There is a lesser place value than tens place which is known as tenth place value.
- How much lesser will it be from ones place value? (WB 3)
 - $1/10$ times
- Is there any place value less than tenths place?
 - The lesser place value next to tenths is hundredths, followed by thousandths, and so on. (WB 4)



(WB 4)



Knowledge Points/Evidence of Learning: Find the place value of a given digit in a multi digit decimal number.

TA Q3 -Place 5.612 in the place value table.

Question Screenshot -

Answer Screenshot -

Say:

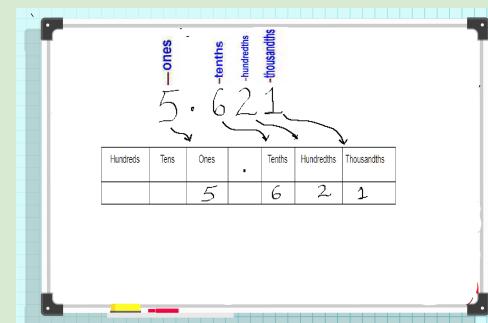
- In the art supply store, there is an ink dispenser that lets you decide the amount of ink you want for Artie's printer, but the dispenser will only accept the amount of ink in the given format.

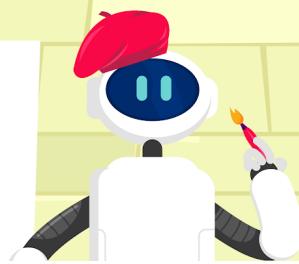
Steps :

- Which digit is at ones place in the given number? (WB 1)
 - 5
 Which digit is at tenths place value of this number?
 - The place value of a digit right to the decimal is tenth place value.
 - 6
- Which digit is at hundredths place value of this number?
 - 2
- Which digit is at thousandths place of this number?
 - 1

Note: Use whiteboard to explain the answer.

(WB 1)





TA-Q3

Knowledge Points/Evidence of Learning: Read and write decimals to the thousandths using number names.

TA Q4 - Write the correct number name for 45.26.

Question Screenshot -

Answer Screenshot -

TA-Q4

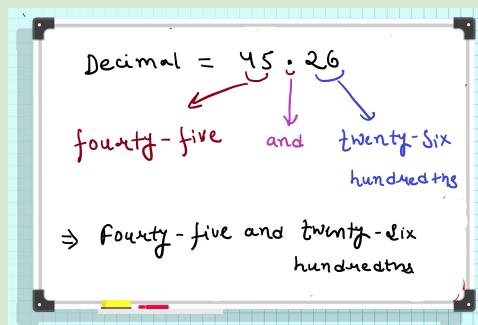
Say:

- We need to instruct the shopkeeper about the canvas size required for our painting.

Steps:

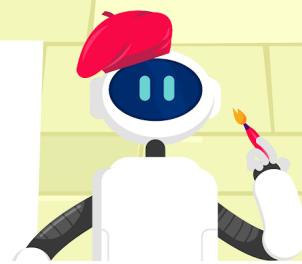
- What is the length of the canvas that we need?
 - 45.26 inches
- Let's write the given decimal in the form of a number name. (WB 1)
 - Step 1-** Write the number name of whole numbers present on the left side of the decimal point.
 - What is the whole number in our decimal?
 - Forty-five
 - Step 2-** Write "and" for the decimal point.
 - What does our number name become?
 - Forty-five and
 - Step 3-** Write the digits to the right of the decimal point in the number name form.
 - What is added to our number name?
 - Forty-five and twenty-six
 - Step 4-** Write the place name of the last digit on the right.
 - What is the place value name of the last digit?
 - Forty-five and twenty-six hundredths

(WB 1)



Knowledge Points/Evidence of Learning: Read and write decimals to the thousandths using base-ten numerals, number names, and expanded forms. Read and write decimals to the thousandths place using place value extension to decimals.

TA Q5 - Select the correct numbers to complete the expanded form of 36.278.



Question Screenshot -

0:05

Select the correct numbers to complete the expanded form of 36.278.

$3 \times ? + 6 \times ? + 2 \times ? + 7 \times ? + 8 \times ?$



CHECK

Answer Screenshot -

0:05

Select the correct numbers to complete the expanded form of 36.278.

$3 \times 10 + 6 \times 1 + 2 \times \frac{1}{10} + 7 \times \frac{1}{100} + 8 \times \frac{1}{1000}$



THAT'S CORRECT!

NEXT

TA-Q5

(WB 1)

Decimal = 36.278

| Hundreds | Tens | Ones | . | Tenths | Hundredths | Thousands |
|----------|------|------|---|--------|------------|-----------|
| 3 | 6 | | | 2 | 7 | 8 |

$$3 \times 10 + 6 \times 1 + 2 \times \frac{1}{10} + 7 \times \frac{1}{100} + 8 \times \frac{1}{1000}$$

Adding all the values,

$$3 \times 10 + 6 \times 1 + 2 \times \frac{1}{10} + 7 \times \frac{1}{100} + 8 \times \frac{1}{1000}$$

(WB 2)

Decimal = 0.5

fraction = $\frac{5}{10}$

Equivalent fraction = $\frac{5 \times 10}{10 \times 10} = \frac{50}{100}$

Percentage = 50 per 100 = 50%

Say:

- This art store accepts credits only in the form of different place values like 10 credits, 100 credits, 0.1 credits, etc.

