

# Activities for Finger Training

These activities go with the paper:

SEEING AS UNDERSTANDING: The Importance of  
Visual Mathematics for our Brain and Learning.



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Stanford University

<http://www.youcubed.org/visual-math-network/>

**You will need:**

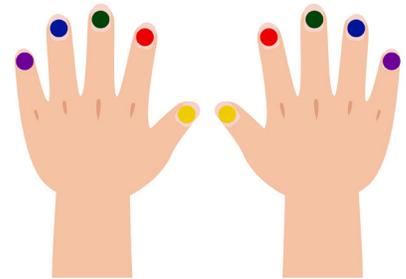
Finger Maze activities (in color)

Colored dots for each color in the Finger Maze: red, blue, green, purple, yellow

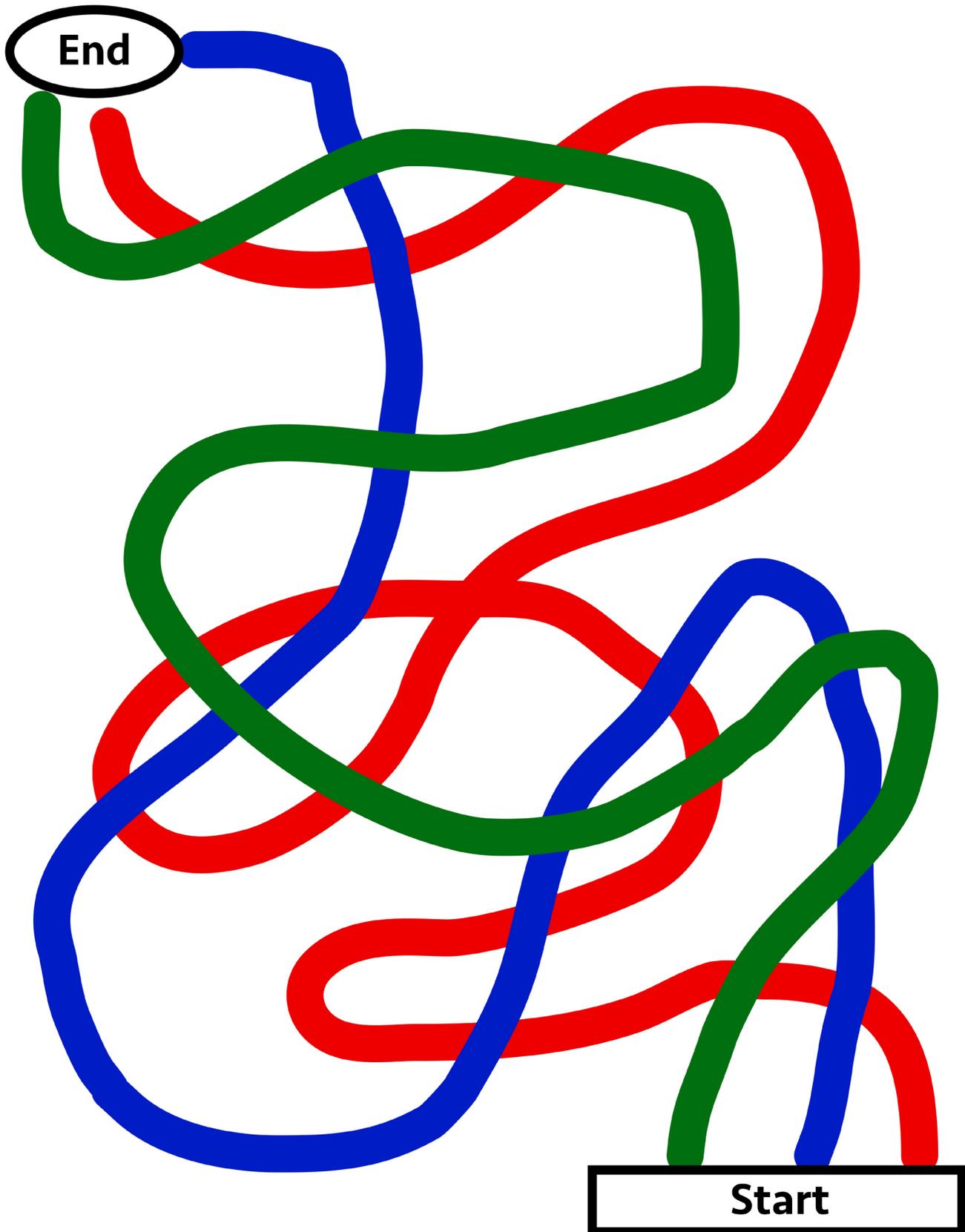
Finger Maze activities help children build finger differentiation, which is important for developing numerical understanding.

