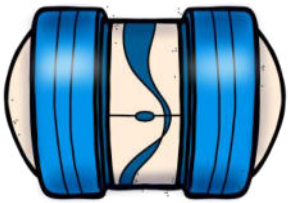
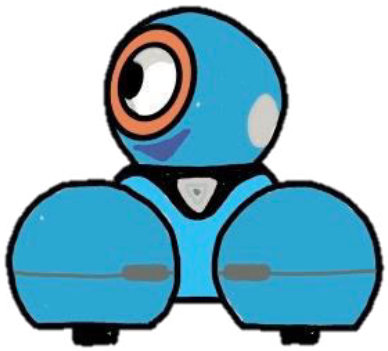
STEM LEADERS

CODING ACTIVITY MAT





Thank You FOR YOUR SUPPORT!

Hi STEM lovers!

Hi, I'm Dena!

- I am currently an **enrichment & technology** teacher for grades 1-4 in New Jersey. I've also been a homeroom and special education teacher.
- I have a 3.5-pound teacup **Yorkie**
- My family is from **Greece, Switzerland & Canada**
- I was so **lost** when I was placed into a new position teaching **350 students** a week in five different grade levels, this led me to create & share my own resources.
- 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!

Thank you for supporting my store! I am so grateful you trusted me to be a small part of your classroom. Let incredible things happen in your classroom with STEM!

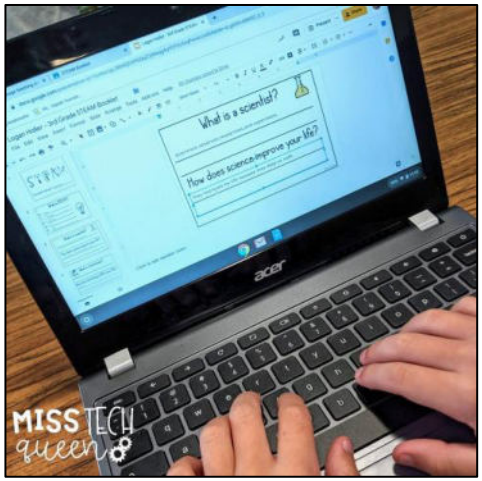
FOLLOW ME FOR UPDATES & TECH TIPS!

VIEW MY WEBSITE

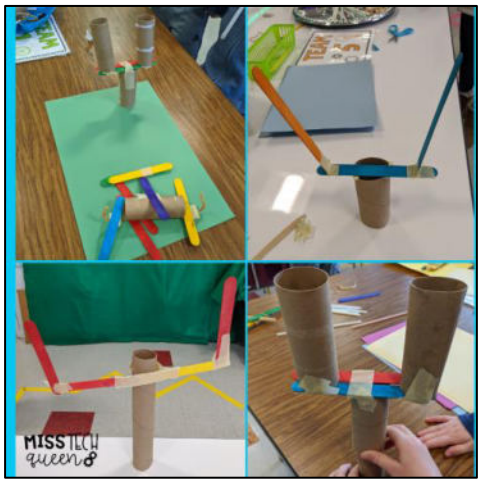
MISS TECH QUEEN

YOU MAY LIKE THESE ENGAGING RESOURCES!

CLICK on each picture to learn more!

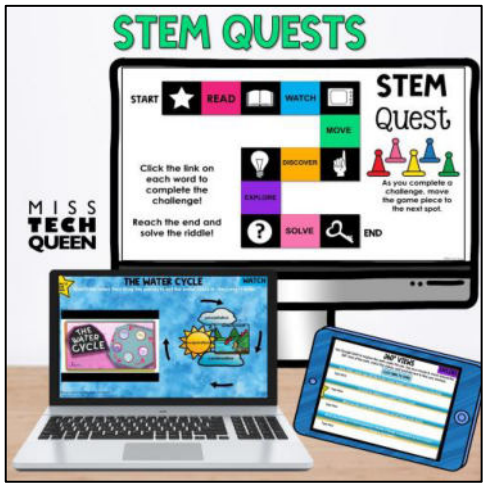


SHOW ME MORE Digital Projects ➤



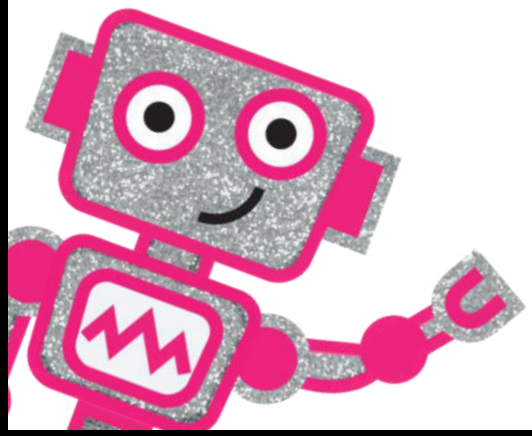
SHOW ME MORE STEM Challenges ➤

SHOW ME MORE Coding & Bots ➤



SHOW ME MORE Adventures ➤

FOLLOW MY STORE FOR EXCLUSIVE SAVINGS!



CLICK HERE!

EVERY NEW ACTIVITY IS
50% OFF FOR 24 HOURS!

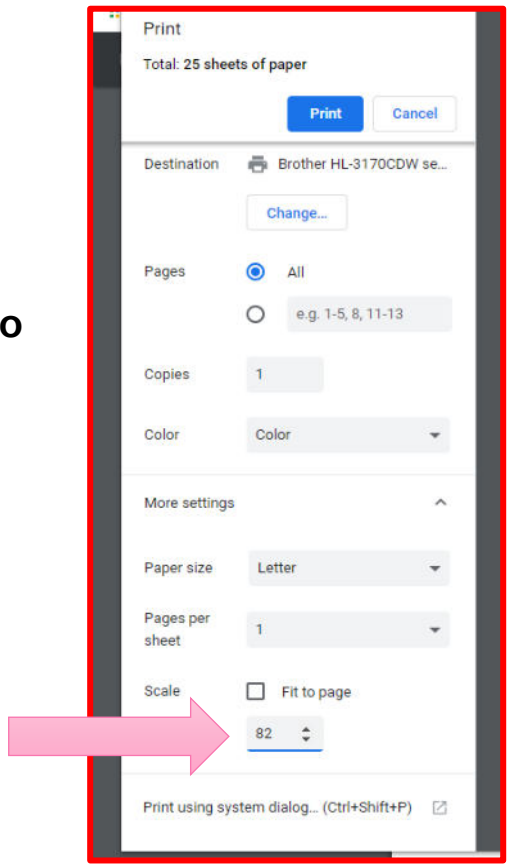
MISS TECH QUEEN

INTRO

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

Set Up Mat

- Print photo squares – there are many options (about 16 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 80% (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 (or more - you decide!) For extras, print blank squares.
- 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 - you can vary or make two mats as well
- Tape the back of the photos together, so the tape is not visible
- **Laminate** the **entire mat** to ensure pieces stay together



Maze

- Print the activity squares. Laminate & cut all individually. Leave them loose.
- Allow students to move the pieces around individually to create their own mazes on the floor. Use Keva Planks, popsicle sticks, Legos, or other items to create a path for the robot. Add the activity squares to the maze.
- They can act as targets around the floor that the bot must reach

