

GO THE DISTANCE

ACTIVITY GUIDE

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Mathematics
Festival**

Materials and Setup

Per table (assuming 5 students per table), you will need:

Per Table	Material Preparation	
40 pawns in 8 different colors.	Sort the pawns into 5 sets with 8 different colors in each set. See the Game Boards for required colors.	
3 copies of Instructions	1 page each	p. 6
5 Game Boards	2 pages each <i>can be printed double-sided</i>	P. 7-8
5 copies of Tasks	4 pages each <i>can be printed double-sided</i>	p. 9-12
1 copy of Table Sign	1 page <i>print on cardstock for sturdiness</i>	p. 13

Per Table	Purchasing Materials		
Colored pawns	96 piece set for \$6.99		
18 plastic sheet protectors	pack of 100 for \$7.67	pack of 500 for \$26.99	These are recommended in order to protect the documents that students will be handling.



Objective

Follow each puzzle's clues to place all of the pieces into the row.

Rules:

1. Each clue tells you the distance between two of the colors.
2. A clue **does not** tell you the order of the two colors.
3. For example, if blue is on the left of red in a clue, this does not mean that blue needs to be on the left of red in the solution.

Materials

Each Go the Distance table should be prepped for 5 stations.

Each station needs:

1. 8 differently colored pawns (see game boards for colors required).
2. Go the Distance instructions.
3. Go the Distance game boards.
4. Go the Distance puzzles.

How to Play

Introduce the activity without overexplaining it and without telling what strategies students might want to use. As much as possible, avoid giving away answers. Students should be encouraged to explore, experiment, and learn from their mistakes.

1. Have the colored pawns laid out on the p.g 7 game board.
2. Demonstrate the rules by starting the first puzzle with them.
3. Have the student help you place the first few pawns. Reinforce that the clue does not tell you the order of the two colors.
4. Have the student solve the first puzzle and then explore the next puzzles.

Standards

1. Make sense of problems and persevere in solving them. CCSS.MP1
2. Construct viable arguments and critique the reasoning of others. CCSS.MP3
3. Model with mathematics. CCSS.MP4
4. Look for and make use of structure. CCSS.MP7



Asking Good Questions

1. Ask questions about confidence.
 - a. When a student asks you “Is this right?”, instead of saying “yes” or “no” right away, ask them how confident they are in their answer. Here are some examples:
 - i. “Maybe. What do you think? How confident are you?”
 - ii. “On a scale of 1-5, how confident are you in your answer?”
 - b. If a student is not confident in their answer, follow up by asking “What would help you feel more confident in your answer?” or “Why do you not feel confident?” This helps you determine how best to help the student through their explorations.
2. Ask students about choices.
 - a. When a student is stuck or shows you a wrong answer, instead of jumping in and showing the student the correct answer, start by asking about the choices that the student made along the way. Here are some suggested steps to follow:
 - i. Start from the beginning.
 - ii. Ask students to show you what they’ve tried so far.
 - iii. When the student gets to a point where they have different choices, ask the student “What other choices can you make here?”
 - iv. Have the student make a different choice and try to solve the puzzle. This helps the student see that they have the power to make different choices during an activity, and they’ll start to do this on their own in the future.
 - v. If you’re familiar with the puzzle or a particular solution, stop the student only when a different choice will help them get to the solution. This will help them feel successful faster without you giving away too much of the answer.
3. Ask students about strategies.
 - a. If a student is getting into the activity and has been doing it for a while, ask the student if there are any strategies they’ve come up with to help them solve the puzzle or win the game.
 - b. Follow up by asking if they think their strategies will work for all puzzles and/or larger puzzles, more complex puzzles, etc. Have the student explore more complex puzzles to test out their strategies.
 - c. This is a great way to encourage a student to dive deeper into an activity and to start looking for patterns, structure, and proofs.