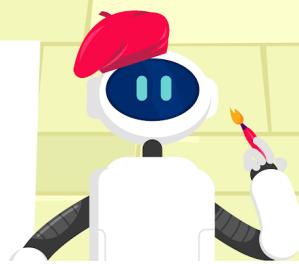
Steps:

- What is the rule we follow while writing the expanded form of any whole number? (WB 1)
 - Multiply each digit of a number to its respective place.
- How will you write 36.278 in a similar manner?
 - For digits after decimal, the expanded form is written by multiplying each digit with its respective place such as tenth, hundredth, thousandth, and so on.
 - 36.278 will be written as: $3 \times 10 + 6 \times 1 + 2 \times \frac{1}{10} + 7 \times \frac{1}{100} + 8 \times \frac{1}{1000}$

Probing Questions -

- How do you convert a given decimal into percentage? (WB 2)
 - Decimal is converted into a fraction with the denominator of 100.
 - Why do we need the denominator as 100 for the conversion?
 - Percentage means amount of quantity per 100.
 - Example: 0.5 will be first written as $5/10$. Then, we will make the denominator as 100.
 - New fraction = $50/100$
 - Percentage = 50%

Knowledge Points/Evidence of Learning: Read and write decimals to the thousandths using base-ten numerals, number



names, and expanded forms. Read and write decimals to the thousandths place using place value extension to decimals.

TEACHER INSTRUCTION for 1:many class

- Please proceed to SA if the students are NOT confident with <topic of class>.
- Please proceed to AA1 if the students are confident with <topic of class>.

TEACHER INSTRUCTION for 1:1 class

- No change please continue to Q6.

TA Q6 - Represent the amount of green color into percentage.

Question Screenshot -

Q-08

0.25 mL of green color is added to white color to obtain a total of 1 mL. Represent the amount of green color in percentage.

CHECK

Answer Screenshot -

Q-08

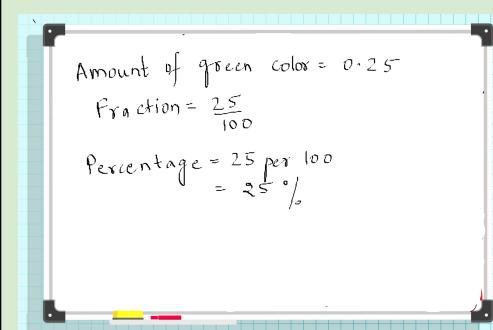
0.25 mL of green color is added to white color to obtain a total of 1 mL. Represent the amount of green color in percentage.

THAT'S CORRECT!

NEXT

TA-Q6

(WB 1)



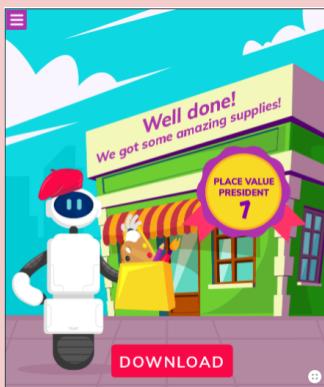
Say:

- We need a particular shade of green color to show the grass.
- The expert at the store says that you need to mix 0.25 mL of green color in 1 mL of white color.

Steps:

- How will you write 0.25 as a fraction? (WB 1)
 - 25 / 100
- How will you write 25/100 as a percentage?
 - 25/100 means 25 for every 100. This can be written as 25%.
 - 25%

Knowledge Points/Evidence of Learning: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

**Narrative Outline (Exit):**

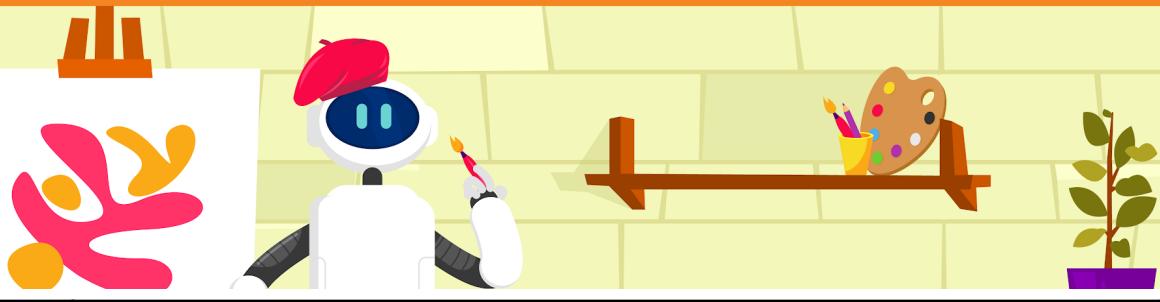
Well done!
We got some amazing supplies.

Student Activity - SA 12**Advanced Activities - AA** 20**Advanced Activity - 1** 20**Advanced Activity - 2** 23**Advanced Activity - 3** 27**Create Activity - CA** 30**Wrap Up** 35**Applet Links** 37**GLOSSARY** 37**Student Activity - SA****Student Activity (10 mins)**

- **Optional**, if the student has confidently solved all the problems in Teacher Activity
- **Compulsory**, if the student struggled in the previous activity
- Lead the student to solve the problems in these activities

Narrative Outline (Entry):

There are a lot of things to set up in the art studio before we get started. Let's make sure Artie has everything it needs.



SA Q1 - In which of the following numbers, the place value of digit 9 is 90?

Question Screenshot -

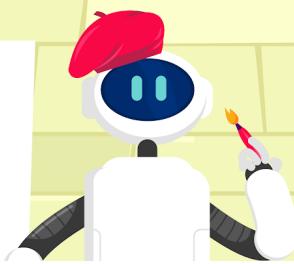
(WB 1)

Say :

- Now, we have everything that we need for the painting.
- Let's start organizing them. But before we get started, let's warm up with two quick questions.

Steps :

- In which place the digit 9 in the number 90? (WB 1)
 - Tens
- Which number has 9 in its tens place?
 - 297



Answer Screenshot -

0-01

In which of the following numbers, the place value of the digit 9 is 90?

729
 297
 927

THAT'S CORRECT!

