

I Can Do Centers Right

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Two Keys Ideas to Doing Centers Right!

- 1) Building Stamina/Independence
 - This idea comes from the work of Gail Boushey and Joan Moser, *The Daily 5: Fostering Literacy Independence in the Elementary Grades*, Stenhouse Publishing, 2006, Chapters 1 and 2
 - Students need training and stamina building with respect to the idea of working independently
- 2) Keeping it Engaging
 - The choice of what you put in the centers will affect the success.
 - A balance of a “drier” center (i.e. vocabulary or puzzles and problems) with a more “engaging” (i.e. strategy games, fast facts) center in the schedule

Why We Chose the Centers We Did:

- **Fast Facts:** A continual practice of basic math skills to build fluency.
- **Strategy Games:** An engaging way to practice thinking ahead and working backwards – planning your moves; this skill is needed in problem solving.
- **Vocabulary:** A continual review of the new vocabulary introduced with math concepts. Depending on the activity, it can be a way of checking for misconceptions (e.g. Frayer model) or a different way for the student to represent his/her understanding.
- **Manipulatives:** A way for students to interact with the manipulatives on their own, to practice what the teacher has modeled in their practice and to remove the negative stigma associated to the use of manipulatives. [In middle-school this can be replaced by calculator-use, a center designed to learn the power of the calculator and how to use it effectively].
- **Puzzles and Problems:** A way for students to practice their problem-solving skills and strategies individually or in pairs.
- **Ketchup & Pickles:** An opportunity for students to complete work begun during “Teacher Time” and to encourage students to complete tasks for the reward of “free-choice.”
- **Teacher Time:** Instructional time in small groups. An opportunity for guided-math.



<http://tinyurl.com/CentersRight>

The first “steps” to setting up Math Centers in your classroom

These have been laid out as steps rather than days as depending on your class, grade level, etc. some activities may take more than a day. Do not rush through this. Taking the time to establish a strong foundation will create the independent students needed in order to be successful. This will allow you to work with small groups without having to constantly stop and redirect misbehaviors.

<u>Step</u>	<u>Content</u>
1) Class Discussion: What are Math Centers and why do we do them?	<ul style="list-style-type: none"> - Why do centers instead of whole group? - Connect to Daily 5 ELA (if applicable) - Set expectations
3) Routines/Rules/ Procedures (Fast Facts)	<ul style="list-style-type: none"> - What is “Fast Facts”? Discuss importance and sample activities. - Set up I Chart. - Introduce sound signal. - Model in class, bring back. (Begin building stamina)
4) Practice Fast Facts	<ul style="list-style-type: none"> - Review I Chart created previous day. - Model, bring back. - Continue building stamina <p>*Take a couple of days to introduce new games in Fast Facts and use the opportunity to build stamina so that students can play for longer periods of time. Don't rush this, as it is your foundation and needs to be secure before you move on.</p>
5) Vocabulary Procedures	<ul style="list-style-type: none"> - What is “vocabulary”? Discuss importance and sample activities. - Set up I Chart. - Introduce Word Wall. - Model the primary vocabulary tool you will use with students (e.g. a Frayer model graphic organizer, or foldable or interactive math notebook, or vocabulary video, etc.) - Model one together, and have students practice independently (continue building stamina)
6) Vocabulary Practice	<ul style="list-style-type: none"> - Continue building stamina. - Slowly, begin to run the two stations simultaneously assigning a station and allowing choice within the station.
7) Strategy Procedures	<ul style="list-style-type: none"> - What is “Strategy Games”? Discuss importance and sample activities. - Set up I chart. - Model in class, bring back. (Continue building stamina)
8) Strategy Practice	<ul style="list-style-type: none"> - Continue building stamina and introducing activities within strategy games.

9) Work with Teacher Procedures	<ul style="list-style-type: none"> - What is “Work with Teacher”? Discuss importance and sample activities. - Set up I Chart. - Practice storage (workbooks, duotangs, binders, drawers, shelf, etc.)
Schedule	<ul style="list-style-type: none"> - Begin building a schedule that incorporates the centers you have up and running with teacher time. - As a teacher consider your student groups (ability, random, gender, etc.) - Draw student’s attention to a choice board of activities within each center.
10) Puzzles and Problems Procedures	<ul style="list-style-type: none"> - What is “Puzzles and Problems”? Discuss importance and sample activities. - Set up I Chart. - Model one problem together as a class - Model appropriate peer collaboration for problem solving (helping vs. doing) - Have students practice.
11) Puzzles and Problems Practice	<ul style="list-style-type: none"> - Continue building stamina. - Continue running multiple stations, adjust schedule appropriately.
12) Manipulatives Procedures	<ul style="list-style-type: none"> - What is “manipulatives”? Discuss importance and sample activities. - Set up I Chart. - Model the primary vocabulary tool you will use with students (e.g. task cards, open ended, peer challenges, parroting teacher models, etc.) -Model one together, and have students practice independently.
13) Manipulatives Practice	<ul style="list-style-type: none"> - Continue building stamina. - Continue running multiple stations, adjust schedule appropriately.
14) Ketchup and Pickles Procedures	<ul style="list-style-type: none"> - What is “Ketchup and Pickles”? Discuss importance and sample activities. - Set up I Chart. - Discuss schedule and choice. Practice.
15) Practice Whole Class	Continue to build stamina up to desired time.

