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Count on Me

Grades 1-2

Introduction

We all use our fingers to count sometimes but do we all use them the same way? This activity gives students an opportunity to use their fingers for counting and explore the multiple ways of using fingers to count the same number. Research tells us that it is very important for students to develop 'finger discrimination' that is, for students to know their fingers really well. In this Atlantic article we share the importance of using fingers for the brain's development of numbers, see https://www.theatlantic.com/education/archive/2016/04/why-kids-should-use-their-fingers-in-math-class/478053/. Evidence from both behavioral and neuroscience studies shows that when people receive training on ways to perceive and represent their own fingers, they develop better representations of their fingers, which leads to higher mathematics achievement.

Video: *https://youcubed.org/weeks/week-3-grade-K/*

Agenda for the activity

Activity	Time	Description	Materials
Mindset Message	5 min	Play the mindset video, ***Speed is not Important,*** https://youcubed.org/weeks/week-3-grade-K/	• Mindset Video day 2, ***Speed is not Important***
Counting with Fingers		1. How do you use your fingers on one hand (or two hands) to count to 5? 2. What are all the different ways of counting three on two hands?	Document camera Handout on pg 4 and 5
Counting Piano keys		1. Number your fingers 1-10 2. Play the corresponding keys with your figures. 3. Discuss which key combination(s) students found the most challenging.	Handout on pg 6
Debrief Mindset Message	5 min		

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Activity

Fingers are the most important representation for counting. We want to do finger activities when students are learning to count to develop finger perception as students learn to understand number as a quantity. This activity offers space for students to develop their finger discrimination because it is about exploring the different ways they can use different fingers to count.

One of the many messages you might attach to this activity is that; mathematicians know there are multiple ways of approaching problems. Making time for students to experience this early in the year will help them to define mathematics as an open and creative subject.

Start by inviting students to share how they count five using one or two hands, you can leave this open for students to decide or you can decide how many hands they use. You might consider having partners share with each other how they count to five. Then invite volunteers to share with the whole class. Continue to take ways of counting until there are no more different methods to share. Give lots of time for sharing so students know there are many ways to count five. Record the different methods shared. You might use the hand diagram on pg 4 to record the different ways of counting five.

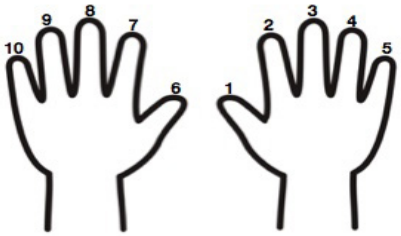
Next ask student pairs to explore the different ways of counting three (or another number of your choice) on their fingers using one or two hands with their partner. If students use two hands this activity will give students an experience that communicates how open and creative mathematics is. Give partners lots of time to explore. You might give each student the handout on pg 5 so they can record all of the different ways of counting three with fingers. Put several copies of the handout on the table so students can record as much as they need when exploring.

Once partners have explored several different ways of counting three bring the class together and ask how many different ways they counted three. Record the number of ways shared by each student, then ask volunteers to share the different ways they counted and record. Invite students to continue sharing until all of the ways students thought up are shared.

Close the exploration of this activity giving a message about how creative and open mathematics and counting are.

Move students on to the next finger activity. Share with them that the more they do to connect fingers and thinking about movement and numbers they will understand mathematics more deeply because fingers are our first representation of number. To get started have students label their fingers with numbers. You might choose to tell students how to number or leave it open for

them to decide. If you tell students how you want them to number their fingers, let them know it's just for this activity and not the way they have to count on their fingers. When learning piano some teachers have students number there fingers like the hands pictured on the right.



Share with them that they will play the piano keys using the corresponding finger that matches the number on the piano keys. Tell them they will use their fingers to move across the row putting down and holding their finger on the key that matches the number on the piano keys. After they have held their finger on the key they can pick it up and move on to the next finger and key. Distribute the handout on pg 6. Give students plenty of time to play with the piano keys.

Close with a discussion about which piano keys they found the most challenging to play. Ask for volunteers to share why they thought it was challenging and if they have any ideas about why.

