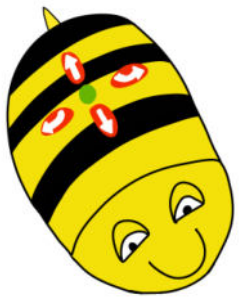
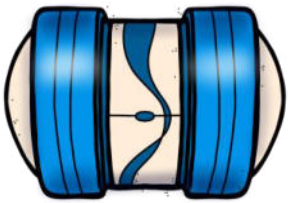
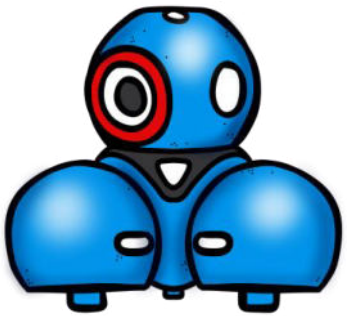
CODE VOCABULARY

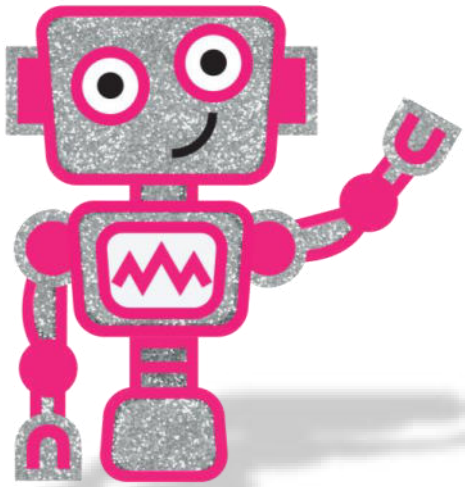
CODING ACTIVITY MAT







LET'S BE FRIENDS!

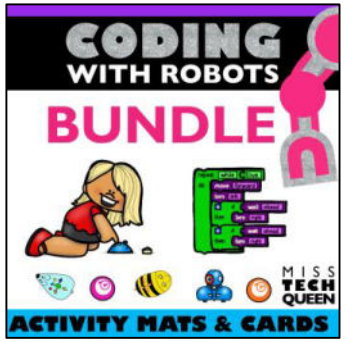


YouTube

TAG ME IN YOUR PHOTOS!

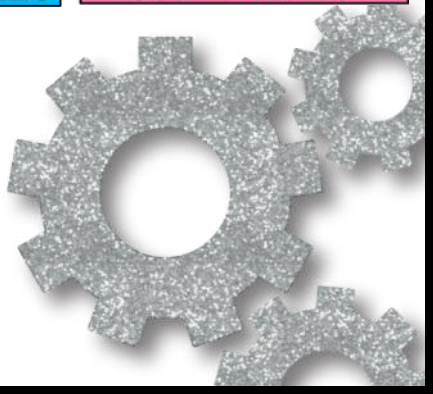
FOLLOW MY TPT STORE FOR 50% OFF NEW PRODUCTS FOR 24 HOURS

YOU MAY LIKE THESE!



MISS TECH QUEEN

CREDITS



INTRO

This hands on activity is a great way to teach students how to program various robots (Bee Bot, Sphero, Robot Mouse, Dash). This mat can be used with robots that can move on a floor. Program your robot with directions to allow it to move along the mat.

Set Up:

- Print photo squares – there are many options (about 12 make one average sized mat)
  - *be careful when printing – unselect *fit to page* to print photos in their current size 6x6 in for larger robots (Dash, Bee Bot)
  - For smaller robots – Sphero, Robot Mouse – select scale & print at 82% (5 x 5 in)
- Cut around black border to remove excess white on page. Leave the black border.
- Arrange photos in a mat – 3 or 4 squares across (you decide!) For extras, print blank squres.
- Place the "start here" square at the top of the mat - You can duplicate the sample photo or arrange the squares in your own way
- Tape the back of the photos together, so the tape is not visible
- Laminate the entire mat

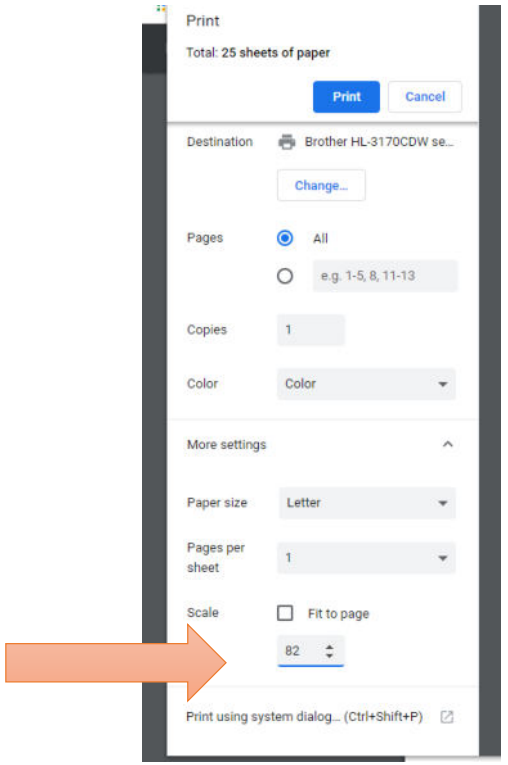
2nd Option

- Print the blank boxes on color paper
- Print out the clip art activity squares
- Laminate & cut all individually. Leave loose. Allow students to move pieces around individually to create their own mazes on the floor

Task Cards

- Print and laminate photo task cards
- Place photo task cards in a pile next to the mat for students to select during the activity

Optional Sheets: Print response sheets back/front for more code spaces



ACTIVITY

Ready To Go Mat

- Use this mat with your favorite classroom robot
- After instructing students how to use the robot, introduce the mat
- Students can work alone or with a partner
- Students will start by placing the robot on the *start here* spot
- Students will pick a task card from the pile
- This card will instruct students to program the robot to go to a specific square on the mat
- Students will program the directions for the robot
- Press go and watch if the robot reaches the assigned square. If it does not, bring it back to the original space and try again!
- After reaching the assigned square, pick a new task card and repeat the steps above
- Continue until all task cards have been used

