

NOT SO CLOSE

ACTIVITY GUIDE

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Materials and Setup

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

Per Table	Material Preparation	
100 colored pawns.	Sort the pawns into 5 sets of 20 pawns with 2 different colors in each set.	
3 copies of Instructions	1 page each	p. 6
5 copies of Game Boards	4 pages each <i>can be printed double-sided</i>	p. 7-10
1 copy of Table Sign	1 page <i>print on cardstock for sturdiness</i>	p. 11

Per Table	Purchasing Materials		
Colored pawns	96 piece set for \$6.99		
13 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

Be the last player to make a move.

Rules:

1. This game needs two players, and players use different colors.
2. Players take turns placing one of their tokens into an empty circle.
3. Two tokens of the same color cannot be right next to each other.
4. The last player who is able to make a move wins.

Materials

Each Not So Close table should be prepped for 5 stations.

Each station needs:

1. 20 pawns in two different colors.
2. Not So Close instructions.
3. Not So Close game boards.

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. Demonstrate the rules by playing a game with the student (or pair of students).
2. Encourage them to explain their thinking out loud as they choose which move to make.
3. Have the student explore the game, starting with the the first game board. This is a 2-player game, so collaborating with a partner is preferred, but the game can also be played with an imaginary partner.

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.

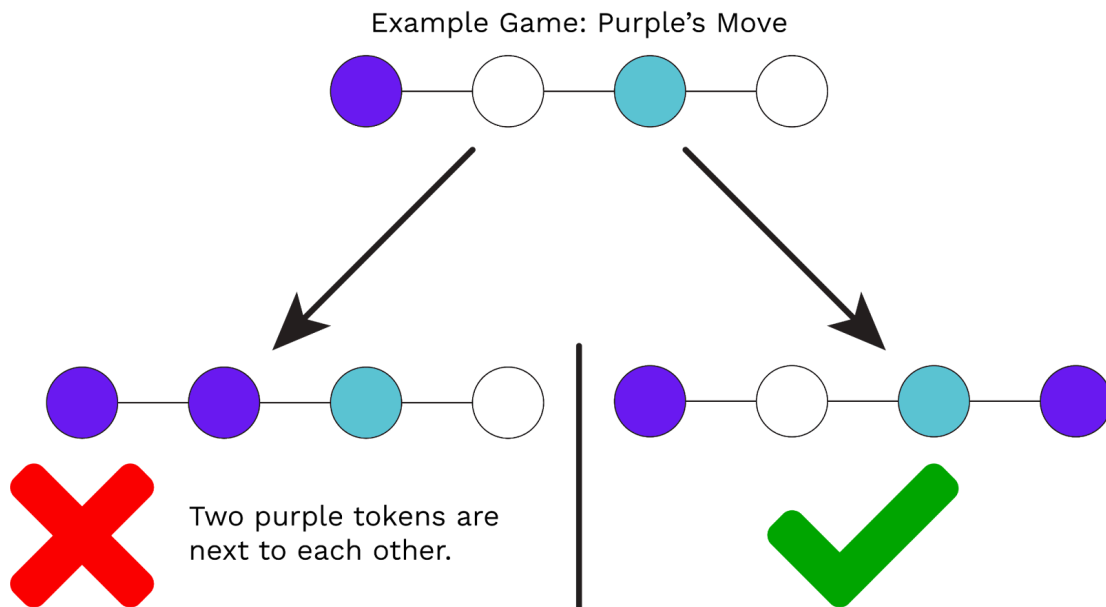
Answers

1. For Game #1, the second player can always win. In general, the second player should copy the first player, and if the first player plays in the center, the second player should play as far from the center as possible. This is not a fool-proof strategy, though, and the second player will sometimes need to think ahead in order to find the winning move.
2. For Games #2 and #3, the second player can always win by copying their opponent. Each of these game boards has a line of symmetry that does not go through any of the circles. Because of this, as long as the first player has a move, the second player will always have a move.
3. Game #4, like Game #1, only has lines of symmetry that go through a circle. The strategy for this game board is much more complex than that of the others, and we leave it to you to find the best strategy.