Extensions

- Which number from 1-10 will have the most ways of counting using two hands? Which number will have the least ways for counting using two hands?
- What is the most common way of counting three with fingers? What is the least common way of counting three with fingers?

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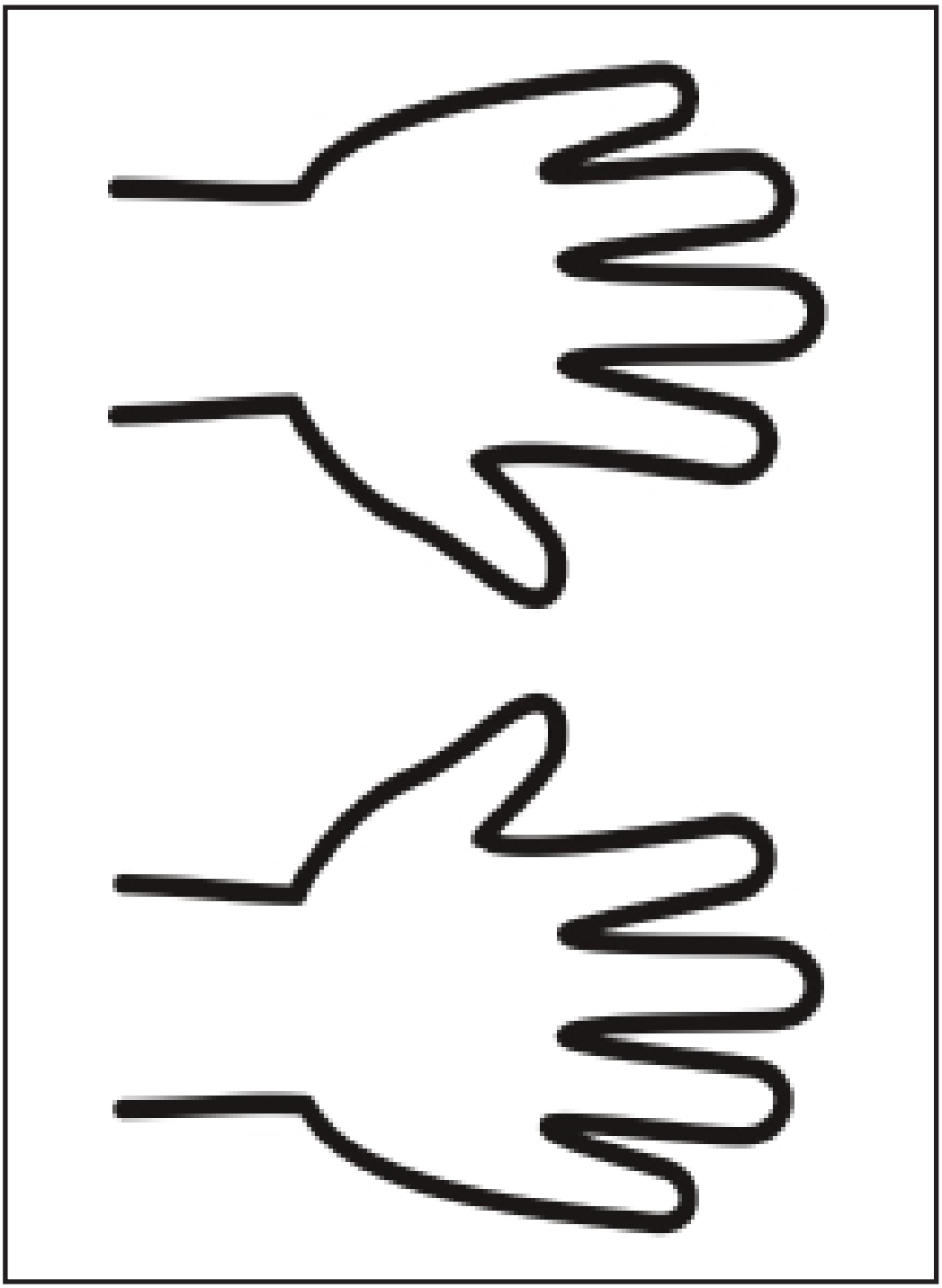
Handout



