

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

# CODING AND ROBOTICS STEM PACK



LITTLE BINS<sup>mc</sup> FOR LITTLE  HANDS

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# SCREEN-FREE CODING PACK



## INTRODUCTION:

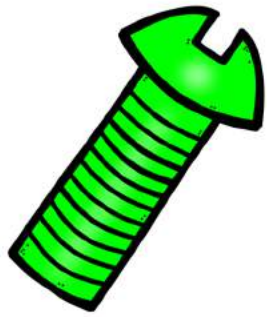
Welcome to your Screen-Free Coding Pack filled with fun, hands-on activities every young coder will enjoy! I hope it sparks creativity and curiosity in your kiddos.

In this pack, find a fun selection of printable algorithm and binary alphabet activities, games, and challenges. Each activity has a set of instructions, and you will find helpful tips and information for learning all about algorithms and the binary alphabet. Kids will also enjoy the NEW coding story challenge!

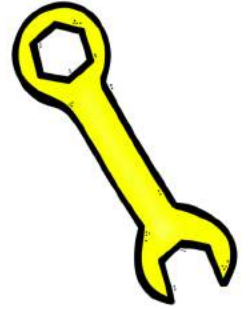
Feel free to use this pack with one kiddo or a whole group. You may copy activities as many times as you like for your class or group, but please send your friends to grab their pack instead of sharing files.

~ Thank you!

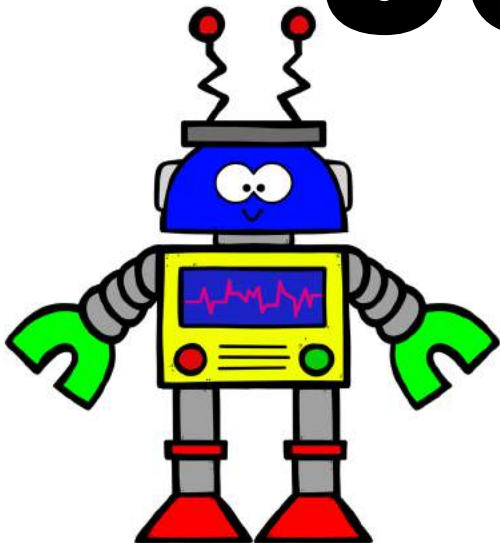




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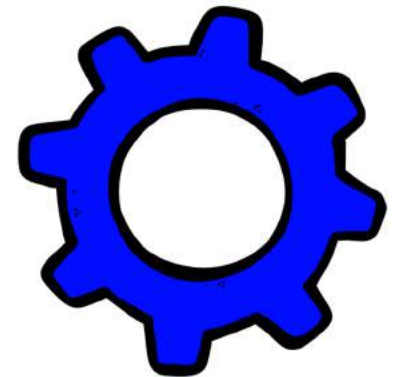


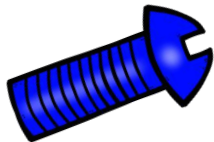
# **CODING & ROBOTS ALGORITHM CODING GAME**



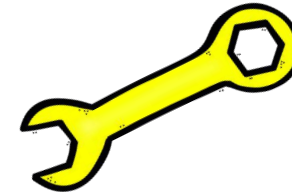
FOR KIDS

3 LEVELS OF DIFFICULTY





## Screen-free coding with a coding and robotics theme! Learn about algorithms as you play games.

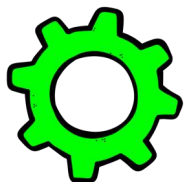
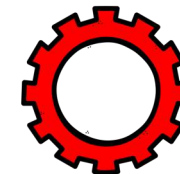


### SET UP & PLAY

Print out one of the sets of grids to set up your board. Choose a blank grid with either the robot head or the robot body. Cut out the corresponding robot arms, legs, antennae, screws, gears, and arrows for your pieces.

Place the pieces on the board in some of the blank spaces (not every space). You can play where the screws and gears are obstacles to move around and/or the robot body parts need to be collected.

Your arrows are your direction cards and how you write the code to solve the puzzle. Included are left, right, and straight arrow pieces. You can use and re-use the grids over and over again and even laminate the sheets.



Use a small figure as an object to move through the board to get to the robot head or the robot body or vice versa.

Use the directional cards to create an algorithm to reach the desired object. You can change the obstacle cards to create a new board each time. Start simple using just a few and work your way up!

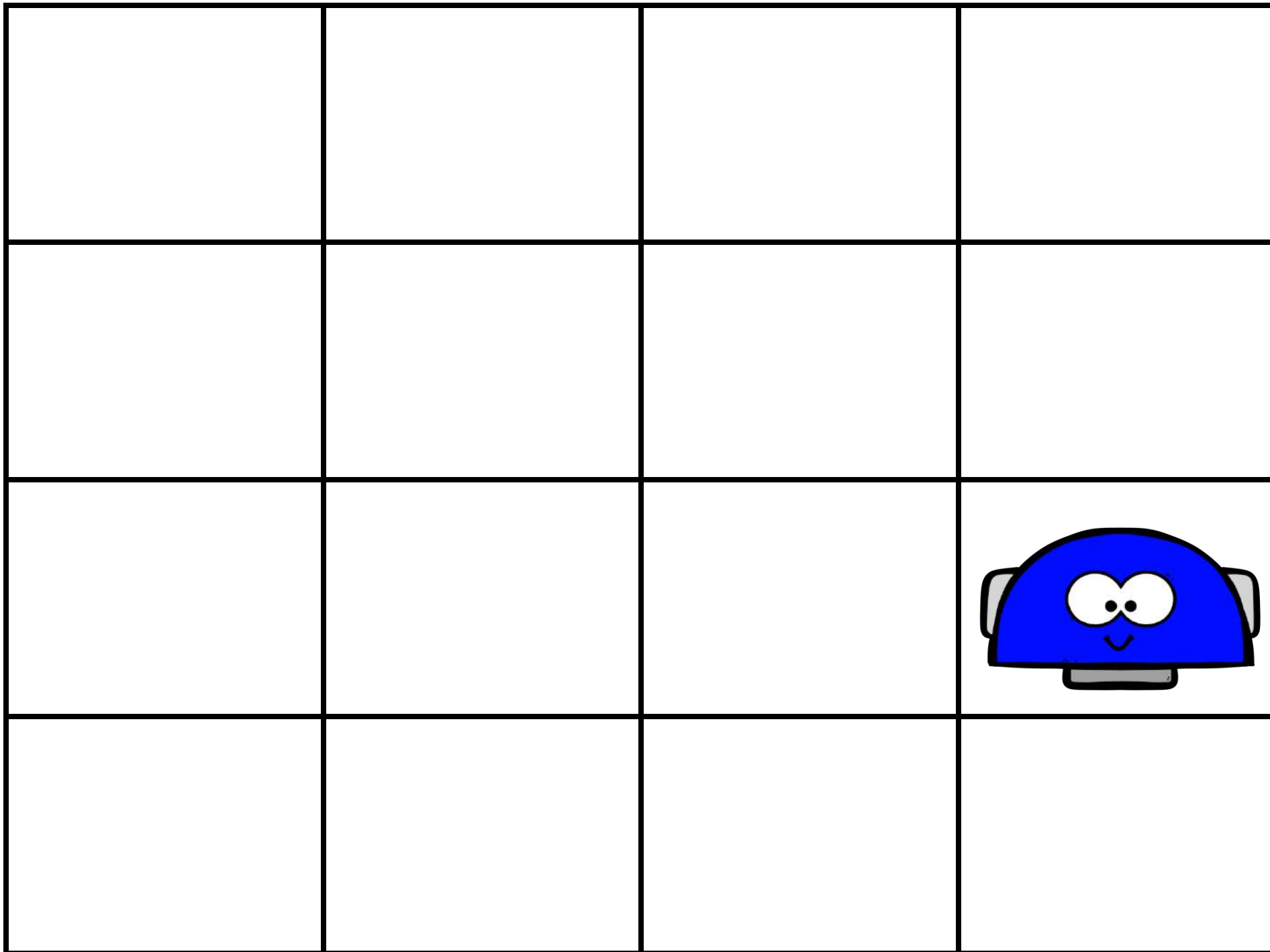
**Easier version:** Place out one directional card at a time as you move the object one square at a time with or without obstacles to go around.

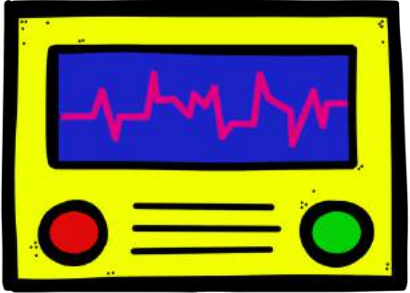
**Harder version:** Think out the sequence of actions ahead of time and place out a string of directional cards to show your program. Run your program (move your piece) according to your directions. Check your results. Did you make it? Do you need to fix a card?

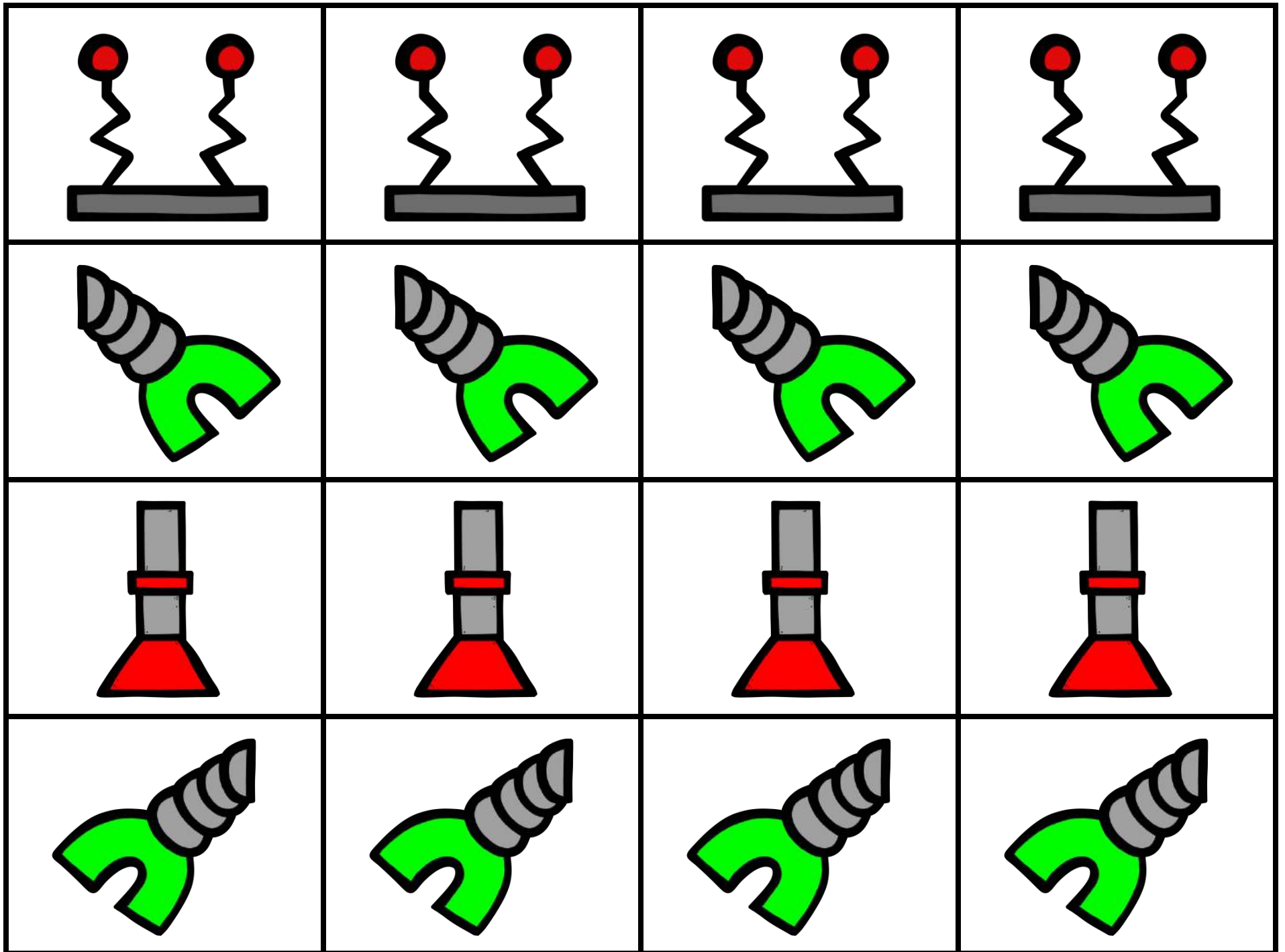
### QUICK STEM

Coding is its own language. For programmers, it's like learning a new language when they write code for a new program. An algorithm is a series of actions that are strung together to solve a problem or tell something what it should do. Our printable algorithm coding game is perfect for learning how these actions string together to create a program through hands-on play!

