

NCTM Annual Conference 2018

Escape Room Key

Code Word: ARGUMENT
6-1-4-3-5-8-2-9

A: Deck of cards with select cards marked with highlighter

- Ace of spades, Three of diamonds, six of hearts
- (Spade = A, Diamond = 3, Heart = 9)

Number puzzle with messages on the back of select numbers

- Two, three, and five: "You need me to get the key"
- The combination to get the key is 3-2-5

The lockbox has the combination lock with the key on the handle

- The key unlocks the box
- Inside the box is the equation: $x^{\spadesuit} \cdot x^{\diamondsuit} = x^{\heartsuit}$

A = 6

R: Shapes puzzle with clues on the back of select shapes

- Hippopotamus: $2x$
- Giraffe: -3
- Snake: $2x^3$
- Lion: $3x$
- Alligator: -2
- Elephant: Remainder = R

Let's Get Dressed puzzle has a partial area model on the back

Let's Get Dressed puzzle with directions on the back of the pieces

- Shirt → UP
- Pants → DOWN
- Shoes → RIGHT
- Coat → RIGHT
- Hat → LEFT
- Backpack → DOWN

Message on the back of the Lion magnet is the message:

- First Andrew put on his shirt, then his pants. Next, he put on his shoes, followed by his coat and then his hat. He grabbed his backpack and he was ready to go.

The envelope has a direction lock on it

- The combination to open the envelope is UP-DOWN-RIGHT-RIGHT-LEFT-DOWN
- Inside the envelope is the expression $(2x^3 - 5x^2 - x + 7) \div (2x - 3)$ on the back of the fox magnet

R = 1

G: A box of crayons with only the colors red, yellow and blue inside and a Giraffe magnet to hold them in place
Color Time! Puzzle has numbers on the back of the pieces

- Red $\rightarrow$ 9
- Orange $\rightarrow$ 5
- Yellow $\rightarrow$ 1
- Green $\rightarrow$ 6
- Blue $\rightarrow$ 2

Color Time! Puzzle has coded message on the inside (behind the pieces)

- "Geoffrey usually runs a fifty-yard dash in twenty seconds. How long will it take him to run thirty feet?"
- OCINND CF GLGSSF DGFL K NHNEF FKDM MKLP HY EBCYEF LCVIYML. PIB SIYO BHSS HE EKRC PHZ EI KGY EPHDEF NCCE?

The combination on the briefcase is 9-1-2

- Inside an open envelope is a coded message with the combination to unlock the secured envelope
- On the dinosaur magnet: **SPHYNX OF BLACK QUARTZ, JUDGE MY VOW**
- On the frog magnet: **LJFYU IN XSKVR AGKDET, QGMOC ZF WIV**

G = 4

U: Underwater Party puzzle has algebraic expressions on the back of the pieces

- Octopus $\rightarrow U(U + 2) - 4$
- Clownfish $\rightarrow U^2 + 4U + 4$
- Starfish $\rightarrow 2U + 5$
- Crab $\rightarrow 2(U - 3)(U - 5)$

Inside an open envelope is a coded message with the combination to the lockbox

- SIX TWO EIGHT FOUR PRESS RIGHT BUTTON

Ziploc container of algebra tiles

- The key to decode the message of the transparencies on the bottom of the container facing down
- The key to decode the message is inside using the sentence "Watch Jeopardy!, Alex Trebek's fun TV quiz game."

Inside the lockbox is the equation Octopus = Starfish

U = 3

M: Bookmark inside 2017 APME at chapter 12

$$M = 2H - B$$

Bookmark inside 5 Practices at page 8

$$2H - B = 2M - 5$$

Inside the Oscar the Grouch Book, the word "play" is highlighted

- PLAY is the combination to unlock the envelope

Inside the secured envelope

- $3 = 3B$
- $M = "M"$

M = 5

- E: Sound animal puzzle
- Lion → zero
 - Zebra → one
 - Parrot → two
 - Penguin → three
 - Alligator → four
 - Elephant → E
 - Snake → five
 - Monkey → thirty-two

1-2-3 book

- Note with clue Combination: “HATS – CHERRIES – YELLOW CHICKS” on math art page
- Hats → 7
- Cherries → 2
- Yellow Chicks → 5
- The code to unlock the envelope is 7-2-5

Inside secure envelope:

- Table

X	LION	PARROT	PENGUIN	SNAKE
Y	ZEBRA	ALLIGATOR	ELEPHANT	MONKEY

E = 8

N: Bruno the dog has magnets hidden in pockets (figure numbers not labeled)

- Turtle → N = # Tiles in Figure 1
- Ladybug → Figure 2
- Elephant → Figure 3
- Butterfly → Figure 4
- Lockbox key hidden in tongue

Use key to open lockbox

- Inside lockbox is tile pattern with pictures of a ladybug, elephant, and butterfly with the corresponding figure numbers

N = 2

T: How I Move and Groove puzzle has messages on the back of pieces

- Head → Translate the graph twice
- Hand → right # of Standards for Mathematical Practice
- Arm → down # of Guiding Principles
- Body → blank
- Leg → Input = 5
- Foot → Output = T

Principles to Actions is available as a reference with the SMPs and GPs

ABC puzzle has messages in the back of the pieces

- F → 1
- O → 2
- U → 3
- N → 4
- D → 5
- The code to unlock the envelope is FOUND

Inside the secure envelope is the message “Consider the graph of $y = |x|$ ”

T = 9