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Placing Chips
Grade 1-2

Introduction

In this activity students explore place value and number relationships. Students build arrangements to make different quantities using representations for 10's and 1's. They are introduced to constraints, which are an important idea in maths. You can think of a constraint like a rule. Students will build numbers considering the constraints given for how they can place their markers in the place value bins.

Agenda

Activity	Time	Description/Prompt	Materials
Mindset Message	10 min	Share the messages from the mindset video.	Mindset Video
Introduce	10 min	• Display the handout and model the activity with the number 22 (placing 2 chips on the tens and 2 on the ones). • Display the hundreds chart to show the number sentence 10+10+1+1=22. • Encourage students to make a different number using the 4 counters. • Repeat the process so students see the representation on the hundred chart, see the written number sentence, and see how to record their data.	• Recording sheet to display • 4 colored counters. We use round bingo chips, which will fit in the boxes of the hundred chart. • Hundred Chart • Colored pencils or markers
Explore	25 min	• Invite students to explore the quantities they can make using five counters and beyond. • How many different numbers can you make? • Complete the recording sheet showing how many numbers you found with the given number of sheets. • What is the largest number you can make? • What is the smallest number you can make? • Record the numbers made on your hundred chart. What patterns do see?	• Recording sheets (one for each number the group explores) • Up to 10 colored counters for each group. • Hundred Chart (one for each number the group explores) • Colored pencils or markers

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Agenda continued

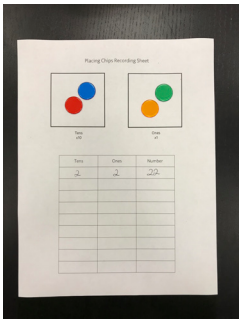
Activity	Time	Description/Prompt	Materials
Discuss	10 min	• What patterns did they find in making different numbers? • What will happen if they have more than 10 chips?	
Debrief Mindset Message	5 min	Debrief the mindset messages for this activity.	

Activity

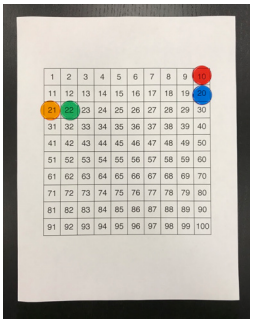
Watch the mindset video before class. See if there are any clips from the video you want to share with your class. At the beginning of class share the mindset messages from the video with your students.

Tell students in this activity they will be making numbers placing the chips in place value bins but with the following constraints:

1. For each number at least one marker must be placed in the tens and one marker in the ones places.
2. You must place all the counters you have to make each number.



Display the recording sheet with the class. Put two chips in the tens' area and two chips in the ones' area. Ask students to name the number you have made. Collect all possible answers as you would in a number talk. Ask students to share their justification for one of the answers that has been given. After students have shared their justifications show the hundred chart and place the counters in order by putting the first 10 chip on the 10 in the hundreds chart, the second 10 on 20, the first one on 21, the second one on 22, showing 10 + 10 + 1 + 1 = 22. Consider writing this expression on the board for students to see. Color the 22 box on the hundred chart to shows 22 has been made. Record the number of chips in each bin and the found in the data table on the bottom of the recording sheet.



Ask students to make a different number using 4 chips and the rules of the game. Show the hundred chart values and record their numbers in the table. When students say they have found them all ask if they see any patterns in the numbers they have colored in on the hundred chart. Ask if they see any patterns in the table where they have recorded their numbers.

Invite students to sit in groups and explore the quantities that can be represented using five chips. Once they have studied and recorded the numbers with 5 chips,

encourage students to choose another number of chips and find all the numbers they can in this same way, and continue to record on the hundred chart. We recommend giving students up to 10 chips. Encourage students to color code to show what numbers are recorded in the hundred chart with the different number of chips.

When students have had enough time exploring what numbers they can make invite them to share with the class the patterns they have found in making different numbers and what they wonder about them. Ask them what they think will happen if they have more than 10 chips, and encourage them to make conjectures about it. How do they know?

Extensions

- How many different numbers can you find using 15 counters?
- What happens if you take away one of the rules of the game?
- What happens if you do not have any rules?

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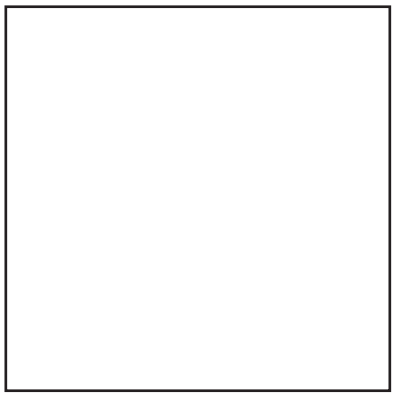
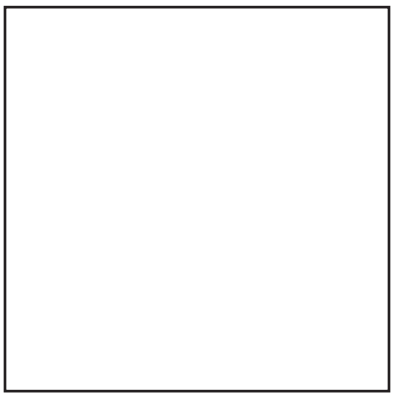
Placing Chips
Recording Sheet



Tens
x10



Ones
x1

Tens	Ones	Number

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Hundred Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100