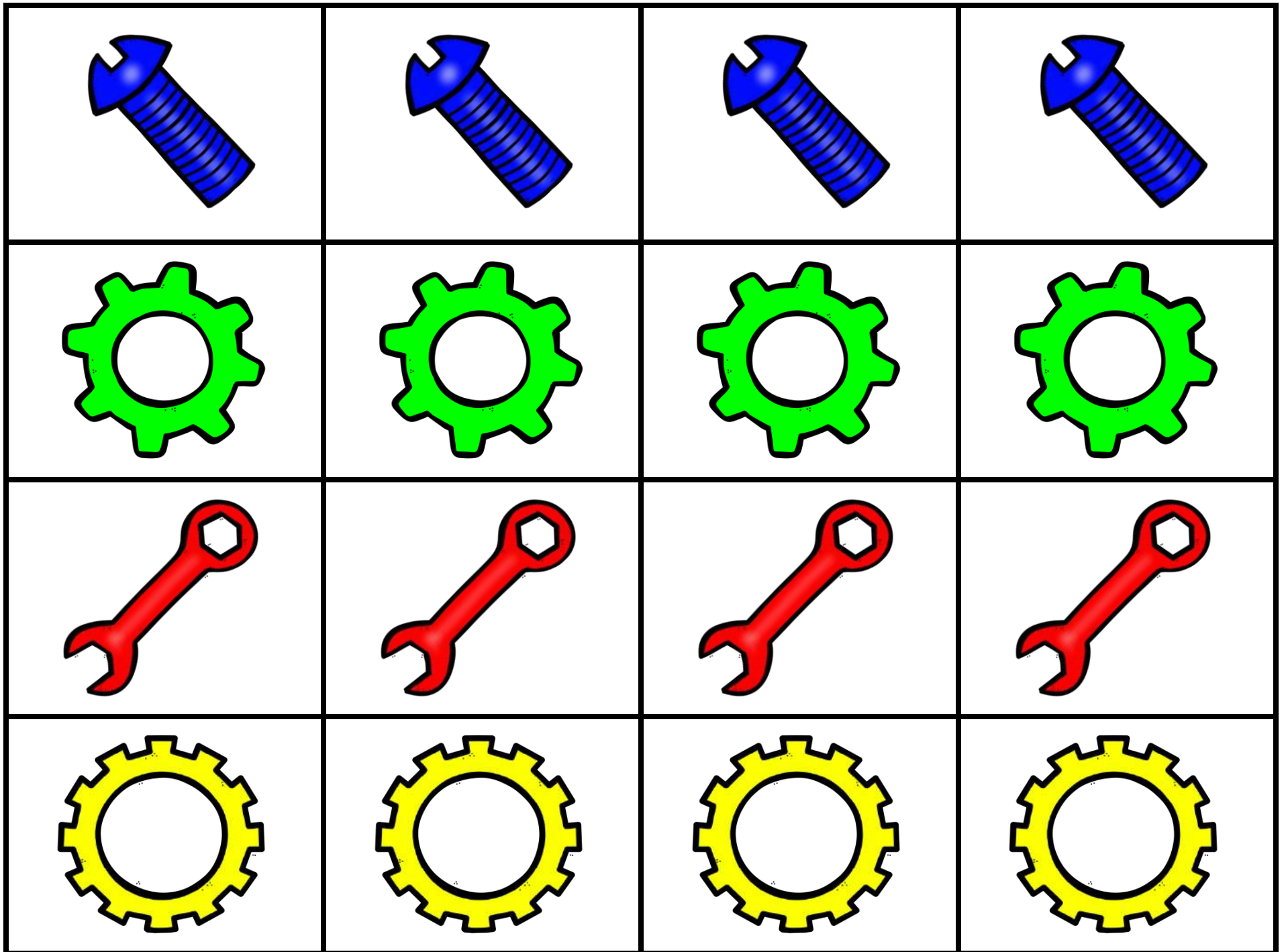




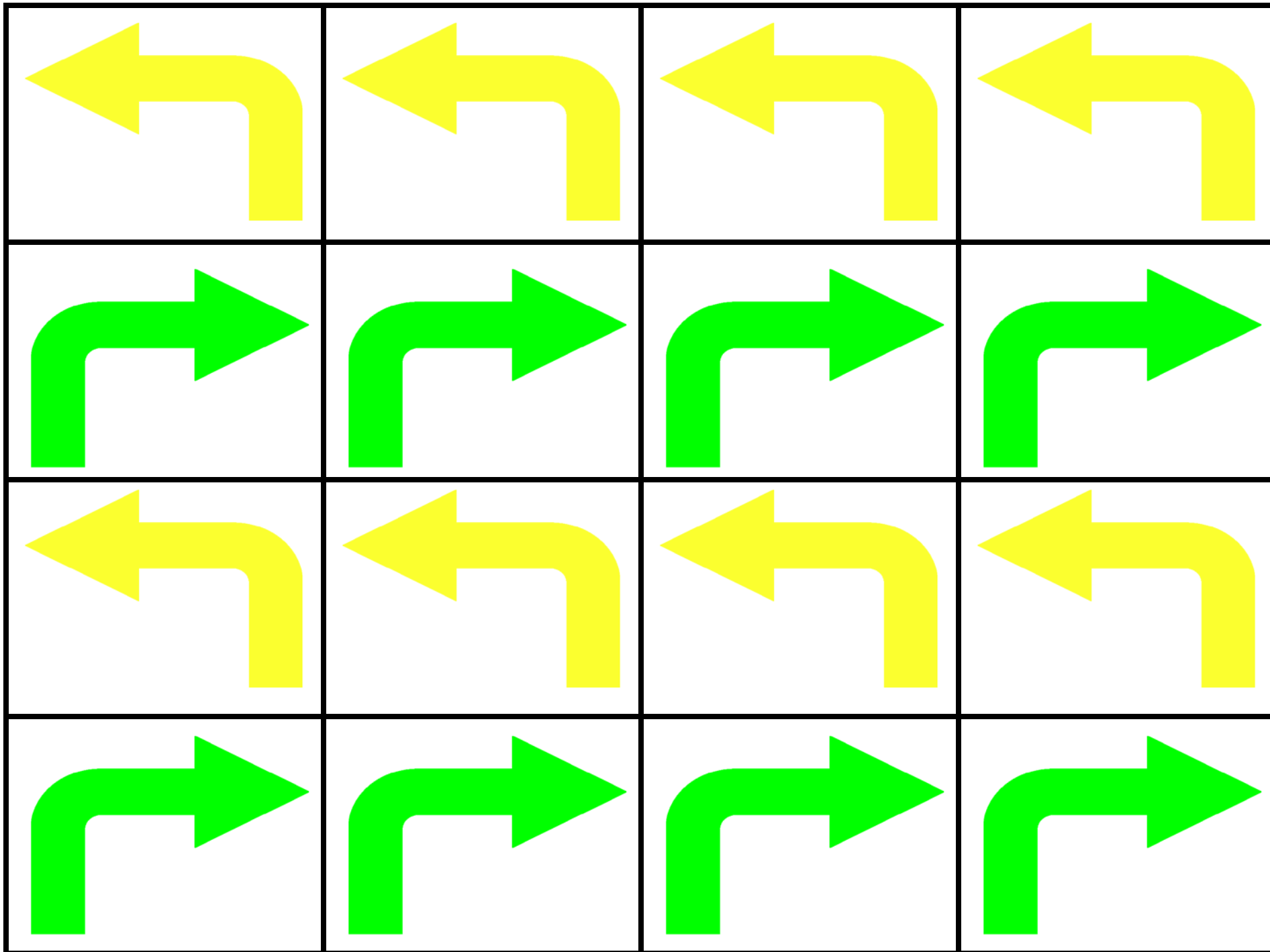
			

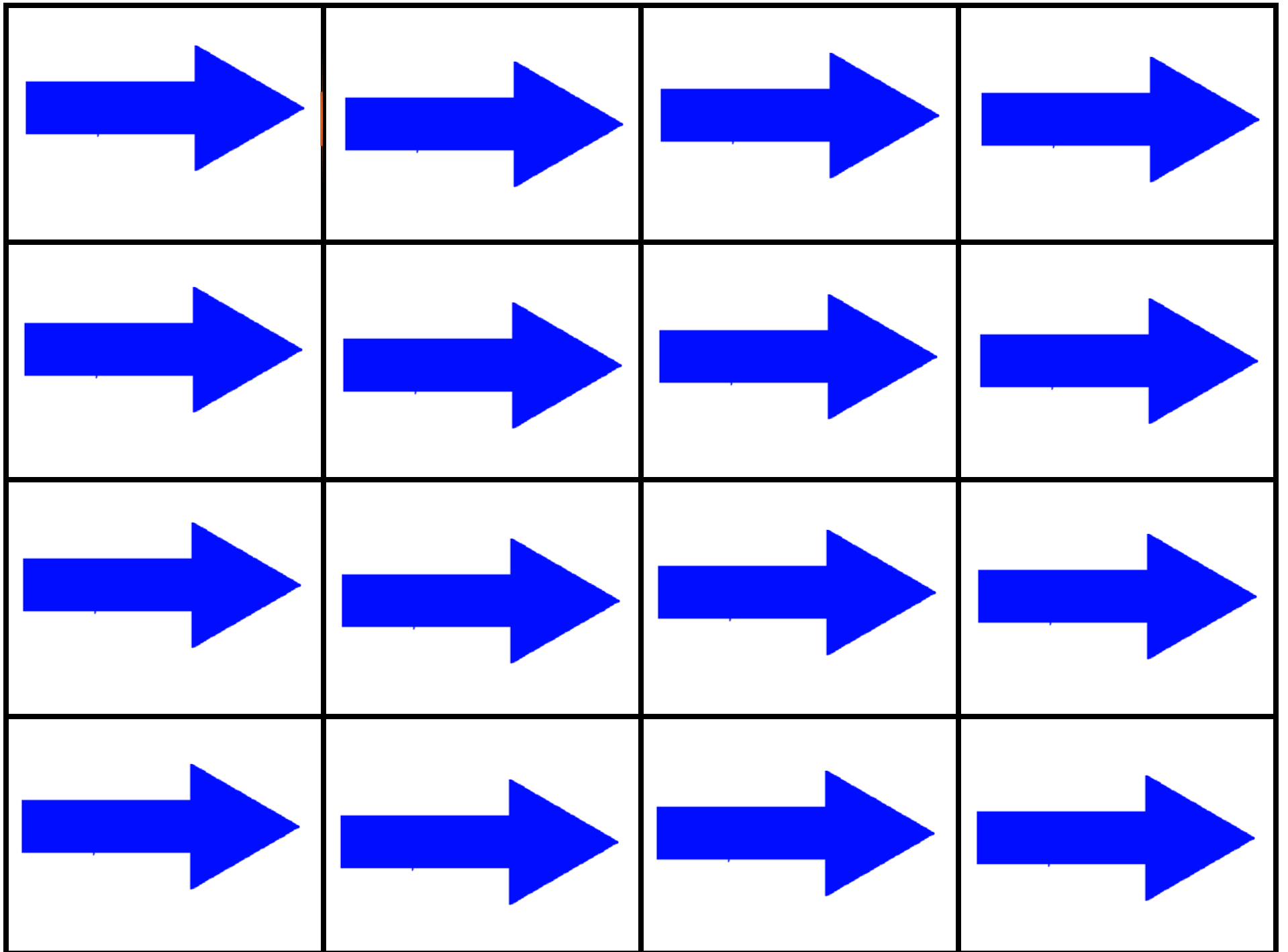


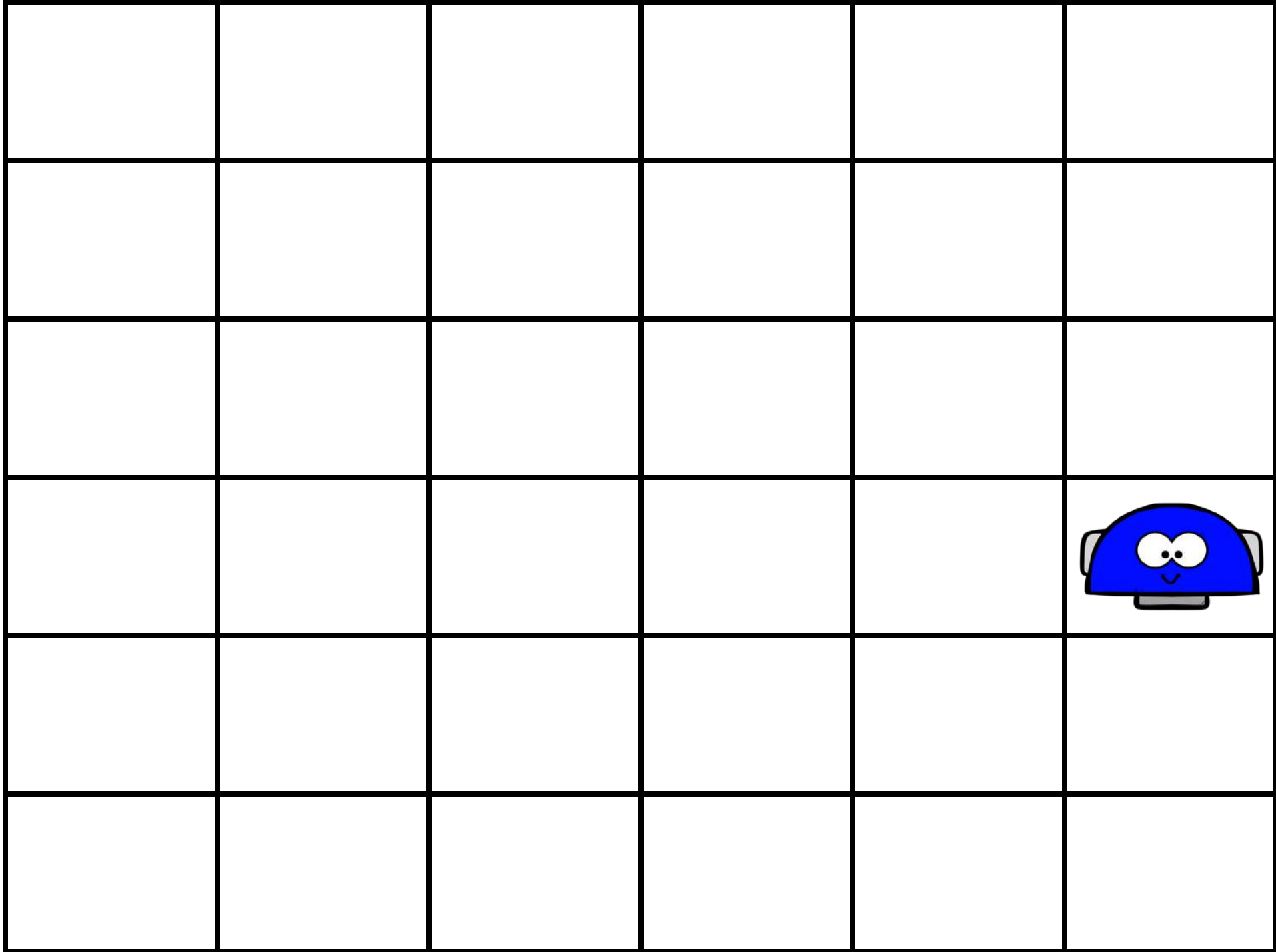


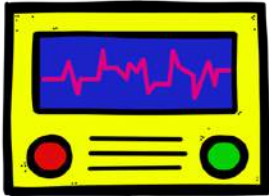


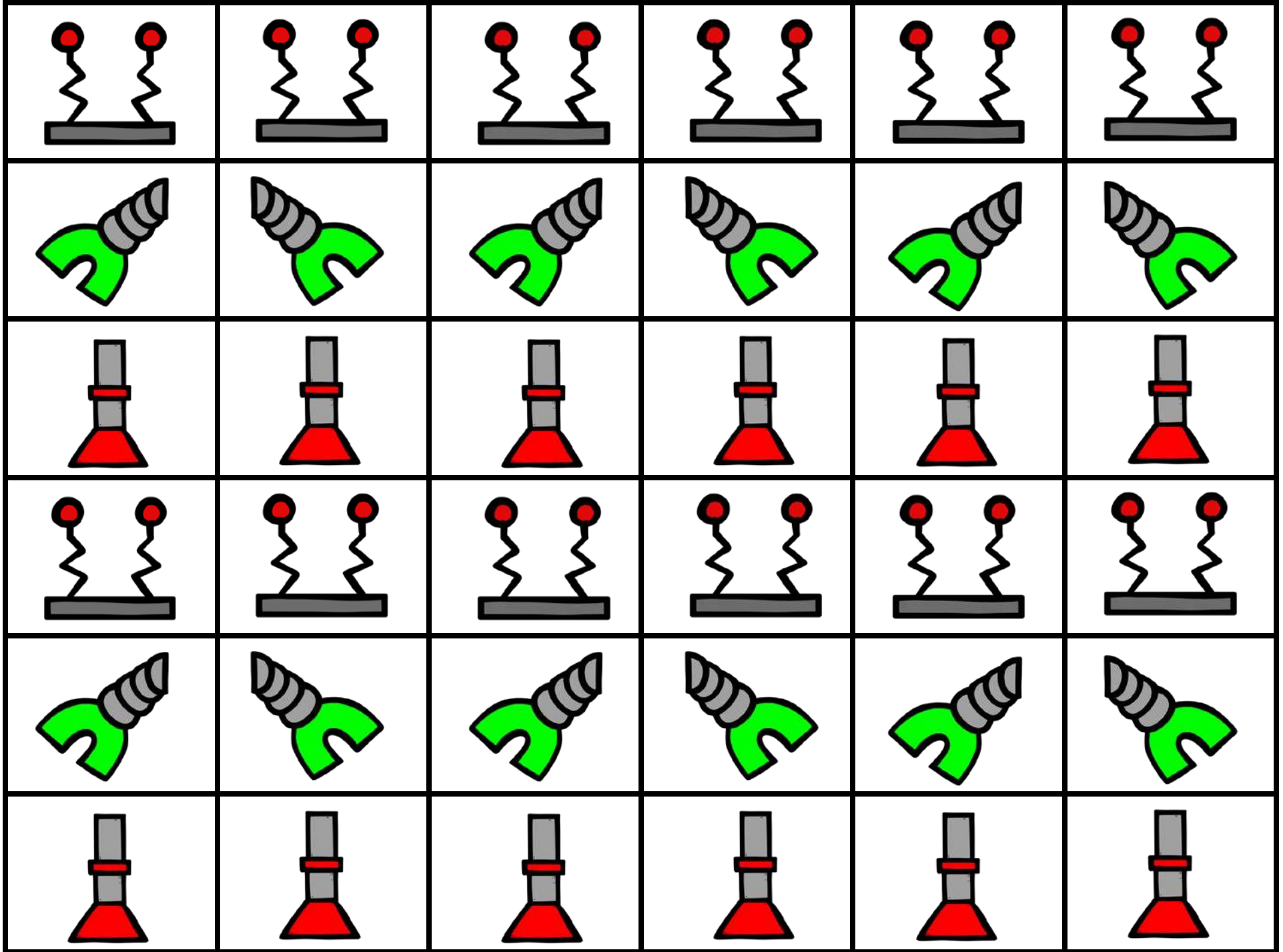


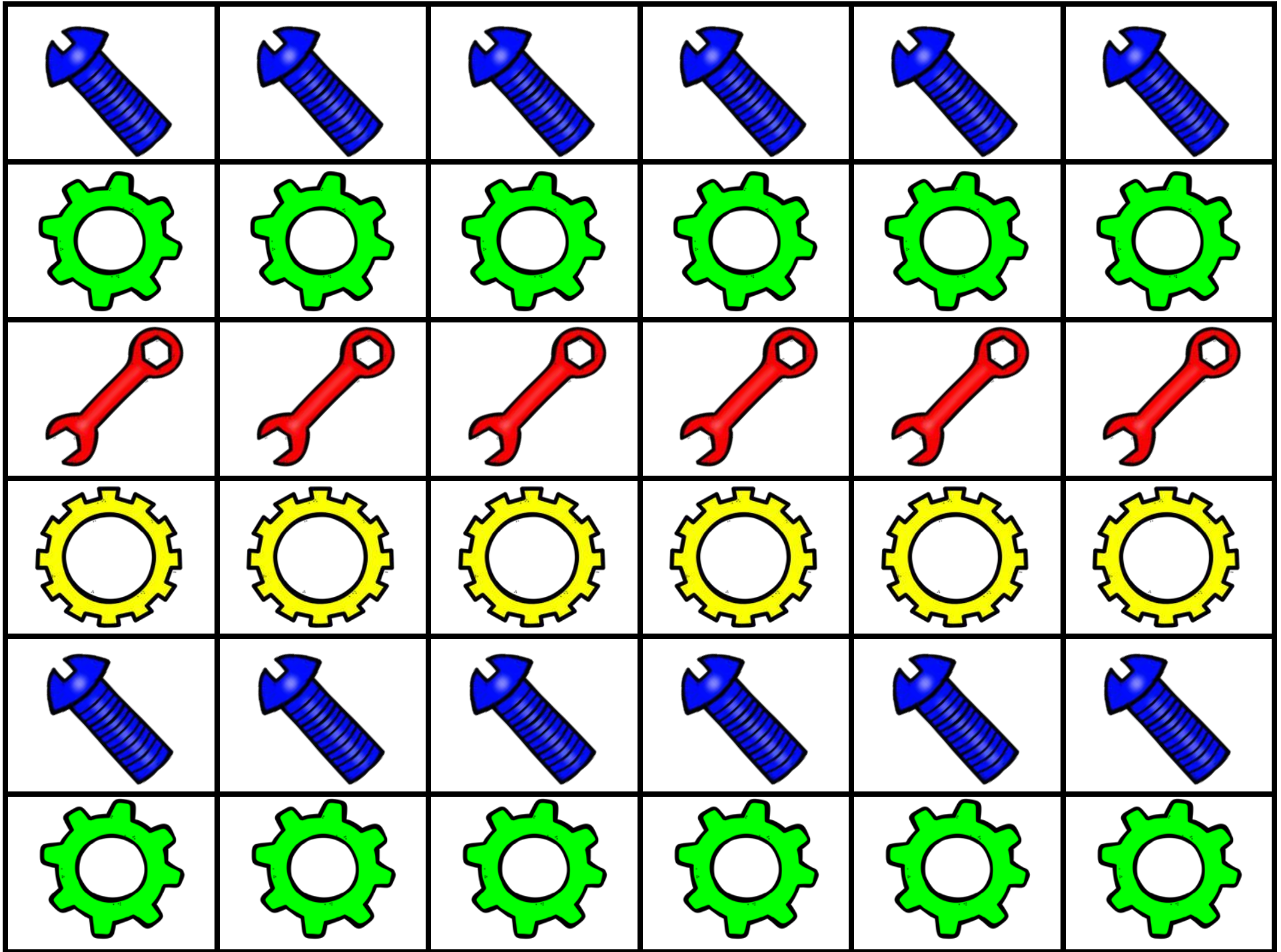


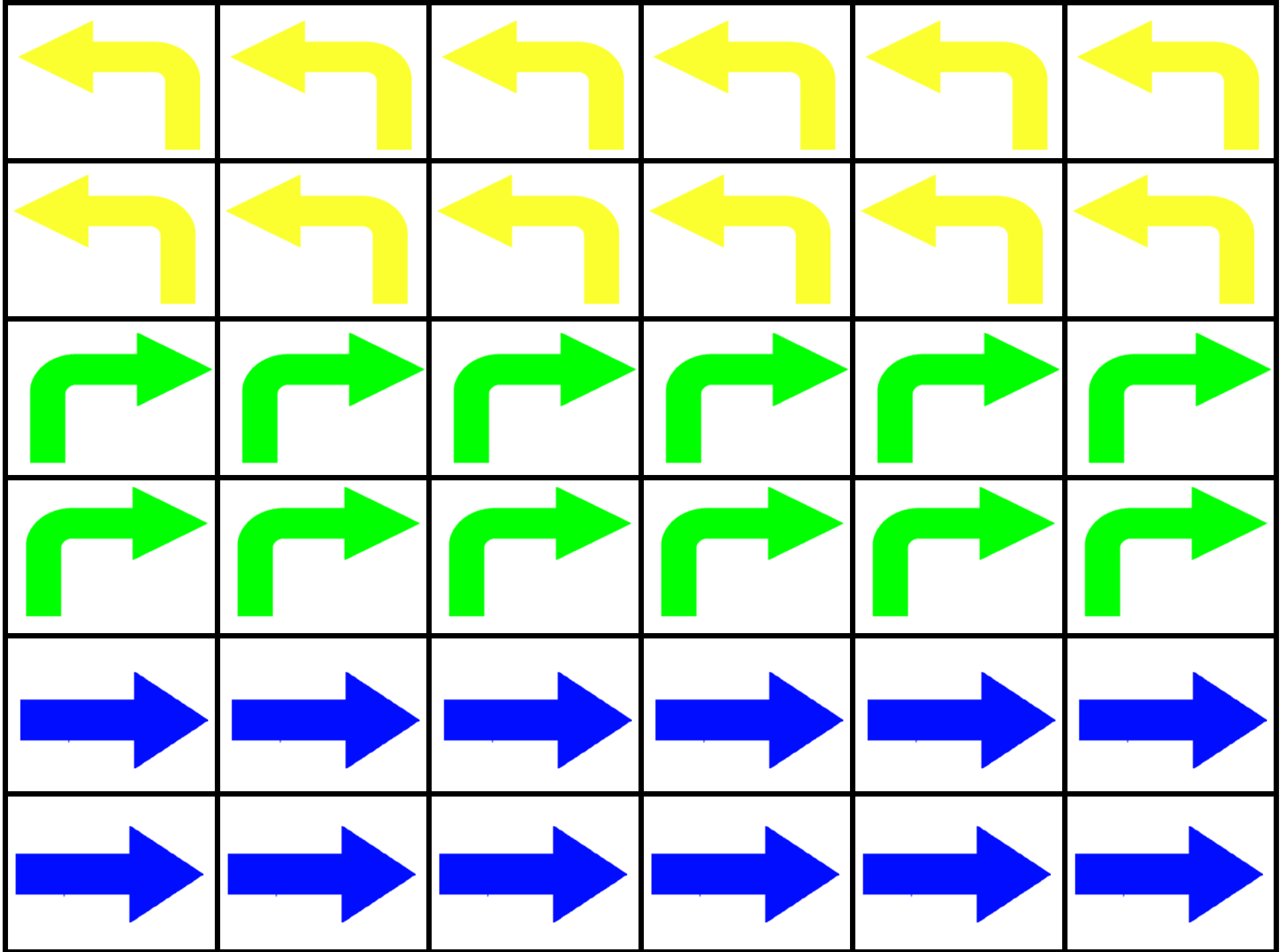




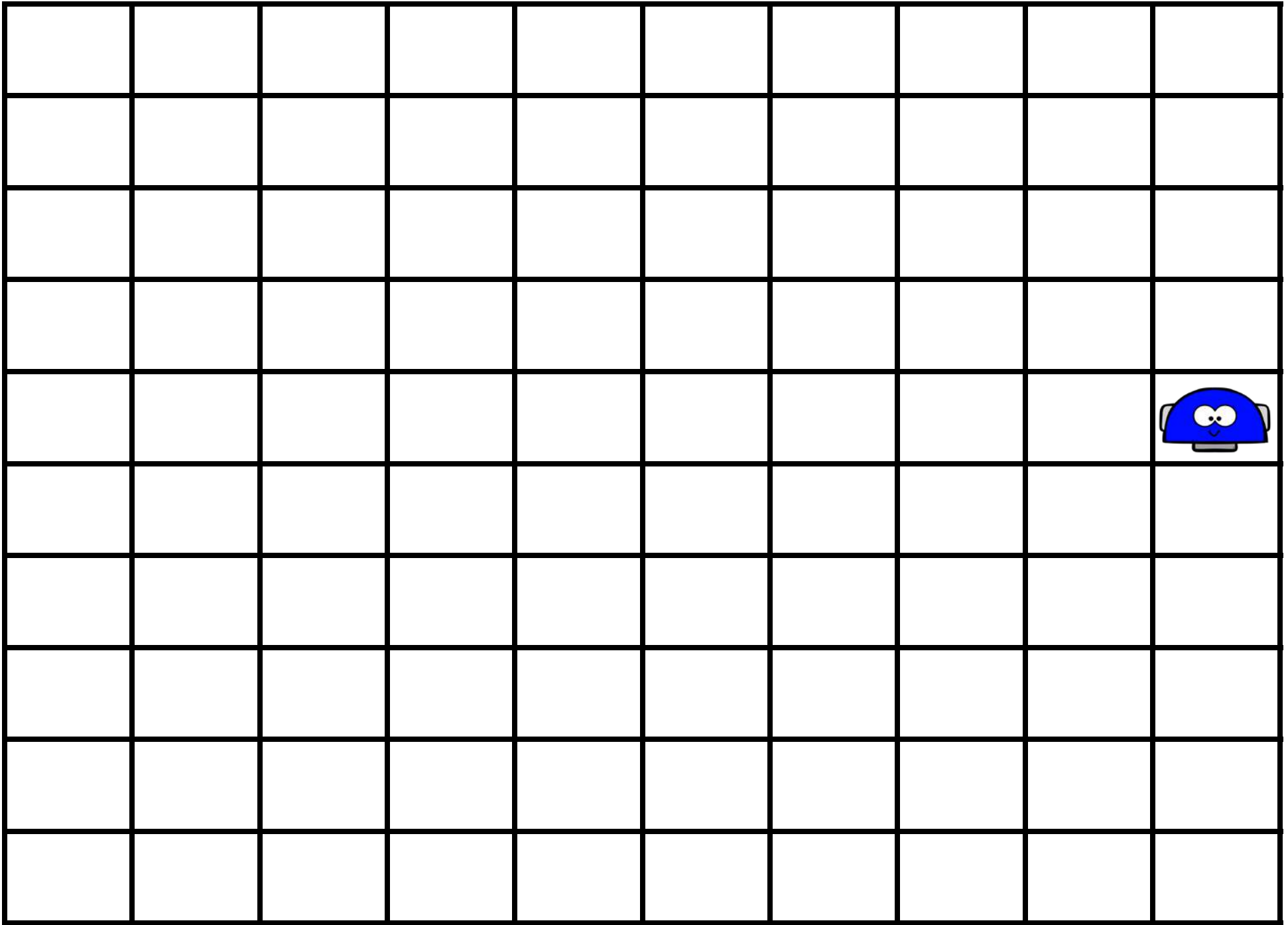
					

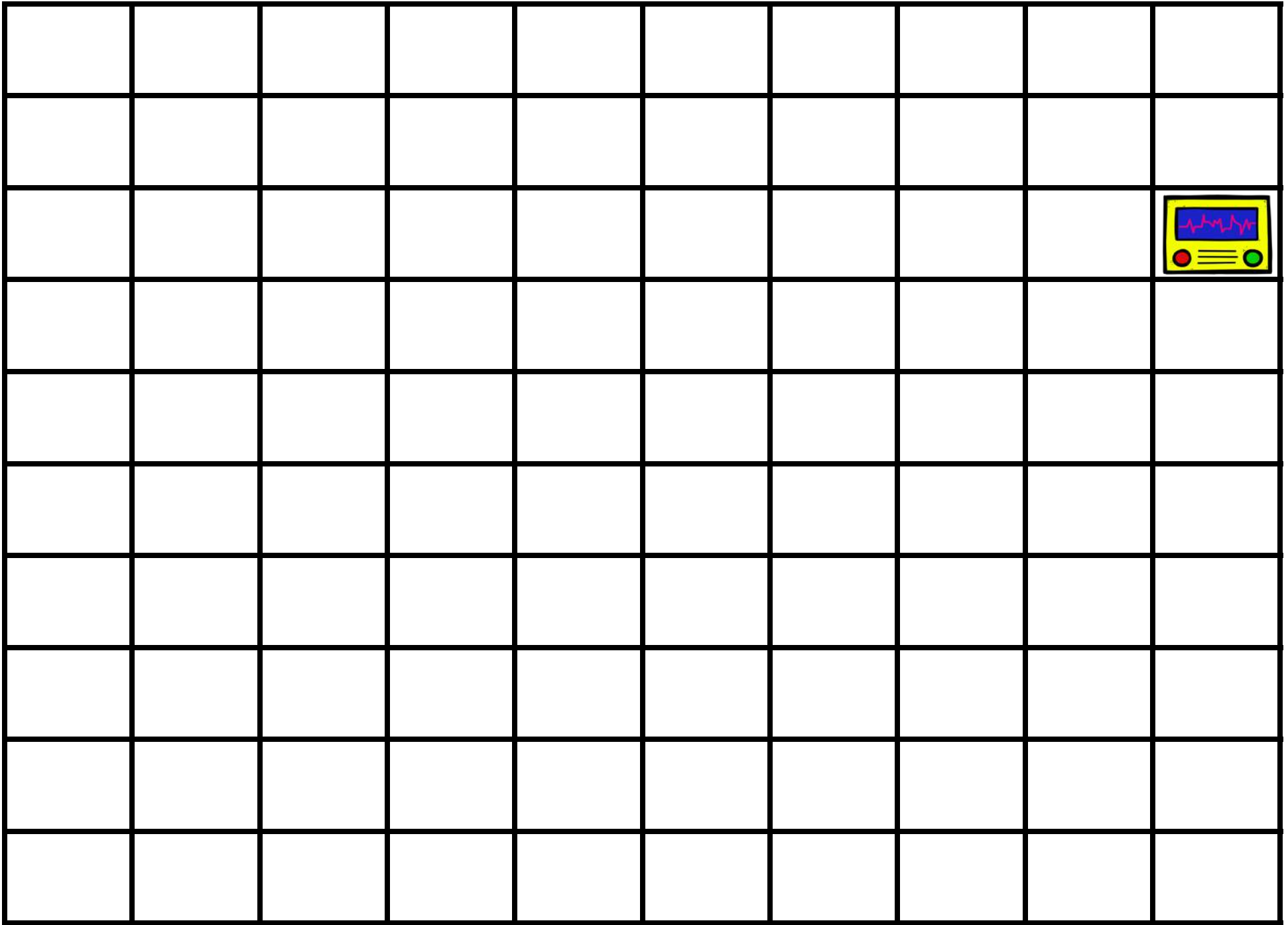


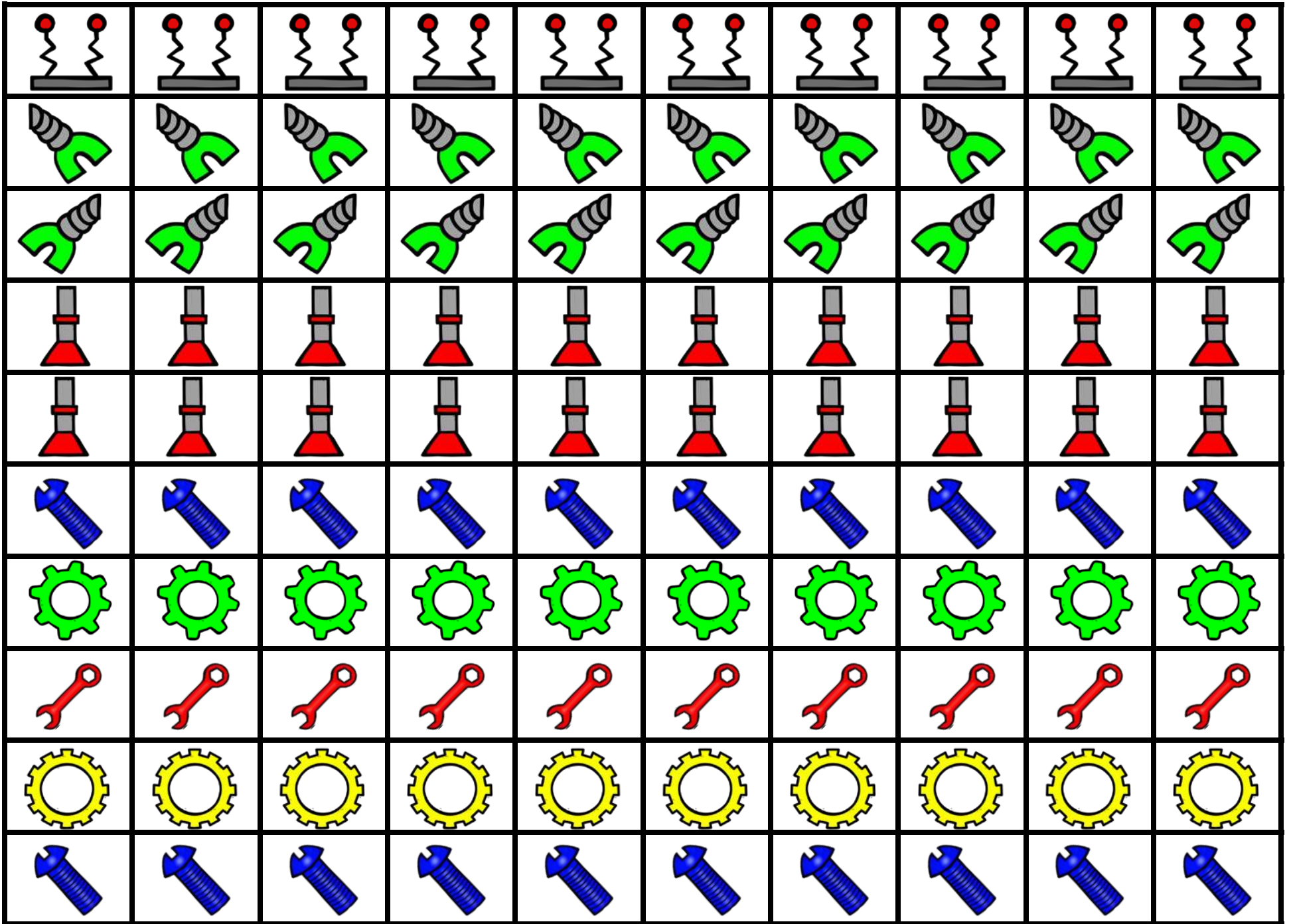


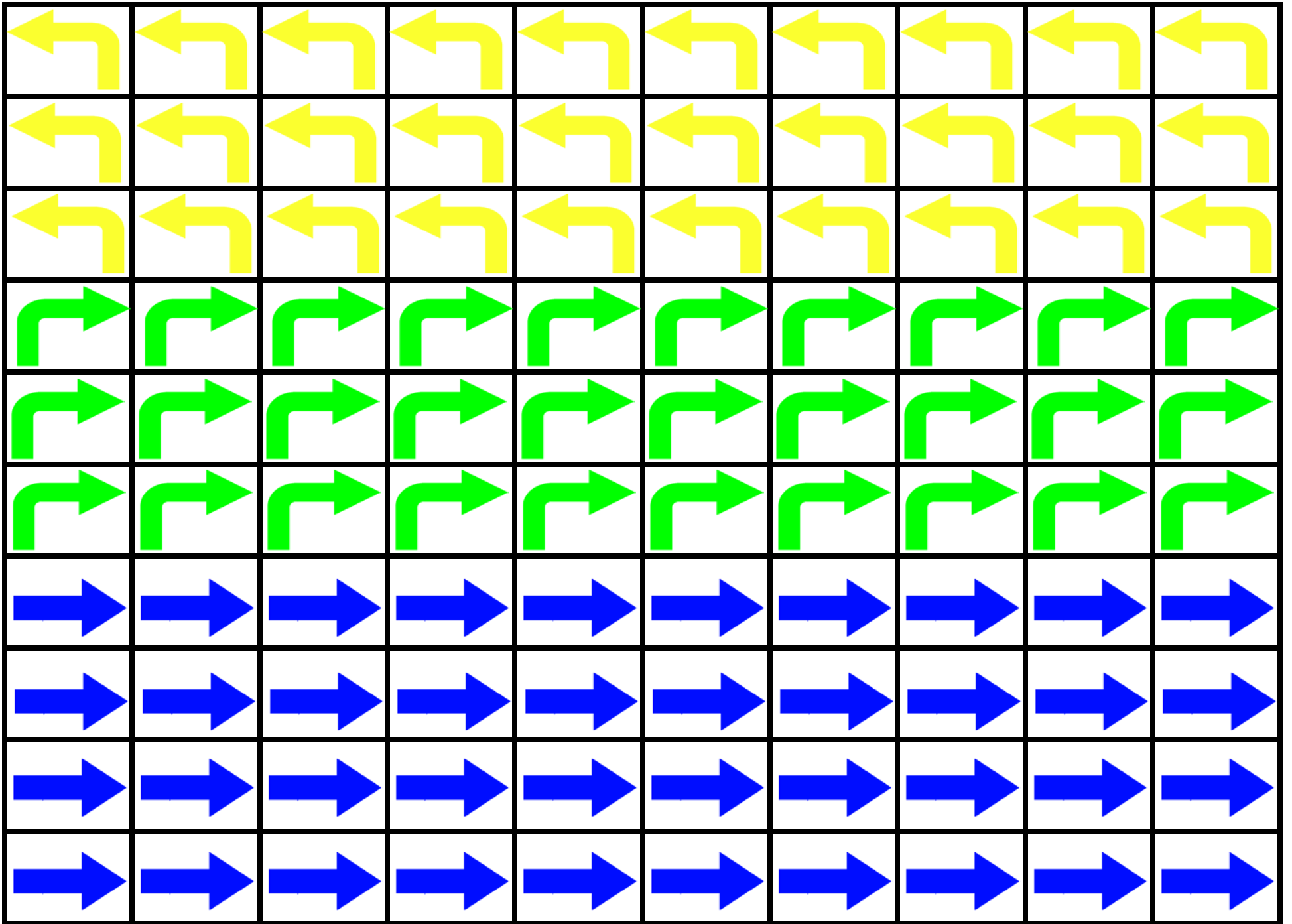












# Help Put the Robot Together Algorithm Activity



# Help Put the Robot Together Algorithm Activity

This activity invites children to complete an algorithm that will put a robot together. Before your children create an algorithm that connects each of the parts of the robot in order, you will want share a simple definition for an algorithm with them and read them the Putting the Robot Together story below.

## What is an algorithm?

An algorithm is the series of steps a computer follows to complete a task. Your children may need real life example of an algorithm. A simple algorithm they do every day is washing their hands.

Here is a version of handwashing you could share:

1. Turn on the water.
2. Wet your hands.
3. Place soap on your hands.
4. Rinse the soap off your hands.
5. Turn off the water.
6. Dry your hands.

## Getting Started

1. You will need to print out an algorithm sheet for each child.
2. Then you can share the robot story.
3. Next your children will connect the robot's sections together with arrows on their algorithm sheet. They will need to have the arrows putting the direction Daniel and Claire would need to go to get from one robot section to the next until the robot has been assembled.