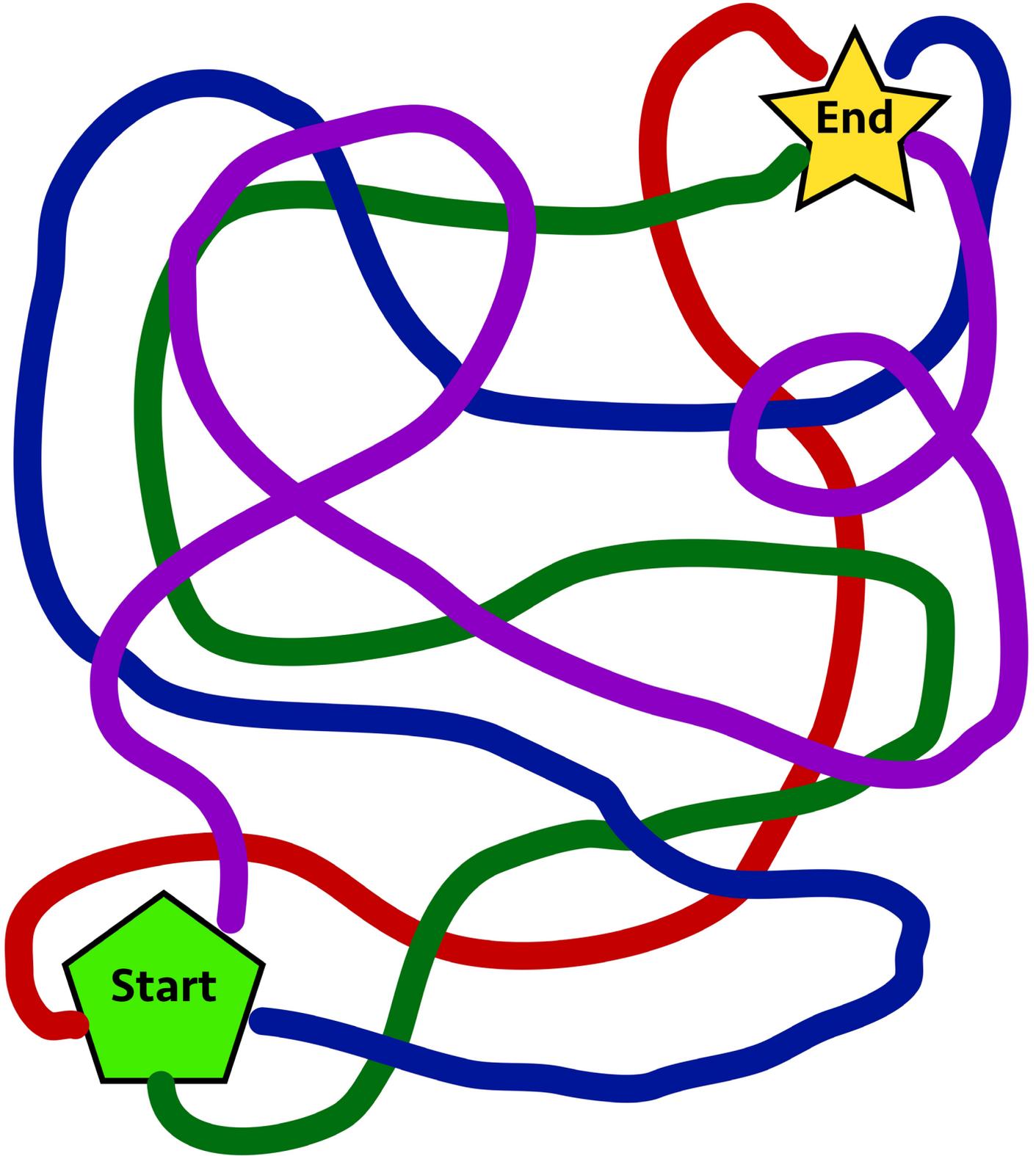
**Directions:**

Put a colored dot on each fingernail that matches the diagram. Start with the first maze. Have the child match their red index finger to the red path in the maze and slowly trace the path to the end. Each path should be traced slowly and take several seconds. Next trace the green path with the matching finger. After a child uses their dominant hand to solve all of the paths in the maze ask them to use their other hand.



Adapted from Gracia-Bafalluy, M., & Noël, M. P. (2008). Does finger training increase young children's numerical performance? *Cortex*, 44(4), 368-375.





Help Chezi the mouse find the cheese!



**You will need:**

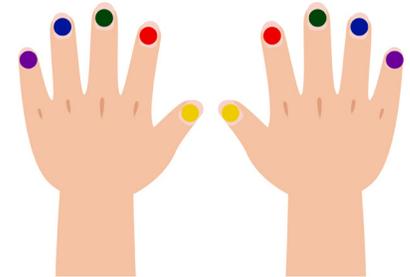
Spot On game board (in color)

Colored dots for each color on the Spot On game board: red, blue, green, purple, yellow