Do not be afraid to go back to the “I charts” that you created to review expected behaviors.

As the year goes on and you need to introduce new games or activities on new math concepts, you can either teach them whole class as a quick mini lesson or teach them to specific groups within “Work with Teacher” time. Students are pretty good about teaching games to one another.

Spiral**Skill:** Addition/Subtraction/Multiplication/Integers/Exponents**Materials:** Deck of Cards (ace = 1, jack = 11, queen = 12, king = 13 or remove the face cards and just use 1-10).**Goal:** To finish the "board" first.**How to Play:**

- Build a spiraling game board with all the cards face up. Start in the center and work your way out.
- Players each select a place marker and place it in the center of the spiral on the very first card. This is the starting point.
- Player 1 rolls the die. He/she moves the number of spaces on the die. He/she then must do the operation decided on with the two numbers (on the die, and the playing card his place marker rests on). If they are correct, they may move ahead the number on the die. If incorrect, they may not move.
- Player 2 rolls the die and proceeds with his/her turn.
- The first player to make it past the last card wins.

*This game can be played either by choosing a focus for all team members (e.g. multiplication) or different team members can work on different skills (e.g. a weaker student could add while a stronger student subtracts).

Clear the Board:**Skill:** Recognizing numbers, addition/subtraction/multiplication/division/factors**Players:** 2 or more**Materials:** A deck of cards and 2 dice**Goal:** To clear all the cards**How to Play:**

- Arrange the cards face up in an array. (7 by 7 or smaller if need be).
- Player 1 rolls both dice and multiplies them to create a target number. He tries to eliminate 1,2 or 3 cards from the bottom row of the array with a math sentence that equals the total rolled.
(Ex: Player 1 rolls a 2 and 3. Target = 6. On the bottom row there is a 4, 8, 5, 1, 10, 6, 2. Player 1 can take the 6 and collect the one card as a point, or take 10-4 equals 6 and collect both cards as points, or $4+2=6$ or $6 \times 1=6$ at which point he/she collects three cards (4,2, and 1) as points.)
- Player 2 rolls both dice and proceeds with his/her turn.
- Continue playing until all the cards have been removed.

*The trick is that you cannot remove a card in the second row, until the card in the first row has been removed.

24**Skills:** mixed operations (+, -, x, /)**Players:** 2 or more**Materials:** cards (Ace = 1) through 10.**How to Play:**

- Flip over 4 cards in a circle.
- Using +, -, x, and / try to combine all 4 numbers for a total equaling 24. They may add, subtract, multiply or divide but they have to use all 4 cards only once each.
- Once you have a solution, knock on the table and record it. Once everyone is ready, share.

Start Running Remainders

5 6 7 8 9 10 11 12 13 14

Skill: Division with Remainders

Players: 2 - 4 players

Materials: Playing Board, 1 Die, 1 game marker per player

15

25 24 23 22 21 20 19 18 17 16

26

How to Play:

- Place game markers on start.
- Player 1 rolls the die and starts on the first number. He/she divides the number rolled into the number on the board. (Ex: $8 \div 5$). He/she solves the problem. (Ex: 1 R 3).
- Player 1 moves forward the number of spaces of his/her remainder (Ex: 3 spaces). If there is no remainder, player 1 stays on that square.
- Player 2 rolls the die and takes his/her turn.
- Continue playing until one player crosses the end line.

27

28 29 30 31 32 33 34 35 36 37

38

End 47 46 45 44 43 42 41 40 39



Competition to Cover: Equivalent Fractions

Skills: Recognizing equivalent fractions (basic), adding fractions

Players: 2

Materials: two six-sided dice, game board (fraction strips $\frac{1}{6}$ to 1)

How to Play:

- Player 1 rolls the two six-sided dice and uses the two numbers to create a proper fraction. E.g. Player 1 rolls  and , the proper fraction would be $\frac{2}{4}$ or $\frac{1}{2}$.
- Player 1 places his/her colored token(s) on the matching fraction, an equivalent fraction or multiple fractions that add up to that fraction. Eg: Player 1 can place a token on $(2 \times \frac{1}{6})$ or $\frac{1}{3}$.
- Player 2 rolls the two six-sided dice and uses the two numbers to create a proper fraction and places his/her token(s) on the matching fraction, an equivalent fraction or multiple fractions that add up to that fraction.
- A player cannot place his/her token on a "taken" spot.
- On his/her turn either player can trade-in a previous token to get a larger sum.
E.g. Player 1 has a token on $\frac{1}{2}$ and rolls another $\frac{1}{2}$ but cannot play; he/she can take their token off the $\frac{1}{2}$ and place a token on the whole.
- If a player cannot play he/she misses a turn.
- Play continues until the game board is covered.
- The winning player is the player with the most tokens on the board.