Example:

- They will draw an up arrow in the box that says start and contains the body. Then they will draw an up arrow in the box between the body and the head.
- They will draw an up arrow in the box with the head.
- They will need to draw an arrow pointing to the right in the box above the head.
- They will then continue to connect the robot parts together in the same order they are mentioned in the instructional manual.

# Putting the Robot Together Story

Daniel and Claire hated to clean their rooms. Yet every Saturday morning they knew their parents expected them to clean them right after breakfast. All their toys needed to be put away. Their clothes needed to be put in their hampers and then brought down to the laundry room. Then they needed to make their beds and vacuum the carpet on the floor of their rooms.

One Saturday it took until almost lunch time to get their rooms picked up and cleaned. Over lunch Daniel and Claire decided they needed to get some help cleaning. What if they pooled their birthday and holiday money from their grandmother to buy a robot. A robot would help them clean their rooms faster.

It took a few searches online to find the LBLH-J4. The LBLH-J4 was a robot designed to help do chores around the house. Daniel and Claire decided it would be just the right robot for them. It came with wheels that would help it roll around their rooms. It had pinchers at the end of its arms that would be great for picking clothes and toys.

Before Dad ordered the LBLH-J4 for them, he reminded them that the robot would come in pieces. It would have to be put together before it could help them clean.