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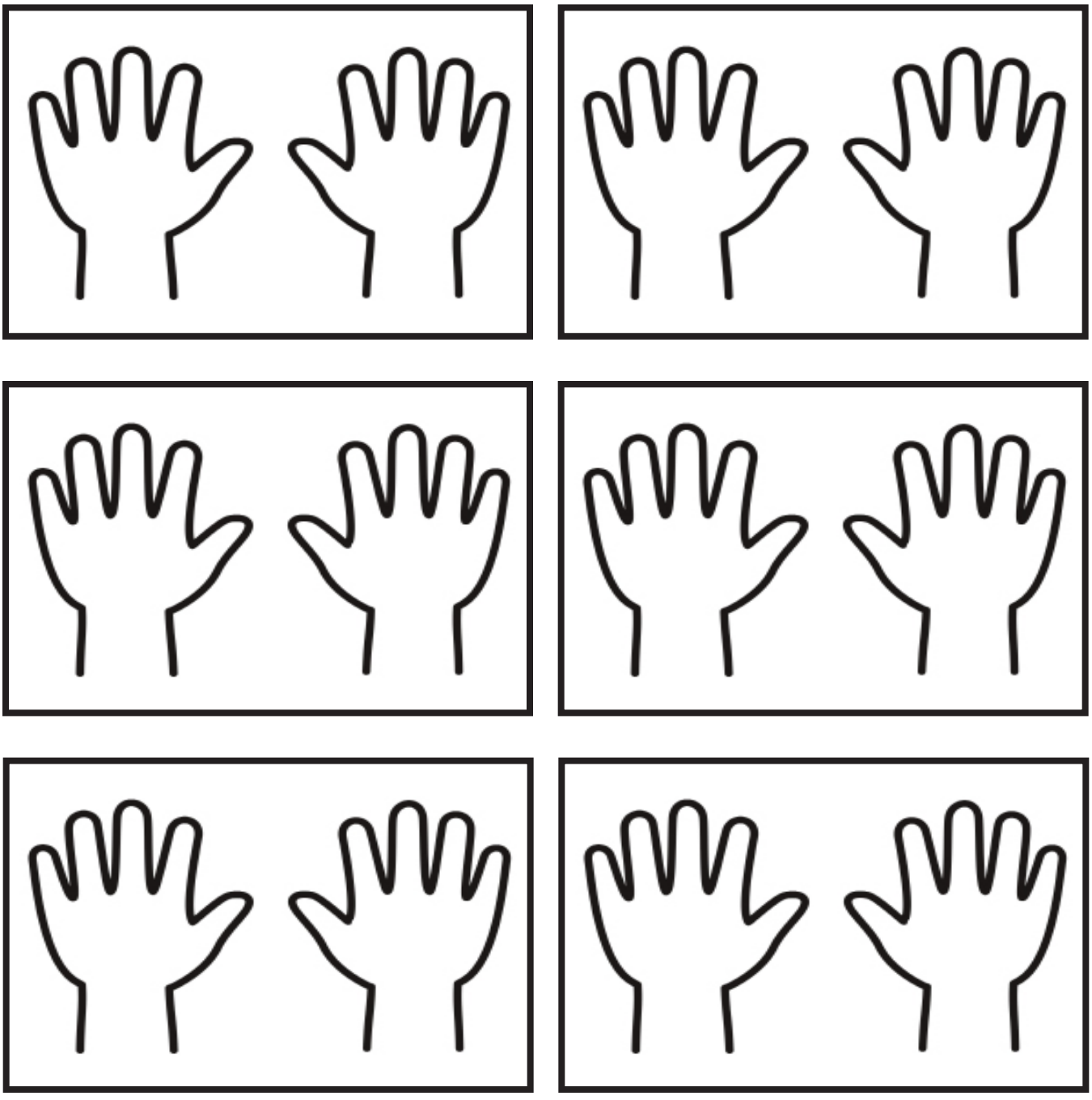
Count on Me
Handout



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Piano Keys
Handout

Play the piano keys with the corresponding fingers.

Left					Right				
10	9	8	7	6	1	2	3	4	5
10	8	6	8	10	1	3	5	2	4
10	10	8	7	6	5	5	3	2	1
8	7	6	10	9	1	2	3	1	2