

VALENTINE COLOR BY CODING

NAME: _____

COLOR BY CODING

WHAT IS ASCII?
ASCII is the most common format for text files for computers and the internet. It stands for American Standard Code for Information Interchange and uses numbers to represent letters and special characters. The binary version uses only zeros and ones in a 8 bit (or digit) pattern. The decimal version uses two digit numbers.

INSTRUCTIONS
Figure out the colors in this color by number coloring page by finding the matching letters on the ASCII code sheet **BINARY** column. Then color the picture with the numbers noted on the picture.

CHARACTER	BINARY	CHARACTER	DECIMAL
A	01000001	A	65
B	01000010	B	66
C	01000011	C	67
D	01000100	D	68
E	01000101	E	69
F	01000110	F	70
G	01000111	G	71
H	01001000	H	72
I	01001001		73
			74
			75
			76
			77
			78
			79
			80
			81
			82
			83
			84
			85
			86
			87
			88
			89
			90

1 = P I
01010000 01001001

2 = G R
01000011 01010010

3 = P U
01010000 01010101

4 = W H
01010111 01001001

5 = B I
01000010 01001001

6 = R
01010010

HAPPY VALENTINE'S DAY!

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DISCOVER. MAKE. PLAY. LEARN.

WHAT IS STEAM?

STEAM IS THE ABBREVIATION FOR SCIENCE, TECHNOLOGY, ENGINEERING, ART, & MATH.

It's an integrated approach to learning that encourages students to think more broadly about real-world problems.

WHY DO WE NEED THE A IN STEAM?

Because art makes STEM better! Here are some of the concrete benefits of incorporating the arts into science:

- It helps remove idea inhibition (there's no wrong answer in art!).
- It focuses on the process which helps drive innovation.
- It teaches the power of observation, of people and your surroundings.
- It helps hone spatial awareness and mathematical concepts like geometry.

SAFETY FIRST!

STEAM EXPLORERS PROJECTS ARE INTENDED TO BE PERFORMED UNDER ADULT SUPERVISION. Although Color by Coding is a low risk activity, we like to leave this here... Appropriate and reasonable caution is recommended when activities call for any items that could be of risk, including, but not limited to: sharp tools, hot glue, chemicals, batteries, scissors, and small items that could present a choking hazard. If you are unsure of the safety or age appropriateness of an activity, please consult your child's doctor.

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WHAT'S INSIDE?

INSIDE THIS COLOR BY CODING ACTIVITY IS:

- Valentine color by number coloring page
- ASCII Binary and ASCII Decimal decipher the color code page
- ASCII code sheet
- Teacher guide
- What's the STEAM Behind It? background info
- Color code answer key



STEAM Explorers is a monthly digital magazine plus kid-safe online project portal filled with STEAM. It's loaded with a monthly activity calendar, fun articles to read, jokes to tell, projects to do, printables to color, videos to watch, and more. Kids will enjoy making, playing, discovering, and learning their way through each month's issue!

YOU CAN LEARN MORE ABOUT STEAM EXPLORERS HERE:

LEFTBRAINCRAFTBRAIN.COM/EXPLORESTEAM

HOW TO JOIN THE STEAM EXPLORERS & LEFT BRAIN CRAFT BRAIN COMMUNITY

STEAM Explorers (and Left Brain Craft Brain, too) is a global community! Come get activity ideas, chat about STEAM, and share your pictures with us on both Facebook and Instagram. We love to see all of the ways you incorporate STEAM into your kids' worlds!

[LEFT BRAIN CRAFT BRAIN FACEBOOK PAGE](#)

[LEFT BRAIN CRAFT BRAIN ON INSTAGRAM](#)

TEACHER GUIDE

MATERIALS

- Paper
- Printer
- Printable coloring page, code sheets, and ASCII code guide
- Art supplies like crayons or markers in pink, purple, red, blue, and green.
- Rulers (optional, but can help kids find the codes easier)

PREPARATION

1. First decide whether to use the binary or decimal versions of the codes. The binary codes are significantly harder than the decimal codes. You can offer a choice to the children if desired.
2. Print out worksheets. Code pages can be printed on the back of the Valentine coloring page, but make sure that the ASCII codes list is on a separate sheet for ease of use.
3. Gather materials, 1 set per child or group into station quantities.

GOALS: Students will decipher a code using ASCII and then complete a coloring page.