It took almost two weeks for the box containing their robot to arrive. When it did, it contained an instruction manual and the robot in seven sections.

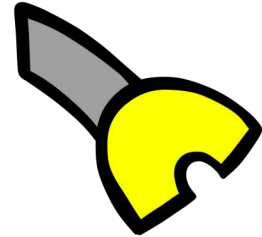
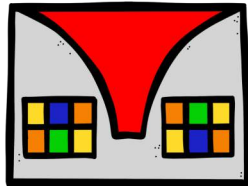
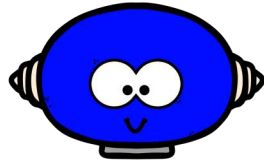
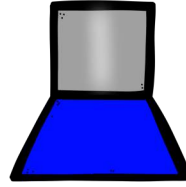
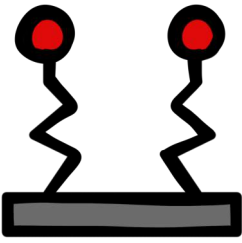
The manual gave the following steps for putting the robot together:

1. Put the robot's body on a flat surface.
2. Screw the robot's head onto the body.
3. Place the antenna hat on top of the robot's head.
4. Attach the right arm to the body next to the grid screen.
5. Attach the left arm next to the column of lights on the body.
6. Screw one of the roller legs on the bottom of the body.
7. Screw the second roller leg onto the bottom of the body.
8. When all the parts have been attached, you will have a complete robot.

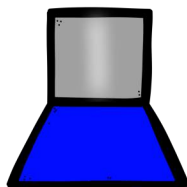
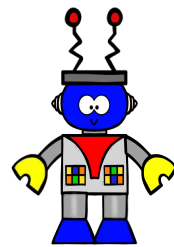
It took a little bit of help from both mom and dad to put the robot together. They finally finished assembling it on a Wednesday after school. Daniel and Claire decided they couldn't wait until Saturday to clean their rooms. Their parents agreed that Wednesday would be a fine day for them to clean their rooms. Any or every day would be a great day to clean their rooms their parents told them. As long as they had a robot to help them, Daniel and Claire thought so too.

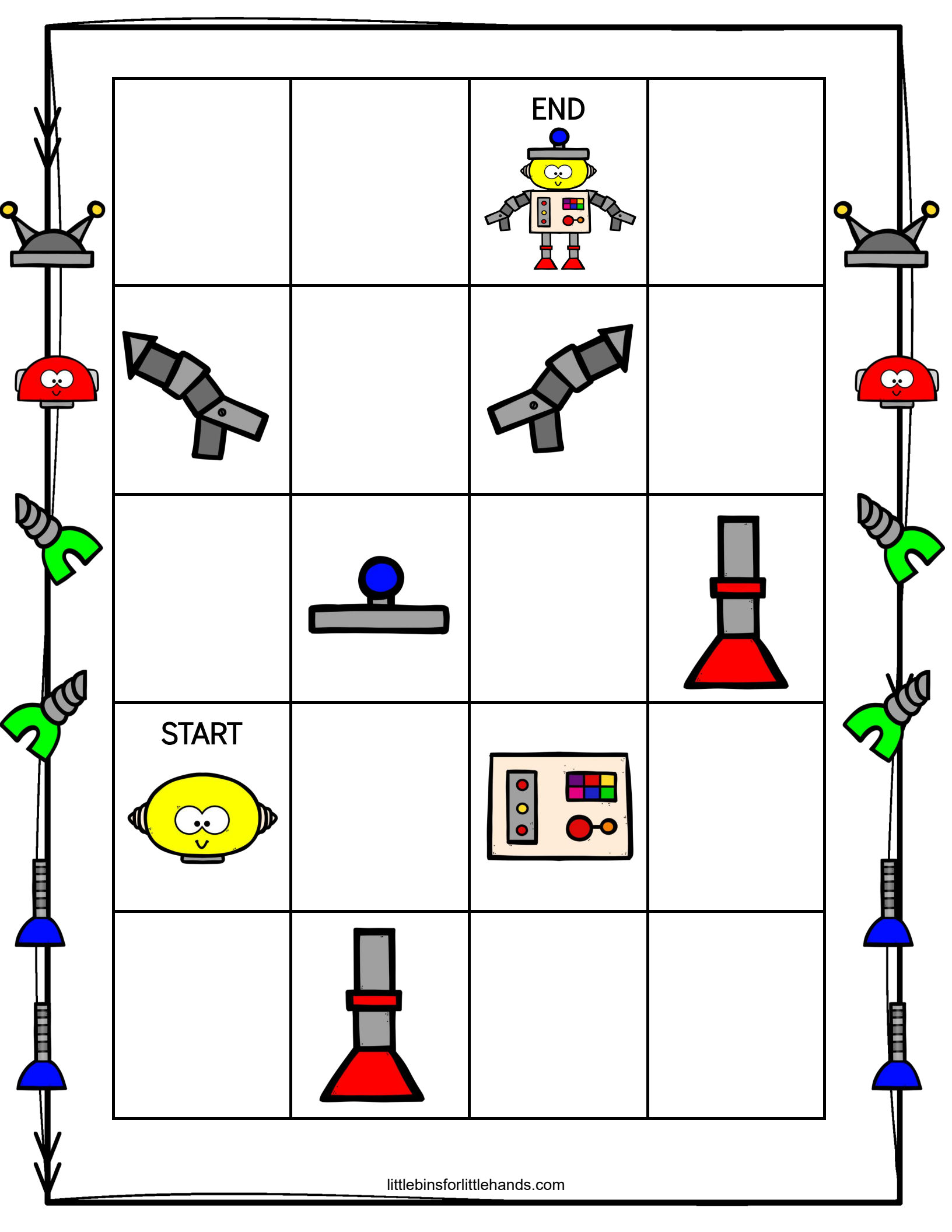


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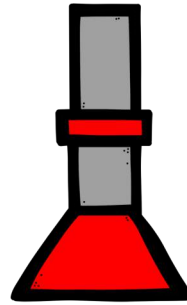
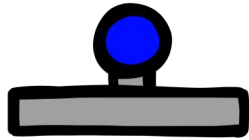
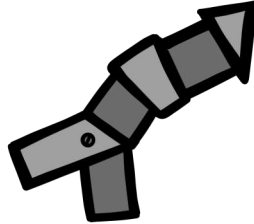
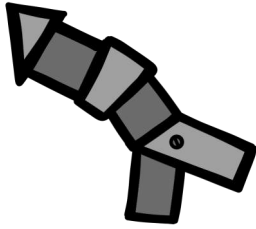
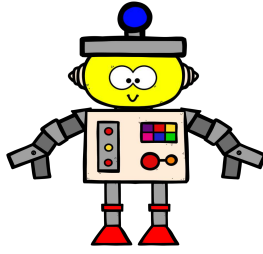