SA-Q1

Knowledge Points/Evidence of Learning: Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

SA Q2- The place value of 5 in 950 is 1/10 times the place value of 5 in _____.

Question Screenshot -

0-02

The place value of 5 in 950 is $\frac{1}{10}$ times the place value of 5 in _____.
 959
 590
 995

CHECK

(WB 1)

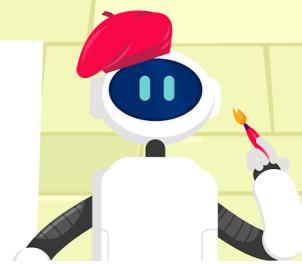
Place value of 5 in 950 = Tens
 Hundreds place value $\times \frac{1}{10}$ = Tens place value
 option a \rightarrow 959 \rightarrow Tens place
 option b \rightarrow 590 \rightarrow Hundreds place
 option c \rightarrow 995 \rightarrow Ones place

Say :

- Here's another question to brush up the concept.

Steps:

- In which place is the digit 5 in the number 950? (WB 1)
 - a. Tens
- Which place value we should multiply with 1/10 to get tens place value?
 - a. Hundreds
- Which of these numbers has 5 at hundreds place?
 - a. 590



Answer Screenshot -

The place value of 5 in 950 is $\frac{1}{10}$ times the place value of 5 in ____.

959
 590
 995

THAT'S CORRECT!

SA-Q2

Knowledge Points/Evidence of Learning: Find the place value of a given digit in a multi digit decimal number.

SA Q3 - Place 26.34 in the place value table.

Place 26.34 in the place value table.

| Hundreds | Tens | Ones | Tenths | Hundredths | Thousands |
|----------|------|------|--------|------------|-----------|
|----------|------|------|--------|------------|-----------|

CHECK

(WB 1)

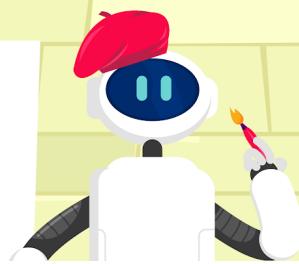
| Hundreds | Tens | Ones | . | Tenths | Hundredths | Thousands |
|----------|------|------|---|--------|------------|-----------|
| 2 | 6 | . | 3 | 4 | | |

Say :

- According to the instructions, the final drawing should only come upto 26.34 inches.
- Input that into Artie correctly so that it doesn't exceed the painting limits.

Steps :

- Which digit is at tens place in the given number? (WB 1)
 - 2
- Which digit is at ones place in the given number?
 - 6
- Which digit is at tenths place value of this number?
 - The place value of a digit right to the decimal is tenth place value.
 - 3
- Which digit is at hundredths place value of this number?
 - 4



Answer Screenshot -

0-03

Place 26.34 in the place value table.

| Hundreds | Tens | Ones | Tenths | Hundredths | Thousands | |
|----------|------|------|--------|------------|-----------|---|
| 0 | 2 | 6 | . | 3 | 4 | 0 |

THAT'S CORRECT!

NEXT

SA-Q3

Knowledge Points/Evidence of Learning: Read and write decimals to the thousandths using number names.

SA Q4 - Write six hundred eighty- seven and eighty-five thousandths as a decimal number.

Question Screenshot -

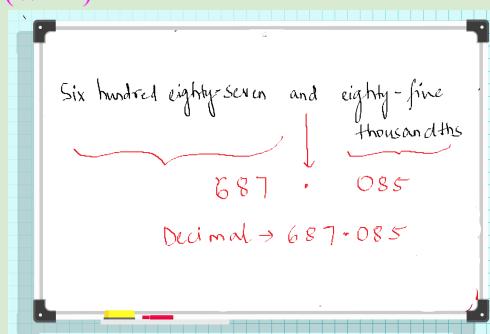
0-04

Write the following number name as a decimal.

Six hundred eighty-seven and eighty-five thousandths

CHECK

(WB 1)



Say -

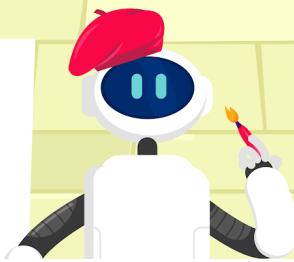
- You forgot to get the tape from the art store!
- You need 687.085 inches of tape, and you decide to call the store on the phone.

Steps -

- How will you write six hundred eighty- seven as a number?
 - 687
- What does the word “and” represents?
 - It represents decimal
- How will you write six hundred eighty- seven and eighty-five thousandths as a decimal number?

(WB 1)

 - 687.085



Answer Screenshot -

0-04

Write the following number name as a decimal.

Six hundred eighty-seven and eighty-five thousandths

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | 8 | 7 | . | 0 | 8 | 5 |
|---|---|---|---|---|---|---|

THAT'S CORRECT **NEXT**

SA-Q4

Knowledge Points/Evidence of Learning: Read and write decimals to the thousandths using base-ten numerals, number names, and expanded forms. Read and write decimals to the thousandths place using place value extension to decimals.

SA Q5 - Select the terms that are incorrect.