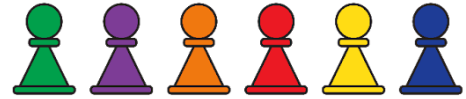
Answers

For each solution, the reverse order is also a solution

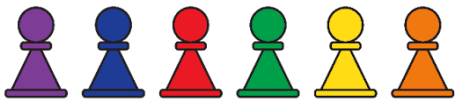
Puzzle 1



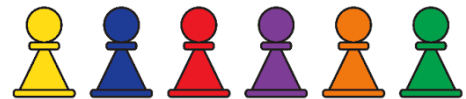
Puzzle 2



Puzzle 3



Puzzle 4



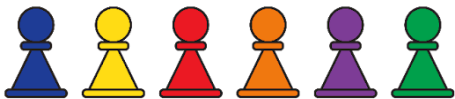
Puzzle 5



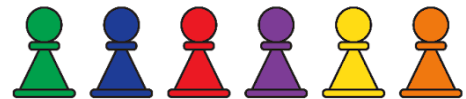
Puzzle 6



Puzzle 7



Puzzle 8



Puzzle 9



Puzzle 10



Puzzle 11



Puzzle 12



Puzzle 13



Puzzle 14



Puzzle 15



Puzzle 16



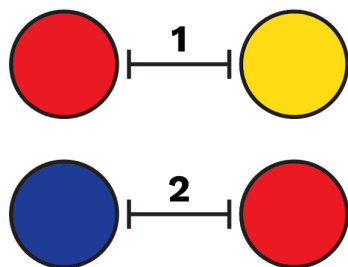
Go the Distance Instructions

Rules:

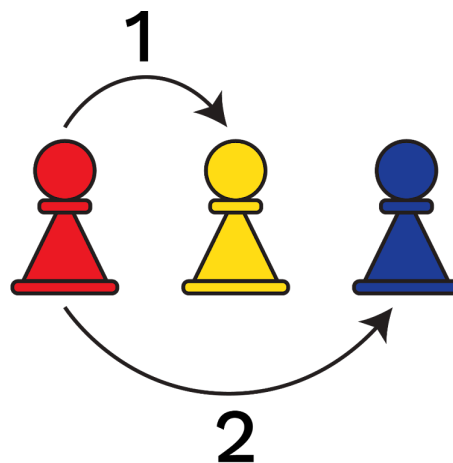
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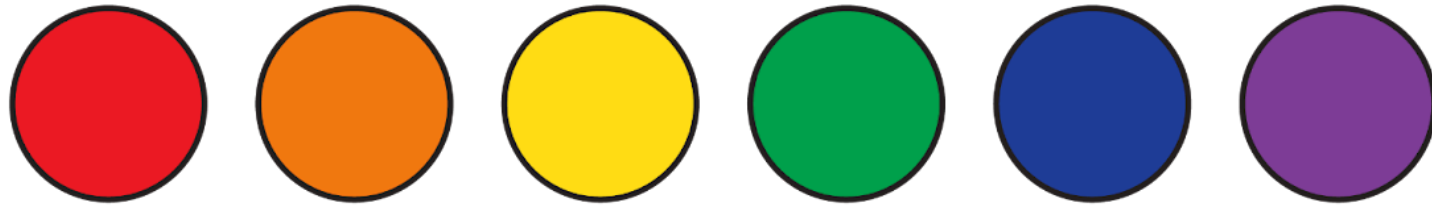
Puzzle



Solution

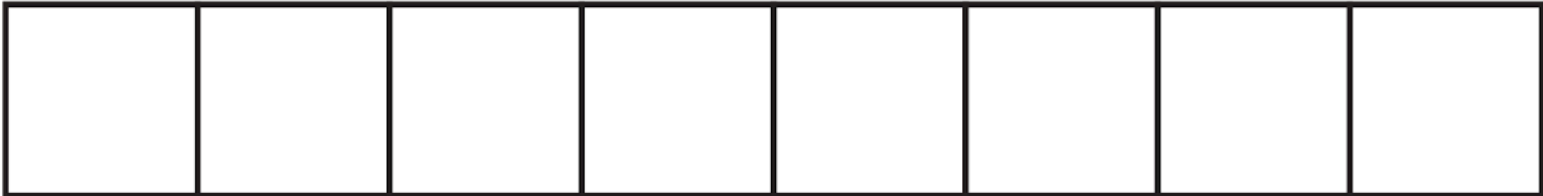
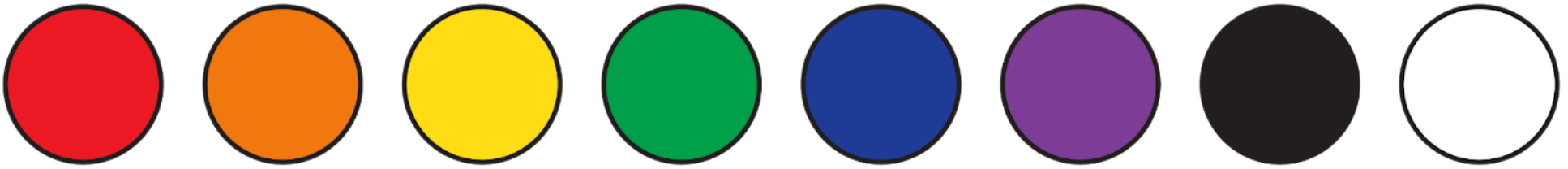