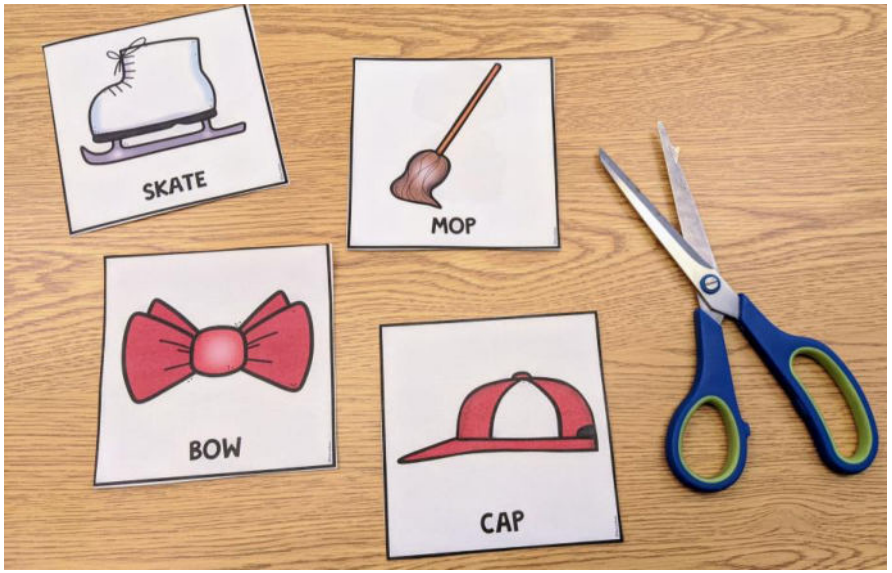
Task Cards

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

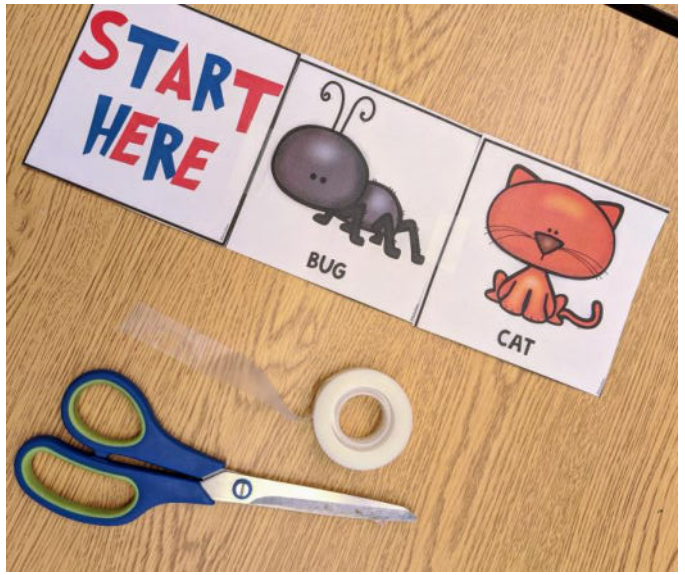
Code Cards: Print & use code cards so students can get a visual

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

SET UP



CUT



TAPE

LAMINATE

READY TO GO MAT

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 – (2 VERSIONS)
- 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 – use the **code cards** to help
- 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
- *Extra challenge: Add the X as squares the bot can not go over! "Bugs"*

Make Your Own Mat

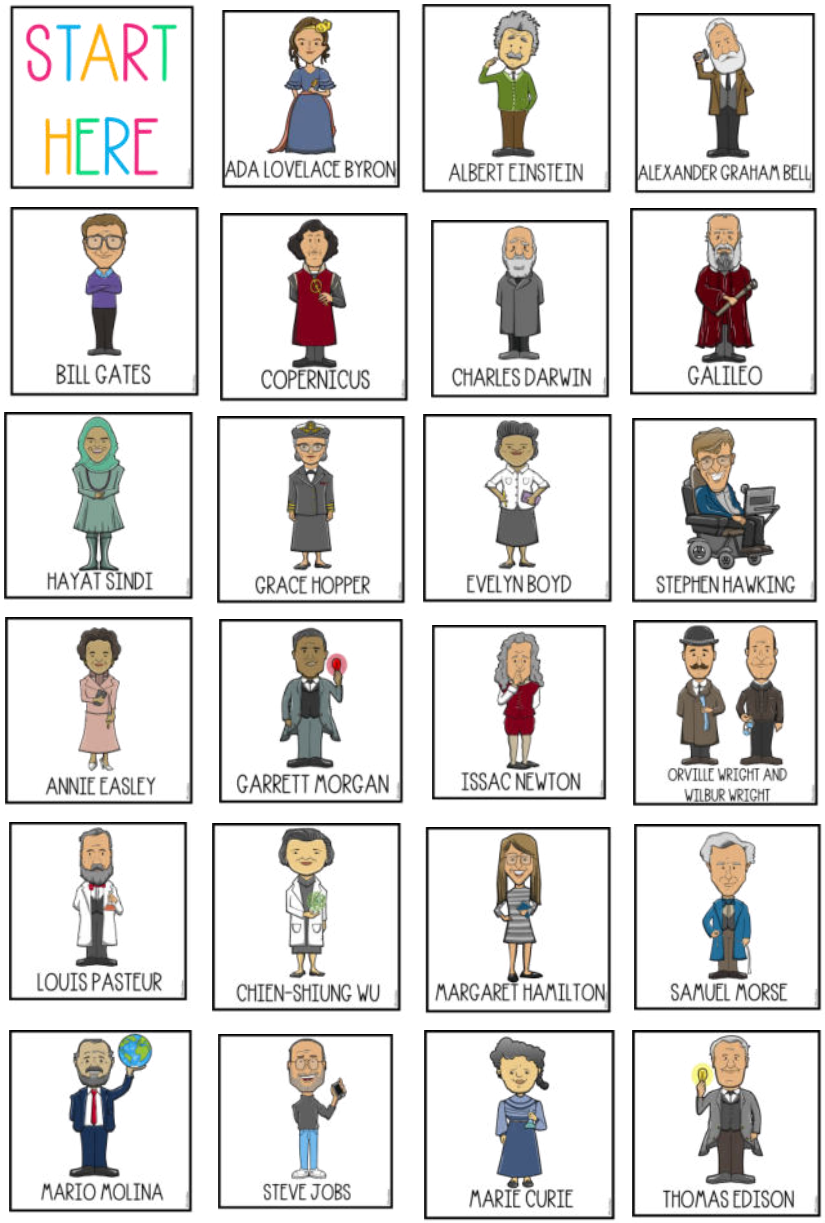
- Do not tape pieces together in a mat. Keep each square separate.
- Allow students to create their own maze by moving the pieces around individually.
- Provide Keva Planks, popsicle sticks, Legos, or other items to
  create a path for the robot. Add the activity squares to the maze.
- Students can also arrange squares 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 MAT

