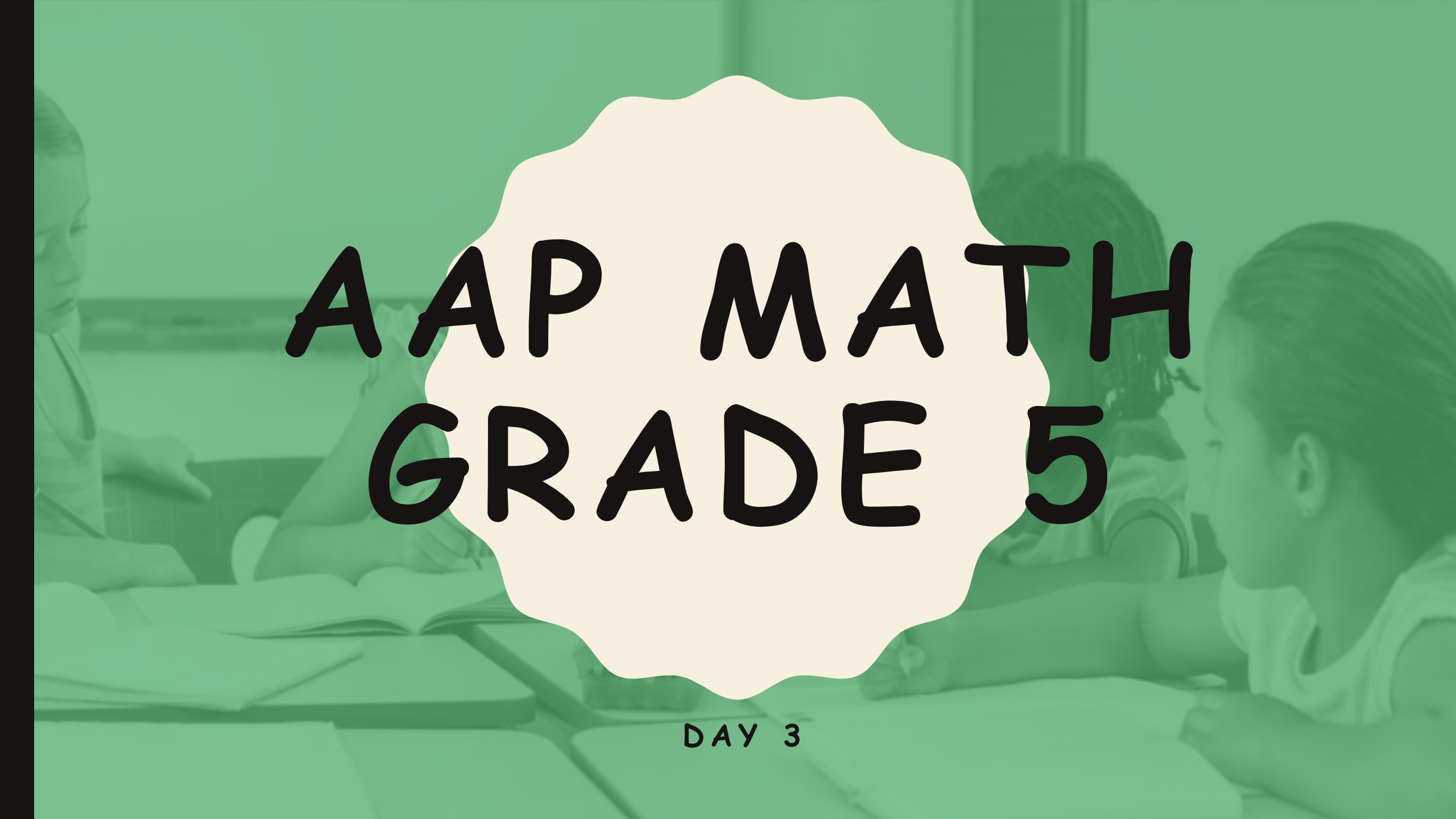

AAP MATH GRADE 5

DAY 3

This lesson is for Grade 5 AAP students. Today's lesson will consist of an opening, a problem of the day, a math activity, a Dreambox lesson, and a reflection piece.

