

# ALGEBRAIC EXPRESSION

## BOOK 2

Each Problem has its own Video Tutorial!

Students solve real-world problems!

Warning - My problems are more fun than real.

BOOK 2

STEALTHY SEA OTTERS

CHALLENGE 1

The Stealthy Sea Otters just sold a bunch of fish from the San Francisco Fisherman's Dock. They stole three times a number squared of Cod. Then the Stealthy Sea Otters stole 5 times the quantity of a number squared plus four of salmon. Let  $X$  stand for the cod and salmon fish they stole. How much fish did the Stealthy Sea Otters steal?

$$3x^2 + 5(x^2 + 4)$$

$$3x^2 + 5x^2 + 20$$

$$8x^2 + 20$$



Photo by Jenny Rolo



# ALGEBRAIC EXPRESSION



## HOW TO USE THIS BOOK

### Teachers

- Upload this PDF into your Google Classroom.

### Students

- Complete each problem.
- Correct your own work, while watching the video tutorials.
- After correcting your work, take your paper to your teacher for a final check.

# STEALTHY SEA OTTERS

BOOK 2

CHALLENGE 1

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How much fish did the Stealthy Sea Otters steal?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.



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Photo by Jenny Rollo



# WRONG WAY JOHN

BOOK 2

CHALLENGE 2

Wrong Way John gets lost more than any other giraffe in the entire world. Last week he got lost six times the quantity of a number times six, plus six in a strand of acacia trees. Then Wong Way John got lost seven plus a number times seven on the African Plains. Let  $X$  stand for the times he got lost in the acacia trees or on the African Plains.

How many times did Wrong Way John get lost?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.



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# GRIZZLY GREG THE HONEY LOVING BEAR

BOOK 2 CHALLENGE 3

Grizzly Greg is a honey loving bear. Today, Grizzly Greg ate eight times the quantity of a number times three, plus eight of ounces of honey from the birch tree hive. Then he ate three less than twenty-one times a number of ounces from the oak tree hive. Let  $X$  stand for the ounces of honey. How much honey did Grizzly Greg the Honey Loving Bear eat?

## Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.

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# ELYSSA ELEPHANT

BOOK 2

CHALLENGE 4

Elyssa Elephant is tired. Her mother has much longer strides than Elyssa. In order to keep up, Elyssa took three less than nine times a number squared of steps before lunch, and another ten times the quantity of a number squared plus sixteen of steps after lunch. Let  $X$  stand for the steps that Elyssa took. How many steps did Elyssa take in all in order to keep up with her mother?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.

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Photo by Eva Schuster



# FERLON THE HIGH-FIVING TORTOISE

BOOK 2

CHALLENGE 5

Ferlon loves giving high-fives to all his friends. Today, Ferlon high-fived four less than seven times a number squared plus 3 times a number of his neighbors on the north side of town. Then he high-fived four times the quantity of three times a number squared, plus two of his neighbors on the south side of town. Let  $X$  represent the high-fives. How many high-fives did Ferlon give to his neighbors?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.

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# STONE COLD KELLY

BOOK 2

CHALLENGE 6

Stone Cold Kelly is always on the hunt. She is swift, stealthy, and deadly. Today, Stone Cold Kelly ate three times the quantity of four times a number cubed, plus sixteen of birds and another six more than eight times a number squared plus four times a number cubed of river rats.

Let  $P$  represent the prey.

How much prey did Stone Cold Kelly eat?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.

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# PELICAN PETE

BOOK 2

CHALLENGE 7

Pelican Pete drives the golfers at Pebble Beach Golf Club crazy. Every time they hit their ball toward the green, Pelican Pete swoops. He catches the ball, flies it to the pond, and drops it into the water. Today, Pelican Pete caught eight less than two times a number squared plus 3 times a number cubed on the third hole, and another four times the quantity of eight times a number squared, plus nine times a number cubed on the fifth hole. Let  $X$  represent the golf balls. How many balls did Pelican Pete drop into the pond?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.

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# Silvia the Silk Weaving Spider

Book 2

Challenge 8

Silvia the Silk Weaving Spider spins a new web every day. Today she spun twelve more than than the quantity of two times a number squared plus 3 times a number cubed meters of silk, before she eat her first bug. Then she spun another three times the quantity of a number squared, plus six times a number cubed meters of silk. Let  $X$  represent the meters of silk. How many meters of silk did Silvia the Silk Weaving Spider spin?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.



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# SANDY STARFISH

BOOK 2

CHALLENGE 9

Sandy Starfish loves to pretend that she is a human walking across the aquarium. Today she took five times the quantity of four times a number squared plus five times a number cubed steps into the kelp. Then she took another two times the quantity of two times a number squared, plus six times a number cubed steps out of the kelp. Let  $X$  represent her steps. How many steps did Sandy Starfish take during her walk across the aquarium?

Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.

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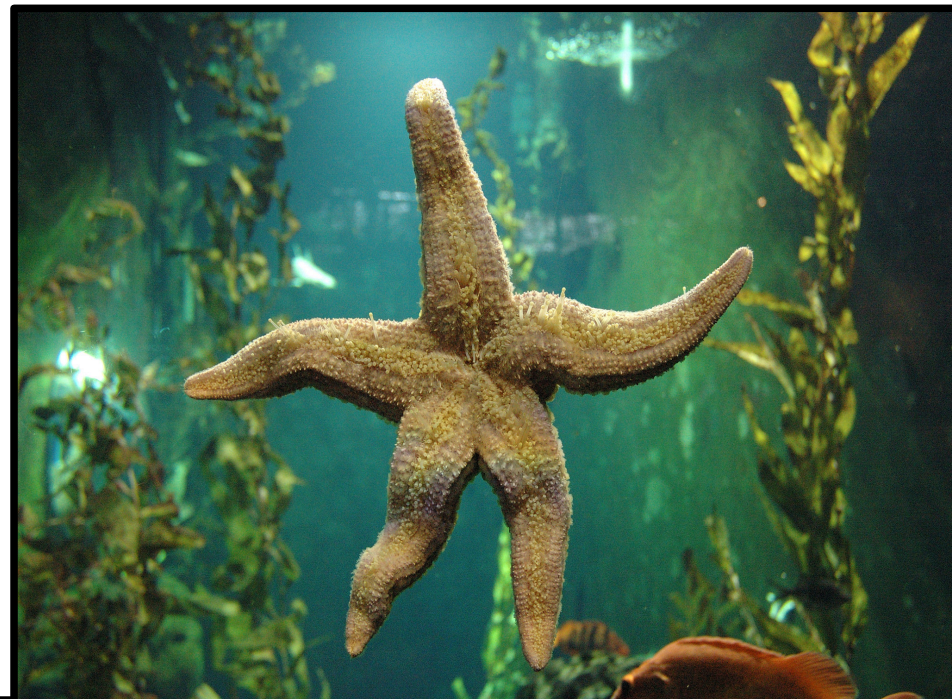


Photo by Chris van ES

Benjamin Bat is one hungry mammal. He ate four more than three times the quantity of seven times a number squared plus 3 times a number cubed bites of tomato. Then he ate another nine times the quantity of a number squared, plus eight times a number cubed bites of a banana. Let  $X$  represent the bites he took. How many bites of food did Benjamin Bat eat?

### Your Challenge:

1. Write an expression that represents the short story above.
2. Simplify the expression.



Photo by Ann Petersen

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