Place START CARD at the top



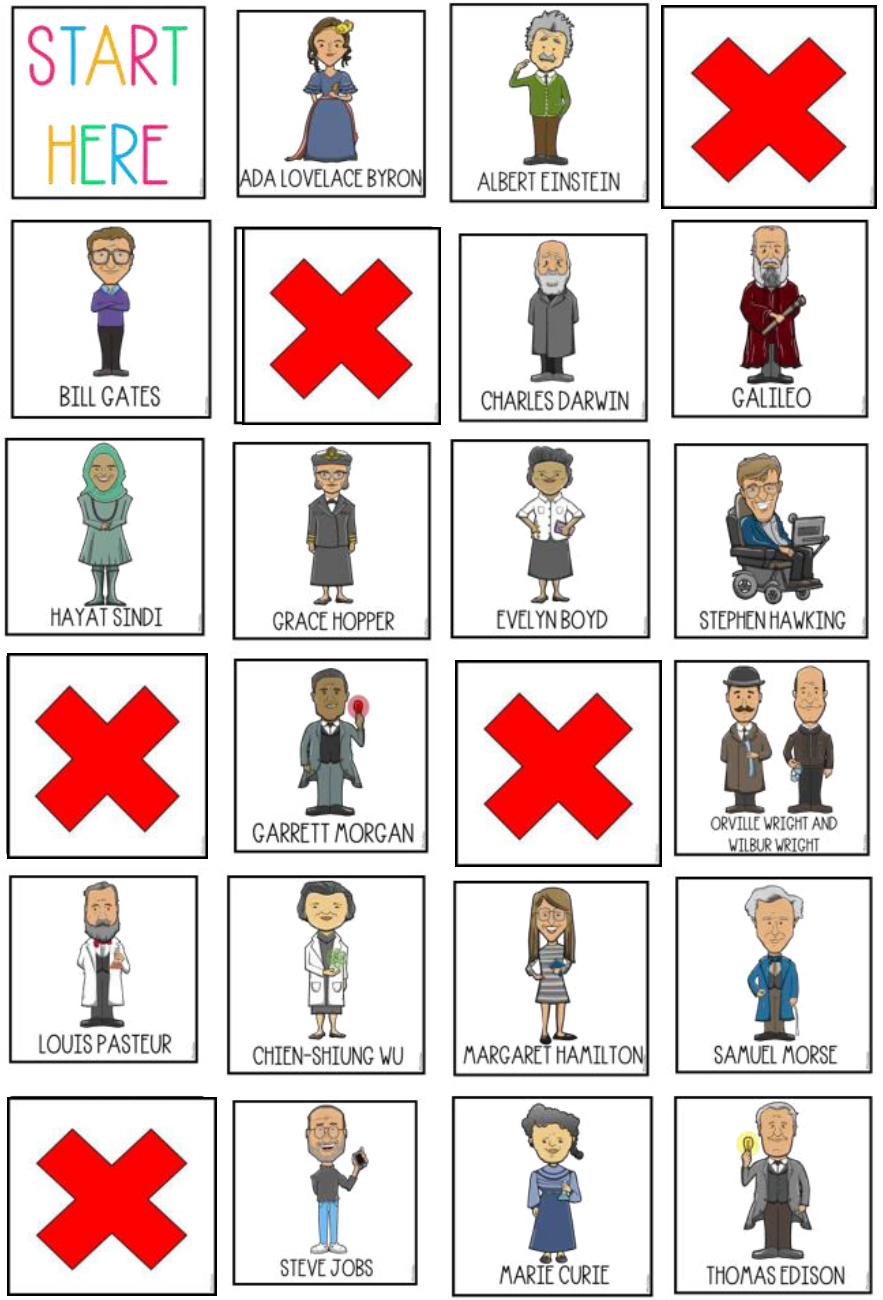
You can arrange the photos as you wish!

There are **24 card** options!

Create one large mat or two smaller ones

SAMPLE CHALLENGE MAT

Place START CARD at the top

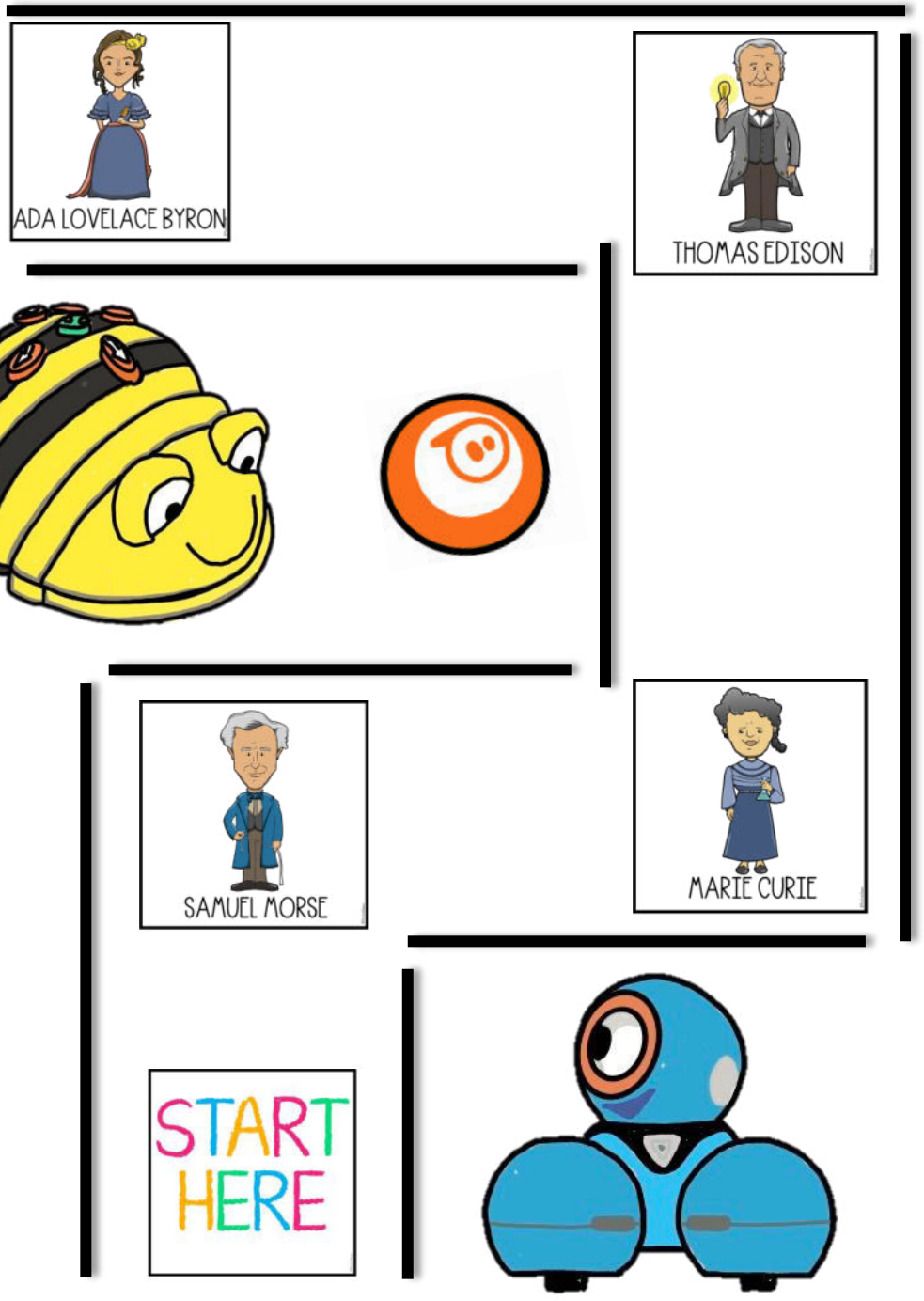


You can arrange the photos as you wish!

