

CONSTRUCTING TASK: Number Hotel

MATHEMATICS • GRADE 1 • UNIT 2: Developing Base Ten Numb

Georgia Department of Education

Dr. John D. Barge, State School Superintendent

May 2012 • Page **39** of **64**

All Rights Reserved



Approximately 2 days Adapted from www.thinkmath.edc.org

STANDARDS FOR MATHEMATICAL CONTENT

MCC1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

MCC1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

On a conventional 0-99 and hundred chart, each row below the previous is greater than the one above. It can be conceptually hard for many children to understand that when you move down, the numbers actually get bigger. Using the *Number Hotel* will allow students to make the connection that as the height of the hotel increases so do the numbers in general.

ESSENTIAL QUESTIONS

- What are math tools and how can they help me make sense of numbers and counting?
- What do the numerals represent in a two or three digit number?
- What is an effective way of counting a large quantity of objects?
- What patterns can be found on the 0-99 chart?

MATERIALS

- Number Hotel game board
- Arrow cards
- Counters to use on the game board

GROUPING

Large Group

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part I

Gather the students together to compare and analyze the Number Hotel and the 0-99 Chart. Have the students participate in a class discussion which includes reviewing and finding new patterns. Ask questions, rather than pointing out the differences, to prompt students to explain their discoveries of the Number Hotel, such as:

- *What differences do you notice between the Number Hotel and the 0-99 Chart?*
- *In what ways are they the same?*
- *What strategies might you need to know in order to use the Number Hotel?*

Part II

Pair the students into partner groups to play *Let Me Out* using the Number Hotel game board.

To Play: There are two exits out of the Number Hotel. The students must exit the hotel through the 0 door or the 119 door. Each player will place a counter on numeral 50 on their own game board. Using the stack of arrow cards, players will turn over five arrow cards each. The arrow cards can be arranged in any order for the player to find the quickest way to get out of the building. Each arrow represents one move on the Number Hotel game board. Players may move up, down, left or right. Once the players have moved five spaces, they may turn over five more arrow cards. Play stops and the player closest to their door wins.

Part III

Revisit the task, *Exploring the 99 Chart*, from the previous unit and incorporate some of the activities mentioned in the task. In particular, *Special Numbers* and *What's My Picture?*

For *Special Numbers*, have the students pair up and cover three numbers special to them (ex.: birthday, address, numbers in their phone number) and have their partner guess the player's numbers.

For *What's My Picture*, have students pair up and cover numbers to create a picture using counters. Player one then calls out the numbers to a partner. The partner uses those numbers to recreate the picture made by player one. Then the player's roles are reversed, giving each player a chance to recreate a picture.

Part IV

Georgia Department of Education

Common Core Georgia Performance Standards Framework

First Grade Mathematics • Unit 2

Gather the students together for a class discussion about what was learned from the *Number Hotel*. Have the students reflect on any connections they have made between the 0-99 chart and the Number Hotel. Have the students record what they learned in their math journals.

FORMATIVE ASSESSMENT QUESTIONS

- How is the Number Hotel different from the 0-99 chart?
- How is the Number Hotel the same as the 0-99 chart?
- What new patterns did you find in the Number Hotel?
- Does the order of the arrows change where you would end up?
- What strategy did you use to make it as close as you could to the door?
- What would you do differently if you could play again?
- What special numbers did you cover up? Why?
- What picture did you make with your counters?
- What did you find difficult while working to recreate a picture from your partner?

DIFFERENTIATION

Extension

- Have the students continue playing *Let Me Out* until they have reached the exit.
- Instead of recording arrows at the bottom of the recording sheet, have the students record the numerical representation of what they need to do to exit the building. (Example: if the counter is at 77 they would need to move +10, +10, +1, +1. Or, if the counter was at 22, they would need to record -10, -10, -1, -1.