Not So Close Instructions

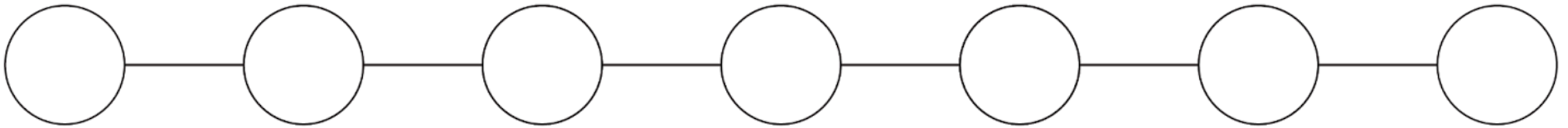
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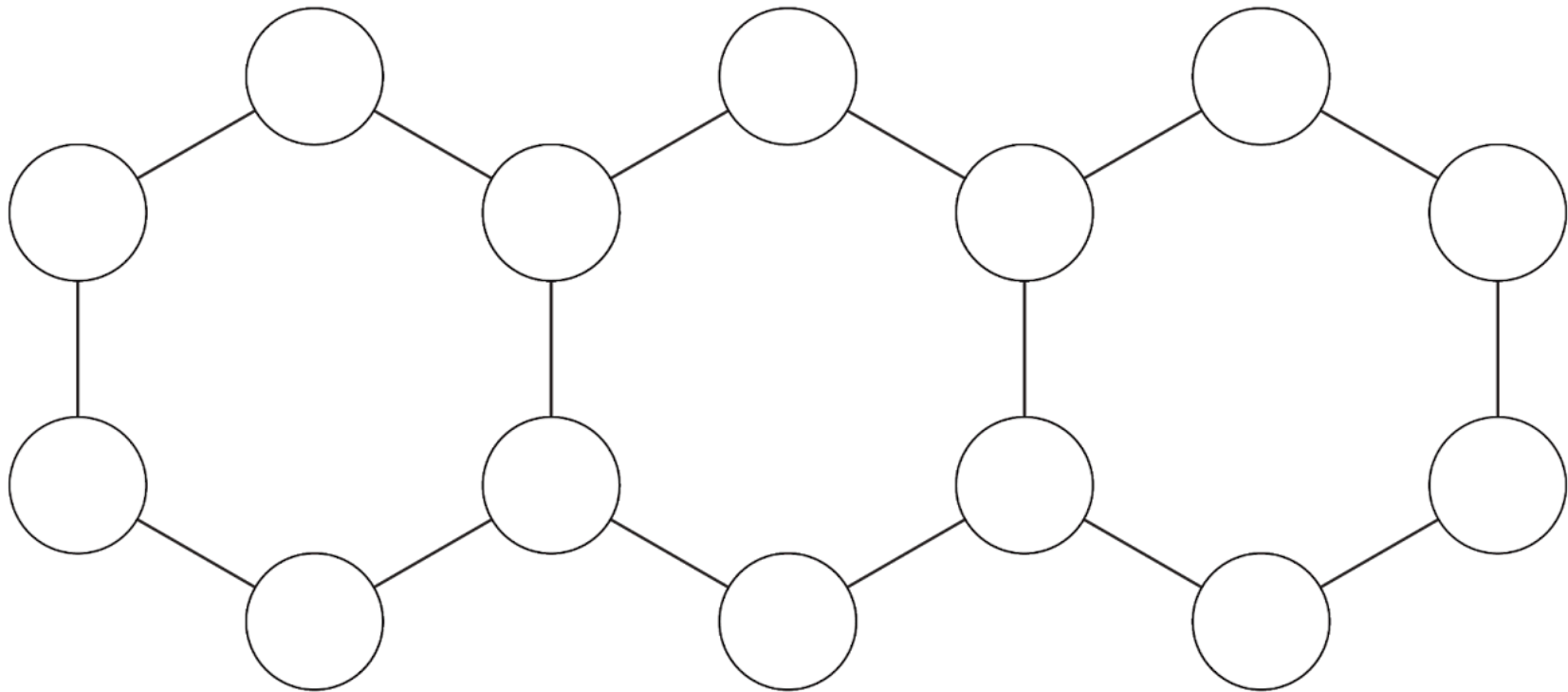
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Game #1