1 Whole					
$\frac{1}{2}$		$\frac{1}{2}$			
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$			
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$		
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

Traffic Lights

Players: 2

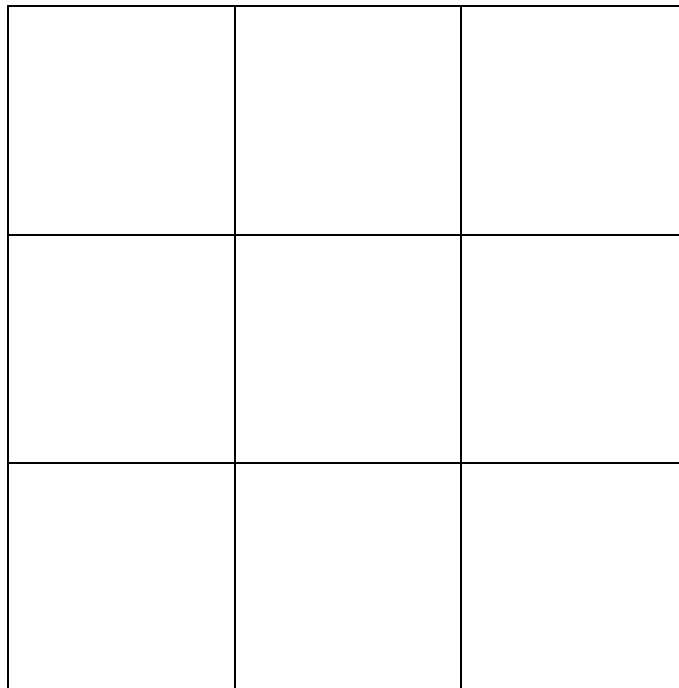
Materials: 9 red counters, 9 yellow counters, 9 green counters, game board

How to Play:

- At the start of the game the game board is empty.
- Player 1 places a red counter anywhere the game board.
- Player 2 has the option to replace Player 1's red counter with a yellow counter or place a new red counter anywhere on the board.
- Players take turns playing. At each turn a player must either:
 - o place a red counter in an empty square, or
 - o replace a red counter already on the board with a yellow counter, or
 - o replace a yellow counter already on the board with a green counter. (Green counters cannot be replaced with another color).
- A player wins by completing a line (row, column, or diagonal) of three counters that are all the same color.

Clarification: *it doesn't matter who placed the first counter(s) in the line - it's the third counter of the line that determines the winner.*

Traffic Lights: Game Board



Knight's Move

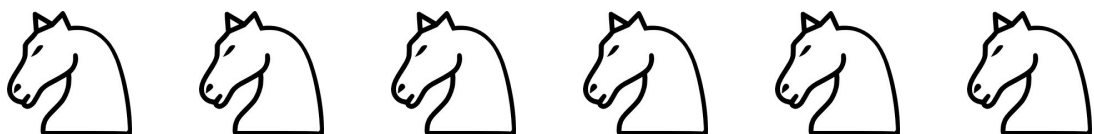
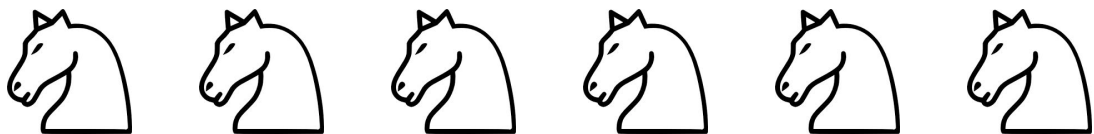
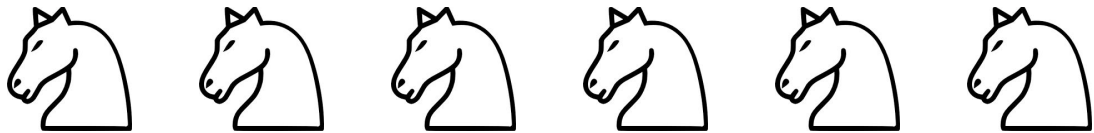
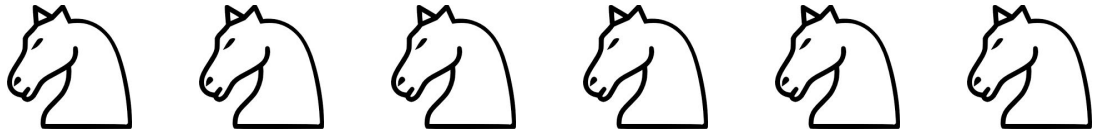
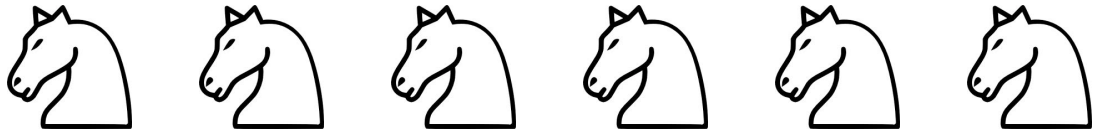
Skill: Strategy