Question Screenshot -

0-05

The expanded form of 45.809 is shown below.
Select the terms that are incorrect.

$$4 \times 10 + 5 \times 1 + 8 \times \frac{1}{10} + 0 \times \frac{1}{100} + 9 \times \frac{1}{1000}$$

| | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

CHECK

(WB 1)

Decimal = $45 + 0.89$

| Hundreds | Tens | Ones | . | Tenths | Hundredths | Thousands |
|----------|------|------|---|--------|------------|-----------|
| 4 | 5 | | | 8 | 9 | |

4×10 5×1 $0 \times \frac{1}{10}$ $8 \times \frac{1}{100}$ $9 \times \frac{1}{1000}$

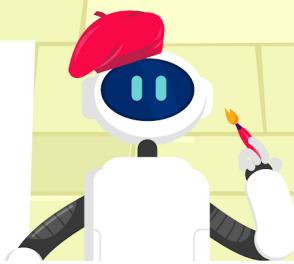
Expanded form: $4 \times 10 + 5 \times 1 + 0 \times \frac{1}{10} + 8 \times \frac{1}{100} + 9 \times \frac{1}{1000}$

Say:

- Here's some error because of which Artie's printer is drawing at the wrong angle.
- Let's fix the errors!

Steps:

- How will you write 45.809 in the expanded form? (WB 1)
 - $4 \times 10 + 5 \times 1 + 8 \times \frac{1}{10} + 0 \times \frac{1}{100} + 9 \times \frac{1}{1000}$
- Which of the place values are incorrect in the given expanded form?
 - $\frac{1}{10}$ and $\frac{1}{100}$



Answer Screenshot -

0:05

The expanded form of 45.809 is shown below.
Select the terms that are incorrect.

$$4 \times 10 + 5 \times 1 + 8 \times \frac{1}{100} + 0 \times \frac{1}{10} + 9 \times \frac{1}{1000}$$

THAT'S CORRECT! NEXT

SA-Q5

Knowledge Points/Evidence of Learning: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

TEACHER INSTRUCTION for 1:many class

- Please proceed to SA if the students are NOT confident with ratios.
- Please proceed to AA1 if the students are confident with ratios.

TEACHER INSTRUCTION for 1:1 class

- No change please continue to Q6

SA Q6 - Express 0.3 in percentage.

Question Screenshot -

0:08

While making the painting, 0.3 out of 1 part of the ink gets wasted. Express the amount of ink wasted in percentage.

% CHECK

(WB 1)

Decimal = 0.3
 Fraction = $\frac{3}{10}$
 Equivalent fraction = $\frac{3 \times 10}{10 \times 10} = \frac{30}{100}$
 ∴ Percentage = 30 per 100 = 30%

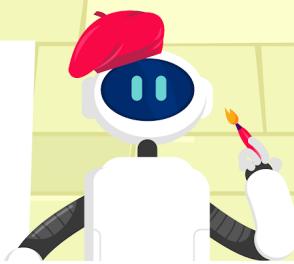
Say :

- Our printer wastes 0.3 part of the whole ink while printing.

Steps :

(WB 1)

- How will you write 0.3 as a fraction?
- 3/10
- How will you write 3/10 as an equivalent fraction?
- $3 \times 10 / (10 \times 10) = 30/100$
- How will you write 30/100 in percentage form?
 - a. 30/100 means 30 for every 100. This can be written as 30%.



Answer Screenshot -

Q-06

While making the painting, 0.3 out of 1 part of the ink gets wasted. Express the amount of ink wasted in percentage.

A blue ink bottle labeled "INK" sits on a shelf. Below it is a yellow box containing the number "30" and the word "%".

THAT'S CORRECT! button

NEXT button

SA-Q6

- 30%

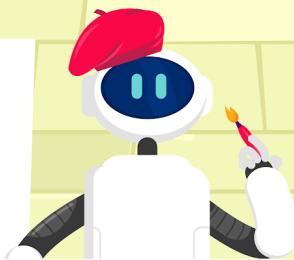
Knowledge Points/Evidence of Learning: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

Narrative Outline (Exit):



Planning is all done! Looks like we're ready!

| | |
|---------------------------------|-----------|
| Advanced Activities - AA | 20 |
| Advanced Activity - 1 | 20 |
| Advanced Activity - 2 | 23 |
| Advanced Activity - 3 | 27 |
| Create Activity - CA | 30 |
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Advanced Activities - AA

Advanced Activity - 1

Advanced Activity - Concepts

- (+1) Advanced: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.
- (+2) Accelerate: Use proportional relationships to solve percent problems.

Advance Activity 1

- This is Optional as it is +1 above the grade level.
- Start, only when more than 15 minutes on the clock.
- Skip to Create Activity if only 10 minutes left.

Narrative Outline (Entry):

Artie's battery is down. Let's charge it up!



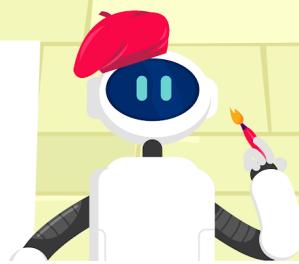
AA1 Q1 - In a robot 100% battery lasts for 80 minutes. For how much time will 25% of it last?

Say:

- Given that, 100% battery for Artie lasts for 80 minutes.

Ask:

- How will you find out the time for which the 25% battery last?



Question Screenshot -

Q-01

In a robot, 100% battery lasts for 80 minutes. For how much time will 25% of it last?

CHECK

Answer Screenshot -

Q-01

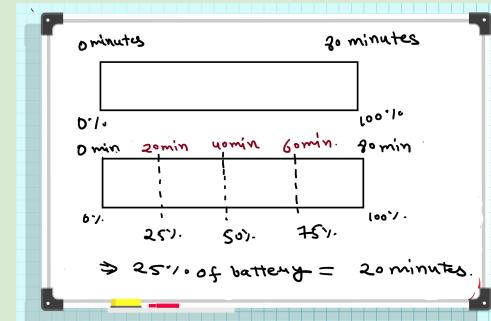
In a robot, 100% battery lasts for 80 minutes. For how much time will 25% of it last?

THAT'S CORRECT!