There are **24 card** options!

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

SAMPLE MAZE



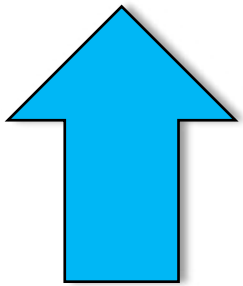
Students can create their own maze and loosely place activity squares in the maze.

Place START CARD at one end

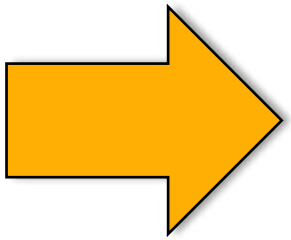
CODE CARDS

Print for hands-on visual

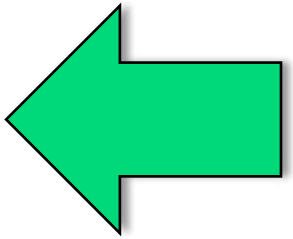
STRAIGHT



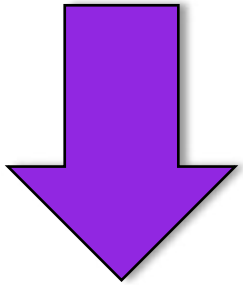
TURN RIGHT



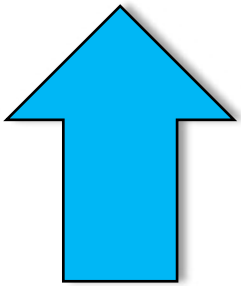
TURN LEFT



BACKWARDS



STRAIGHT



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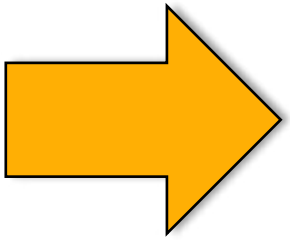

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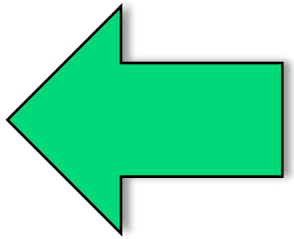

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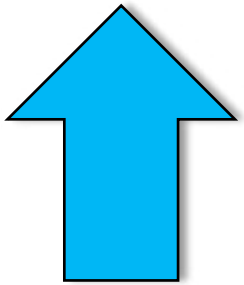

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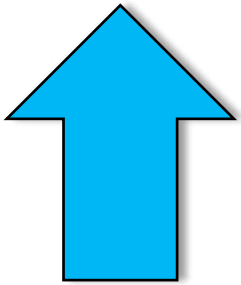

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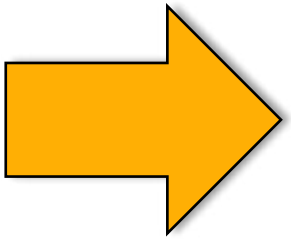

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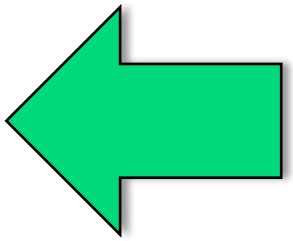

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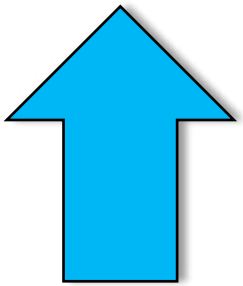
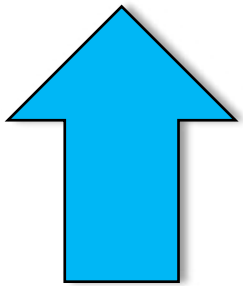


Print duplicates for students to use - laminate for reuse

STRAIGHT



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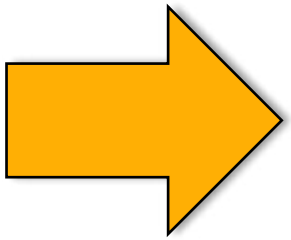
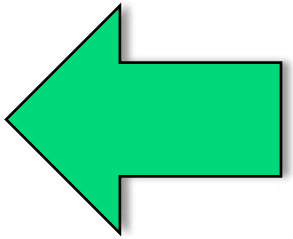
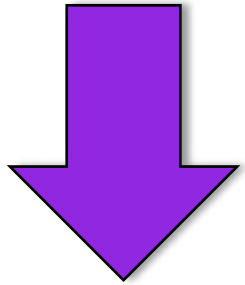


TURN LEFT



BACKWARDS



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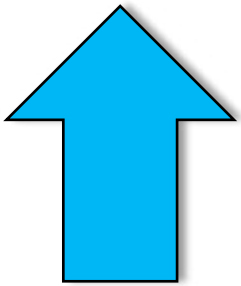

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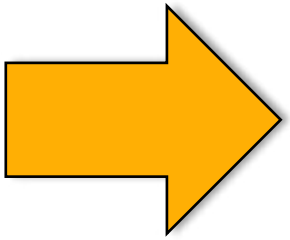

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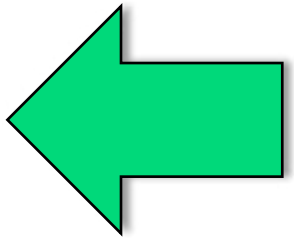
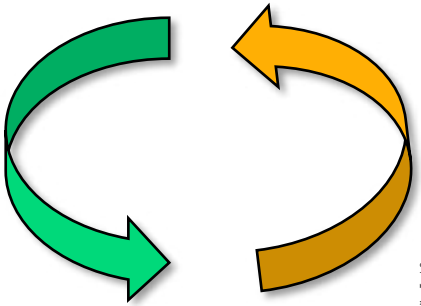