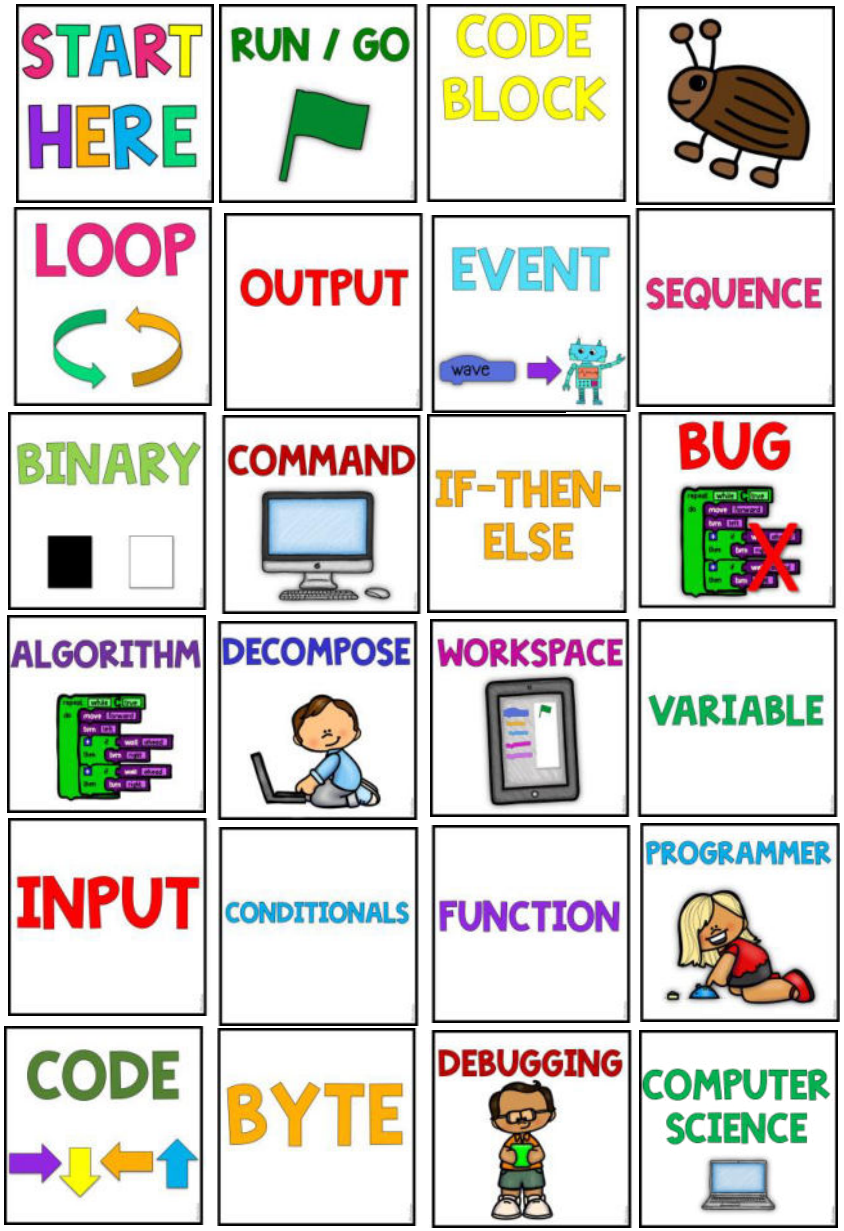
Make Your Own Mat

- Do not tape pieces together in a mat. Keep each square separate.
- Allow students to create their own maze by putting together each square on the floor or a robot track. Students can also arrange loosely on a floor as targets.
- Students can create various mazes & program the robot to follow the track

- **Response Sheet:**
- Students can complete the response sheet to include the directions they programmed their robot to follow
- This can be used before testing the robot or as a follow up, once successful
- Laminate/use pocket charts with dry erase markers for reuse in centers

SAMPLE

Place START CARD at the top



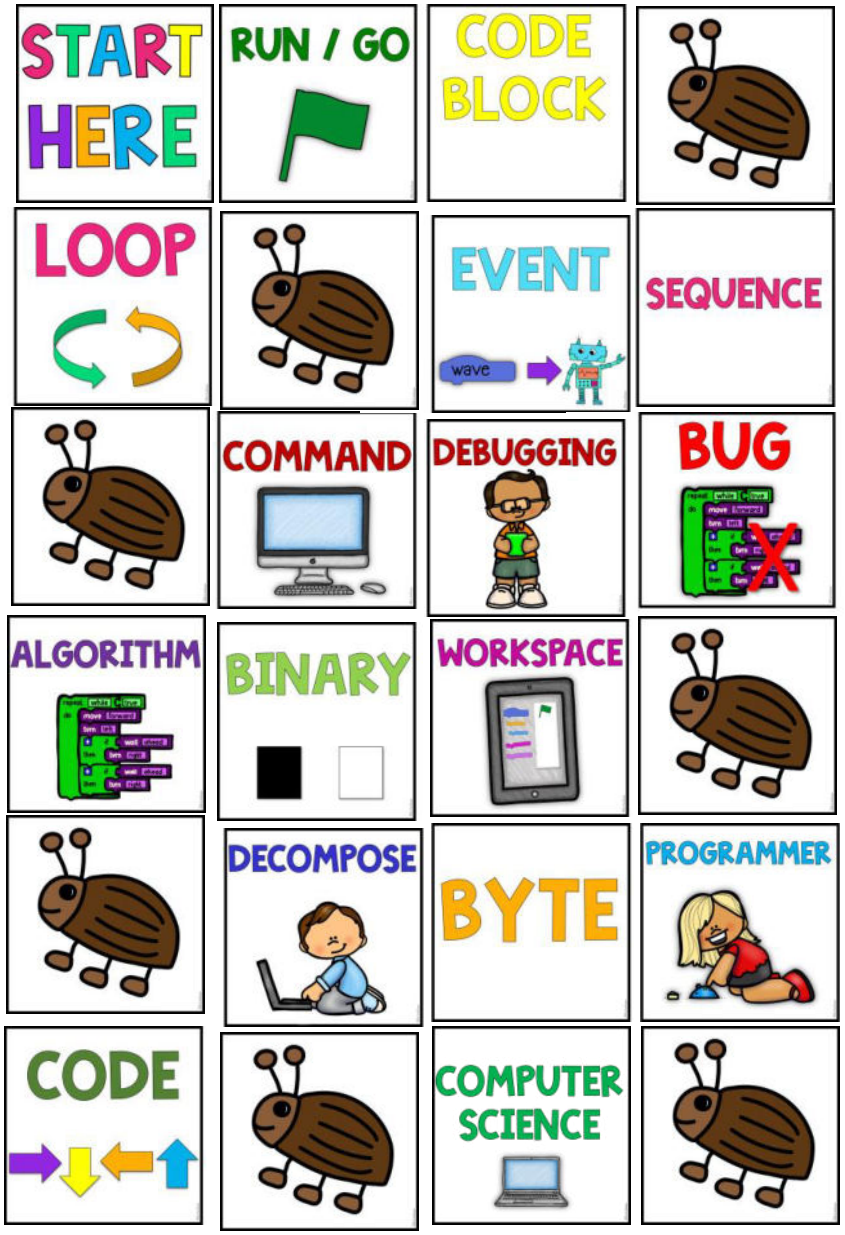
You can arrange the photos as you wish!

There are **24 card** options!

Photo task cards

SAMPLE

Place START CARD at the top



You can arrange the photos as you wish!

There are **24 card** options!

Use BUG cards to fill in spots and create a challenge. Students must avoid them.

Photo task cards

Name: _____

CODING VOCABULARY

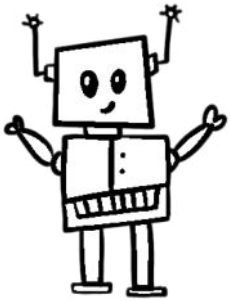
MY WORD:	A PICTURE TO DESCRIBE IT:

THIS MEANS:

_____

_____

Created by: _____



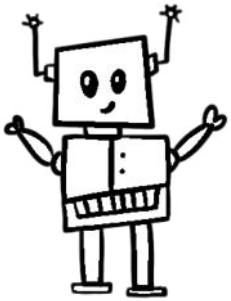
ROBOT MAZE

Draw arrows to show the steps to your program. Test it out with your robot!