NEXT

AA1-Q1

(WB 1)



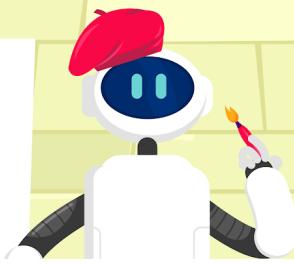
Steps:

(WB 1)

- The 100% battery lasts for 80 minutes. This means that 80 is the value for the whole, that is, 100 equal parts.
- 80 is the value of the whole 100 parts. We have to find out the equivalent of 80 for 25 per 100 parts.
- 100 should be divided by 4 to get 25, so 80 minutes should also be divided by 4 to get the time for the 25% battery.
- $80 \div 4 = 20$ minutes

Knowledge Points/Evidence of Learning: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

AA1 Q2- Artie paints 200 blocks when fully charged. How many blocks can it paint at 50% battery.

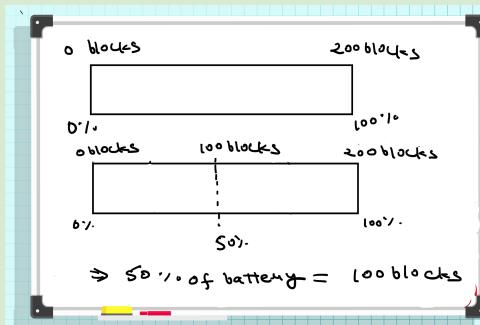


Question Screenshot -

0-02

Artie paints 200 blocks when full charged. How many blocks can it paint at 50% battery?

CHECK



Say -

- Artie estimates that a full battery would be empty when it is done coloring 200 blocks on the canvas.

Ask:

- How will you find out the blocks covered by 50% battery?

Steps -

- 100% battery covers the 200 blocks. This means that 200 is the value for the whole, that is, 100 equal parts.
- 200 is the value of the whole 100 parts. We have to find out the equivalent of 200 for 50 per 100 parts.
- 100 should be divided by 2 to get the 50, so for 200 blocks should also be divided by 2 to get the blocks covered by 50% battery.
- $200 \div 2 = 100$ blocks

Answer Screenshot -

0-02

Artie paints 200 blocks when full charged. How many blocks can it paint at 50% battery?

THAT'S CORRECT!

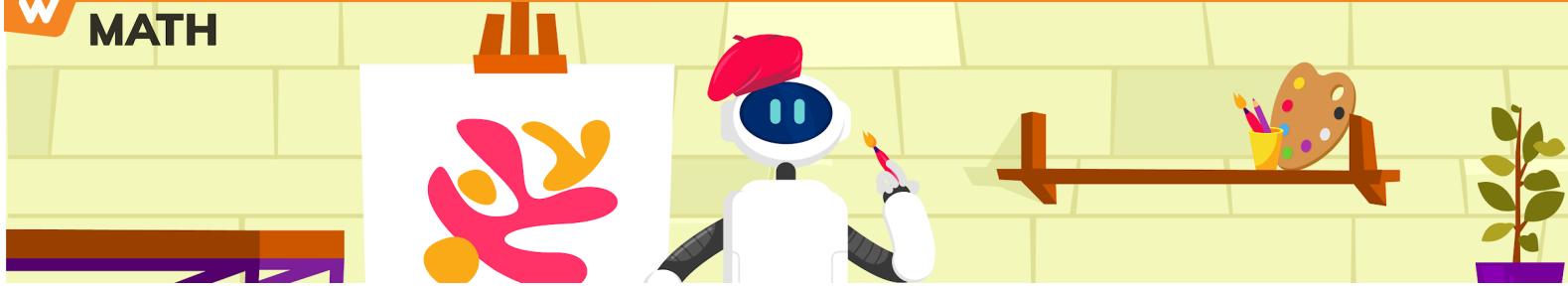
NEXT

AA1-Q2

Knowledge Points/Evidence of Learning: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

Narrative Outline (Exit):

Well done! Artie's batteries are charged and the canvas is ready.



Well done! Artie's multiple batteries are charged and the canvas is ready.



| | |
|------------------------------|-----------|
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| Advanced Activity - 3 | 27 |
| Create Activity - CA | 30 |
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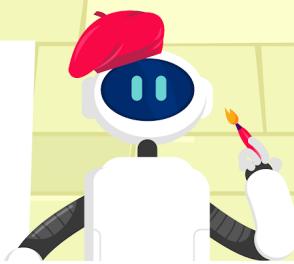
Advanced Activity - 2

Advance Activity 2

- This is Optional as it is +1 above the grade level.
- Start, only when more than 15 minutes on the clock.
- Skip to Create Activity if only 10 minutes left.

Narrative Outline (Exit):

How well are our posts doing on social media? Let's find out.

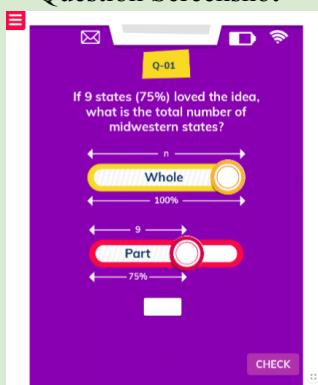


How well are our posts doing on social media?

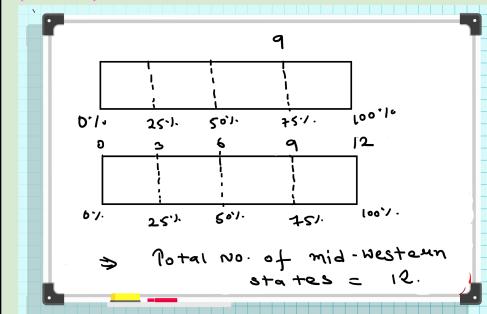


AA2 Q1 - If 9 states (75%) loved the idea, what is the total number of midwestern states?