EXPLAIN: Describe the project they will be completing. Show how the colors in the color by number page need to be deciphered by figuring out the letters in each color's name. Show them where to find the codes to decipher the color codes sheet on the ASCII code list.

DISCUSS: Talk to the students about the language of computers. Describe how all computer languages are built on the premise of 0 = OFF and 1 = ON. Switching lights on and off is a great demo to do while explaining. See What's the STEAM Behind It? section for more information.

EXTENSIONS (CLICK TO ACCESS):

- Want to add more STEAM fun to Valentine's Day? Check out these Valentine activities:

[VALENTINE CIRCUITS](#)

[HEART CRYSTALS](#)

[VALENTINE PROCESS ART PROJECTS](#)

[PRINTABLE VALENTINES FOR KIDS WHO LOVE STEM & STEAM](#)

- Or pick up our [COLOR BY CODING EBOOK](#) that has coloring pages for any day of the year.
- Play the [IF-THEN CODING GAME](#), another screen-free way to learn about code.
- Want a new Color by Coding coloring page every month? [JOIN STEAM EXPLORERS!](#) The coolest new adventure for kids is a monthly digital magazine plus project portal. It's filled with hands-on STEAM projects, printables, recipes, and more. It's perfect for classrooms, libraries, and home!

OTHER RESOURCES:

- **VIDEO:** [BINARY NUMBERS - MATH BITES WITH DANICA MCKELLAR](#)
- **BOOKS:** [CODING BOOKS FOR KIDS](#)

COLOR BY CODING

INSTRUCTIONS

Figure out the colors in this coloring page by finding the matching letters on the ASCII code sheet. Then color the picture with the numbers noted on the picture. There are two different code options, BINARY and DECIMAL. The binary coloring page is harder, so pick which one is best for you.

WHAT'S THE STEAM BEHIND IT?

There's a lot of talk today about coding being the language of the future. But what exactly is it and why is it important? Coding makes it possible for us to tell computers how to do stuff, like run our phone, play a video game, and make a website. Any app you use on your phone or computer is possible because of code.

WHAT IS ASCII?

Computers speak the languages of zeros and ones, essentially on and off signals to computer parts called transistors. These zeros and ones have been translated into codes called the ASCII Binary code where every letter, number and character has an 8 digit combination of zeros and ones. ASCII is the most common format for text files for computers and the internet. It stands for American Standard Code for Information Interchange and uses numbers to represent letters and special characters. The binary version uses only zeros and ones in an 8 bit (or digit) pattern.