Players: 2 players

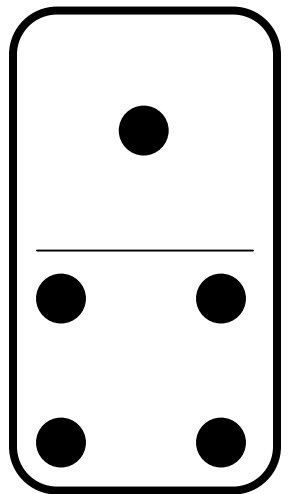
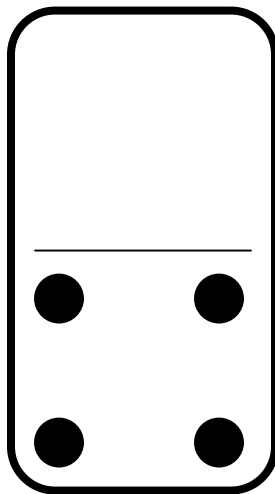
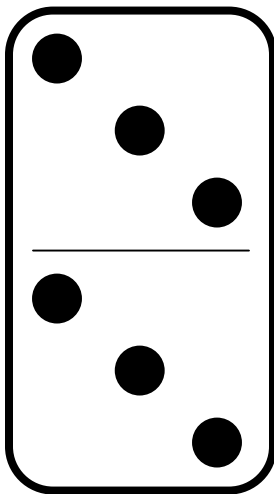
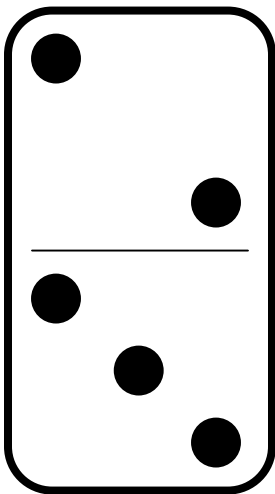
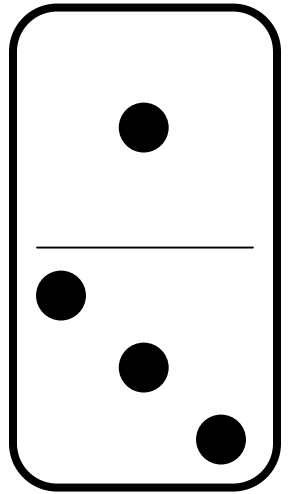
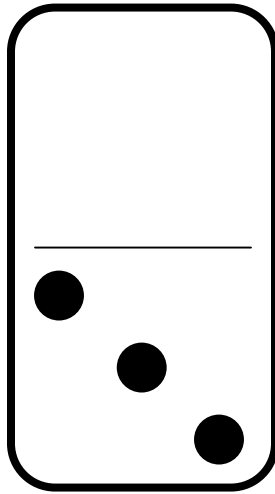
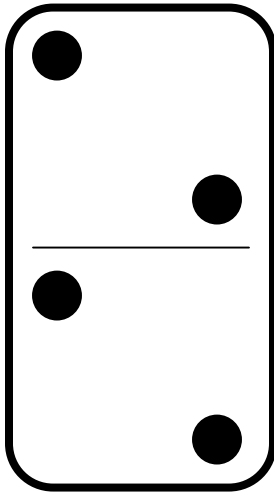
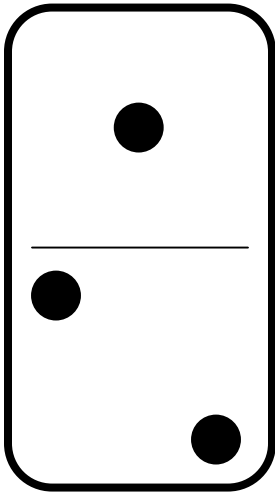
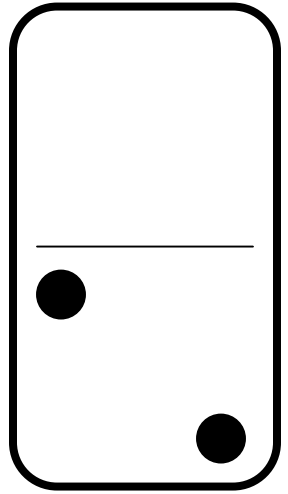
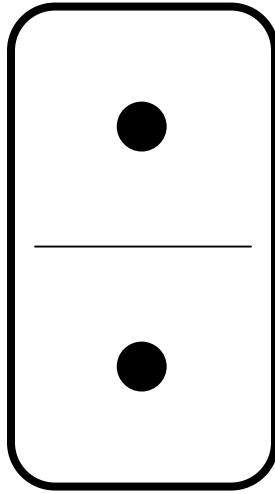
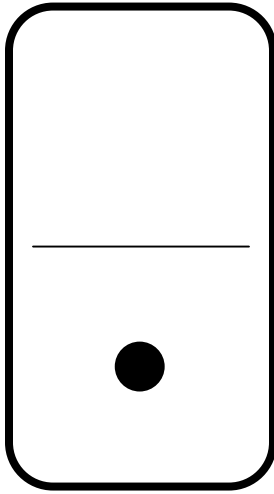
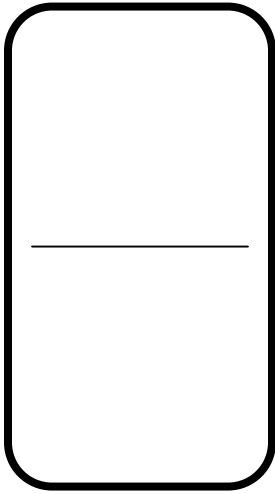
Materials: Game Board, Knight, counters