Spot On activities help children build finger differentiation, which is important for developing numerical understanding.

**Directions:**

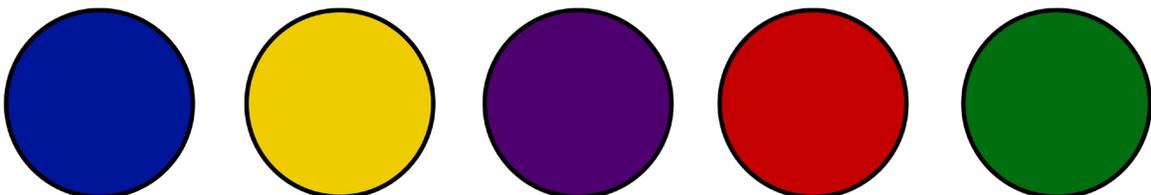
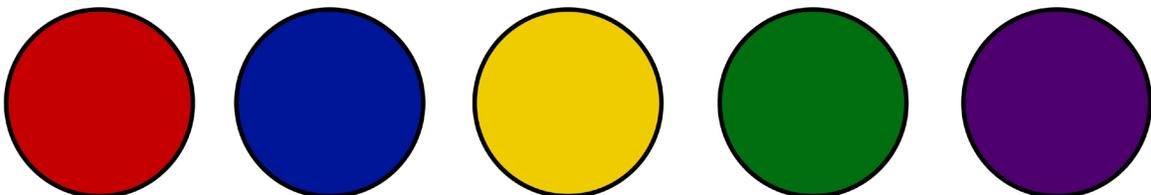
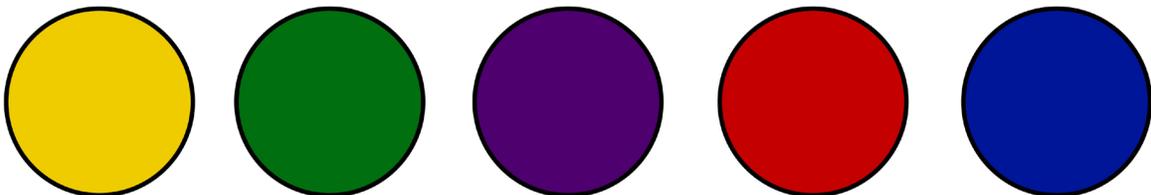
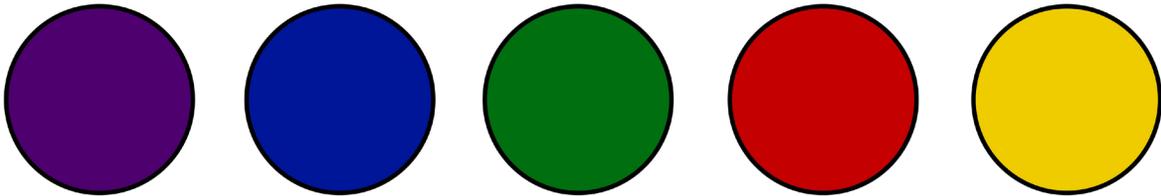
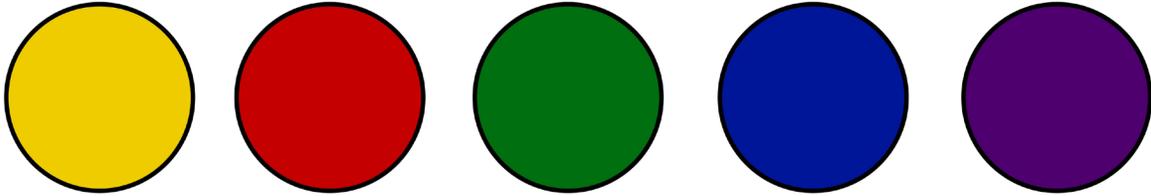
Put a colored dot on each fingernail that matches the diagram. Start with the first row of colored dots. Have the child use their dominant hand and match their corresponding finger to the first colored dot. They should move across the row putting down the finger that matches the dot in color. Make sure they hold their finger on the dot for a few seconds before they move on. After a child finishes each row using their dominant hand ask them to complete each row using their other hand.