While programming my robot I learned _____

_____

Created by: _____



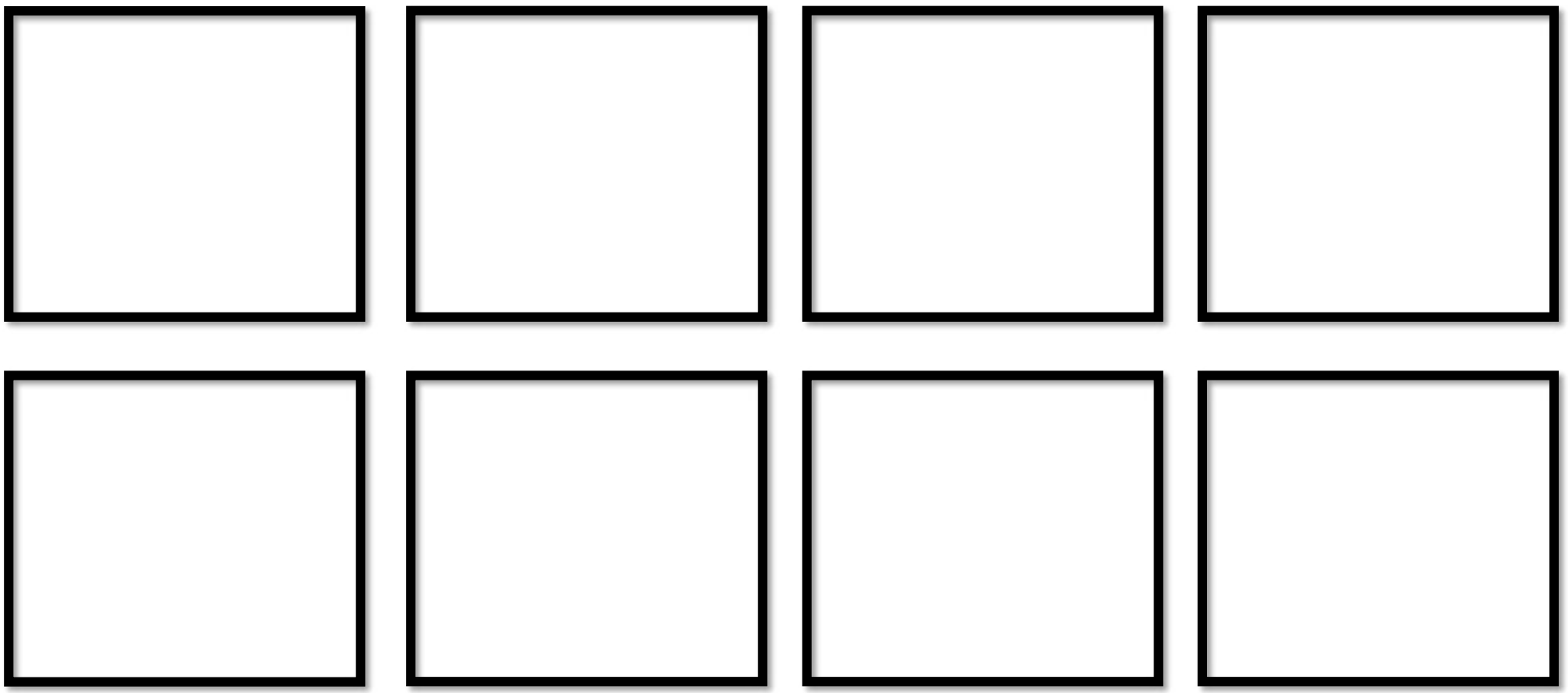
MY PROGRAM

While programming my robot I learned _____

_____

Created by: _____

CONTINUED . . .