How to Play:

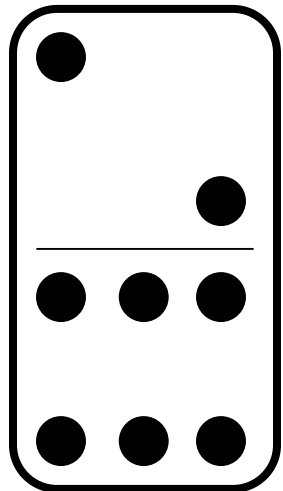
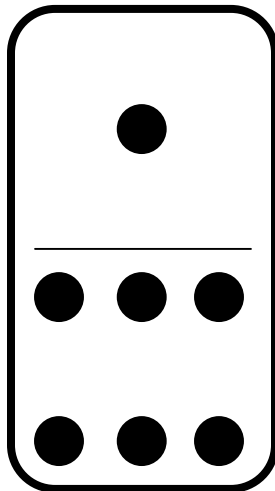
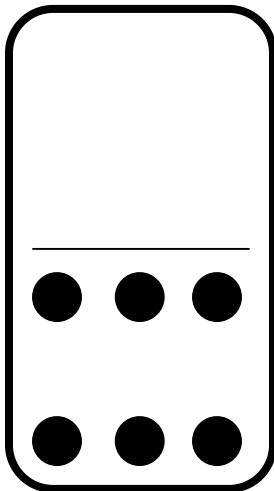
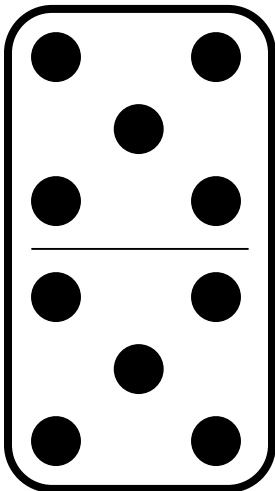
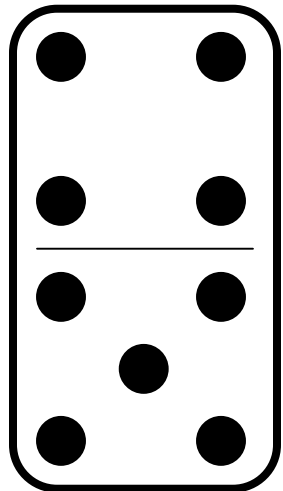
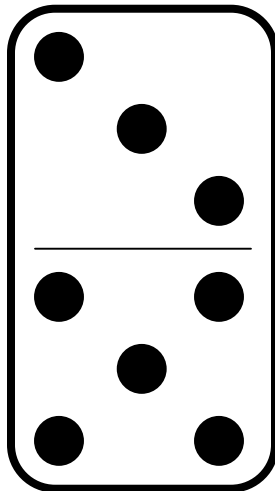
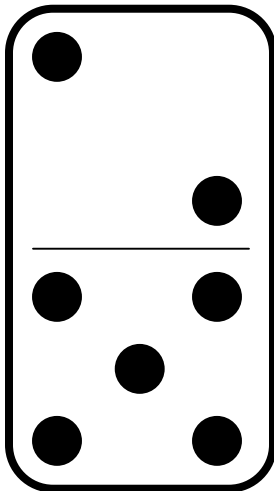
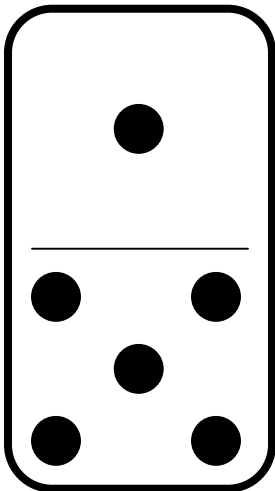
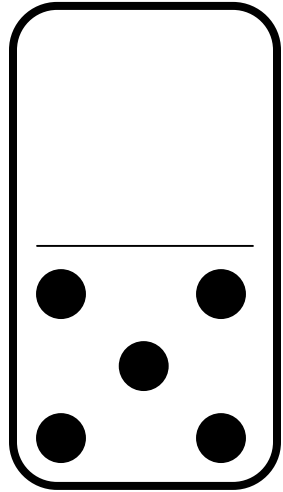