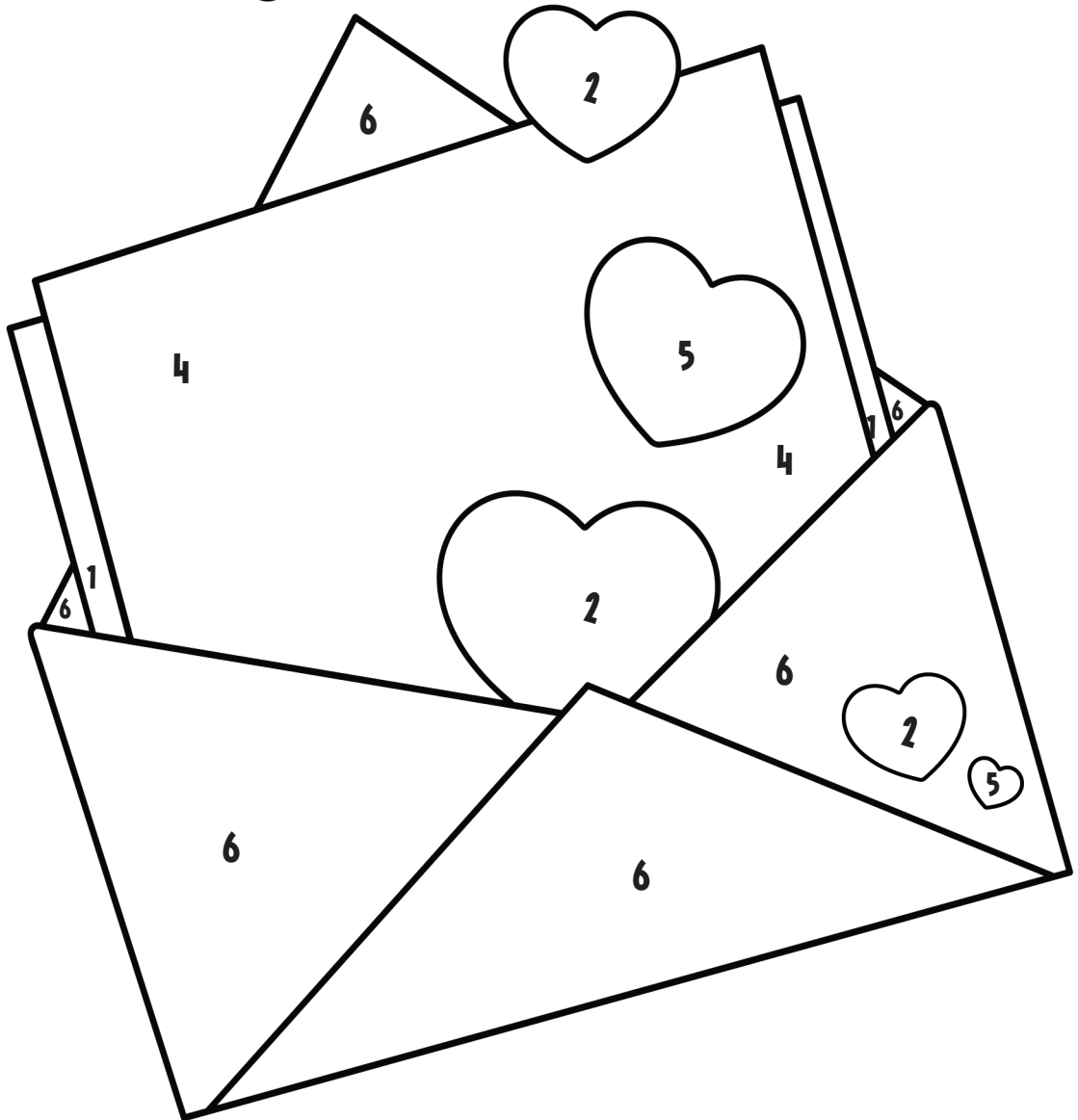
But it would take too long to do anything if we had to code in just zeros and ones, so computers use other languages now, that are all based upon binary.



ASCII

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A	01000001	A	65
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G	01000111	G	71
H	01001000	H	72
I	01001001	I	73
J	01001010	J	74
K	01001011	K	75
L	01001100	L	76
M	01001101	M	77
N	01001110	N	78
O	01001111	O	79
P	01010000	P	80
Q	01010001	Q	81
R	01010010	R	82
S	01010011	S	83
T	01010100	T	84
U	01010101	U	85
V	01010110	V	86
W	01010111	W	87
X	01011000	X	88
Y	01011001	Y	89
Z	01011010	Z	90

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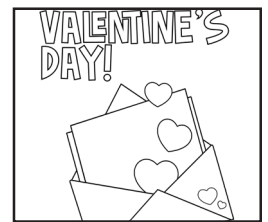
INSTRUCTIONS

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1

=

_____ _____ _____ _____
01010000 01001001 01001110 01001011



2

=

_____ _____ _____ _____ _____
01000111 01010010 01000101 01000101 01001110

3

=

_____ _____ _____ _____ _____ _____
01010000 01010101 01010010 01010000 01001100 01000101

4

=

_____ _____ _____ _____ _____
01010111 01001000 01001001 01010100 01000101

5

=

_____ _____ _____ _____
01000010 01001100 01010101 01000101

6

=

_____ _____ _____
01010010 01000101 01000100

COLOR BY CODING

WHAT IS ASCII?

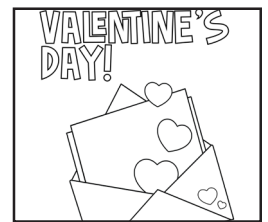
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INSTRUCTIONS

Figure out the colors in this color by number coloring page by finding the matching letters on the ASCII code sheet **DECIMAL** column. Then color the picture with the numbers noted on the picture.