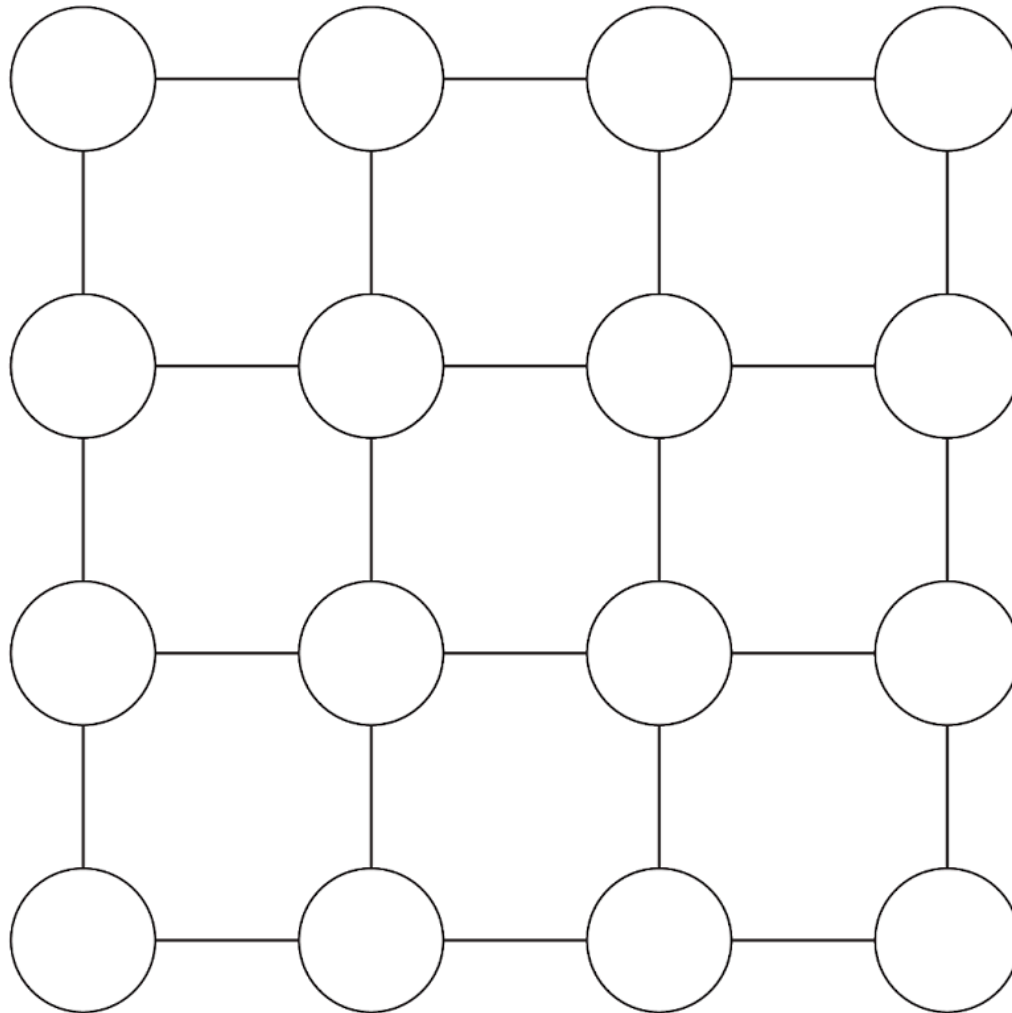
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Game #2