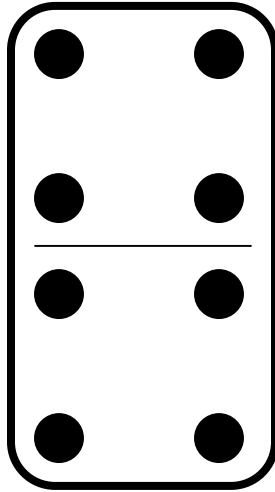
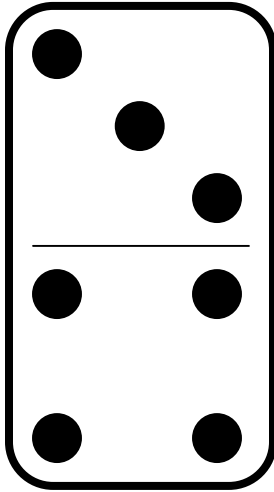
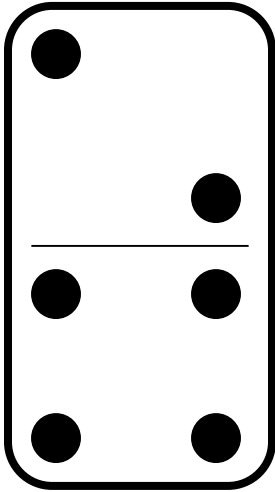
- Place the knight anywhere on the board.
- Player 1 moves the knight in a traditional knight move and covers the move with a counter.
- Player 2 moves the knight in a traditional knight move and covers the move with a counter.
- Play continues until one opponent is unable to move.