Go the Distance



This page is for puzzles 1 - 8. Flip me over for puzzles 9 - 16.

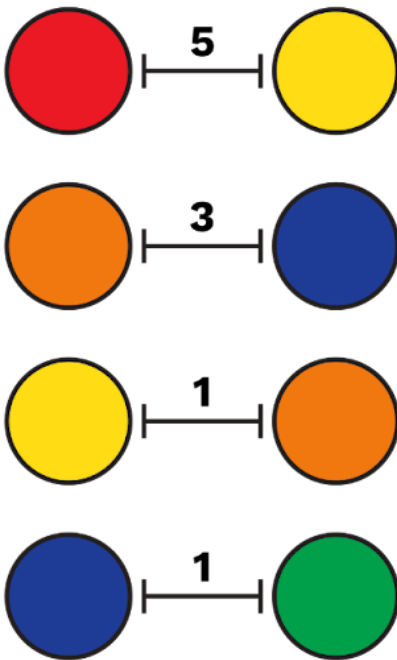
Go the Distance



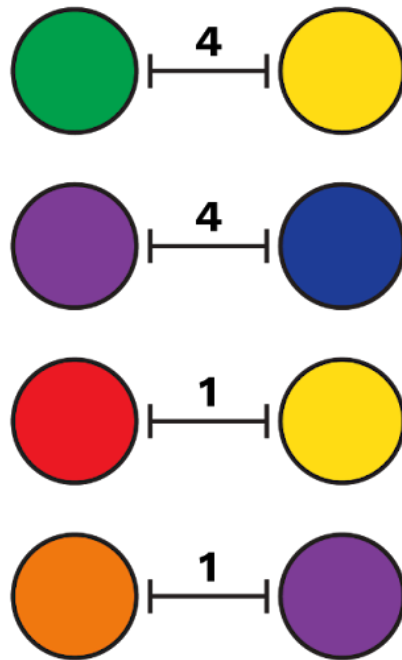
This page is for puzzles 9 - 16. Flip me over for puzzles 1 - 8.