1

= _____
 80 73 78 75



2

= _____
 71 82 69 69 78

3

= _____
 80 85 82 80 76 69

4

= _____
 87 72 73 84 69

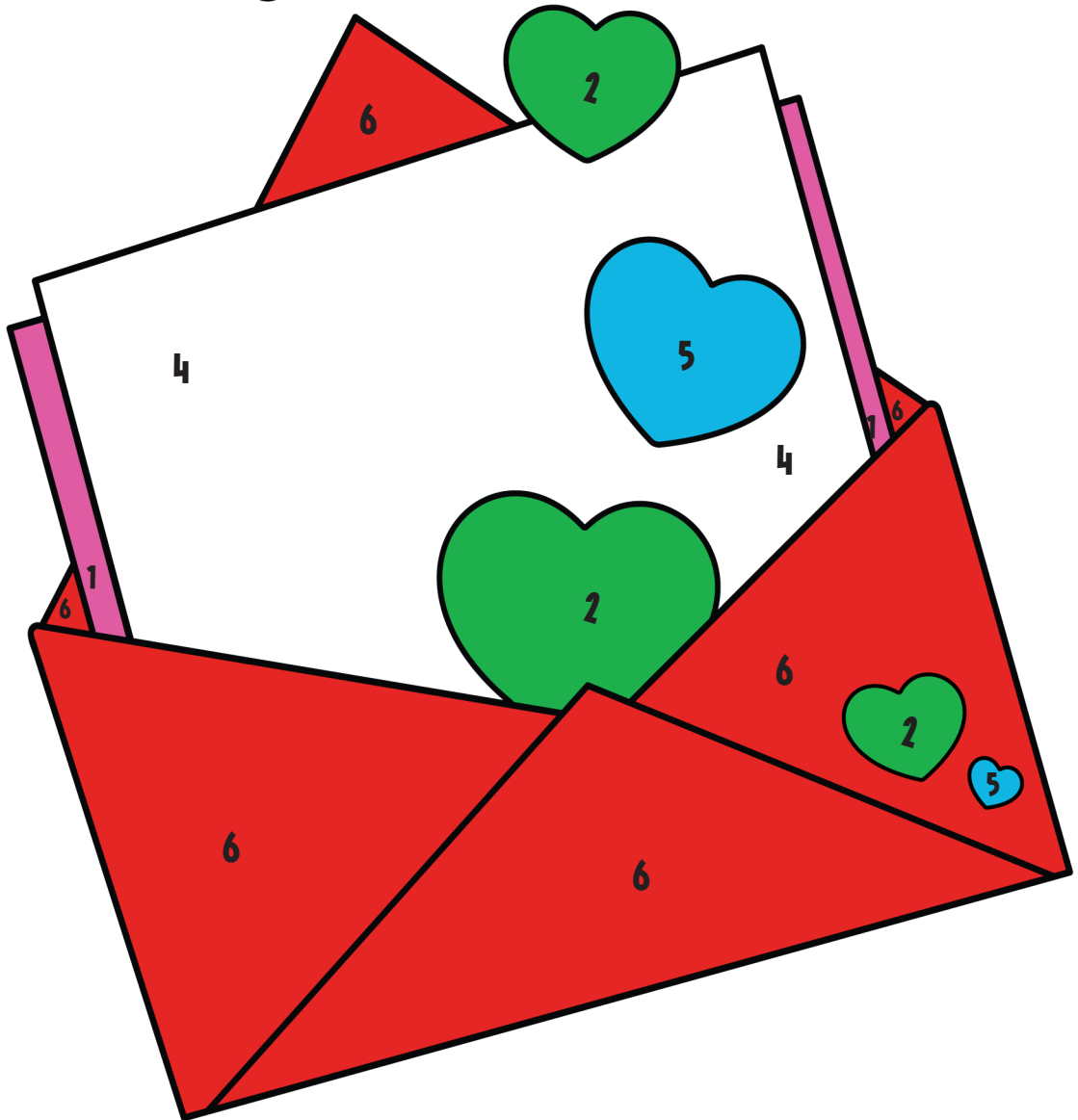
5

= _____
 66 76 85 69

6

= _____
 82 69 68

HAPPY
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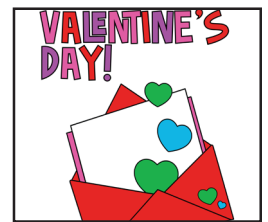
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= P I N K
01010000 01001001 01001110 01001011



= G R E E N
01000111 01010010 01000101 01000101 01001110



= P U R P L E
01010000 01010101 01010010 01010000 01001100 01000101



= W H I T E
01010111 01001000 01001001 01010100 01000101



= B L U E
01000010 01001100 01010101 01000101



= R E D
01010010 01000101 01000100

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Figure out the colors in this color by number coloring page by finding the matching letters on the ASCII code sheet **DECIMAL** column. Then color the picture with the numbers noted on the picture.