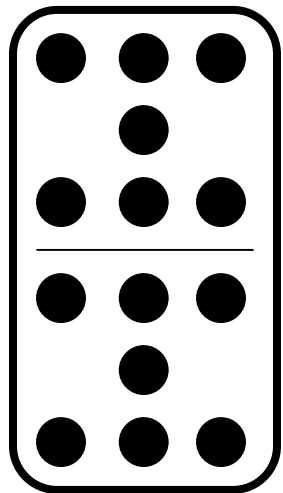
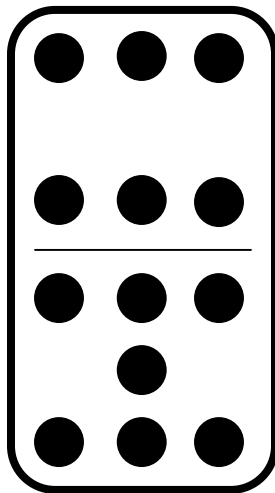
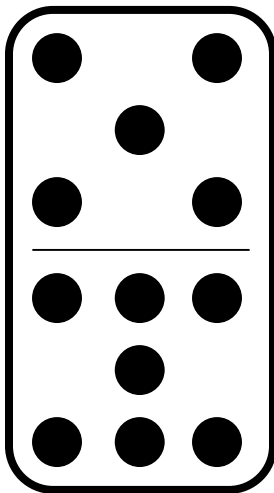
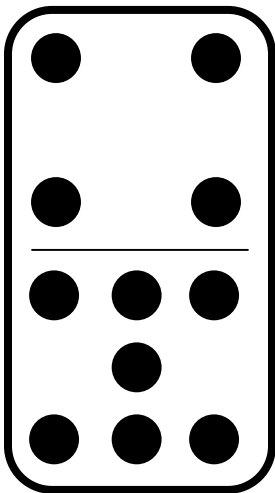
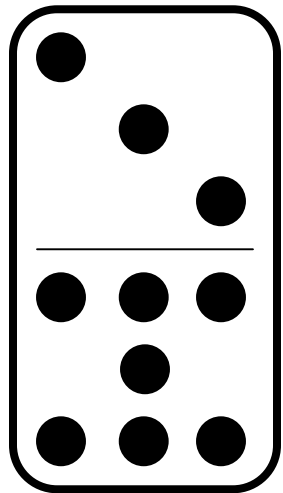
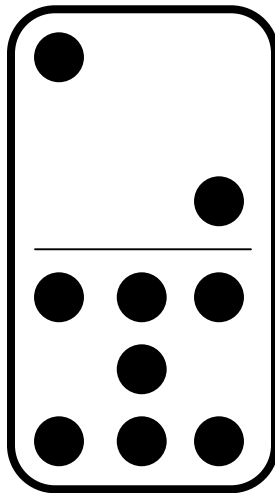
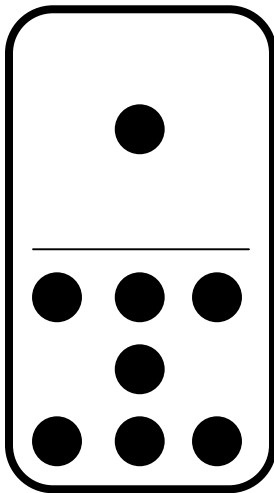
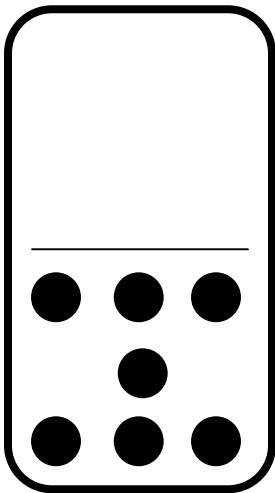
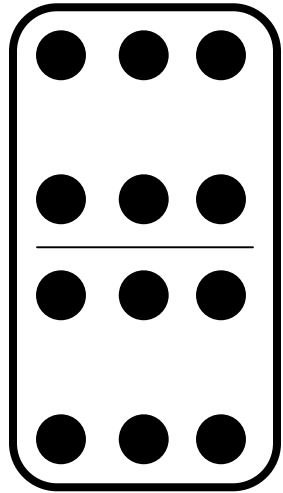
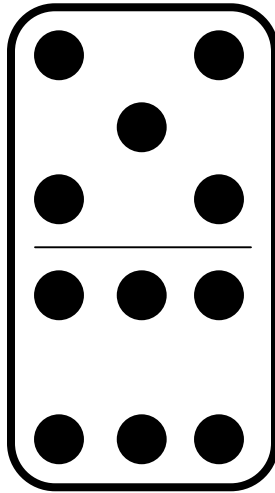
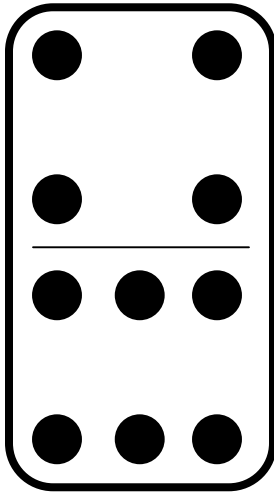
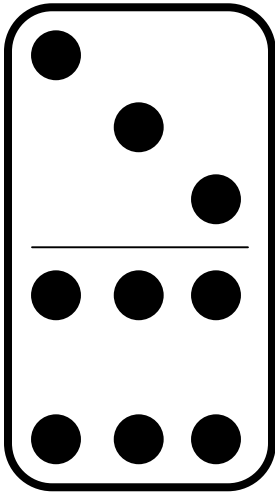
Dominoes