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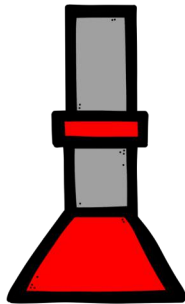
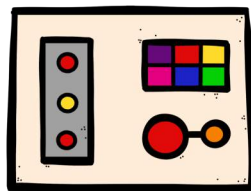
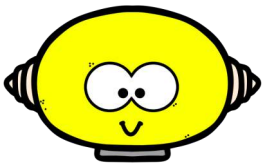


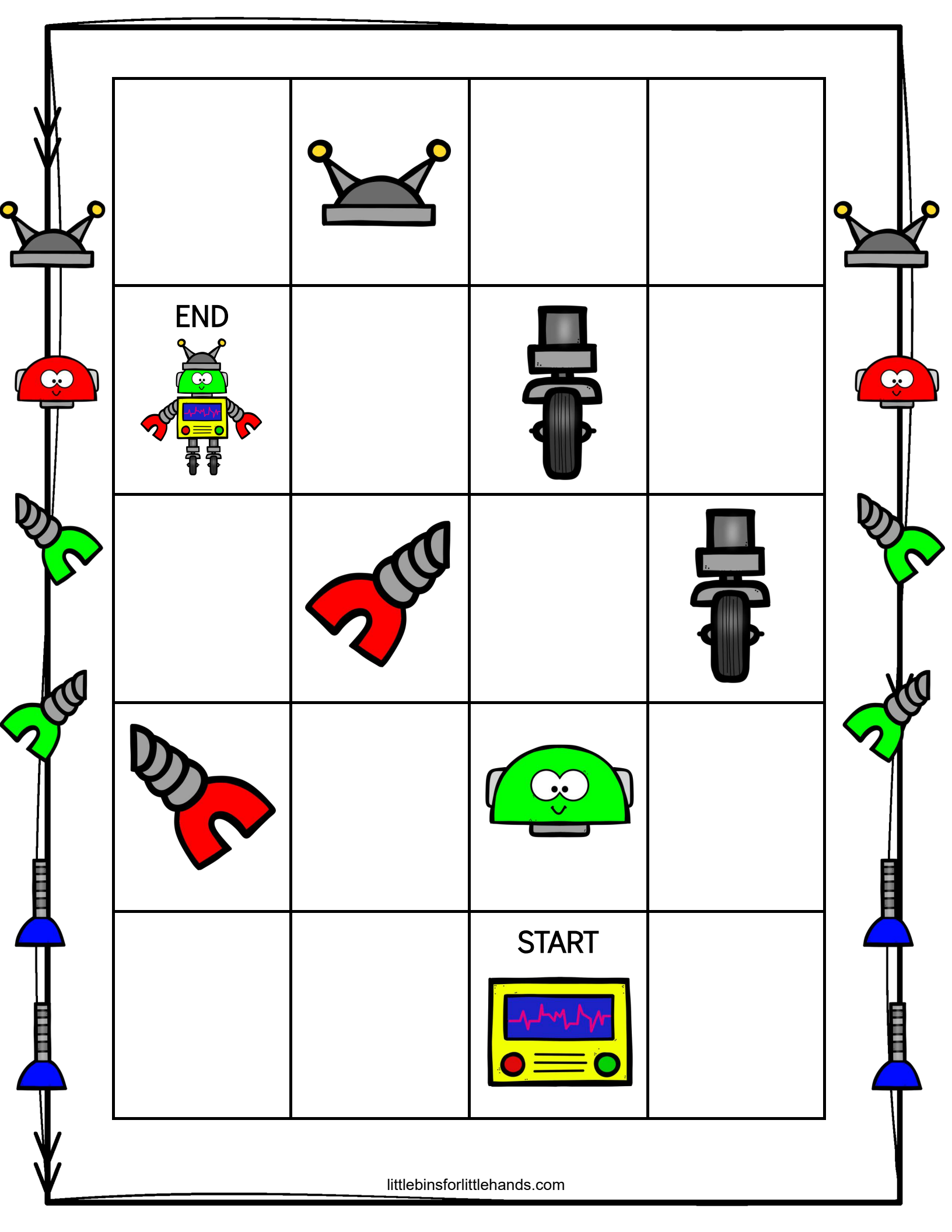


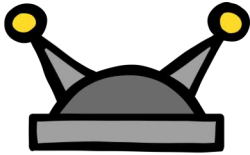
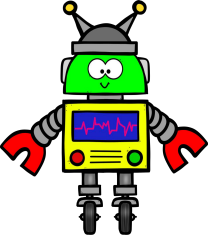

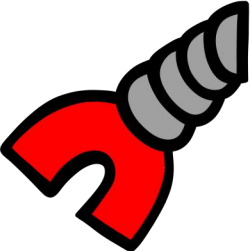

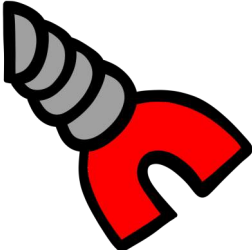
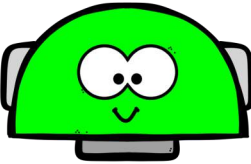
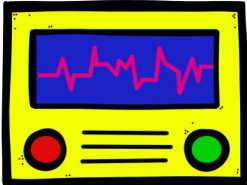
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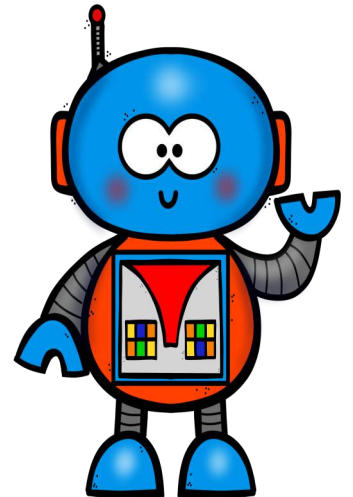
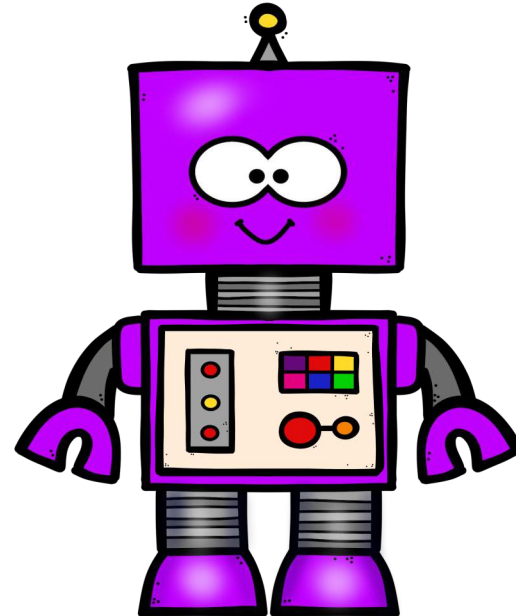
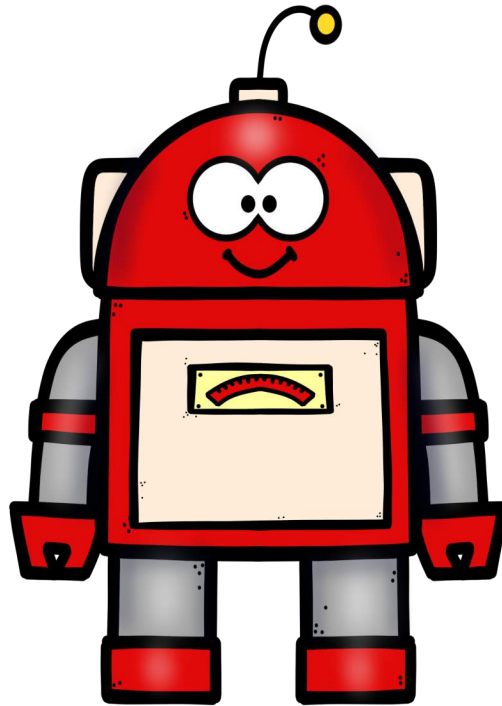
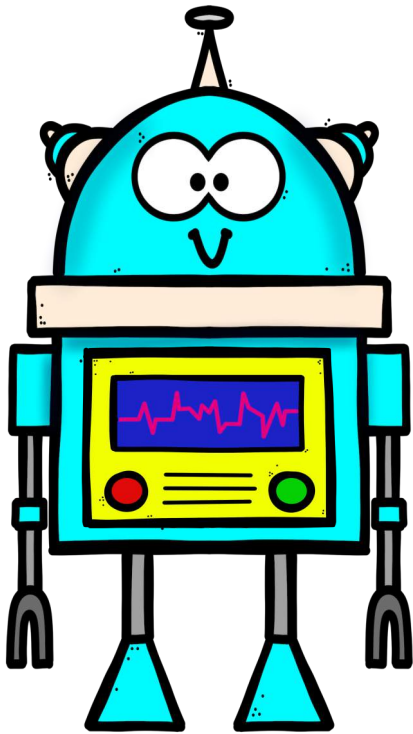
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END 			
			
			
		START 	

# ROBOT CHALLENGES



# Robot Challenges

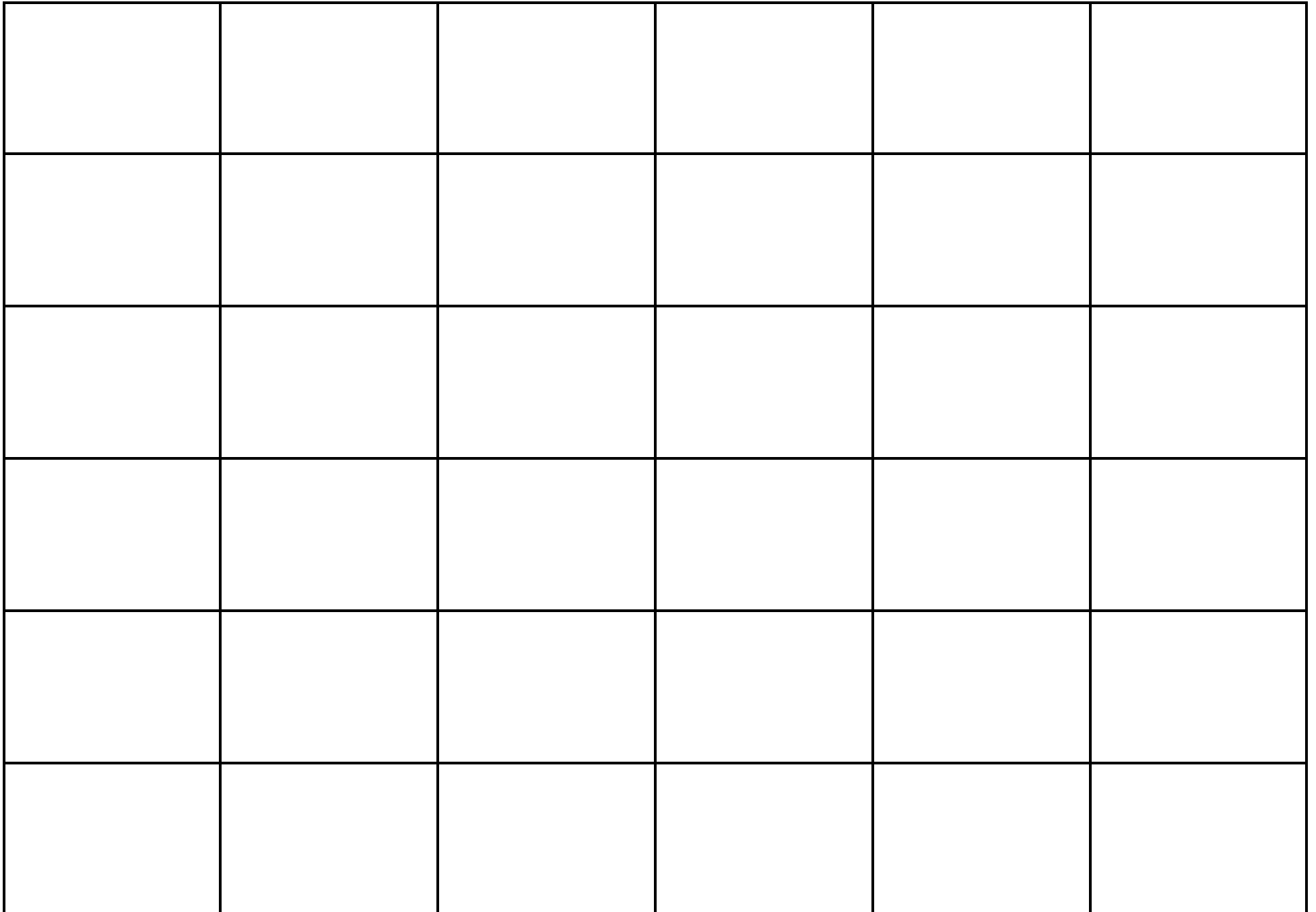
The robot challenge grid activity invites children to create their own unique path for a robot to follow. Each card presents a different set of path building guidelines. Once your children have prepared their grid, they will need to create a path with arrows. The path will take them from the beginning to the end of each challenge.


This challenge gives your children two opportunities to interact with algorithms. Each challenge card displays a creation algorithm. The path your child creates with arrows to get from start, around the colored in boxes, and to the end box is the second algorithm.


You may want to walk your children through the algorithm challenges. They may not be sure what the algorithms are asking them to do. Others may know what the symbols mean, but may not be able to read the words on the challenge card. Still, others may need help with the words and the symbols.


It will be up to you to decide if you want your children to work in a group with you, one-on-one with you or on their own. There really isn't a wrong way to have them complete the challenges.