Question Screenshot -



(WB 1)



Say -

- People love the idea of a robot that can draw.
- Let's look at how our posts are doing online.
- 9 states which make up 75% of the midwestern states love it.

Ask :

- How will you calculate the total number of midwestern states?

Steps :

(WB 1)

- 9 states are given as 75% of the whole.
- 75% is divided into 3 equal parts to get 25%, so we will also divide the 9 by 3 to get the equivalent percentage.

$$1. \quad 9 \div 3 = 3$$

- If 25% is equivalent to 3 states, then for finding the 100% we need to multiply it by 4.

$$2. \quad 3 \times 4 = 12$$

Say:

- There are a total of 12 midwestern states.



Answer Screenshot -

Q-01

If 9 states (75%) loved the idea, what is the total number of midwestern states?

Whole

Part

12

THAT'S CORRECT! NEXT

AA2-Q1

Knowledge Points/Evidence of Learning: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

AA2 Q2- How many states did we advertise in if 60%(18 states) showed interest in the advertisements?

Question Screenshot -

Q-02

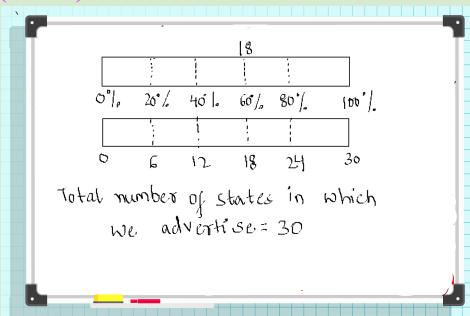
How many states did we advertise in if 60% (18 states) showed interest in the advertisements?

Whole

Part

CHECK

(WB 1)



Say:

- Out of all the states we advertised in, people in 60% of the states or 18 states definitely wanted to see Artie's picture.

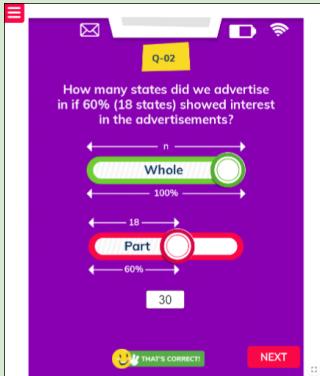
Ask :

- How will you calculate the total number of states in which we advertise?

Steps :

(WB 1)

- 18 states are given as the 60% of the whole.
- 60% is divided into 3 equal parts to get 20%, so we will also divide the 18 by 3 to get the equivalent percentage.
1. $18 \div 3 = 6$
- If 20% is equivalent to 6 states, then for finding the 100%, we need to multiply it by 5.
1. $6 \times 5 = 30$

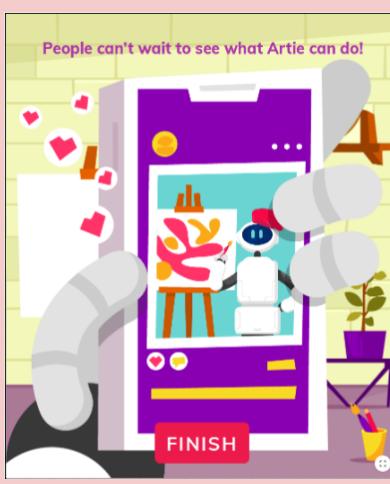

Answer Screenshot -

AA2-Q2
Say:

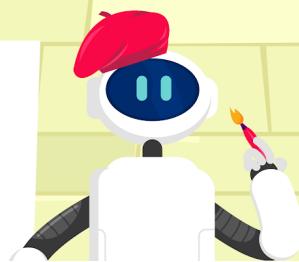
- There are a total of 30 states in which we advertise.

Knowledge Points/Evidence of Learning: Apply understanding of percentage to solve problems involving finding the whole, given a part and the percent in real life.

Narrative Outline (Exit):

People can't wait to see what Artie can do!


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Advanced Activity - 3

Advance Activity 3

- This is Optional as it is +1 above the grade level.
- Start, only when more than 15 minutes on the clock.
- Skip to Create Activity if only 10 minutes left.

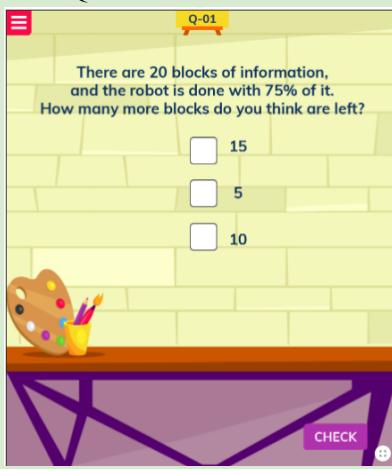
Narrative Outline (Exit):



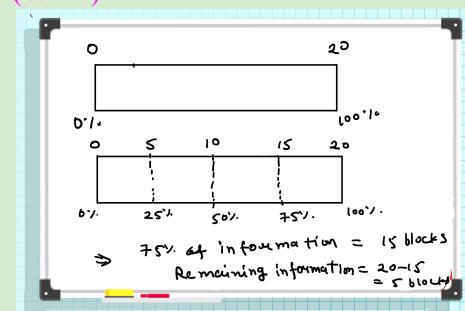
Artie needs to analyze the image before it starts drawing. Let's help it out!

AA3 Q1 - There are 20 blocks of information, and the robot is done with 75% of it. How many more blocks are left?

Question Screenshot -



(WB 1)



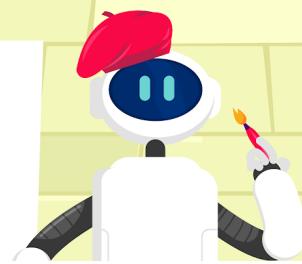
Say:

- It's finally happening! Artie is processing the image before we can begin to draw with it.
- There are a total of 20 blocks of information on the image. This means 20 is the value of the whole or 100%.