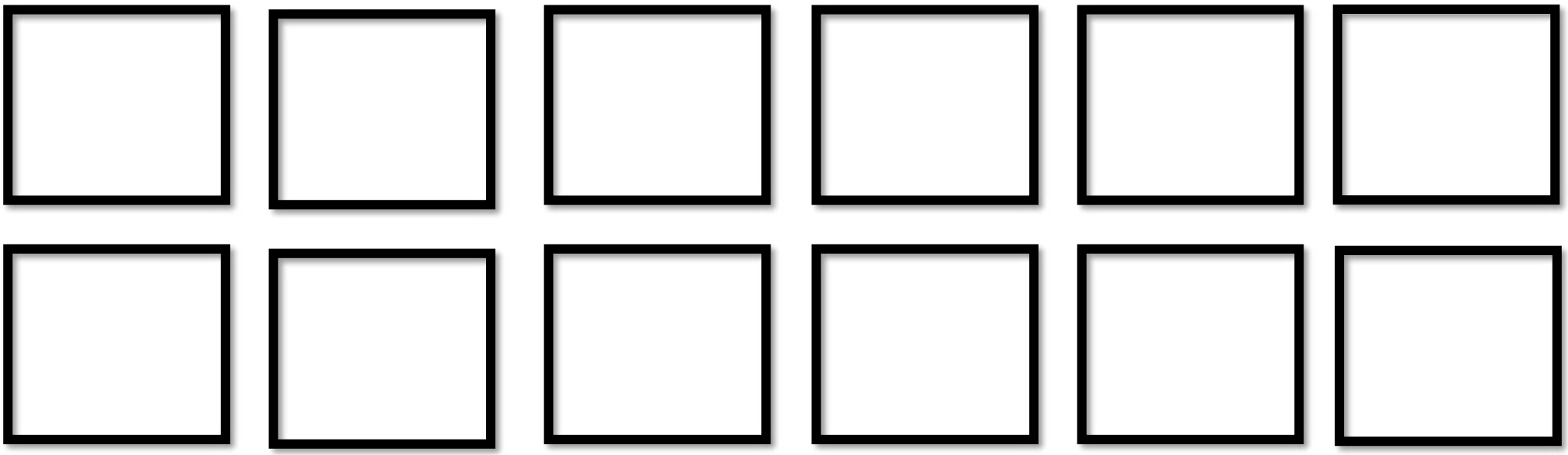


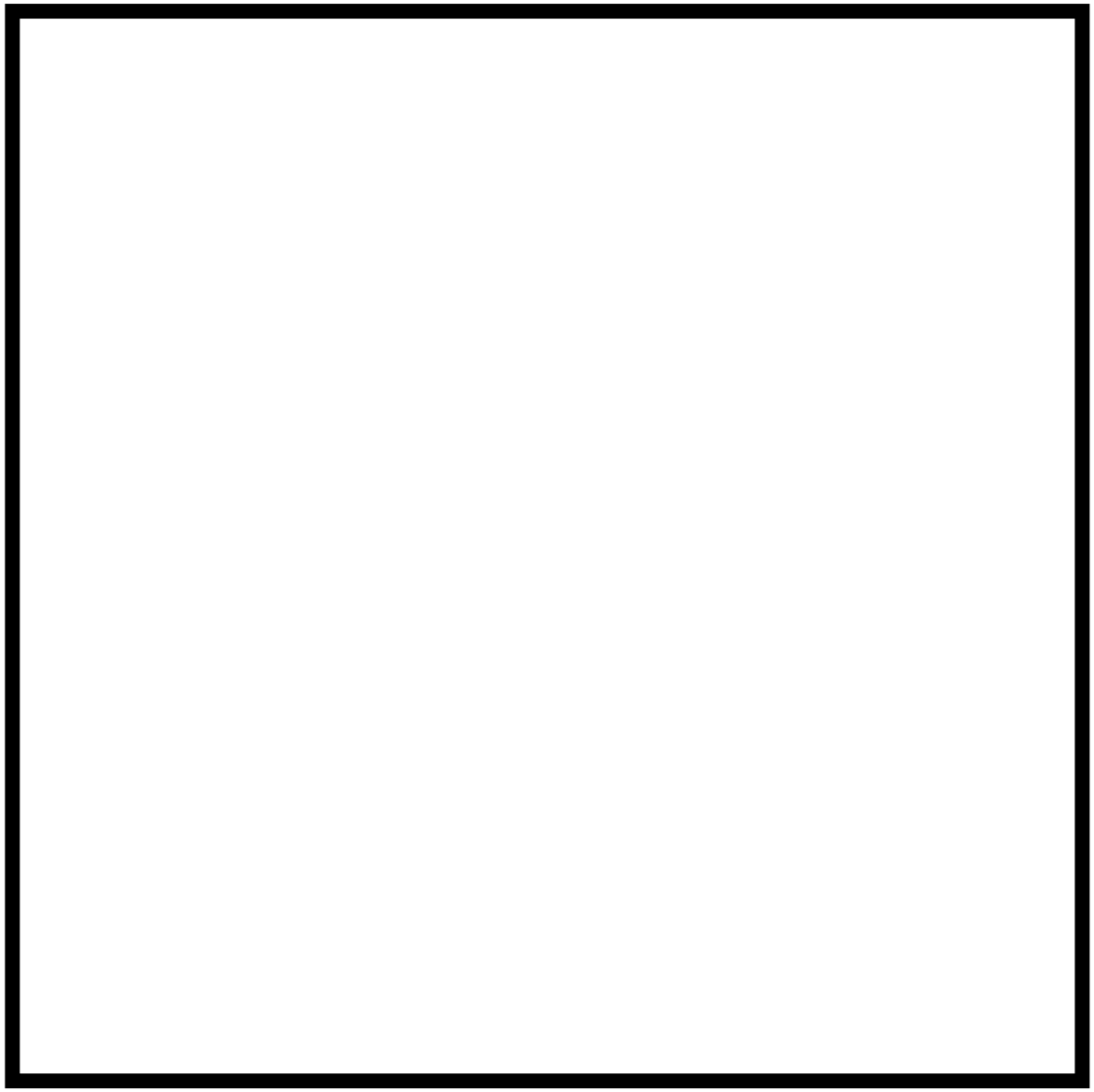
Name: _____

What is your favorite part about coding?

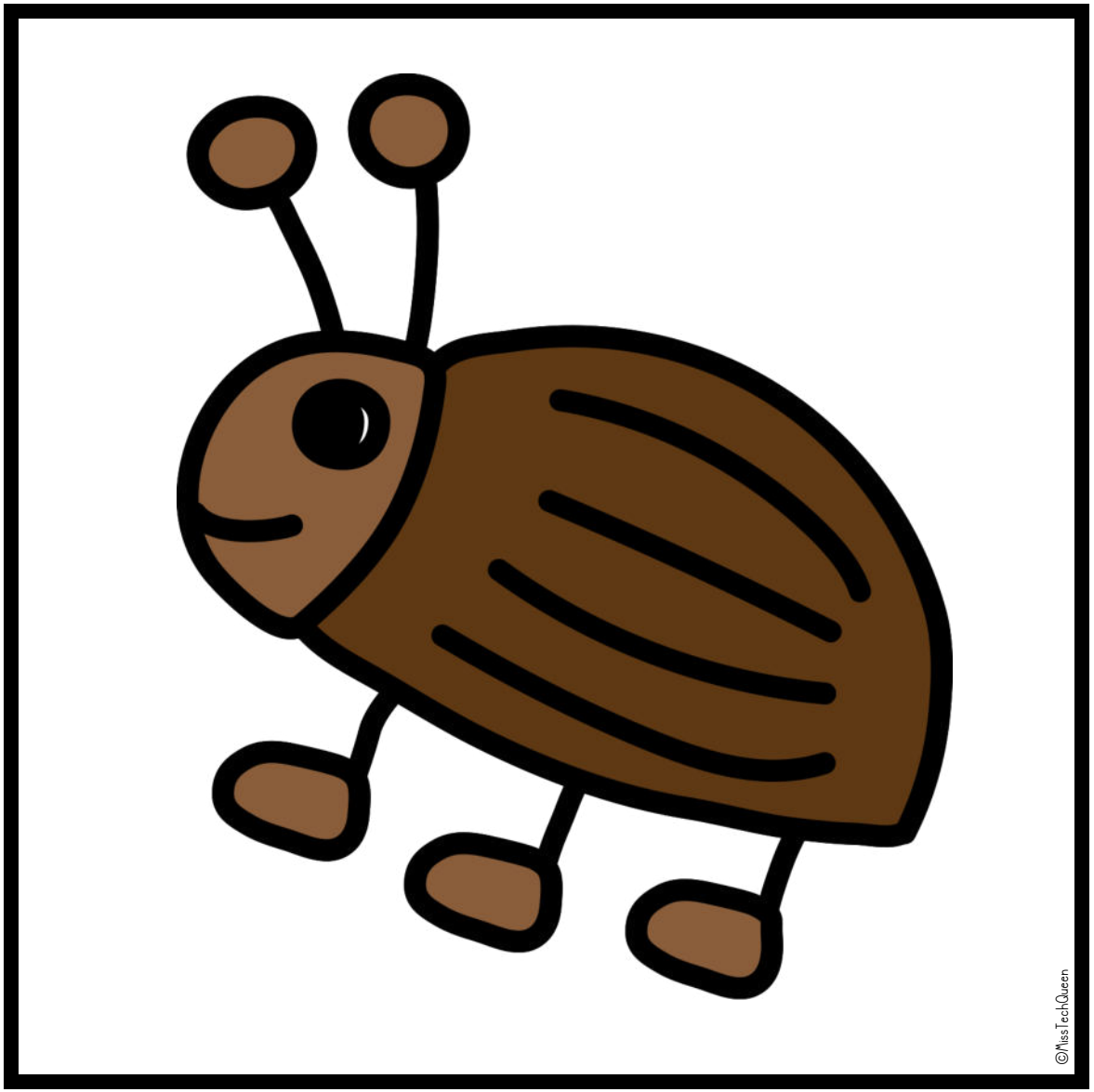
What is difficult about coding?