# Robot Challenge Grid

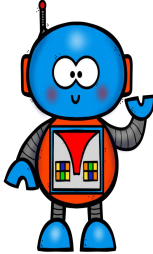


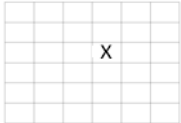
Place an X in corner box 


Place an O in corner box 


Color in 5  on the grid



Create a path with arrows  from the X to the O around the 

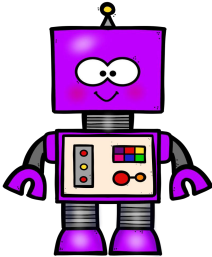



Place an X in a center box 


Place an O in corner box 


Color in 7  on the grid



Create a path with arrows  from the X to the O around the 

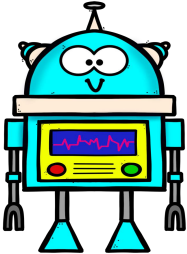



Place an X in a bottom box 


Place an O in corner box 

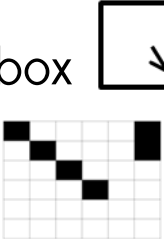
Color in 6  on the grid



Create a path with arrows  from the X to the O around the 

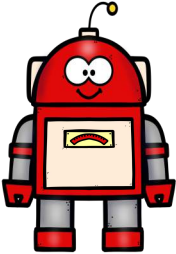


Place an X in a bottom box 


Place an O in corner box 


Color in this pattern 

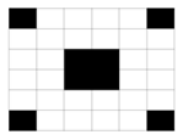
Create a path with arrows  from the X to the O around the 

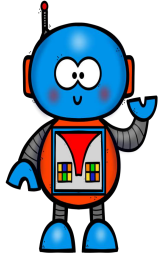







Place an X in a 


Place an O in a 

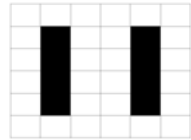
Color in this pattern 

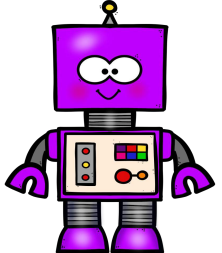




Create a path with arrows  from the X to the O around the 


Place an X in a 


Place an O in a 

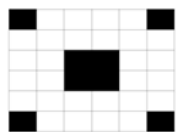
Color in this pattern 

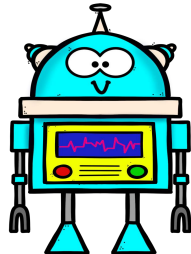




Create a path with arrows  from the X to the O around the 


Place an X in a 


Place an O in a 

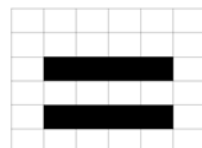
Color in this pattern 

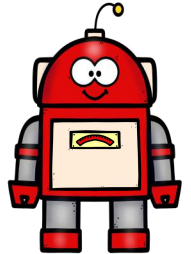




Create a path with arrows  from the X to the O around the 

Place an X in a 

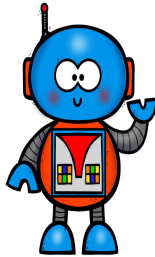
Place an O in corner box 

Color in this pattern 



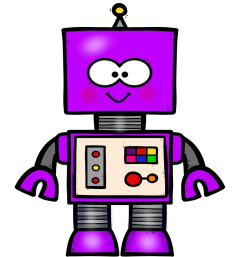
Create a path with arrows  from the X to the O around the 

- Write **start** in a square on the left hand edge of the grid.
- Write **finish** in a square on the right hand edge of the grid.
- Color in six squares to create barriers. The colored squares can not touch each other.
- Create a path that connects the start square to the finish squares using arrows that point up, down, left or right.



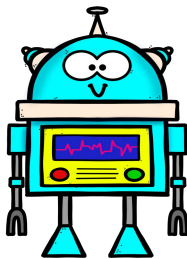
**Warning:** Your path has to go around the barriers.

- Color in squares each corner and the center to create barriers.
- Write **start** in a square on the left hand edge of the grid.
- Write **finish** in a square on the right hand edge of the grid.
- Create a path that connects the start square to the finish squares using arrows that point up, down, left or right.



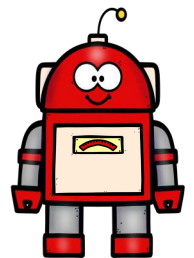
**Warning:** Your path has to go around the barriers.

- Write **start** in a square in the middle of the grid.
- Write **finish** in a square in a square on the edge of the grid.
- Color in seven squares to create barriers. The colored squares can not touch each other.
- Create a path that connects the start square to the finish squares using arrows that point up, down, left or right.



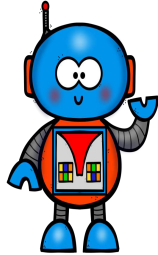
**Warning:** Your path has to go around the barriers.

- Write **start** in a square at the top of the grip
- Write **finish** in a square at the bottom of the grid.
- Color in eight squares to create barriers. The colored squares can not touch each other.
- Create a path that connects the start square to the finish squares using arrows that point up, down, left or right.



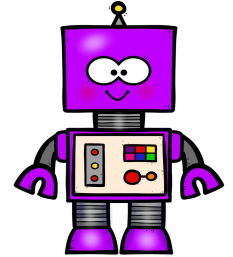
**Warning:** Your path has to go around the barriers.

- Write **start** in one of the corner squares.
- Write **finish** in the square in the opposite corner.
- Color in four squares that connect the corner squares diagonally to create wall.
- Create a path that connects the start square to the finish squares using arrows that point up, down, left or right.



**Warning:** Your path has to go around the barriers.

- Write **start** in one of the corner squares.
- Write **finish** in the square in the opposite corner.
- Color in four squares in the center of the grid.
- Create a path that connects the start square to the finish squares using arrows that point up, down, left or right.



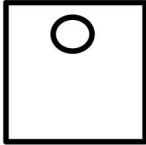
**Warning:** Your path has to go around the barriers.

# DRAWING A ROBOT BASED ON AN ALGORITHM

WHEN RUN



DRAW A ROBOT  
HEAD IN THE SQUARE



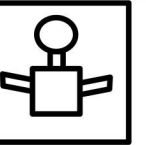
GIVE THE ROBOT A NECK



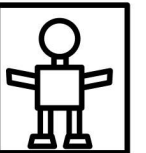
GIVE THE ROBOT A BODY



GIVE THE ROBOT ARMS



GIVE THE ROBOT LEGS



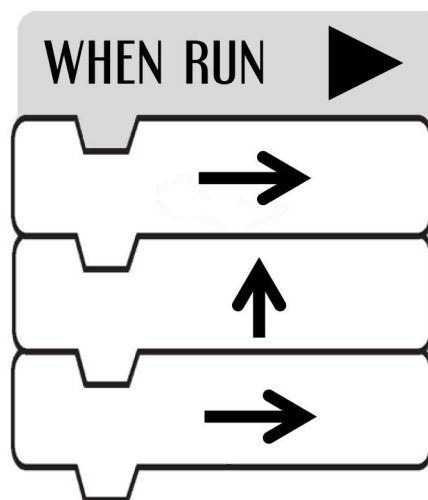
ADD DETAILS TO THE ROBOT



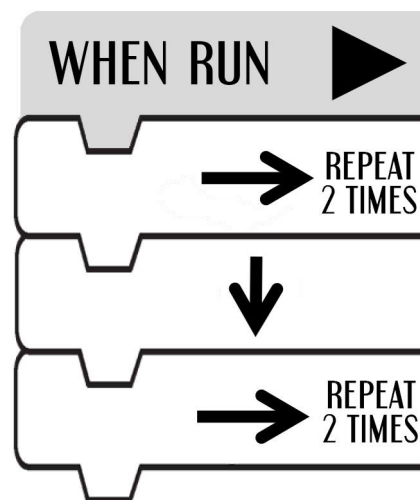
Years ago when people learned to code. They needed to learn a computer language like Cobol, Basic or C++. The language features a combination of words, letters, numbers and symbols.

A few years ago Neil Fraser invented a coding language called Blockly Blocks which features visual block programming. A series of command or function blocks are linked together vertically to create an algorithm or series of steps needed to complete a task.

examples :



This means after you click on run you need the object you are programming to go right, then forward and finally right again.



This means after you click on run you need the object you are programming to go right twice, then backwards and finally right again twice.

Coding sites for children like Tynker and Code.org feature Blockly Blocks in their coding activities. Before you have them put Blockly blocks together online, you can have them follow an algorithm offline. One way they can work with a Blockly block algorithm is to follow the steps you need to draw an object like a robot. The algorithm or series of steps needed to draw and color a robot can be found on the Drawing a Robot Based on an Algorithm worksheet.

What will they do? Your children will draw what is mentioned or pictured in each of the blocks from the top block to the bottom block. When they are completed each step displayed in the block, they will have drawn a robot.

# Counting to Ten With Robots

When you tell your children that they will be creating an algorithm while completing this activity. They will probably have no idea what the word algorithm means. Yet they use algorithms each and every day.

An algorithm is a series of steps needed to complete a task. A computer follows an algorithm each time you type something into a computer or touch a computer screen. It follows the clicks you perform on a keyboard or the taps you do on your computer's screen. Then it translates them into the steps that it needs to complete so the computer does what you need it to.

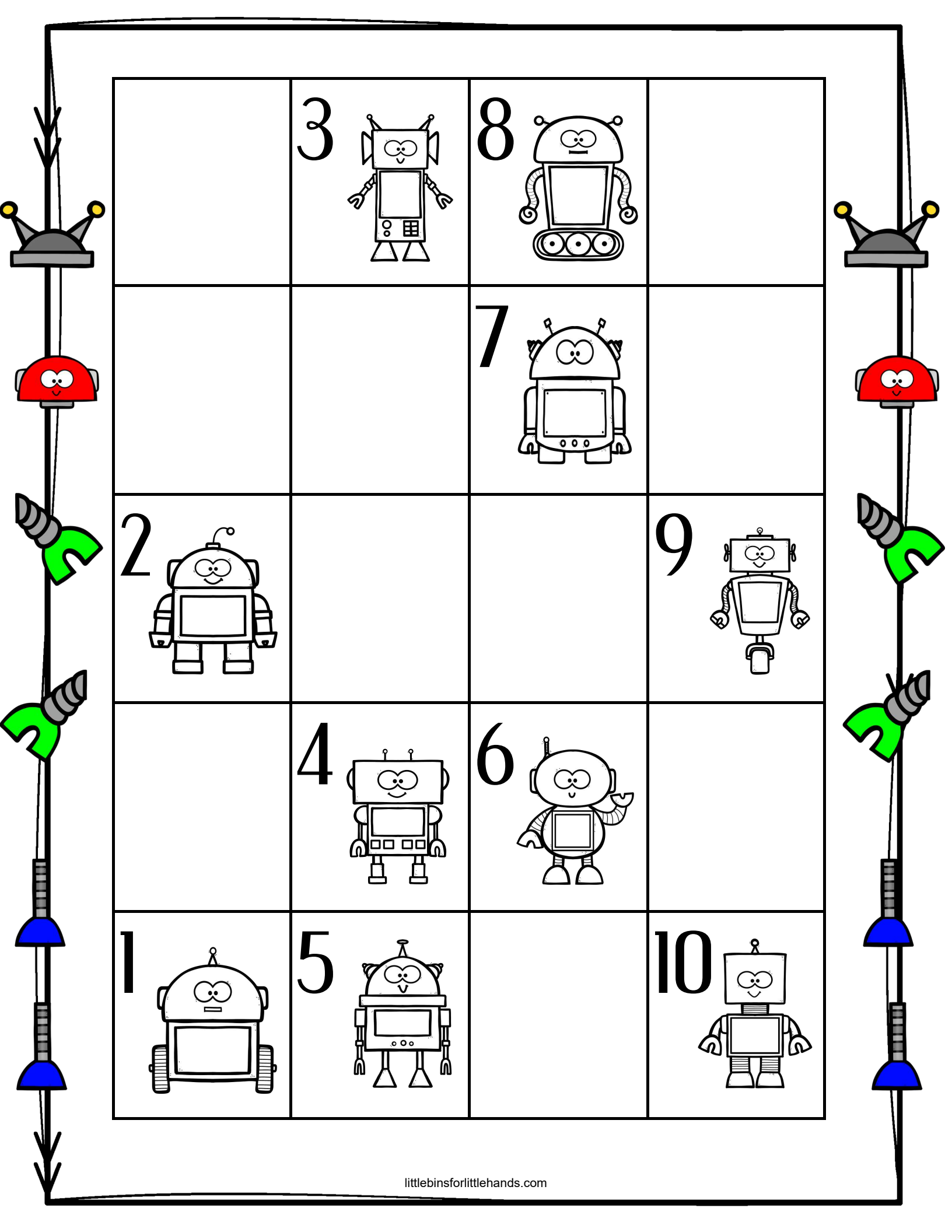
Every day your children follow the steps they need to get dressed for school, walk down a hallway, or finish an assignment you give them. If they skip any part of one of those activities, the task won't be completed well. They could forget to tie their shoes, lift up one foot and then another, or put their name on their paper.

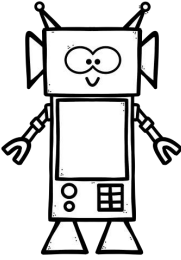
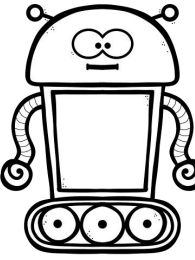
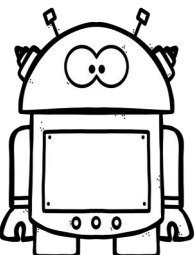
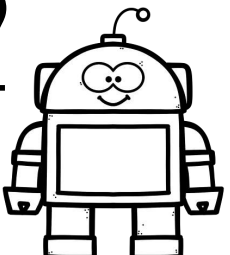
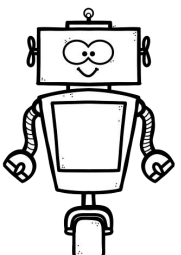
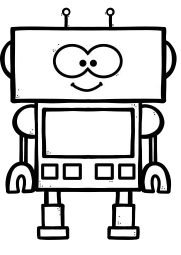
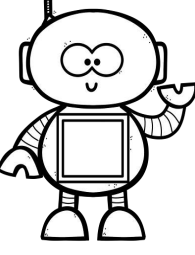
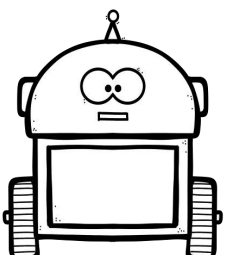
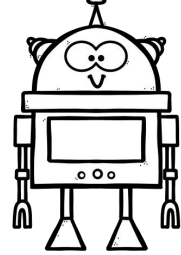
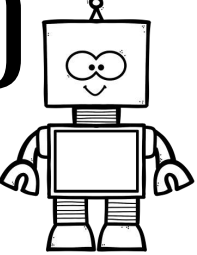
As your children complete this activity they will need to connect the numbers from 1 to 10 in order. They will show what direction you need to go from one box to another with arrows.

Example:

- Your children will draw an up arrow in the box with the number one.
- They will draw an up arrow in the box between the one and the two.
- Next, they could draw an up arrow or an arrow pointing to the right in the number two box.
- If they drew an up arrow, they will draw an up arrow in the box above the number two box. Then they will draw a right arrow in the left-hand corner box to get the three box.
- If they drew a right arrow in the number two box, they will draw an up arrow in the box beside the two and one in the box above that one.

Sometimes there is just one direction to go. Other times there is more than one way. Computer programmers sometimes have the same thing happen. There is more than one way to complete a programming algorithm. Most programmers will try to complete an algorithm with the fewest number of steps. Your children will probably want to do the same thing.



	3 	8 	
		7 	
2 			9 
	4 	6 	
1 	5 		10 

# BINARY CODE

Coding ornaments are the perfect craft activity for the kid who doesn't care too much for crafts! Screen-free coding and ornament making as you explore the binary code.

## SUPPLIES

- 3 Colors of Beads
- Pipe Cleaners
- Printable Binary Code Sheet

Choose one color bead for the number 1 and another color bead for the number 0. Choose a 3rd color bead to use as a spacer between letters.

Bend your pipe cleaner into any whimsical shape.

Choose a word or your name to be represented with the binary code. Use the printable sheet to write down the code.

If your word is too long for one pipe cleaner, simply attach another! Use ribbon or another type of fastener to hang in your window or tune into a keychain!

The computer doesn't read the letter A like we read the letter A. It reads it in a series of 1's and 0's. Each letter has its own code of 1's and 0's. This code is called the ASCII Binary Alphabet.

The binary number system is a base-2 number system. This means it only has two numbers: 0 and 1. The number system that we normally use is the decimal number system. It has 10 numbers: 0-9.

Computers work best with an "on" and "off" system and that is just what the binary code is all about. 1 is "on" and 0 is "off".