Go the Distance

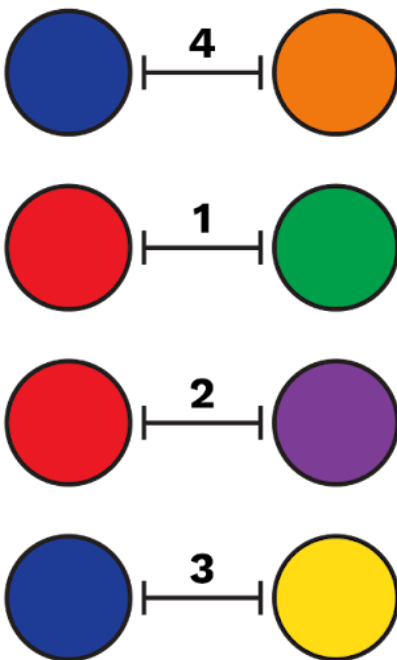
Puzzle 1



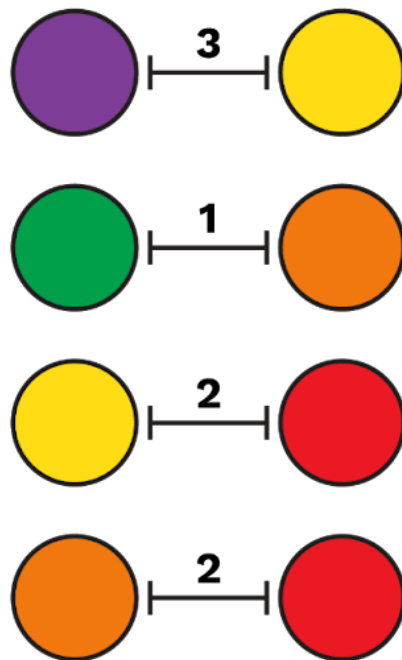
Puzzle 2



Puzzle 3

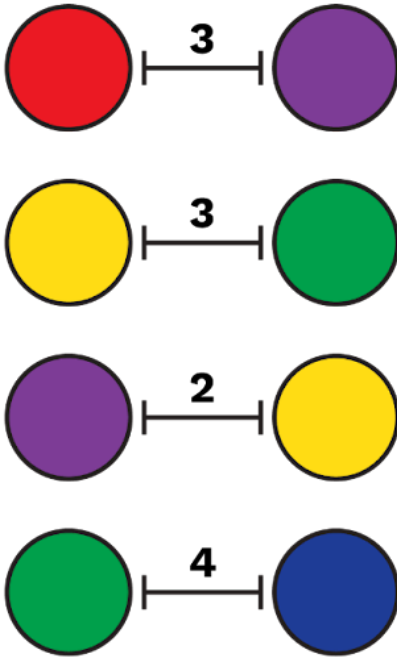


Puzzle 4

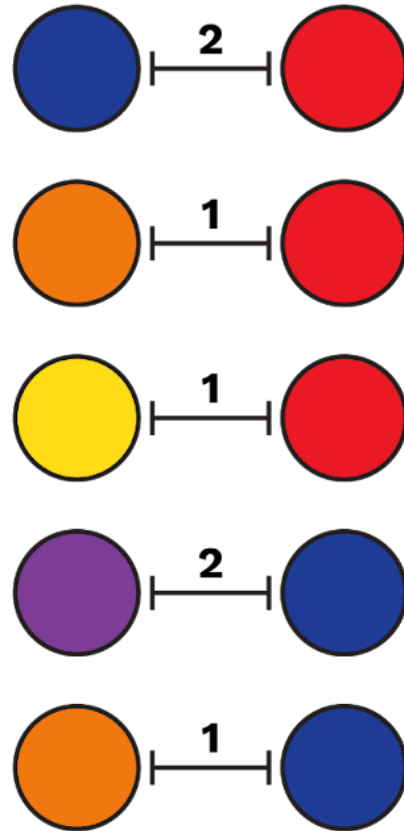


Go the Distance

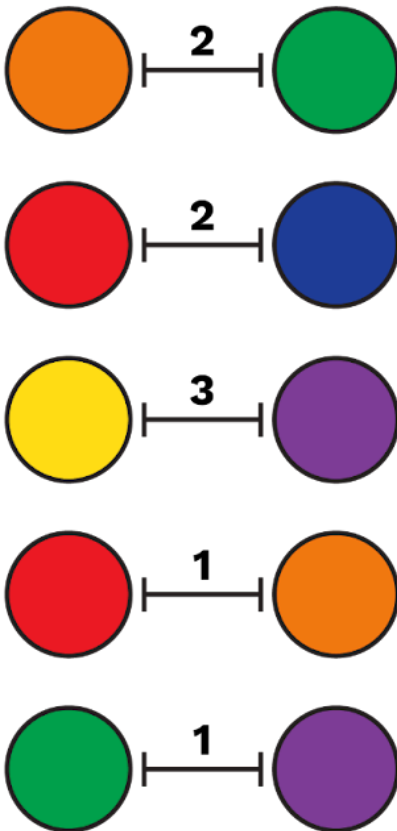