1 = P I N K
80 73 78 75



2 = G R E E N
71 82 69 69 78



3 = P U R P L E
80 85 82 80 76 69



4 = W H I T E
87 72 73 84 69

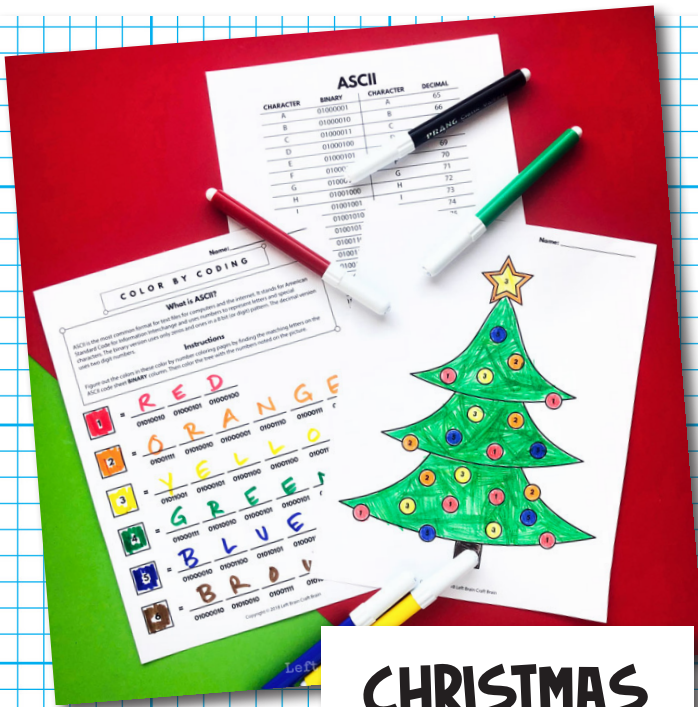


5 = B L U E
66 76 85 69



6 = R E D
82 69 68

BE SURE TO CHECK OUT OUR HOLIDAY @LOR BY @DING @LORING PAGES TOO!



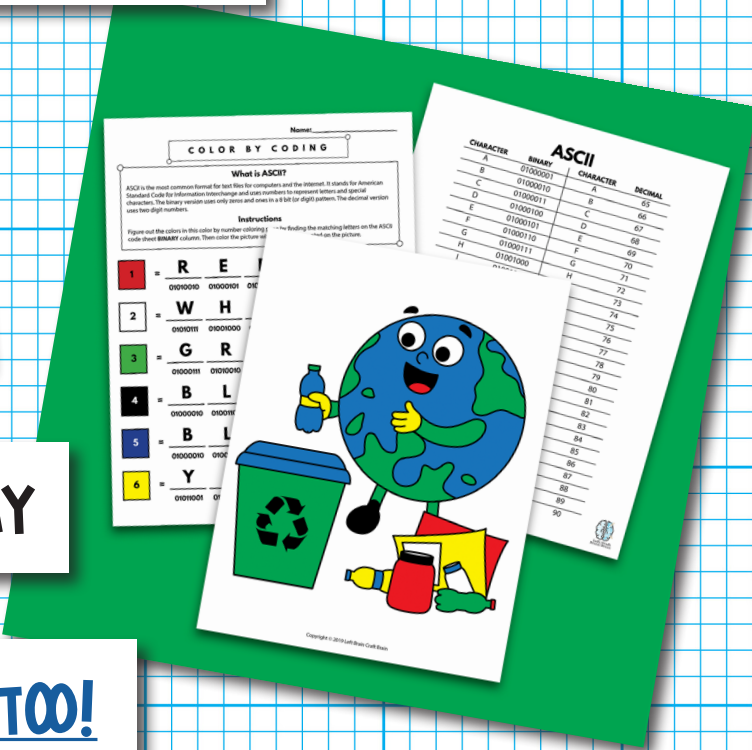
CHRISTMAS



HALLOWEEN



THANKSGIVING



EARTH DAY

PLUS MORE @MING SOON, TOO!
SHOP.LEFTBRAIN.CRAFTBRAIN.COM