1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

# ALPHABET IN BINARY CODE

<b>A</b>	<b>01000001</b>	<b>J</b>	<b>01001010</b>	<b>S</b>	<b>01010011</b>
<b>B</b>	<b>01000010</b>	<b>K</b>	<b>01001011</b>	<b>T</b>	<b>01010100</b>
<b>C</b>	<b>01000011</b>	<b>L</b>	<b>01001100</b>	<b>U</b>	<b>01010101</b>
<b>D</b>	<b>01000100</b>	<b>M</b>	<b>01001101</b>	<b>V</b>	<b>01010110</b>
<b>E</b>	<b>01000101</b>	<b>N</b>	<b>01001110</b>	<b>W</b>	<b>01010111</b>
<b>F</b>	<b>01000110</b>	<b>O</b>	<b>01001111</b>	<b>X</b>	<b>01011000</b>
<b>G</b>	<b>01000111</b>	<b>P</b>	<b>01010000</b>	<b>Y</b>	<b>01011001</b>
<b>H</b>	<b>01001000</b>	<b>Q</b>	<b>01010001</b>	<b>Z</b>	<b>01011010</b>
<b>I</b>	<b>01001001</b>	<b>R</b>	<b>01010010</b>		



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1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

# WRITE YOUR FIRST NAME IN CODE

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

# WRITE YOUR LAST NAME IN CODE

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

# COLOR THE CODE

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111


1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111

# ALPHABET IN BINARY CODE

<b>A</b>	<b>01000001</b>	<b>J</b>	<b>01001010</b>	<b>S</b>	<b>01010011</b>
<b>B</b>	<b>01000010</b>	<b>K</b>	<b>01001011</b>	<b>T</b>	<b>01010100</b>
<b>C</b>	<b>01000011</b>	<b>L</b>	<b>01001100</b>	<b>U</b>	<b>01010101</b>
<b>D</b>	<b>01000100</b>	<b>M</b>	<b>01001101</b>	<b>V</b>	<b>01010110</b>
<b>E</b>	<b>01000101</b>	<b>N</b>	<b>01001110</b>	<b>W</b>	<b>01010111</b>
<b>F</b>	<b>01000110</b>	<b>O</b>	<b>01001111</b>	<b>X</b>	<b>01011000</b>
<b>G</b>	<b>01000111</b>	<b>P</b>	<b>01010000</b>	<b>Y</b>	<b>01011001</b>
<b>H</b>	<b>01001000</b>	<b>Q</b>	<b>01010001</b>	<b>Z</b>	<b>01011010</b>
<b>I</b>	<b>01001001</b>	<b>R</b>	<b>01010010</b>		



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1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

## SOLVING RIDDLES WITH BINARY CODE

Find the answers to these alphabet riddles using the binary code.

What letter gathers nectar for honey?

Answer: 01100010 or \_\_\_\_\_

What letter helps you see?

Answer: 01101001 or \_\_\_\_\_

What letter is like a ring around your finger?

Answer: 01101111 or \_\_\_\_\_

What letter is a hot or cold drink?

Answer: 01110100 or \_\_\_\_\_

What letter asks a question?

Answer: 01111001 or \_\_\_\_\_

What letter is something you stand in?

Answer: 01110001 or \_\_\_\_\_

What letter is very deep and full of water?

Answer: 01100011 or \_\_\_\_\_

What letter is the favorite of a pirate?

Answer: 01110010 or \_\_\_\_\_

What letter is a type of blue bird?

Answer: 01101010 or \_\_\_\_\_

What letter is a type of green vegetable?

Answer: 01110000 or \_\_\_\_\_

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

# SOLVING RIDDLES WITH BINARY CODE

## ANSWERS

1. B (bee)
2. I (eye)
3. O
4. T (tea)
5. Y (why)
6. Q (queue)
7. C (sea)
8. R (arrrr!)
9. J (jay)
10. P (pea)

# NUMBERS IN BINARY CODE

0	00110000	5	00110101
1	00110001	6	00110110
2	00110010	7	00110111
3	00110011	8	00111000
4	00110100	9	00111001





1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

10010000  
10011110  
10011101  
10011000  
10010111  
10010110  
10010101  
10010011  
10010010  
10010001  
10010000

10010000  
10011110  
10011101  
10011000  
10010111  
10010110  
10010101  
10010011  
10010010  
10010001  
10010000

# HELP THE ROBOTS ADD WITH BINARY CODE

Help the robots figure out what number each binary code equals.  
Then write the number above the code. Finally write each sum.

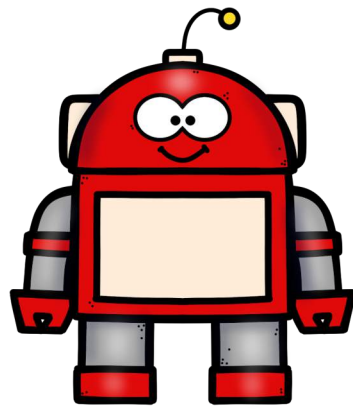
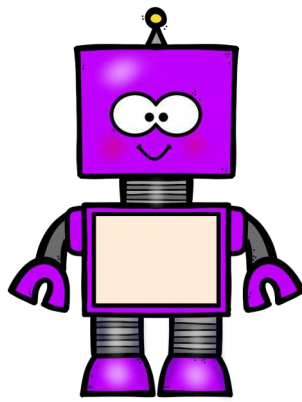
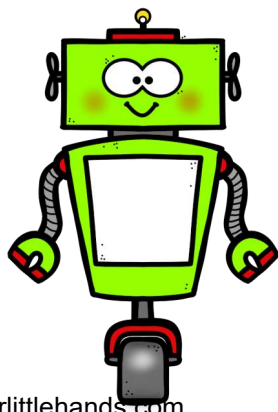
1. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110010 + 00110100 = \_\_\_\_\_

2. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110110 + 00110011 = \_\_\_\_\_

3. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110000 + 00110001 = \_\_\_\_\_

4. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110101 + 00110000 = \_\_\_\_\_

5. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110101 + 00110100 = \_\_\_\_\_



1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

10010000  
1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111 - 1010000

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111 - 1010000

# HELP THE ROBOTS ADD WITH BINARY CODE

Help the robots figure out what number each binary code equals.  
Then write the number above the code. Finally write each sum.

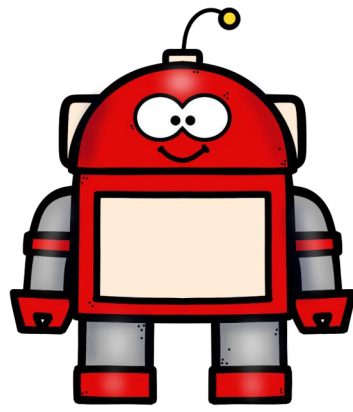
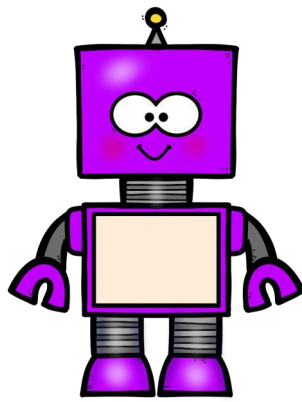
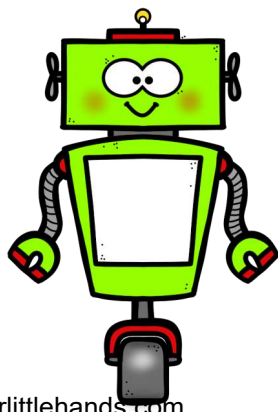
6. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110110 + 00110010 = \_\_\_\_\_

7. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00111000 + 00110001 = \_\_\_\_\_

8. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110101 + 00110010 = \_\_\_\_\_

9. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110111 + 00110001 = \_\_\_\_\_

10. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00111001 + 00110000 = \_\_\_\_\_



1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

# HELP THE ROBOTS ADD WITH BINARY CODE

Help the robots figure out what number each binary code equals.  
Then write the number above the code. Finally write each sum.

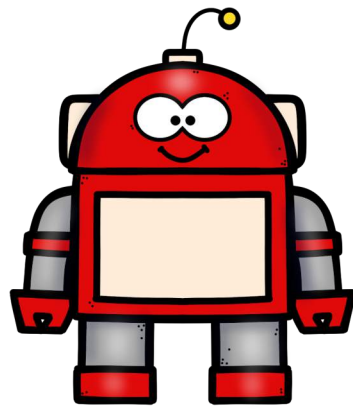
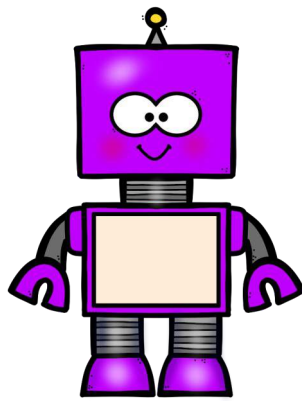
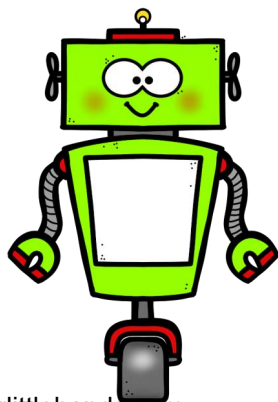
11. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110001 + 00110111 = \_\_\_\_\_

12. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110001 + 00110100 = \_\_\_\_\_

13. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110110 + 00110001 = \_\_\_\_\_

14. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110011 + 00110101 = \_\_\_\_\_

15. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
00110010 + 00110010 = \_\_\_\_\_



1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

10010000  
10011111  
10011110  
10011011  
10011010  
10011000  
10011011  
10010111  
10010110  
10010011  
10010101  
10010100  
10010011  
10010010  
10010001  
10010000

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111 - 1010000

# HELP THE ROBOTS ADD WITH BINARY CODE

Create your own addition problems to solve.

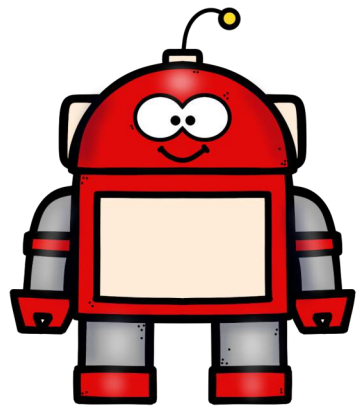
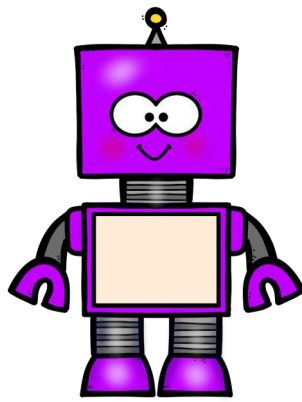
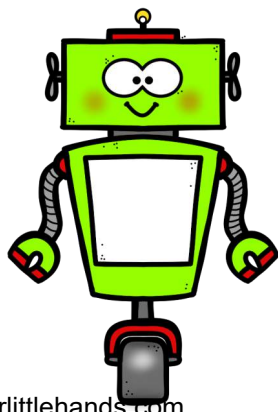
\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_



1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111

# ANSWERS

1.  $00110010 + 00110100$   
 $2+4=6$  (00110110)

9.  $00110111 + 00110001$   
 $7+1=8$  (00111000)

2.  $00110110 + 00110011$   
 $6+3=9$  (00111001)

10.  $00111001 + 00110000$   
 $9+0=9$  (00111001)

3.  $00110000 + 00110001$   
 $0+1=1$  (00110001)

11.  $00110001 + 00110111$   
 $1+7=8$  (00111000)

4.  $00110101 + 00110000$   
 $5+0=5$  (00110101)

12.  $00110001 + 00110100$   
 $1+4=5$  (00110101)

5.  $00110101 + 00110100$   
 $5+4=9$  (00111001)

13.  $00110110 + 00110001$   
 $6+1=7$  (00110111)

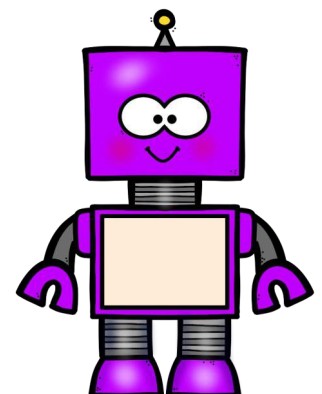
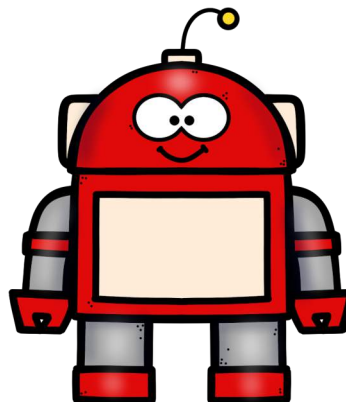
6.  $00110110 + 00110010$   
 $6+2=8$  (00111000)

14.  $00110011 + 00110101$   
 $3+5=8$  (00111000)

7.  $00111000 + 00110001$   
 $8+1=9$  (00111001)

15.  $00110010 + 00110010$   
 $2+2=4$  (00110100)

8.  $00110101 + 00110010$   
 $5+2=7$  (00110111)



1000001 - 1000010 - 1000011 - 1000100 - 1000101 - 1000110 - 1000111


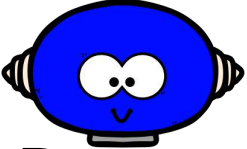
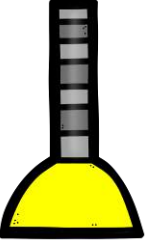
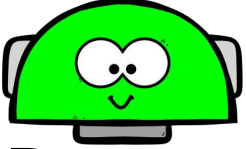
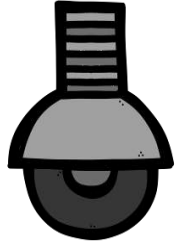
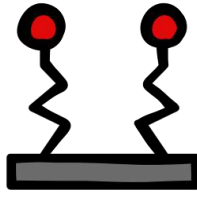
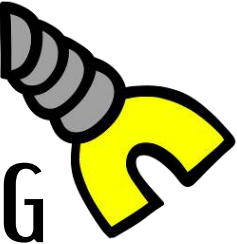
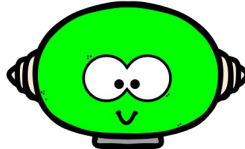
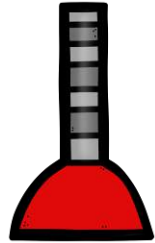
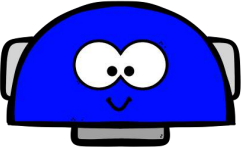
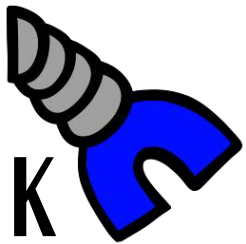
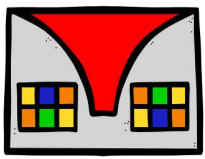
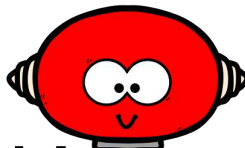
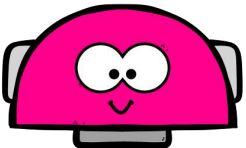
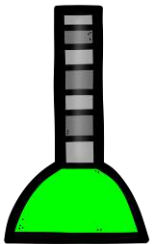
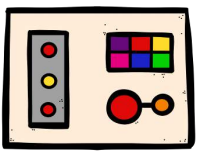
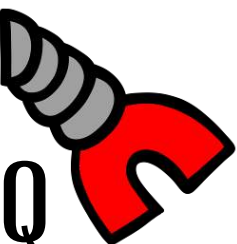
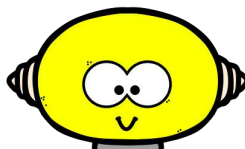
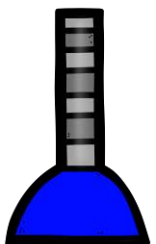
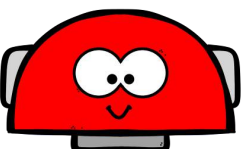