RUN THE CODE

LOOP



REPEAT

×2

REPEAT

×3

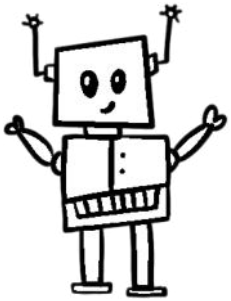
REPEAT

×4

RESPONSE SHEETS

Print or place in dry erase pocket charts for reusable centers

Created by: _____



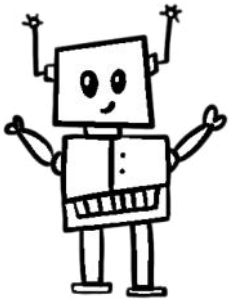
ROBOT MAZE

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

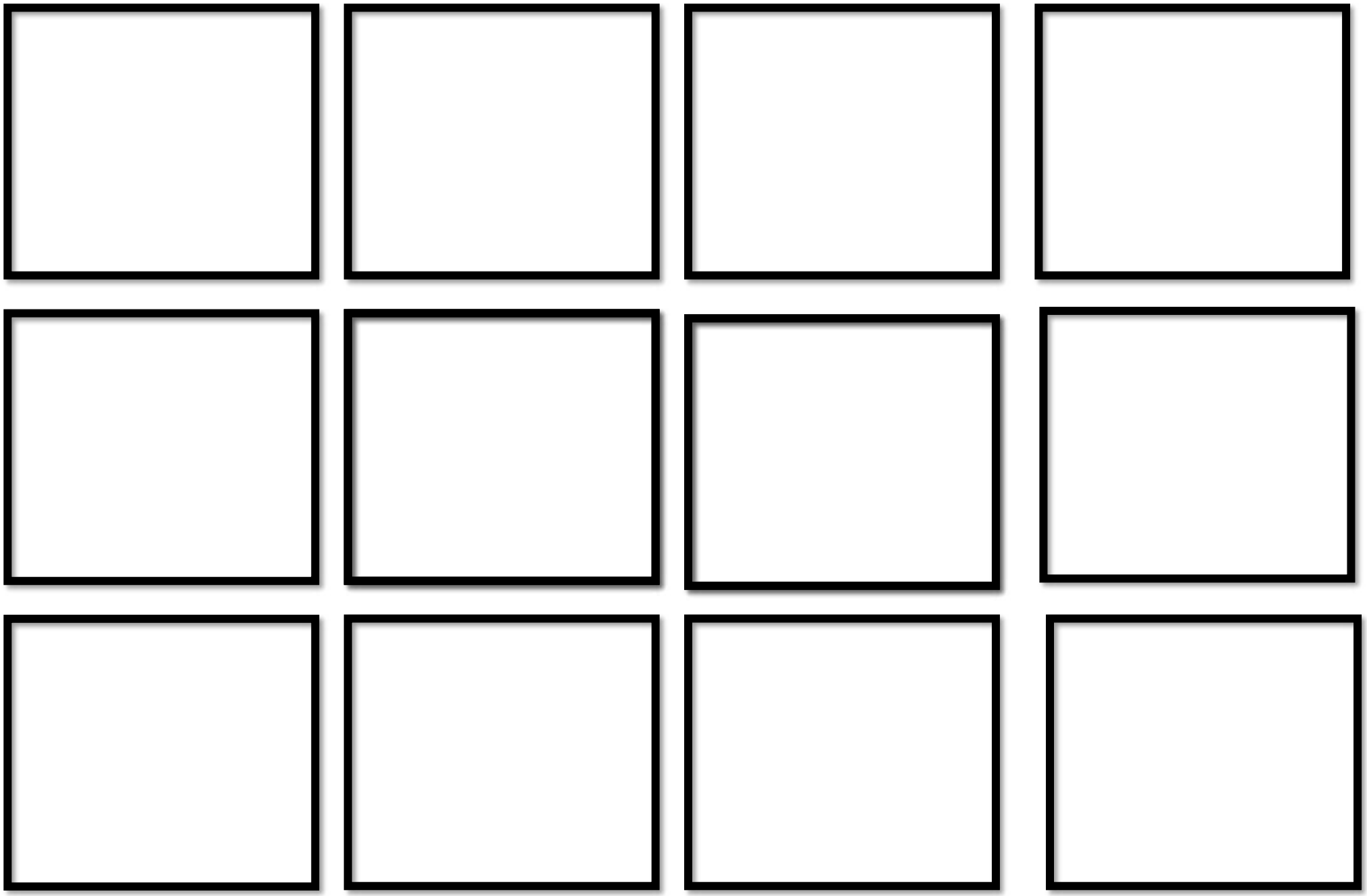
Draw arrows to show the steps to your program. Test it out with your robot!

While programming my robot I learned _____

_____

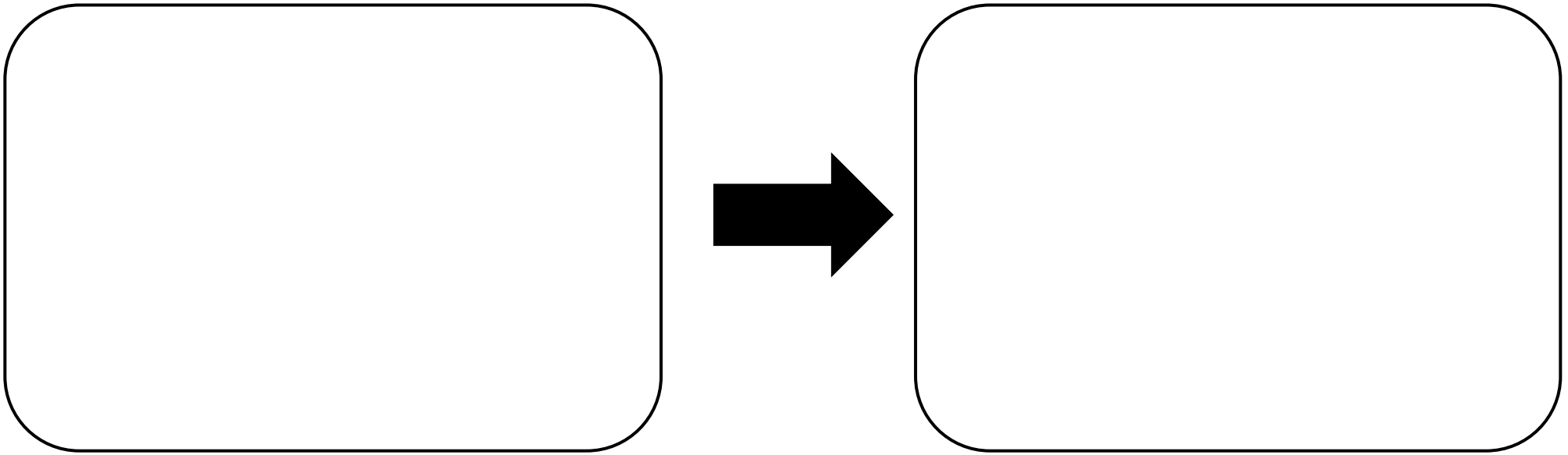
Created by: _____

CONTINUED . . .



Name: _____

I PROGRAMMED BY BOT TO GET FROM...