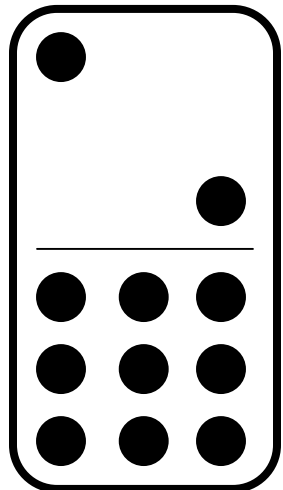
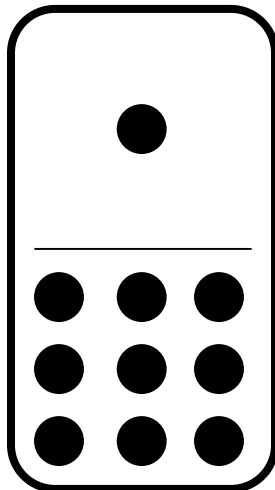
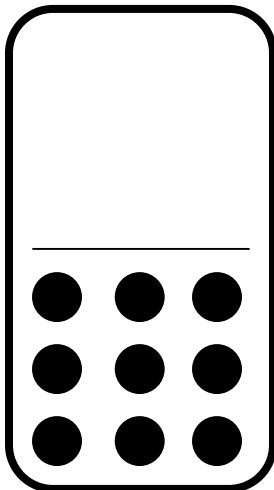
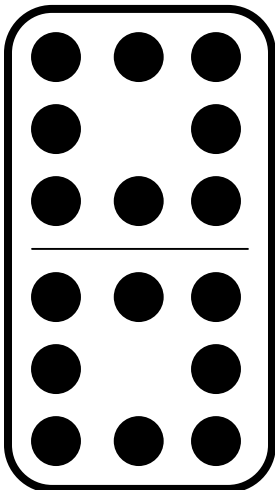
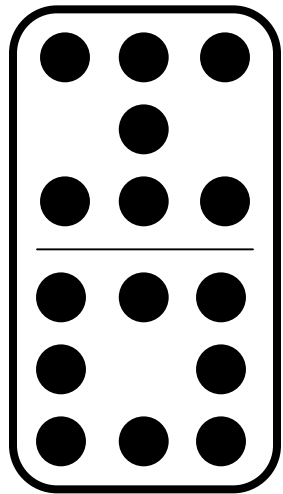
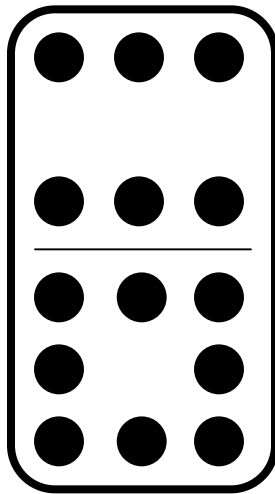
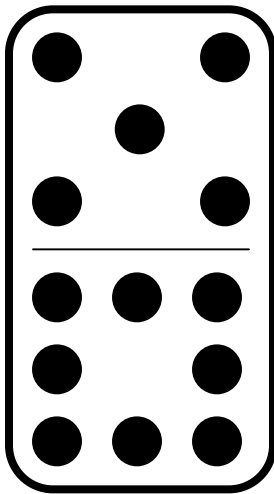
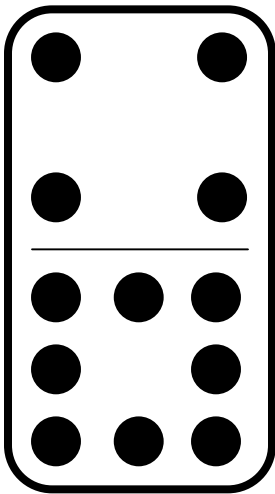
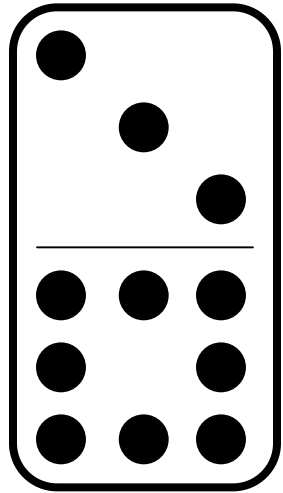
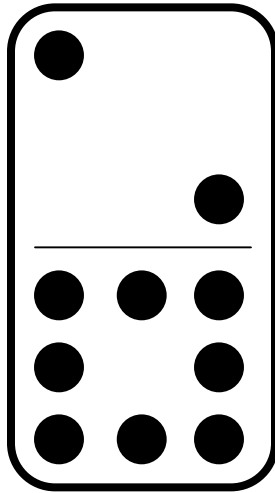
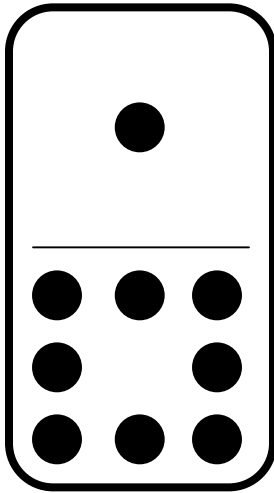
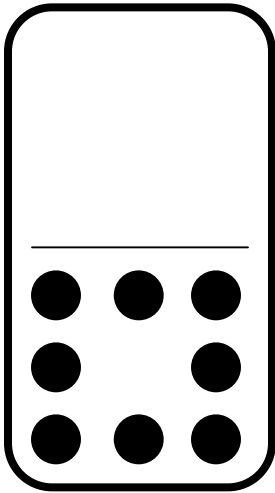
Dominoes



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