Steps:

(WB 1)

- If we divide 100% into 4 parts, then how much will each part be?
 - a. 25%
- If 20 is divided into 4 equal parts, then how much will each part be?



Answer Screenshot -

Q-01

There are 20 blocks of information, and the robot is done with 75% of it. How many more blocks do you think are left?

15
 5
 10

THAT'S CORRECT! **NEXT**

AA3-Q1

a. 5

- Now, what will be the value of the blocks painted at 75% percent?
a. 15
- How many blocks is Artie left with?
a. $20 - 15 = 5$ blocks

Knowledge Points/Evidence of Learning: Solve percent problems by identifying direct proportion.

AA3 Q2- If 20 out of 80 units are done processing, then what percentage is left to be analyzed?

Question Screenshot -

Q-02

If 20 out of 80 units are done processing, then what percentage is left to be analyzed?

25
 75
 50

CHECK

(WB 1)

$$\begin{aligned} \text{whole} &= 80 \\ \text{part} &= 20 \\ \text{Percent} &= ? \\ \Rightarrow ? &= \frac{20}{80} \times 100 \\ \Rightarrow ? &= \frac{2000}{80} \Rightarrow ? = 25\% \end{aligned}$$

Say:

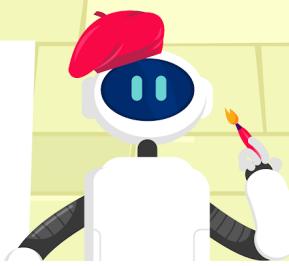
- While it was processing the last block of information, it shut down.
- Logs tell us that 20 out of 80 units were done processing.

Steps:

- What is the value of percentage when part is given as 20 and the whole as 80?
a. 25% (WB 1)
- What percentage is left for analyzing?
a. $100 - 25 = 75\%$ (WB 2)

(WB 2)

$$\begin{aligned} \text{Remaining percentage} &= 100\% - 25\% \\ \Rightarrow & 75\% \end{aligned}$$



Answer Screenshot -

Q-02

If 20 out of 80 units are done processing, then what percentage is left to be analyzed?

25
 75
 50


 THAT'S CORRECT! 

AA3-Q2

Knowledge Points/Evidence of Learning: Solve percent problems by identifying direct proportion.

Narrative Outline (Exit):



We're finally ready to start drawing!

Create Activity - CA

30

Wrap Up

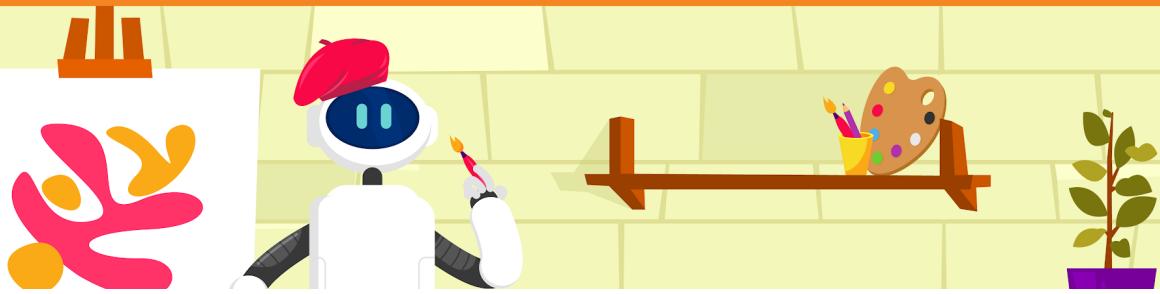
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Create Activity - CA

Create Activity (12 mins)

- This is a compulsory activity.
- Allow the children to carry out the activity on their own.



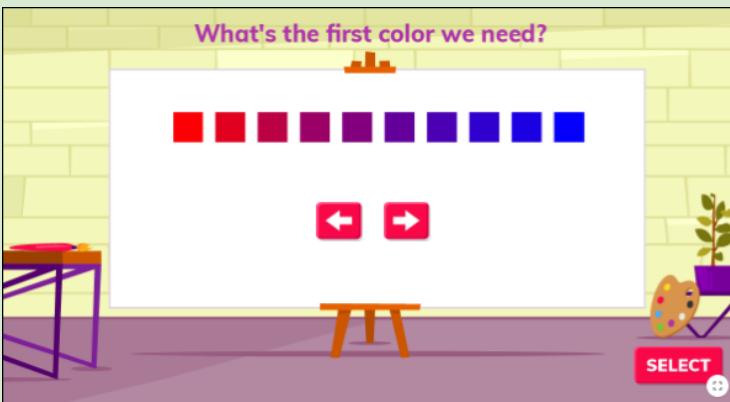
Note for teacher:

Enter the badge Number 7 for those students who have only finished up to TA and SA.

Enter the badge Number 10 for those students who have finished the AA1.

Say:

- Let's paint with Artie!
- Enter the badge number.
- Click on Begin

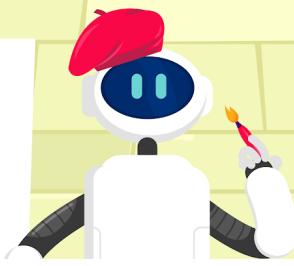


Note for teacher:

3 different types of color shades are required. Flow for one is given and it will be similar for the other 2 color shades.

Say:

- Select any one of the colors for your painting.



What's the first color we need?

98.478 1.522



SELECT

Help Artie fix an amount for red color.

98.478 1.522

$$98.478 = \square \times 10 + \square \times 1 + \square \times \frac{1}{10} + \square \times \frac{1}{100} + \square \times \frac{1}{1000}$$

1.522

CHECK

Help Artie fix an amount for red color.