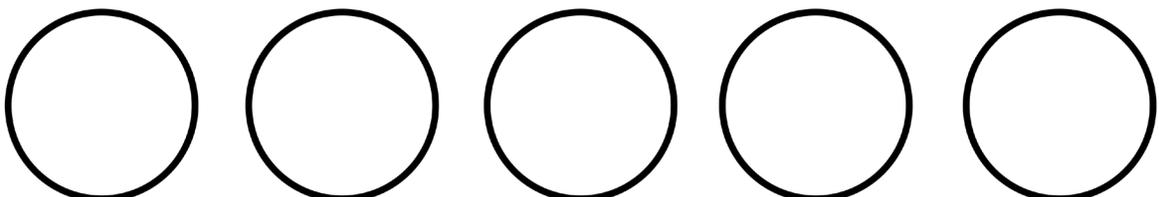
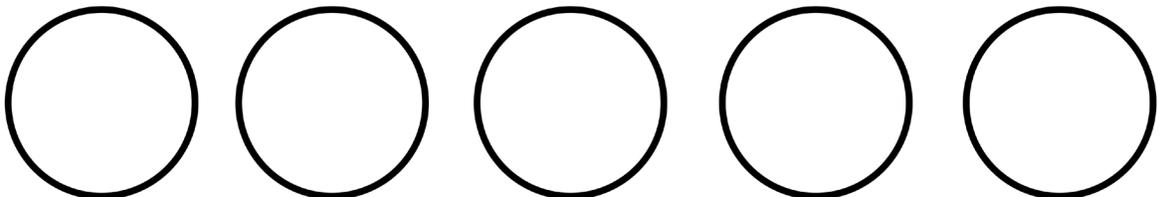
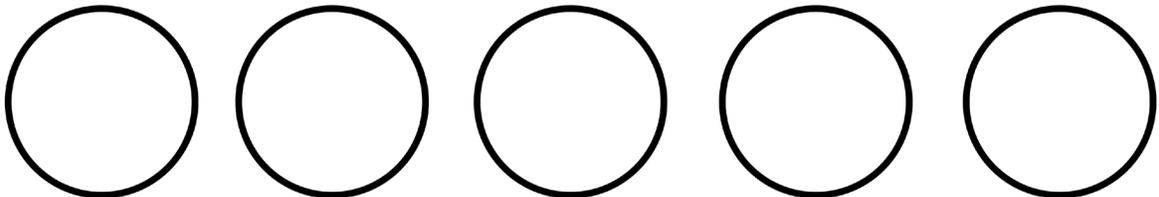
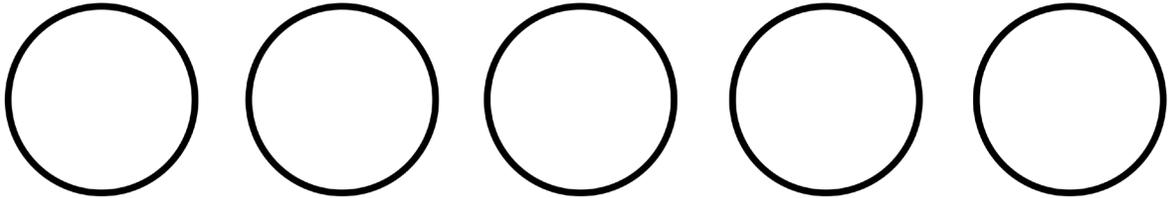
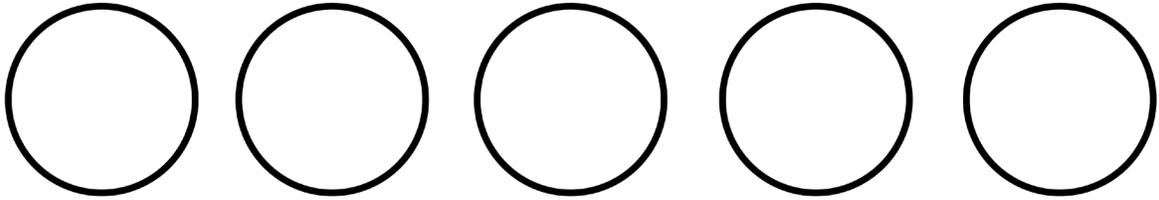
A blank page of spots is included so children can make their own patterns.