Draw arrows to show your code below:

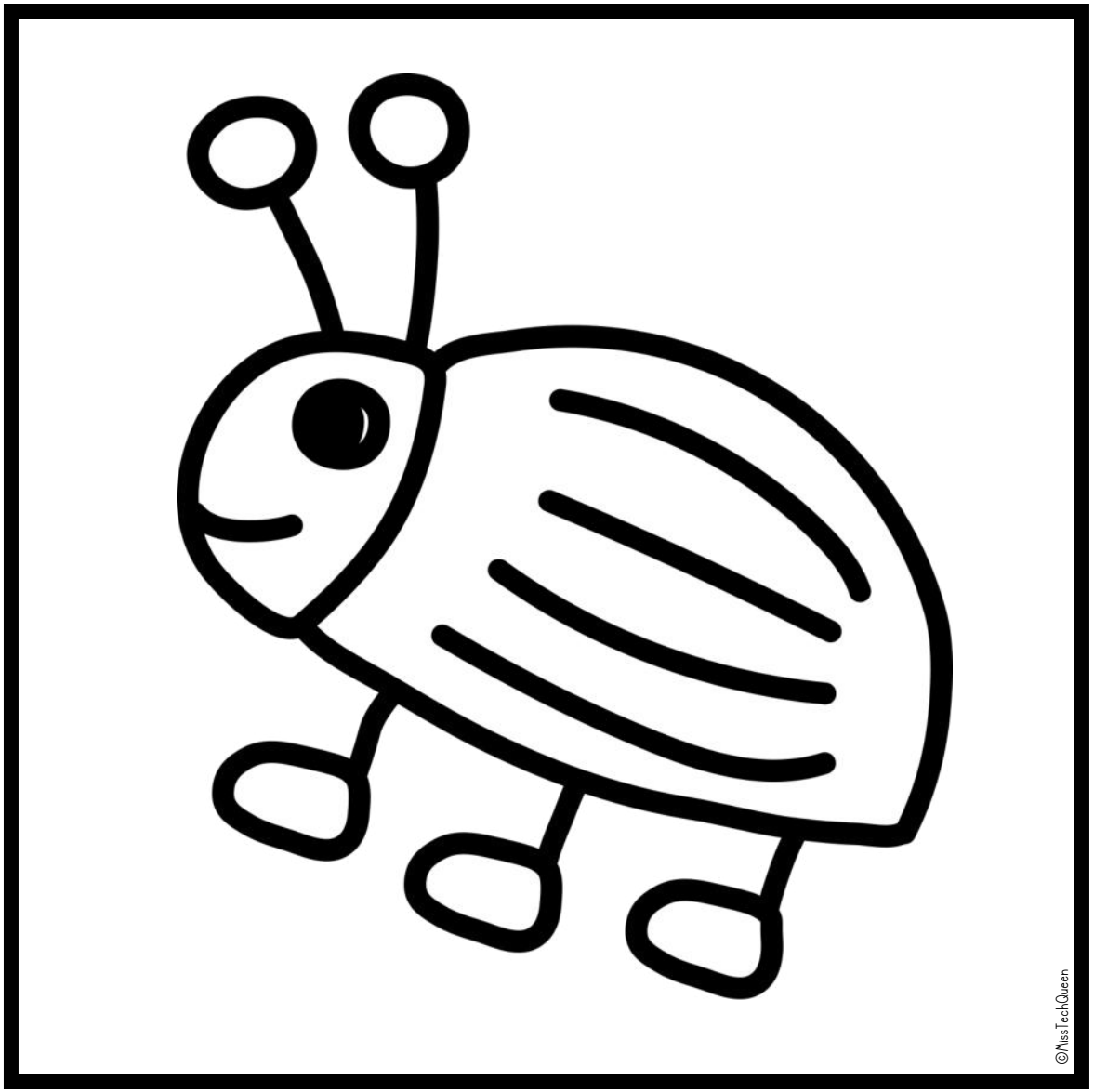




Blank squares – print on color paper to create spaces in the mat & make it more difficult. Also can be used to allow students to put together their own maze.



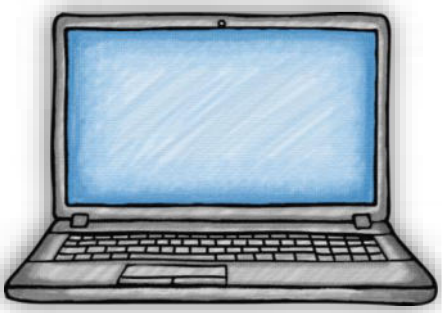
Add the computer bug as a spot students must avoid when programming the bot.



Add the computer bug as a spot students must avoid when programming the bot.