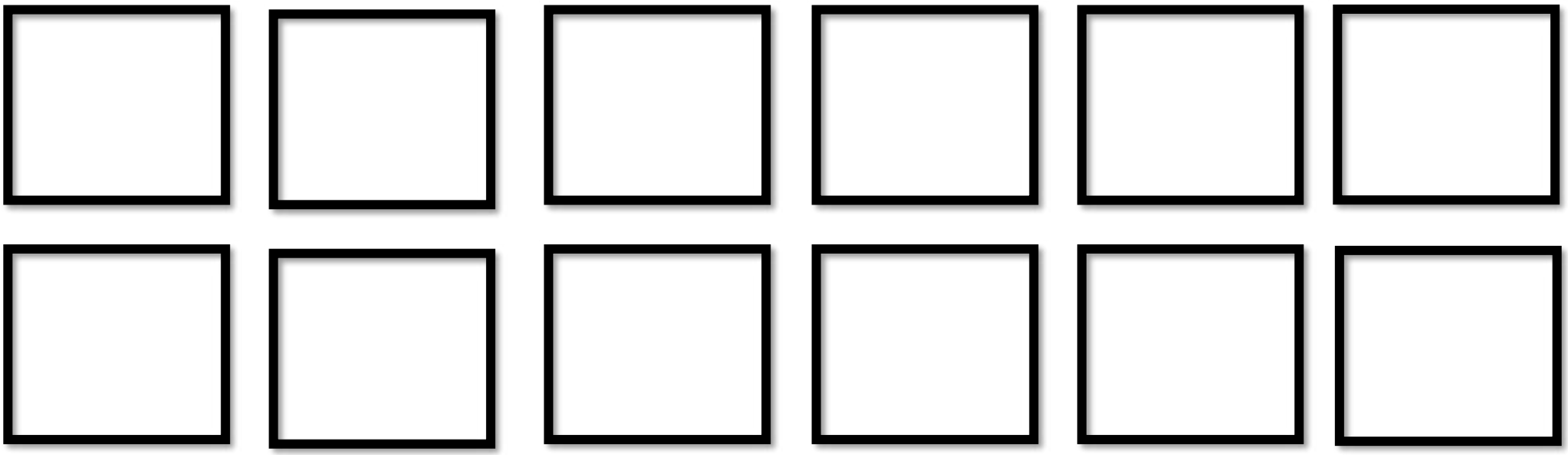
HERE IS THE CODE I USED TO DO IT

Name: _____

What is your favorite part about coding?

What is difficult about coding?

Draw arrows to show your code below:

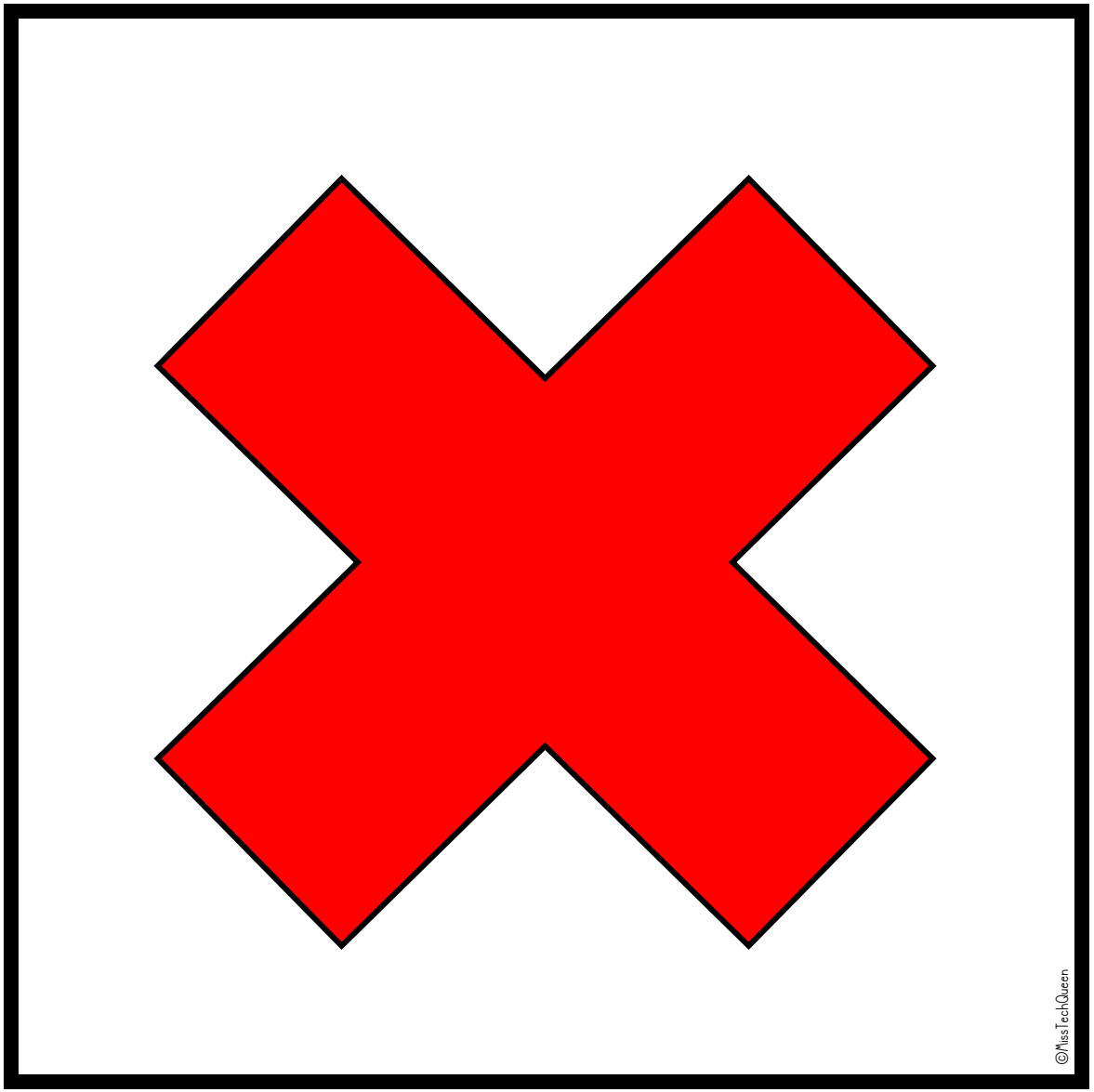


ACTIVITY SQUARES

Print, cut and tape together to form mat

You can also leave separate as targets

*Don't forget to check print sizes for your specific bot!



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

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 80% (5 x 5 in)

ADA LOVELACE BYRON

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ALBERT EINSTEIN

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ALEXANDER GRAHAM BELL

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BILL GATES

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CHARLES DARWIN

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COPERNICUS

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GALILEO

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GARRETT MORGAN

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ISSAC NEWTON

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LOUIS PASTEUR

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MARGARET HAMILTON

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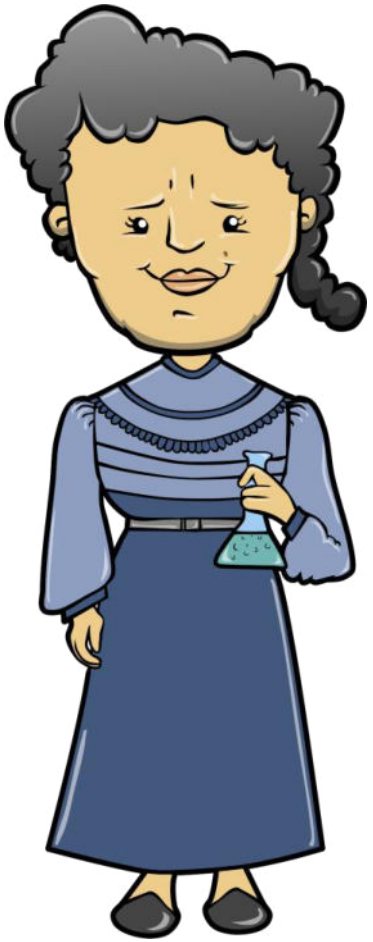