As an extension you could give fingers and spots numbers.

Adapted from Gracia-Bafalluy, M., & Noël, M. P. (2008). Does finger training increase young children's numerical performance? *Cortex*, 44(4), 368-375.



# Spot On!



**You will need:**

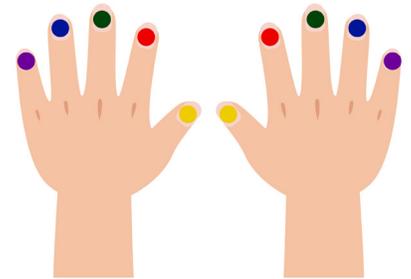
Rockin' the Piano Keyboard (in color)

Colored dots for each color on the keyboard: red, blue, green, purple, yellow

Rockin' the Piano activities help children build finger differentiation, which is important for developing numerical understanding.

**Directions:**

Put a colored dot on each fingernail that matches the diagram. Start with the first row of colored piano keys. The child should read the keys from left to right and touch the corresponding finger to the colored piano key. They should move across the row putting down the finger that matches the dot color starting with their left hand and then using their right hand. Make sure they hold their finger on the key for a few seconds before they move on. After a child finishes each row of keys see if they can alternate left right left right reading one dot from the left and then one dot from the right.

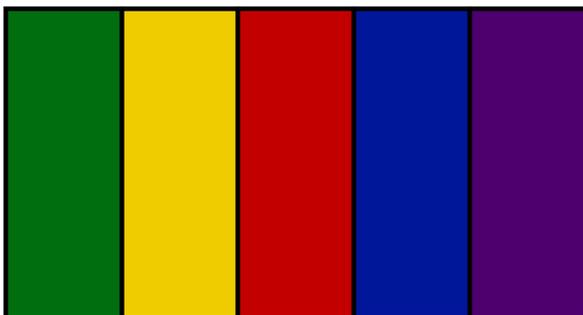
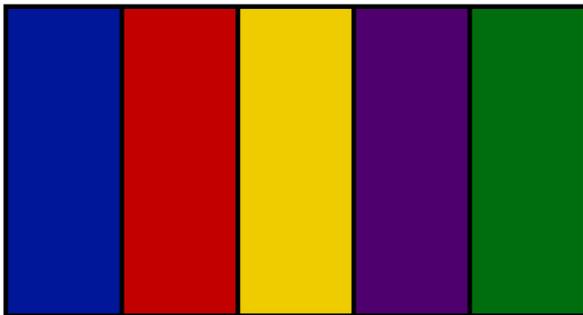
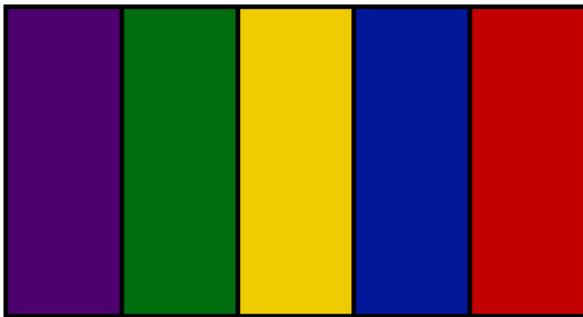
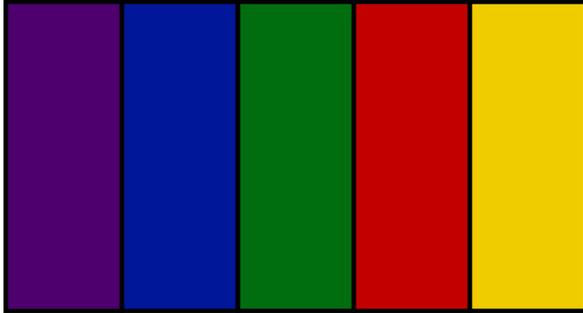


A blank page of keyboards is included so that children can make their own patterns.

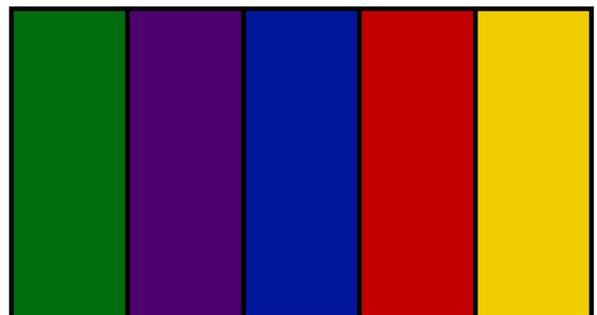
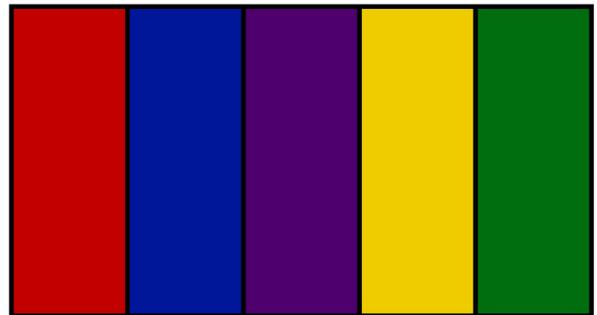
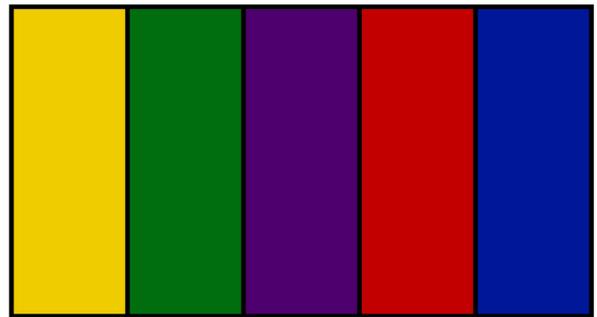
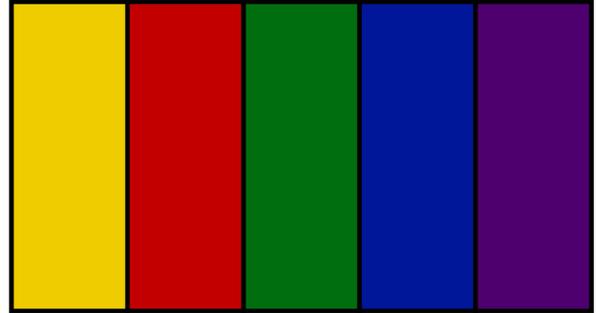
Adapted from Gracia-Bafalluy, M., & Noël, M. P. (2008). Does finger training increase young children's numerical performance? *Cortex*, 44(4), 368-375.