98.478 1.522

$$98.478 = 9 \times 10 + 8 \times 1 + 4 \times \frac{1}{10} + 7 \times \frac{1}{100} + 8 \times \frac{1}{1000}$$

$$1.522 = 0 \times 10 + 1 \times 1 + 5 \times \frac{1}{10} + 2 \times \frac{1}{100} + 2 \times \frac{1}{1000}$$



THAT'S CORRECT!

NEXT

Say:

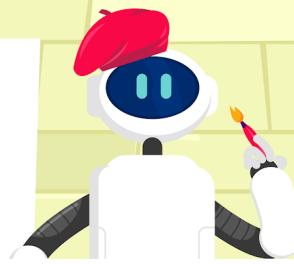
- Click on select for fixing the amount of red and blue.

Say:

- Input the values to correctly represent the expanded form of the given decimal.
- Click on Check.

Say:

- You can also see the expanded form of the second decimal.
- Click on Next.



Let's paint!

NEXT

Say:

- Select the color you want to apply.
- Now, click on the sections of painting where you want to apply the selected color.
- Repeat the process for the second and third color.

Let's paint!

NEXT

Say:

- Click on Next.

For Badge No.7:

Everyone is in love with the painting, well done!

DOWNLOAD

$98.478 = \boxed{\text{Red}}$
 $9 \times 10 + 8 \times 1 + 4 \times \frac{1}{10} + 7 \times \frac{1}{100} + 8 \times \frac{1}{1000}$

$90.001 = \boxed{\text{Blue}}$
 $9 \times 10 + 0 \times 1 + 0 \times \frac{1}{10} + 0 \times \frac{1}{100} + 1 \times \frac{1}{1000}$

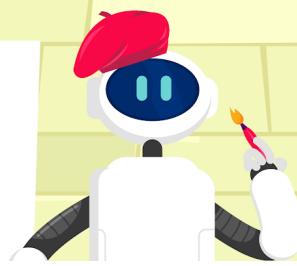
$75.875 = \boxed{\text{Green}}$
 $7 \times 10 + 5 \times 1 + 8 \times \frac{1}{10} + 7 \times \frac{1}{100} + 5 \times \frac{1}{1000}$

Say:

- Click on Download.

Say:

- Let's add one more color to the painting.
- Select any one color from the given colors.



For Badge No. 10:

Add one more color to the painting



SELECT

Add one more color to the painting



SELECT

Say:

- Click on Select to lock the amount of red and green.

Add one more color to the painting.



Change

What is the percentage
of red color?

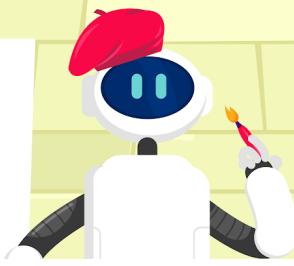
CHECK

Say:

- Enter the amount of red color in percent.

Note for teacher:

$$\begin{aligned} \text{Percent of red color} &= \text{Number on left}/200 \times 100 \\ &= 20/200 \times 100 = 10\% \end{aligned}$$



Add one more color to the painting



What is the percentage of red color?

%

CHECK

Say:

- Click on Check.

Add one more color to the painting



What is the percentage of red color?

25 %

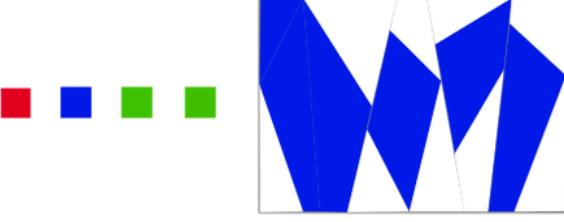
 THAT'S CORRECT!

NEXT

Say:

- Click on Next.

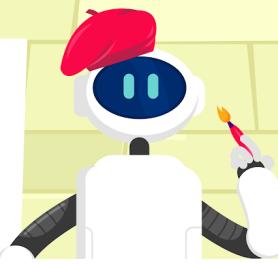
Let's paint!



NEXT

Say:

- Select the color you want to apply.
- Now, click on the sections of painting where you want to apply the selected color.



Creatively Solved Activities  +10

Great Question  +10

Strong Concentration  +10

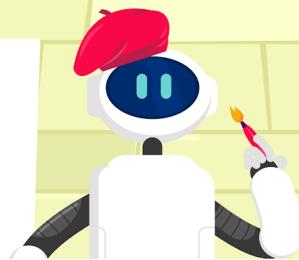
Great Question  +10

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Applet Links

GGB Links for the activities

| Activity | Activity Name | Links |
|---------------------|---------------------------|---|
| Teacher Activity | Art Essentials | https://www.geogebra.org/m/usvmaj6r |
| Student Activity | Machine Madness | https://www.geogebra.org/m/paq7xpc8 |
| Advanced Activity 1 | In Charge of Batteries | https://www.geogebra.org/m/jub89jyg |
| Advanced Activity 2 | Like, Share and Subscribe | https://www.geogebra.org/m/jzstuga7 |
| Advanced Activity 3 | Art Analysis | https://www.geogebra.org/m/nenpqe2s |
| Create Activity | Painting a painting | https://www.geogebra.org/m/usbb2z7q |
| Quiz Activity | Quiz | https://www.geogebra.org/m/evvdnnhq |
| Wrap Up | Key Learnings | https://www.geogebra.org/m/vb9ac7qt |

GLOSSARY

| WORD | MEANING |
|-------------|--|
| Artie | The student's artist robot - one of the finalists in this year's Build-a-Bot. |
| Build-a-Bot | A yearly robot building competition where students build their robots and have the robot perform something on live TV. |