MARIE CURIE

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 80% (5 x 5 in)

NIKOLA TESLA

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 80% (5 x 5 in)

MARIO MOLINA

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 80% (5 x 5 in)

SAMUEL MORSE

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 80% (5 x 5 in)

STEPHEN HAWKING

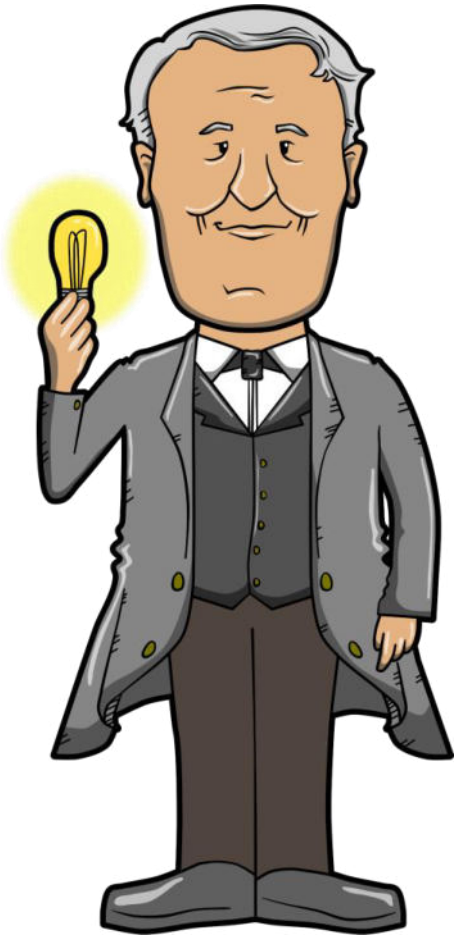
be careful when printing – unselect *fit to page* to print photos in their current size 6x6 in for larger robots (Dash, Bee Bot)

For smaller robots – Sphero, Robot Mouse – select scale & print at 80% (5 x 5 in)

STEVE JOBS

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 80% (5 x 5 in)



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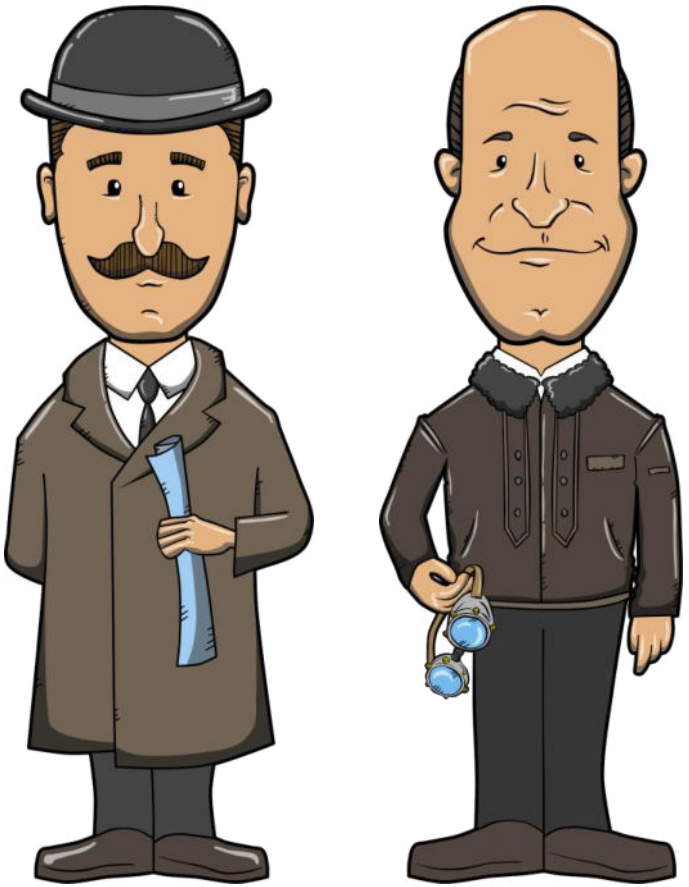

ORVILLE WRIGHT AND WILBUR WRIGHT

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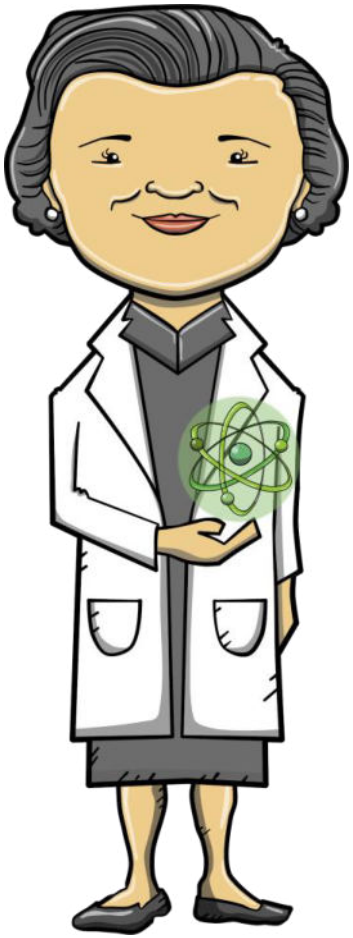

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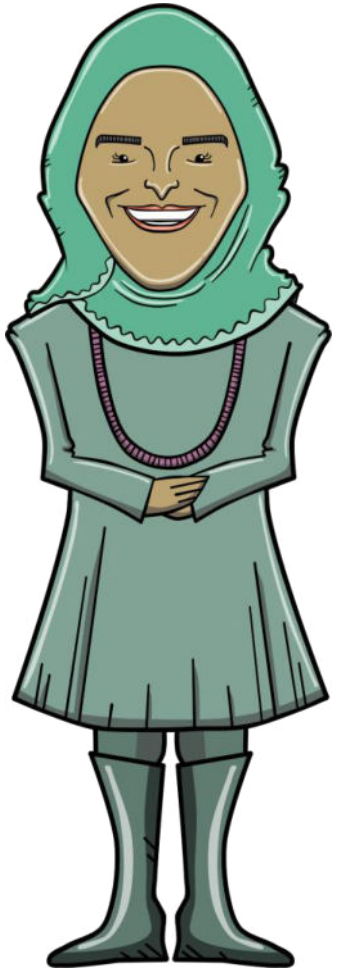

HAYAT SINDI

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TASK CARDS

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

THE WORLD'S FIRST COMPUTER PROGRAMMER

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A PHYSICT AND DEVELOPED THE THEORY OF RELATIVITY

PROGRAM THE ROBOT TO REACH THE PERSON WHO

INVENTED AND PATENT THE 1ST WORKING TELEPHONE

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

THE FOUNDER OF MICROSOFT

PROGRAM THE ROBOT TO REACH THE PERSON WHO

DEVELOPED THE THEORY OF EVOLUTION

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

AN ASTRONOMER AND PROPOSED THE HELOPCENTRIC SYSTEM

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

AN ASTRONOMER AND DEVELOPED HIS OWN VERSION OF A TELESCOPE

PROGRAM THE ROBOT TO REACH THE PERSON WHO

INVENTED AND INNOVATED THE MODERN TRAFFIC SIGNAL

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A PHYSICIST AND DEVELOPED THE LAWS OF MOTION

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A CHEMIST AND DISCOVERED PRINCIPLES OF VACCINATION

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A COMPUTER SCIENTIST AND MEMBER OF NASA APOLLO TEAM

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

CHEMIST AND CONDUCTED RESEARCH ON RADIOACTIVITY

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

AN INVENTOR AND CONTRIBUTED TO MODERN ELECTRICITY SUPPLY SYSTEM

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A CHEMIST AND OZONE RESEARCHER