Intervention

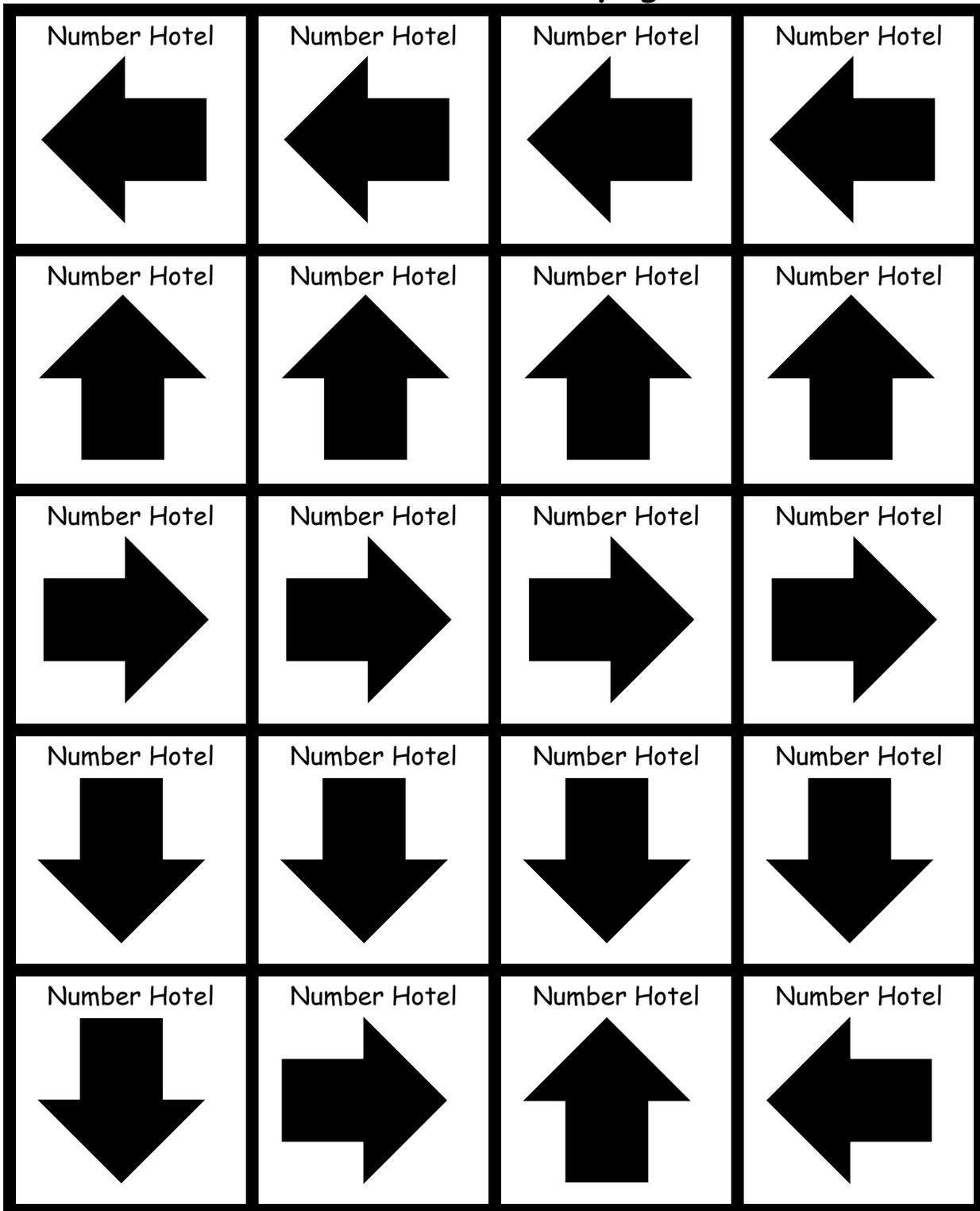
- Have the students use the 0-99 chart to play *Let Me Out*.
- In *What's My Picture*, give the students an outline of a picture such as a flower to replicate.



Number Hotel

110	111	112	113	114	115	116	117	118	119
100	101	102	103	104	105	106	107	108	109
90	91	92	93	94	95	96	97	98	99
80	81	82	83	84	85	86	87	88	89
70	71	72	73	74	75	76	77	78	79
60	61	62	63	64	65	66	67	68	69
50	51	52	53	54	55	56	57	58	59
40	41	42	43	44	45	46	47	48	49
30	31	32	33	34	35	36	37	38	39
20	21	22	23	24	25	26	27	28	29
10	11	12	13	14	15	16	17	18	19
0	1	2	3	4	5	6	7	8	9

Number Hotel Playing Cards





Number Hotel

Name: _____

Each player places a counter on the numeral 50. Player 1 takes the top five arrow cards from the pile and records the moves they made. Players keep track of their moves on the task sheet by recording where they moved to after each card and the move they had to make to get there. After both players have had 2 turns taking the top five arrow cards, they identify which arrows they still need to get out of the hotel.

Direction +1, -1, +10, -10	Room Number
Start	50

1
2
3
4
5
6
7
8
9
10

Direction +1, -1, +10, -10	Room Number
Start	50

Draw the arrows you need to get out

--	--	--	--	--

Draw the arrows you need to get out

--	--	--	--	--