START
HERE
©MissTechQueen

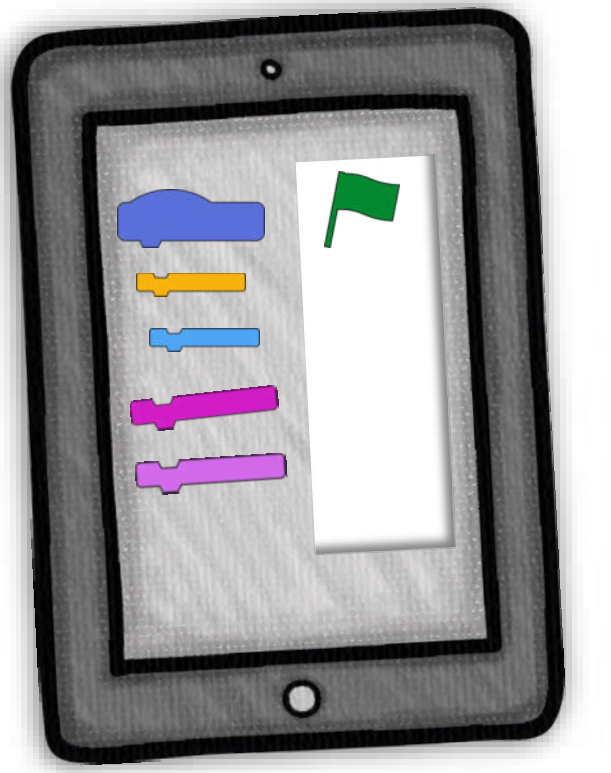
COMPUTER SCIENCE



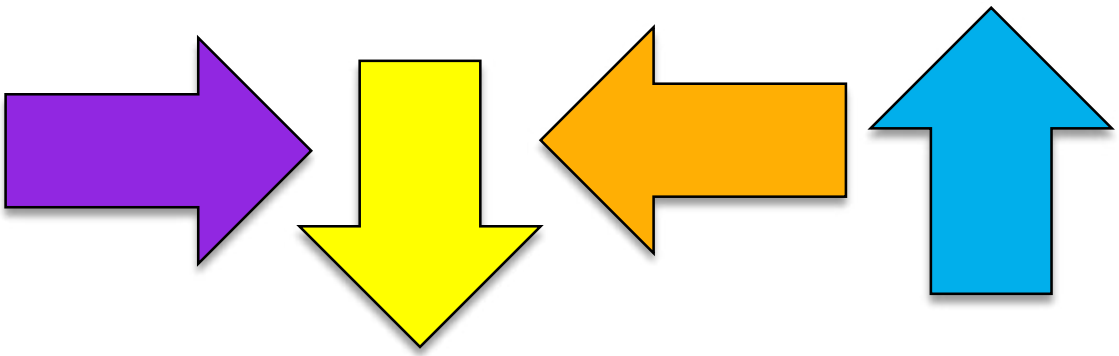
COMPUTATIONAL THINKING

PROGRAMMER

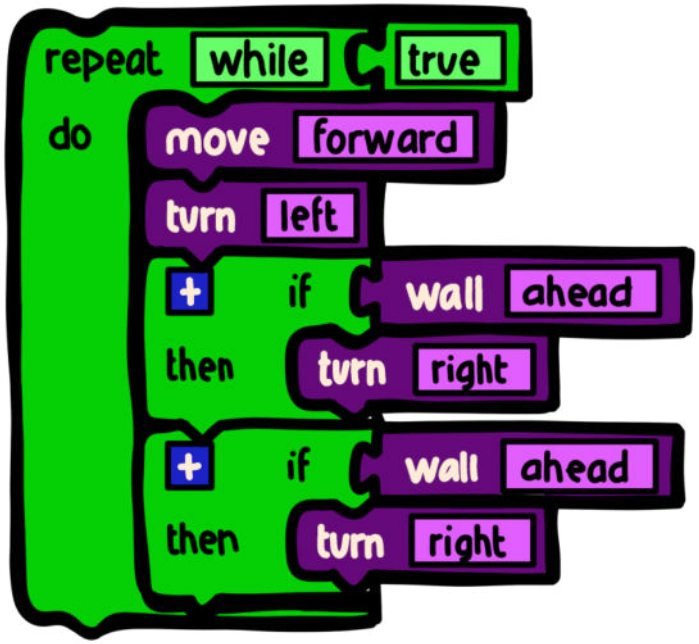
WORKSPACE



CODE

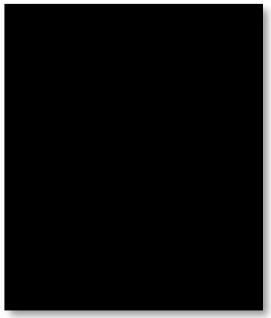


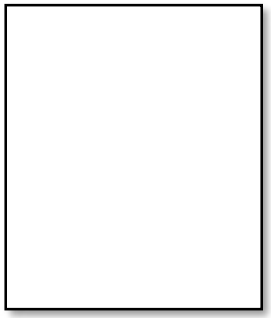
ALGORITHM



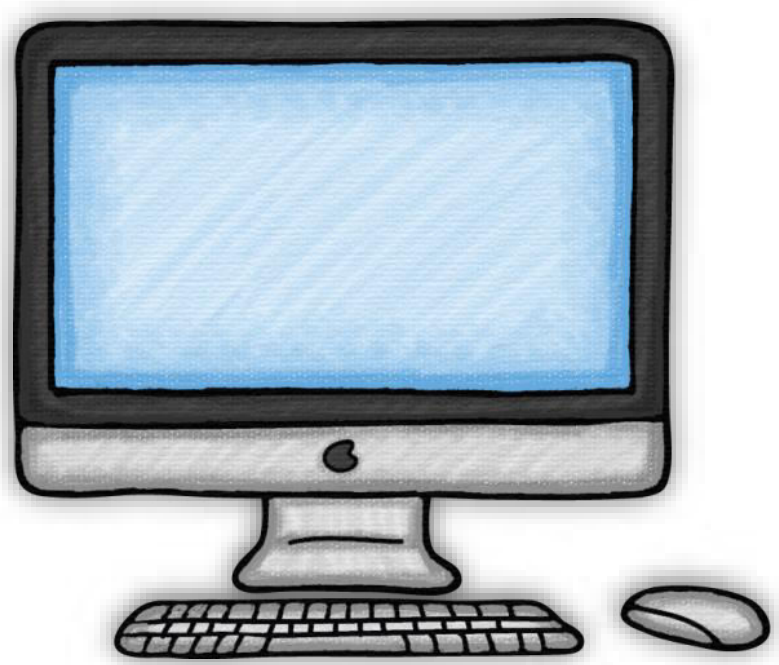
PROGRAM

BINARY





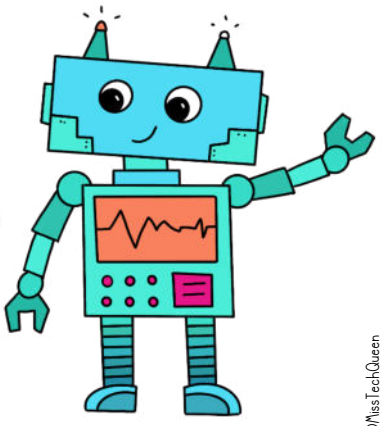
COMMAND



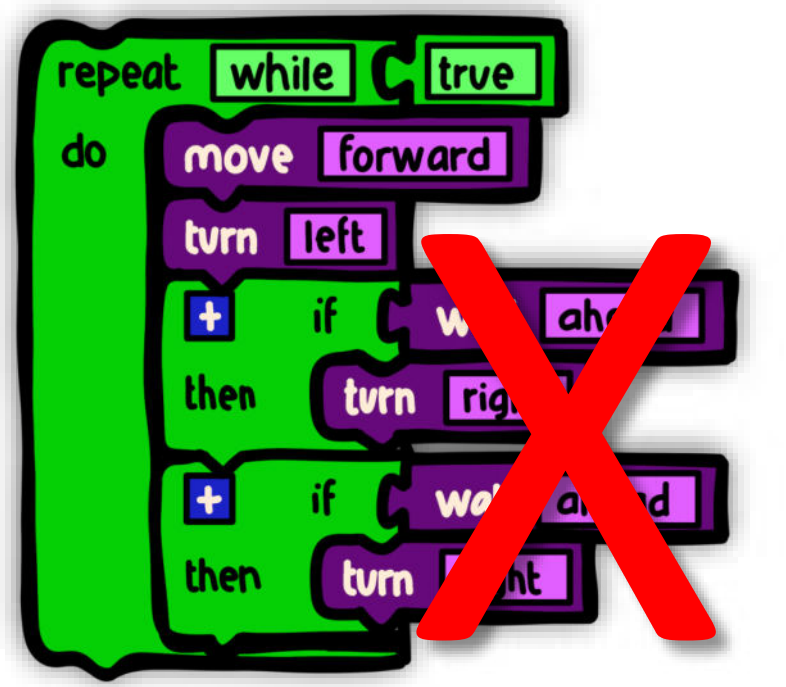
RUN / GO

EVENT

wave

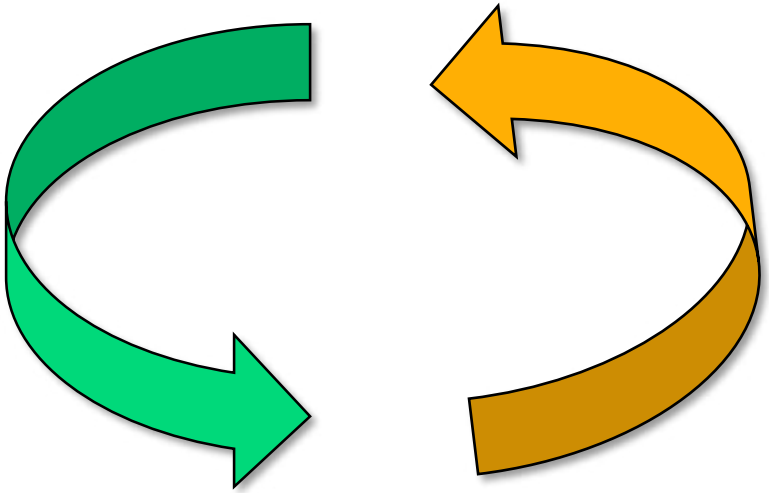


BUG

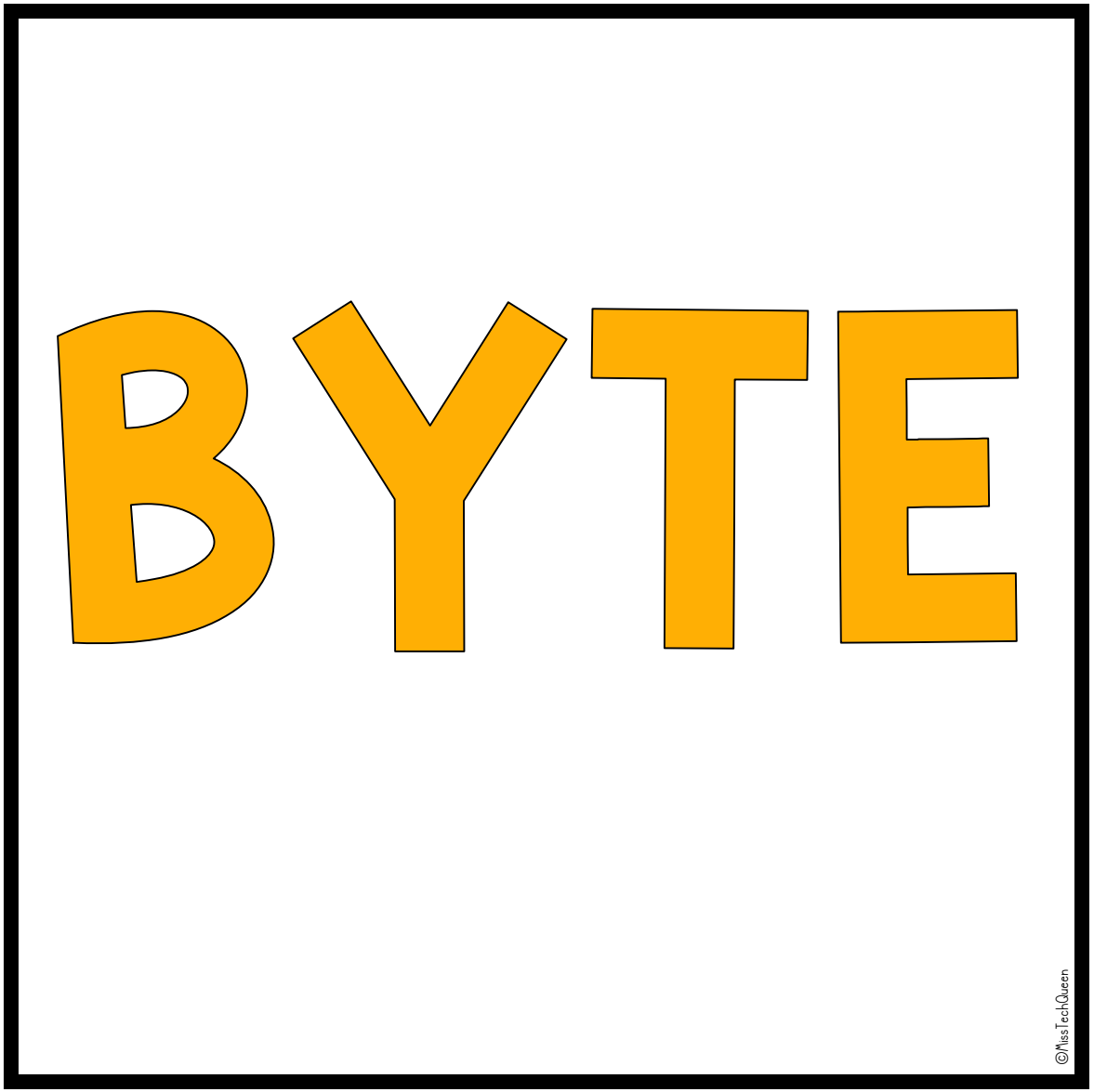


DEBUGGING

LOOP



DECOMPOSE

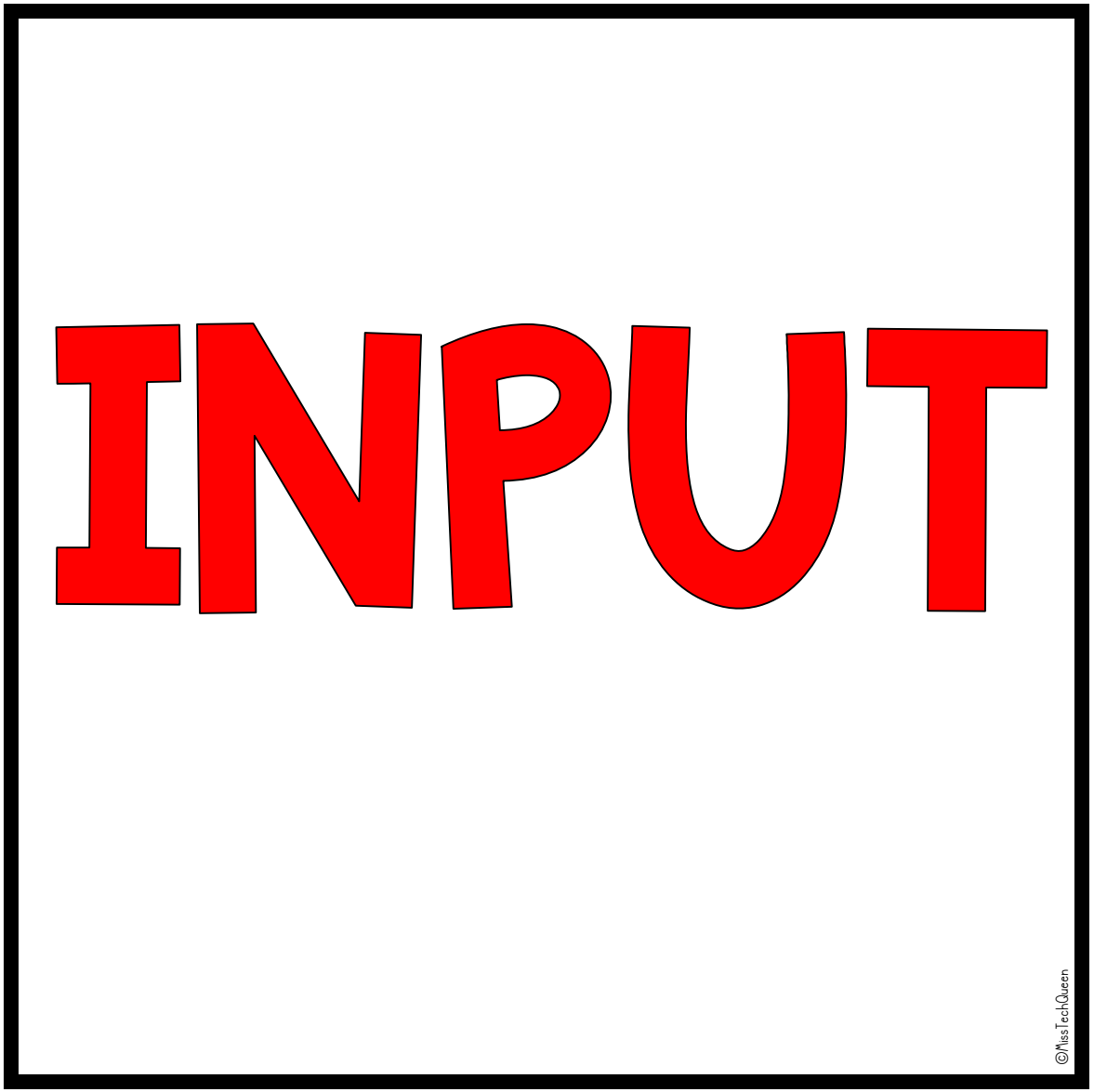

BYTE
©MissTechQueen

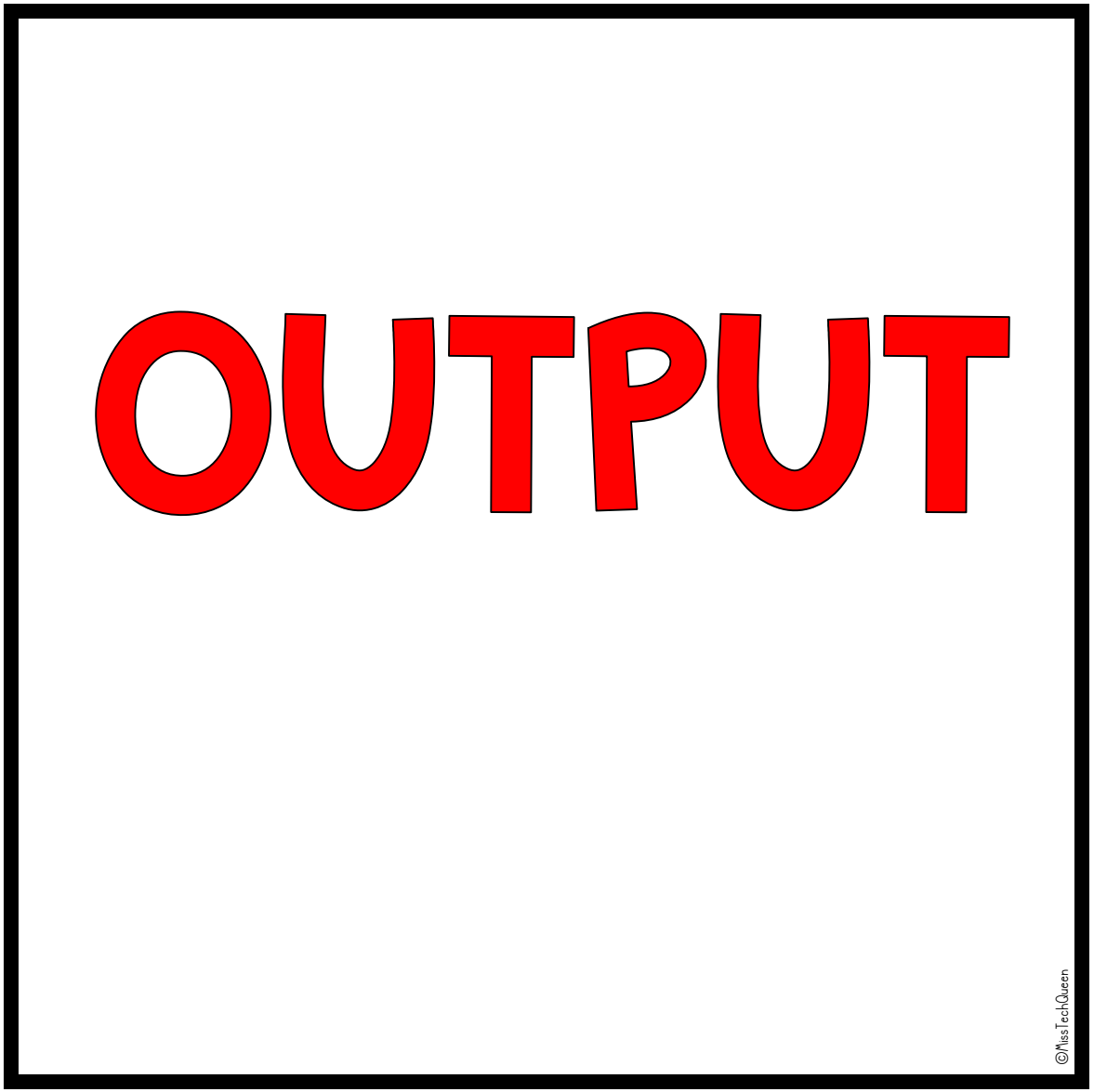
CONDITIONALS

FUNCTION

VARIABLE

IF-THEN-ELSE


INPUT
©MissTechQueen


OUTPUT
©MissTechQueen

CODE BLOCK

SEQUENCE

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

A place to store information & a variable.

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Examples of conditional statements. What will happen under certain conditions.

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

A command that is entered

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

The result of a specific set of commands & steps being entered

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

A set of code that is grouped together

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Code written in a specific order

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Finding and fixing problems in the code

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Doing something over and over again

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Break a problem down into smaller pieces

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

The most common fundamental unit of digital data

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Statements that only run under certain conditions.

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

A piece of code that you can easily call over and over again.