PROGRAM THE ROBOT TO REACH THE PERSON WHO

DEVELOPED MORSE CODE TELEGRAPH SYSTEM

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS A

THEORETICAL PHYSICIST AND WORKED ON THE PHYSICS OF BLACK HOLES

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

THE FOUNDER OF APPLE

PROGRAM THE ROBOT TO REACH THE PERSON WHO

CONTRIBUTED TO THE INVENTION OF THE LIGHTBULB

PROGRAM THE ROBOT TO REACH THE BROTHERS WHO

INVENTED THE FIRST SUCCESSFUL AIRPLANE

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A ROCKET SCIENTIST AND WORKED ON CENTAUR TECHNOLOGY AT NASA

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

AN EXPERIMENTAL PHYSICIST AND CONTRIBUTED TO NUCLEAR PHYSICS

PROGRAM THE ROBOT TO REACH THE PERSON WHO

PERFORMED PIONEERING WORK IN THE FIELD OF COMPUTING

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A COMPUTER SCIENTIST AND INVENTED ONE OF THE FIRST LINKERS

PROGRAM THE ROBOT TO REACH THE PERSON WHO IS

A MEDICAL SCIENTIST AND CONTRIBUTED TO BIOTECHNOLOGY

PEOPLE KEY

- ADA LOVELACE BRYON: THE WORLD'S FIRST COMPUTER PROGRAMMER
- ALBERT EINSTEIN: A PHYSICT AND DEVELOPED THE THEORY OF RELATIVITY
- ALEXANDER GRAHAM BELL: INVENTED AND PATENT THE 1ST WORKING TELEPHONE
- BILL GATES: THE FOUNDER OF MICROSOFT
- CHARLES DARWIN: DEVELOPED THE THEORY OF EVOLUTION
- COPERNICUS: AN ASTRONOMER AND PROPOSED THE HELOPCENTRIC SYSTEM
- GALILEO: AN ASTRONOMER AND DEVELOPED HIS OWN VERSION OF A TELESCOPE
- GARRETT MORGAN: INVENTED AND INNOVATED THE MODERN TRAFFIC SIGNAL
- ISSAC NEWTON: A PHYSICIST AND DEVELOPED THE LAWS OF MOTION
- LOUIS PASTEUR: A CHEMIST AND DISCOVERED PRINCIPLES OF VACCINATION
- MARGARET HAMILTON: A COMPUTER SCIENTIST AND MEMBER OF NASA APOLLO TEAM
- MARIE CURIE: CHEMIST AND CONDUCTED RESEARCH ON RADIOACTIVITY
- NIKOLA TESLA: AN INVENTOR AND CONTRIBUTED TO MODERN ELECTRICITY SUPPLY SYSTEM
- MARIO MOLINA: A CHEMIST AND OZONE RESEARCHER
- SAMEUL MORSE: DEVELOPED MORSE CODE TELEGRAPH SYSTEM
- STEPHEN HAWKING: A THEORETICAL PHYSICIST AND WORKED ON THE PHYSICS OF BLACK HOLES
- STEVE JOBS: THE FOUNDER OF APPLE
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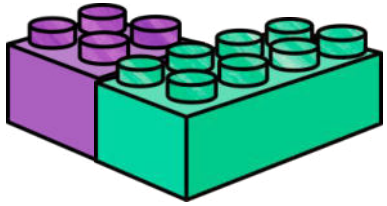
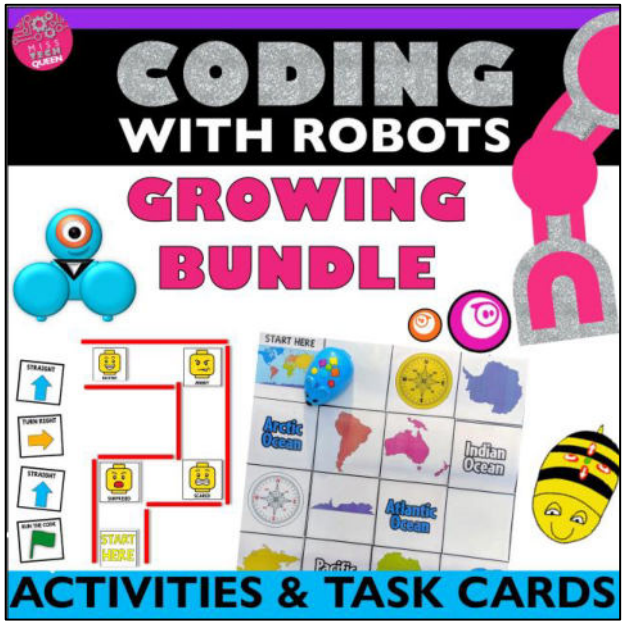
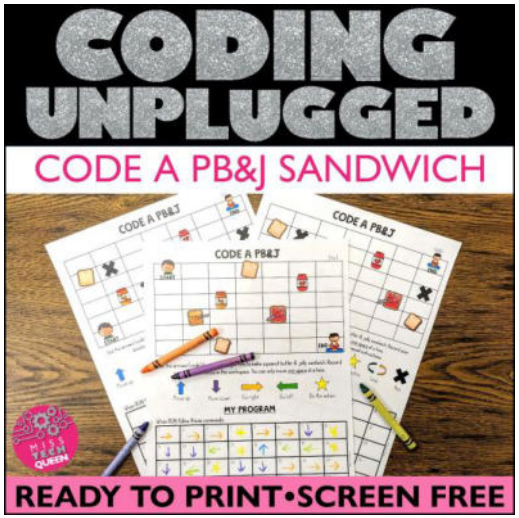
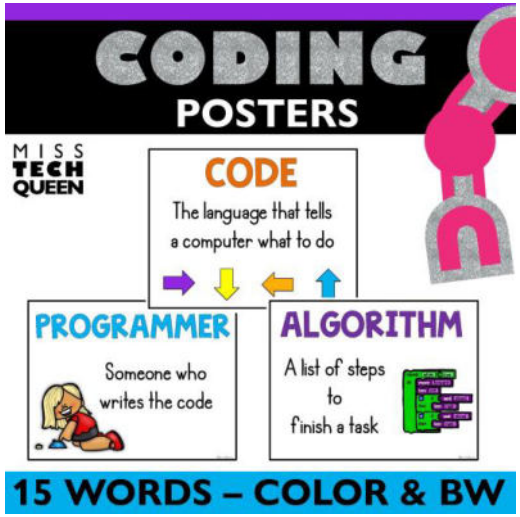


The Perfect Pair

THIS RESOURCE MATCHES WELL WITH







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