# Rockin' the Piano

Left Hand



Right Hand



Left Hand

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Right Hand

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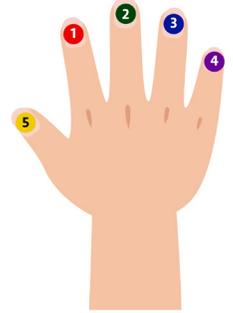
**You will need:**

1 die for each pair of students

Different colored dots to put on fingernails: red, blue, green, purple, yellow

**Directions:**

Write the numbers 1 - 5 on each of the colored dots: 1 red, 2 green, 3 blue, 4 purple, 5 yellow. If you are playing with two hands write the numbers on each dot: 6 red, 7 green, 8 blue, 9 purple, 10 yellow. Put the numbered colored dots on each fingernail to match the diagram.



**One hand play:** Decide who is going to be player 1 and player 2. Player 1 will roll first. Player 2 **closes their eyes** and holds out their hand in front of them like the diagram. Their palm should be facing down. Player 1 rolls the die. If player 1 rolls a 5 they touch player 2's 5 finger. The touch should be for a few seconds. Player 2 should say what finger is being touched. If player 2 is not correct player 1 should ask player 2 to open their eyes and see what was rolled on the die and determine which finger represents the die roll. Player 1 closes their eyes. Player 2 rolls the die. If player 2 rolls a 6 they should touch the palm of player 1's hand. Play continues for a few rounds.

**Modifications:**

- Play can be simplified using 5 or 10 sided dice.
- In two hand play using two dice a player can be asked to identify each dice roll by finger touch and then they can determine the sum of the dice.
- In two hand play using two dice a player can be asked to identify the sum of the dice and then determine all possible number rolls. For example, if a 6 was rolled the player would say the dice rolls could have been (1,5) (2,4), (3,3).

**You will need:**

- One Finger Money game board for each player
- Coins for each player: 4 quarters, 2 dimes, 2 nickels, 10 pennies
- 2 dice

**Directions:**

Assign coins to each finger as shown in the diagram. Players must use the designated finger to touch and drag each coin from their bank to the game board and back to the bank. If a player uses the wrong finger on a coin they lose their turn and take no money from their bank. For a greater challenge players may pick up their coins using the designated finger for each coin and their thumb.



To begin each player places their coins in the bank at the top of their game board.

Each player rolls the dice. The highest sum goes first.

Player 1 rolls the dice and finds the sum of the two numbers.

Player 1 takes an amount of coins representing the sum of the dice roll and places them in the appropriate coin boxes on their game board.

Players will have to trade up coins. For example, if player 1 rolls a 2 and 3 their sum is 5. They count out 5 pennies. Player 1 then trades for a nickel putting the 5 pennies back in their bank and taking a nickel using the correct finger. If player 1 rolled a 7, they could count out 5 pennies from their bank and then trade the pennies for a nickel before counting out the remaining two pennies to make 7.

Play continues until one player has reached one dollar in coins. A player may go over one dollar to win.

Bank	
Quarters	
Dimes	
Nickels	
Pennies	