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

An algorithm that has been coded into something that can be run by a machine

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

A way of representing information in only two ways

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

An instruction for the computer

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

This causes the computer to do the commands you've written

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

An action that causes something to happen.

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

A mistake in the program

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

The study of computers

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Modifying a problem so that it can be solved using a computer

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

Someone who writes the code

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

The area on site where you drag and drop commands to build your program

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

The language that tells a computer what to do

PROGRAM THE ROBOT TO REACH THIS WORD THAT MEANS:

A list of steps to finish a task

TERMS

If-then-else – Examples of conditional statements. What will happen under certain conditions.

Output – The result of a specific set of commands & steps being entered

Code Block – A set of code that is grouped together

Decompose –Break a problem down into smaller pieces

Byte – The most common fundamental unit of digital data

Conditionals – Statements that only run under certain conditions.

Function – A piece of code that you can easily call over and over again.

Run/Go – This causes the computer to do the commands you've written

Input – A command that is entered

Event – An action that causes something to happen.

Command – An instruction for the computer

Program – An algorithm that has been coded into something that can be run by a machine

Binary – A way of representing information in only two ways

Bug – A mistake in the program

Computer Science – The study of computers

Workspace – The area on site where you drag and drop commands to build your program

Computational Thinking – Modifying a problem so that it can be solved using a computer

Code – The language that tells a computer what to do

Loop – Doing something over and over again

Sequence – Code written in a specific order

Algorithm – A list of steps to finish a task

Programmer – Someone who writes the code

Variable – A place to store information & a value.

Debugging – Finding and fixing problems in the code

THANK YOU FOR YOUR DOWNLOAD!

ABOUT THE AUTHOR:

Hi! I am Dena from New Jersey. I am currently an enrichment teacher/gifted & talented for grades K-4. For the last three years I have been immersed in technology education, primarily in grades 5 and 6. Earlier in my career, I taught 4th grade & special education. For as long as I can remember, teaching has been my passion & thus, I have pursued my dream career.

Using STEAM activities in my classroom allows students to demonstrate creativity while designing. While promoting the art of exploration & discovery, I have found that my students operate on an independent basis as they work at their own speed while taking charge of their own education. STEAM incorporates teamwork, fine motor skills, problem solving, & more.

My student load is a hefty one, 350 students a week in five different grade levels. It is difficult to photocopy large packets & use new materials each week. Instead, I must use simple, low prep activities that still incorporate these foundational skills. I know there are many educators in a the same position as me, which has inspired me to share my activities on TPT. I hope your students benefit from these activities just as much as mine do!

I love to see your students using these activities. Feel free to tag me in photos on social media @MissTechQueen! If you have any questions or comments about the product, please email me.

Thank you for supporting my store,

Dena