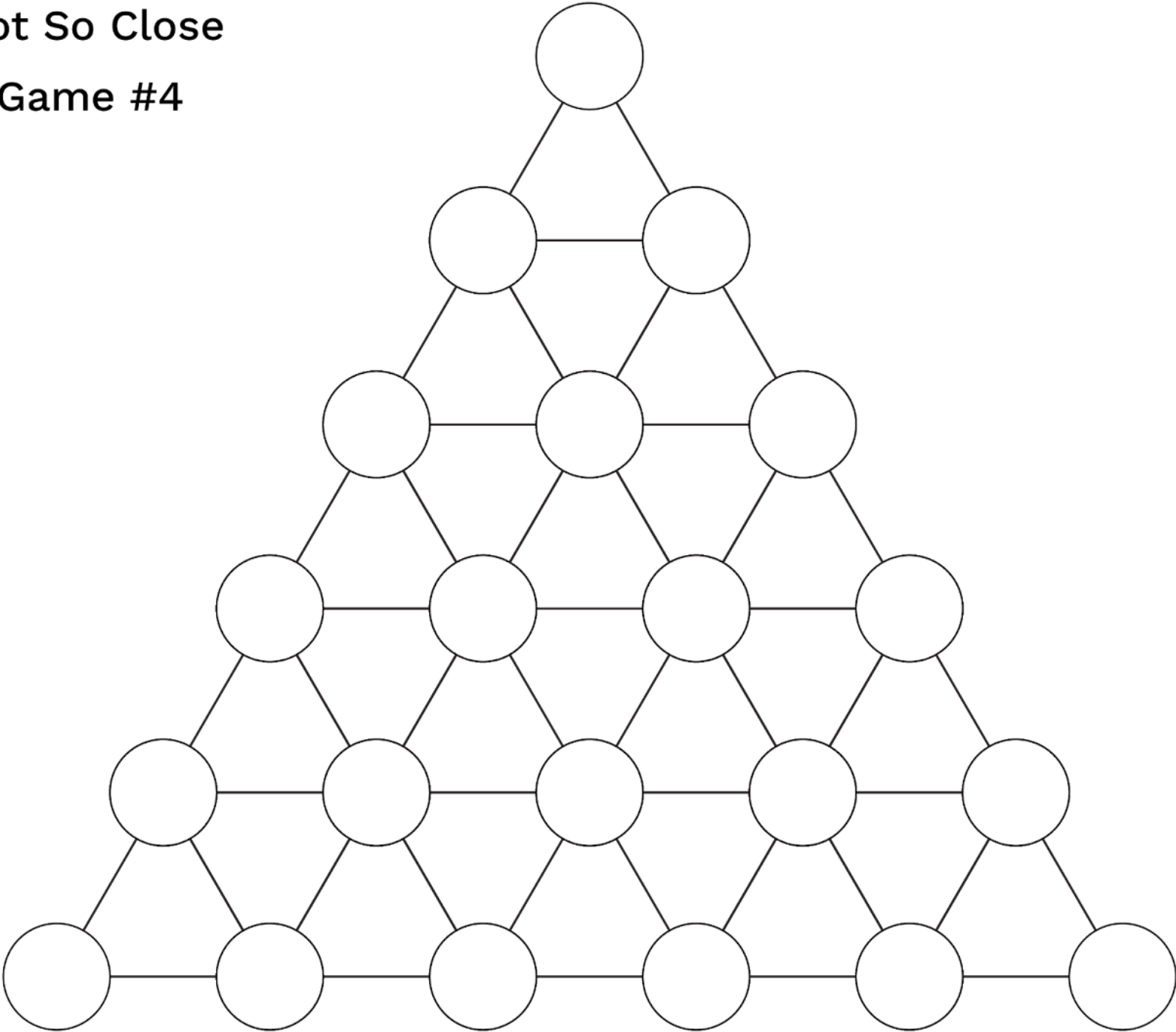
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Game #3



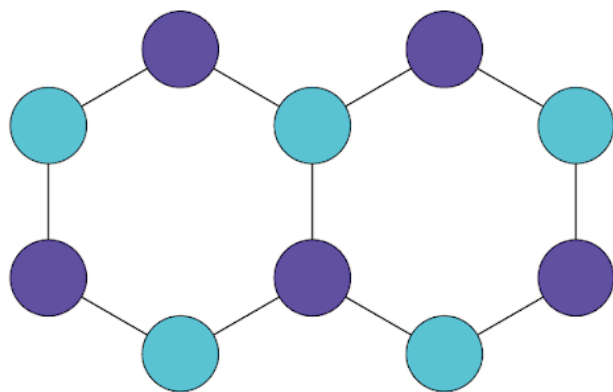
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Game #4





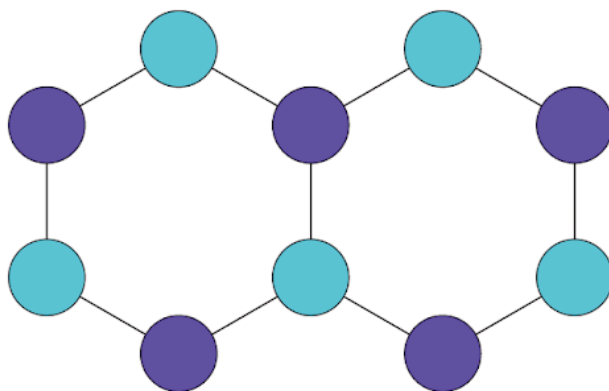
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