All assignments are due to your teacher.

STANDARD

5.NSBT.2

Use whole number exponents to explain:

a. patterns in the number of zeros of the product when multiplying a number by powers of 10;

b. patterns in the placement of the decimal point when a decimal is multiplied or divided by a power 10

I CAN STATEMENTS

Represent	I can represent powers of 10 using whole number exponents (10 to the 3rd power= 10x10x10=1,000).
Explain	I can explain patterns when multiplying a number by powers of 10.
Explain	I can explain the shifting of the digits when multiplying or dividing by powers of 10.

ESSENTIAL QUESTION:

- How are place value patterns repeated in larger numbers?

Materials and Resources:

- Paper and Pencil
- Dreambox

ACTIVITIES

OPENING: GRADE 5 NUMBER ROUTINE

Find the quotients below. What do you notice about the values of each digit in the quotients below?

950 ÷ 10 =

950 ÷ 100 =

950 ÷1000 =

Activities:

- #1 5.NSBT.2 Quick Review
- #2 Powers of 10 with Decimals Activity
- #3 Performance Tasks – Veronica's Statement

5.NSBT.2 QUICK REVIEW

When you multiply a decimal by a power of ten, the decimal point moves right.

$0.43 \times 10 = 4.3$

Multiply by 10.
Move the decimal point **one** place to the right. The digit in the tenths place is now in the ones place.

$0.075 \times 100 = 7.5$

Multiply by 100 (10×10).
Move the decimal point **two** places to the right. The digit in the hundredths place is now in the ones place.

When you divide a decimal by a power of ten, the decimal point moves left.

$4.3 \div 10 = 0.43$

Divide by 10.
Move the decimal point **one** place to the left. The digit in the ones place is now in the tenths place.

$7.5 \div 100 = 0.075$

Divide by 100 (10×10).
Move the decimal point **two** places to the left. The digit in the ones place is now in the hundredths place.

POWERS OF TEN WITH DECIMALS

Match the multiplication/division expression with its correct product/quotient.

4.7 / 10	7,200	1,276 / 1,000	1.276
5.061	6 / 10	.218	6.43 x 10
50.61 / 10	.4	72 x 100	64.3
.47	21.8 / 100	.6	40.0 / 100

PERFORMANCE TASK
VERONICA'S STATEMENT

In class Veronica told her teacher that when you multiply a number by 10, you just always add 0 to the end of the number. Think about her statement (conjecture), then answer the following questions.
When does Veronica's statement (conjecture) work?
When doesn't Veronica's statement (conjecture) work?
Is the opposite true? When you divide a number by 10, can you just remove a 0 from the end of the number? When does that work? When doesn't that work?
Rewrite Veronica's statement (conjecture) so that it is true for ALL numbers. Write a statement (conjecture) about what happens when you divide a number by 10.
Rewrite your statement (conjecture) again so that it applies to other powers of 10.
Explain how these statements (conjectures) are related to place value. (HINT: Think about the decimal point!)

FOR THE LAST PART OF TODAY'S LESSON, PLEASE GET ON DREAMBOX FOR 10 MINUTES.

REFLECTION: WHAT WAS ONE THING YOU DID WELL WITH TODAY'S LESSON? WHAT IS ONE THING YOU NEED ADDITIONAL HELP WITH?

GREAT JOB, MATHEMATICIANS! PLEASE MAKE SURE YOU HAVE WRITTEN DOWN YOUR ANSWERS TO EACH QUESTION FROM TODAY'S ACTIVITIES AND PLACE YOUR WORK IN YOUR BOOK BAG TO GIVE TO YOUR TEACHER WHEN YOU RETURN TO SCHOOL.