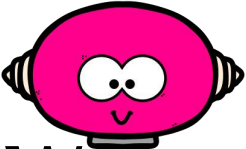

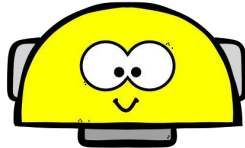
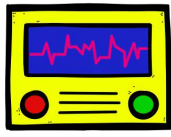
1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111 - 1010000

1001000 - 1001001 - 1001010 - 1001011 - 1001100 - 1001101 - 1001110 - 1001111 - 1010000

# Inspirational Code Breaker Puzzles



# ROBOT WORD DECODER

A 	B 	C 	D 	E 
F 	G 	H 	I 	J 
K 	L 	M 	N 	O 
P 	Q 	R 	S 	T 
	U 	V 	W 	
	X 	Y 	Z 	



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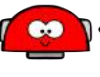
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- Albert Einstein

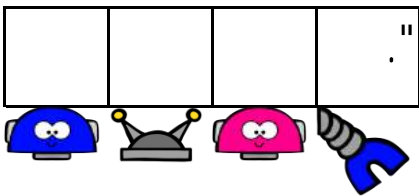
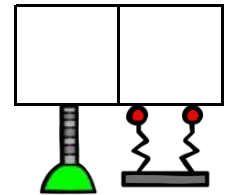
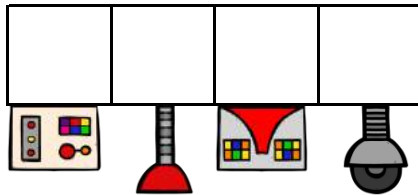
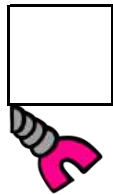
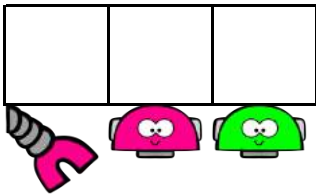
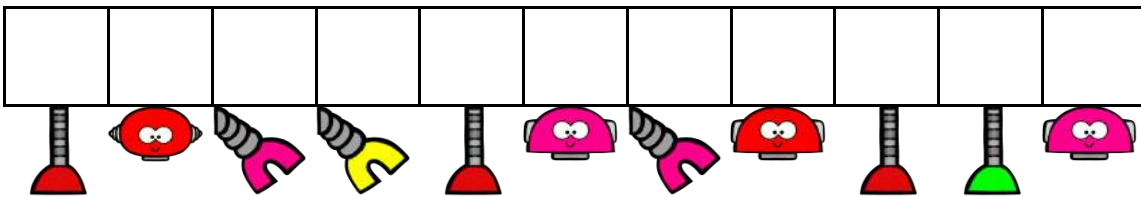
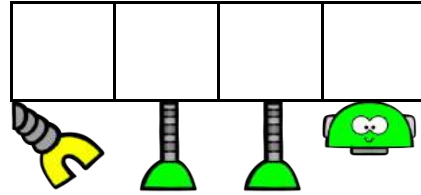
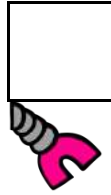
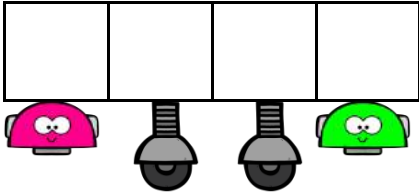
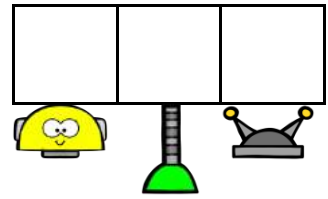
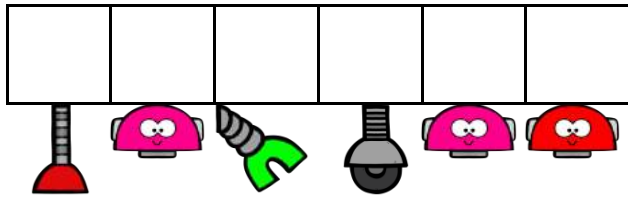
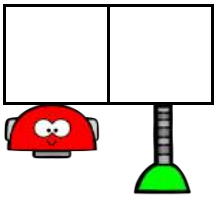
What does this quote mean to you?

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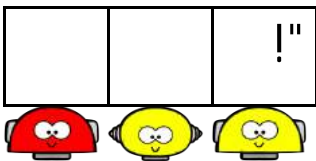
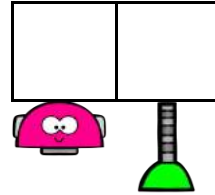
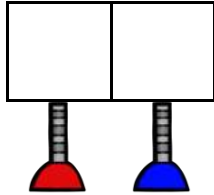
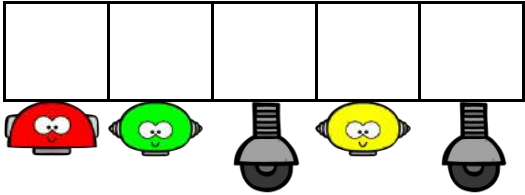
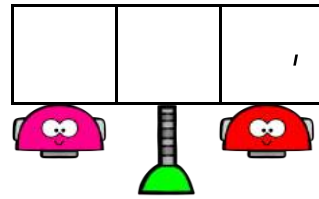
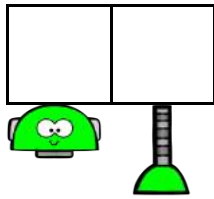
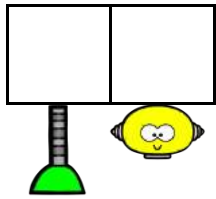
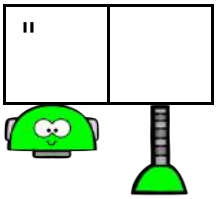
- Thomas Edison

What does this quote mean to you?

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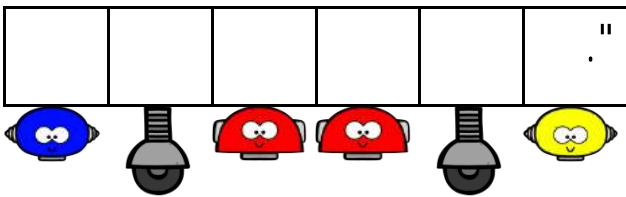
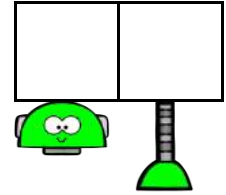
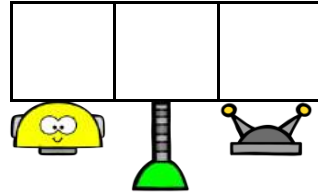
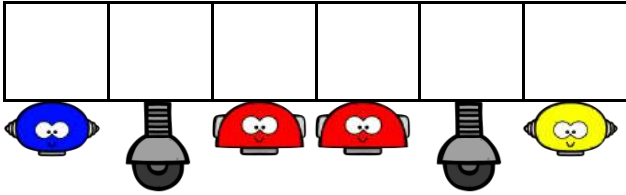
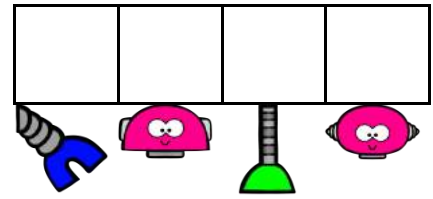
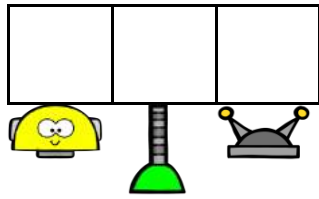
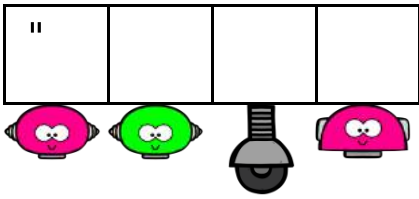
- Yoda

What does this quote mean to you?

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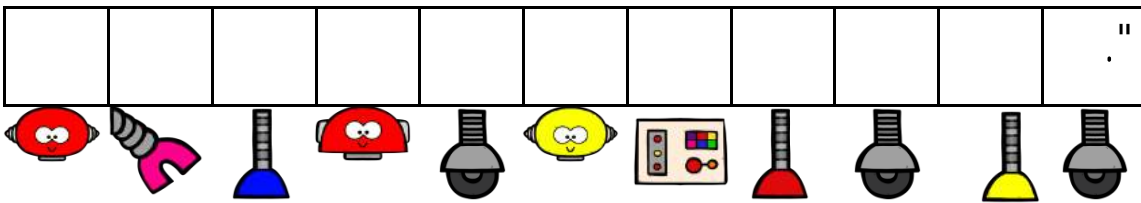
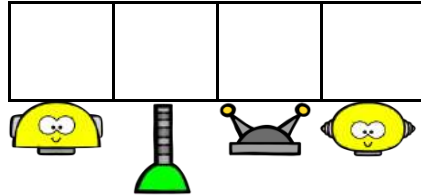
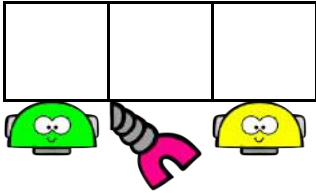
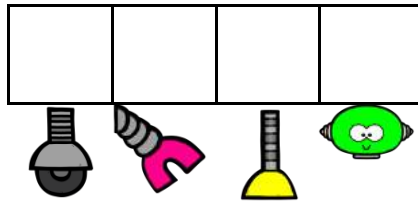
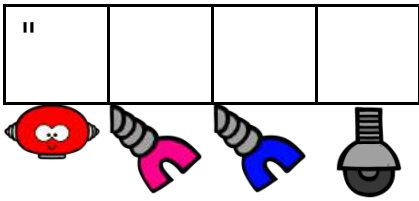
- Maya Angelou

What does this quote mean to you?

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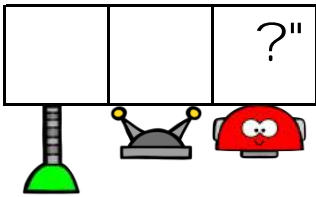
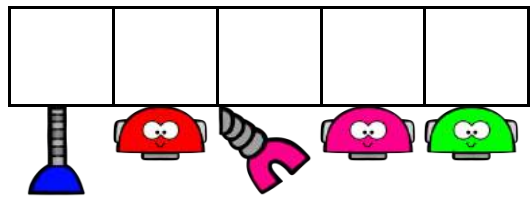
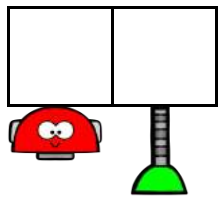
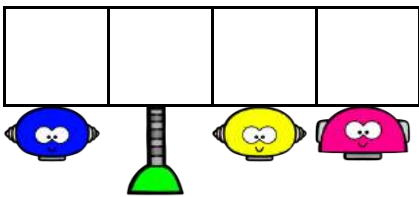
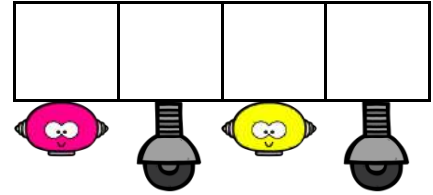
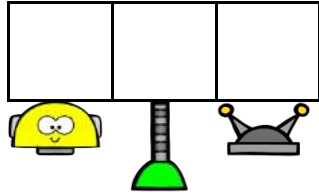
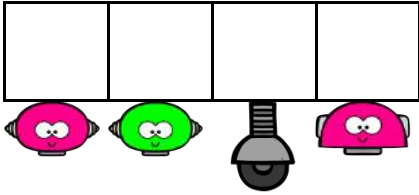
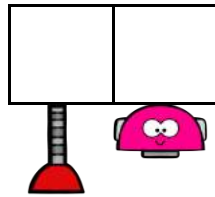
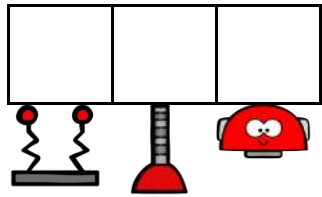
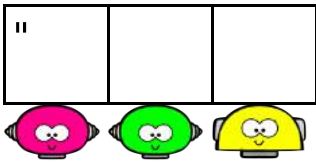
-John Wooden

What does this quote mean to you?

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- Dr. Seuss

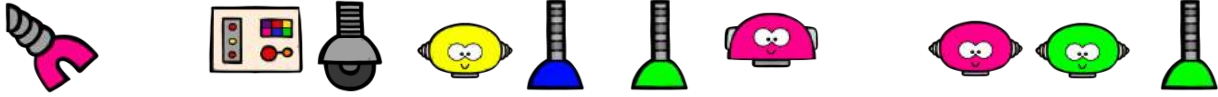
What does this quote mean to you?

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"A p e r s o n w h o



n e v e r m a d e a



m i s t a k e n e v e r



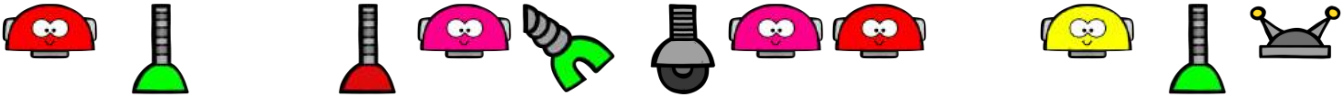
t r i e d a n y t h i n g



n e w." - Albert Einstein



"T o i n v e n t, y o u



n e e d a g o o d



i m a g i n a t i o n



a n d a p i l e o f



j u n k."

- Thomas Edison



"D o o r d o n o t,



t h e r e i s n o

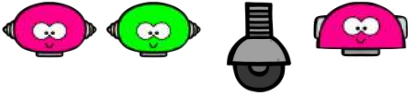


t r y!" - Yoda





"W h e n



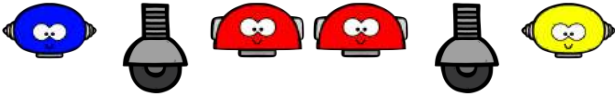
y o u



k n o w



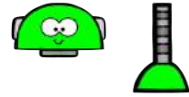
b e t t e r



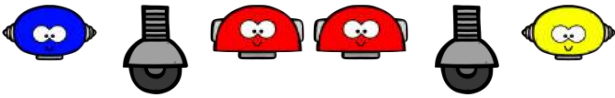
y o u



d o



b e t t e r."



- Maya Angelou

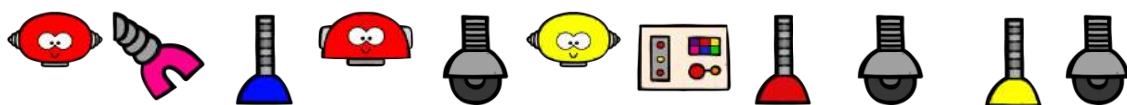
"M a k e e a c h



d a y y o u r



m a s t e r p i e c e."



-John Wooden

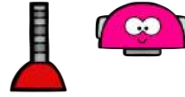
"W h y



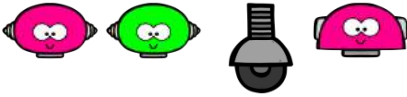
f i t



i n



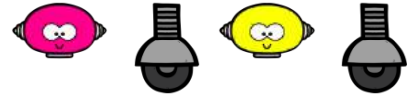
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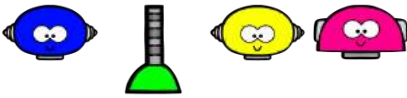
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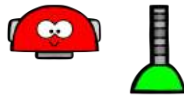
w e r e



b o r n



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s t a n d



o u t?"



- Dr. Seuss

# GRAPHICS CREDIT FOR THIS PACK