Puzzle 5



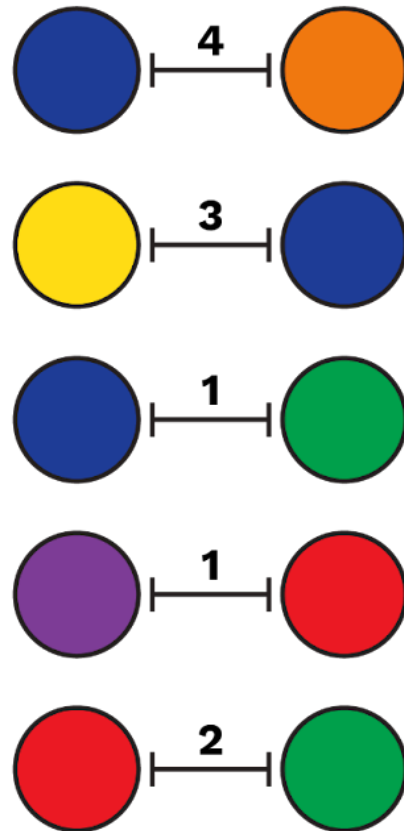
Puzzle 6



Puzzle 7

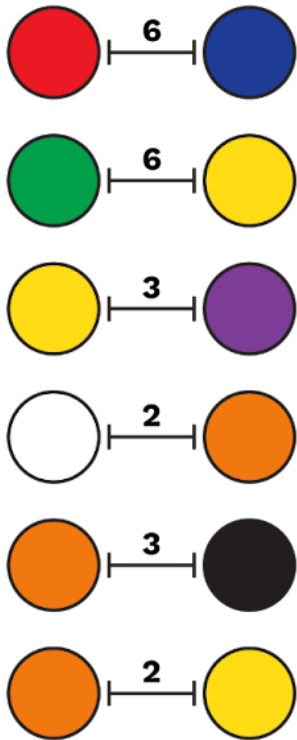


Puzzle 8

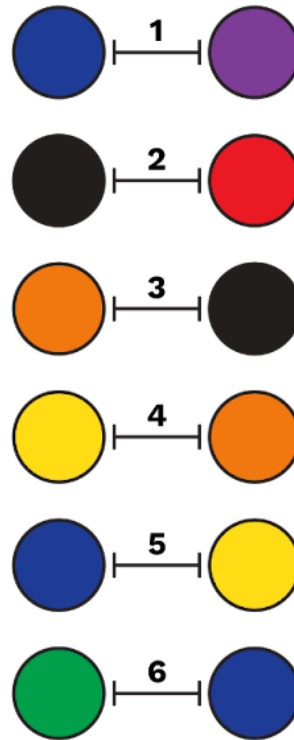


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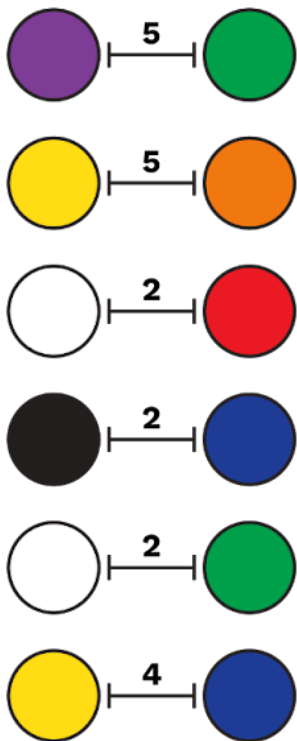
Puzzle 9



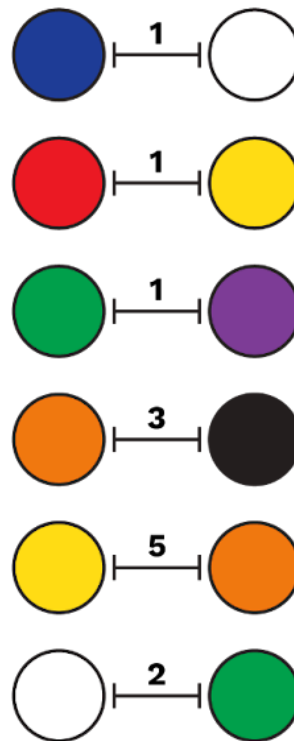
Puzzle 10



Puzzle 11

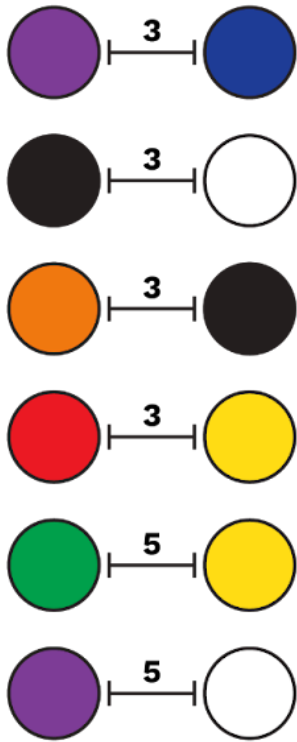


Puzzle 12

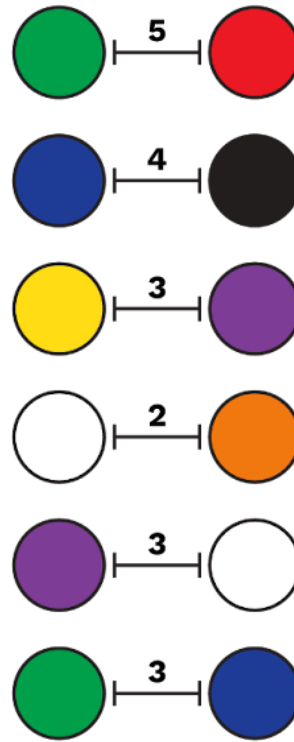


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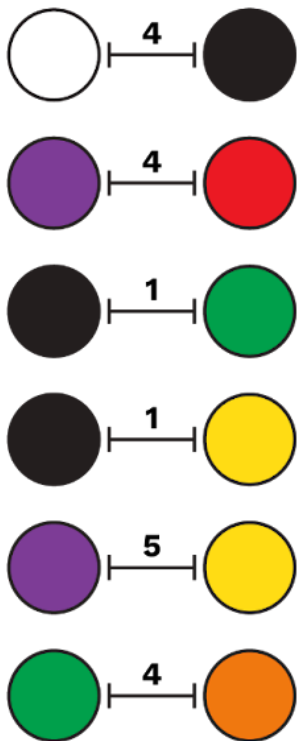
Puzzle 13



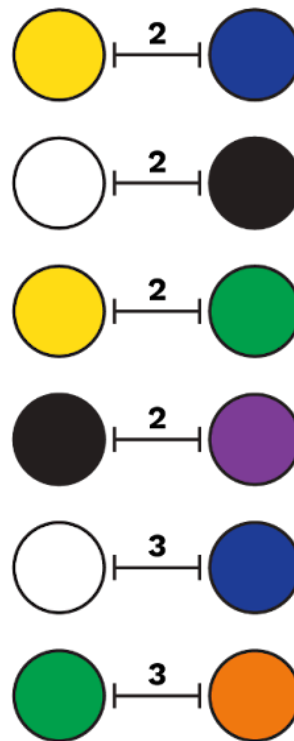
Puzzle 14



Puzzle 15

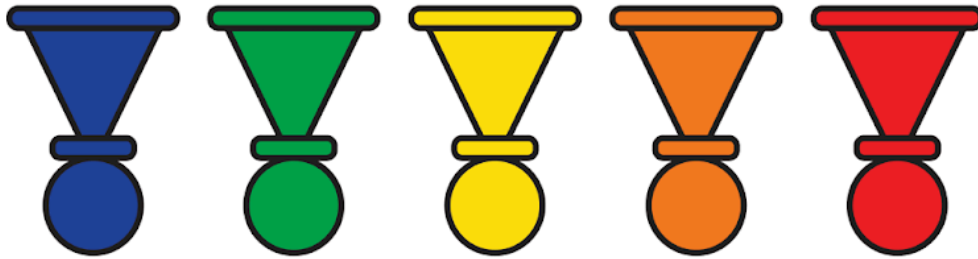


Puzzle 16





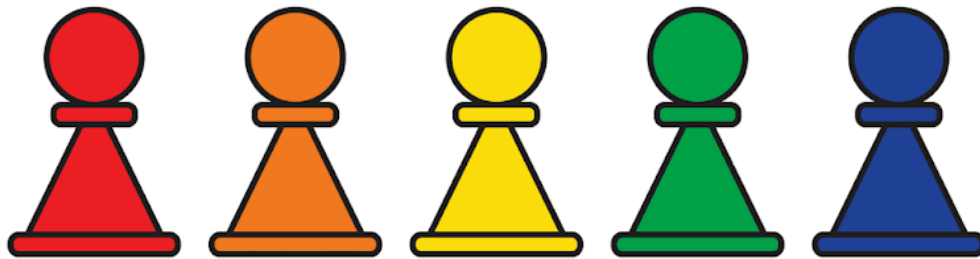
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