

THREE-DIGIT PLACE VALUE.

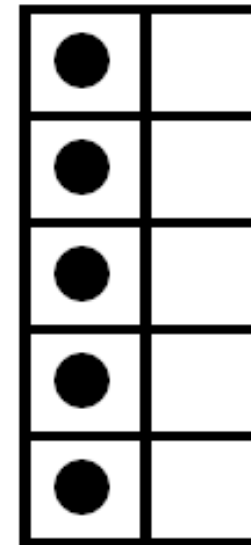
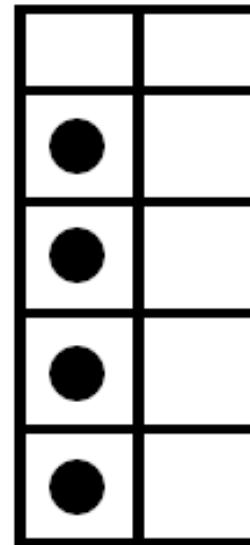
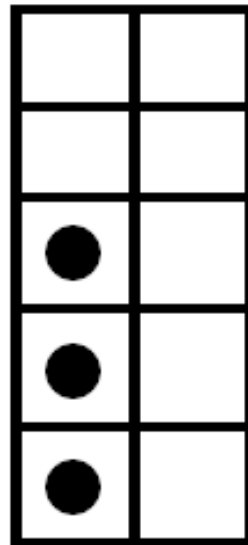
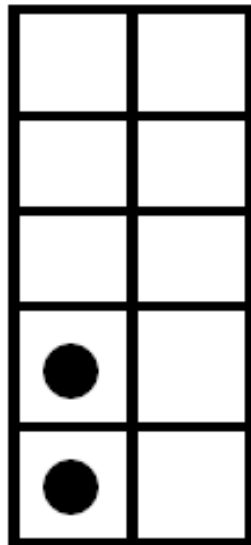
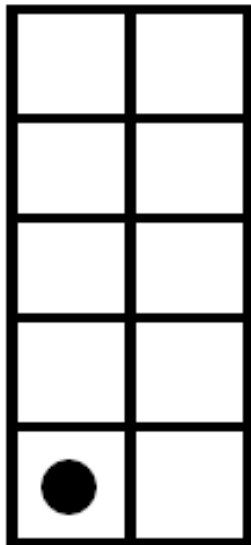
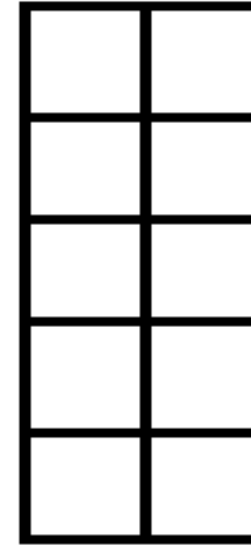
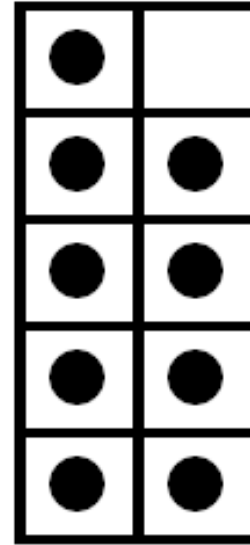
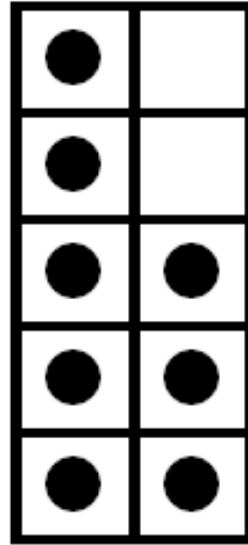
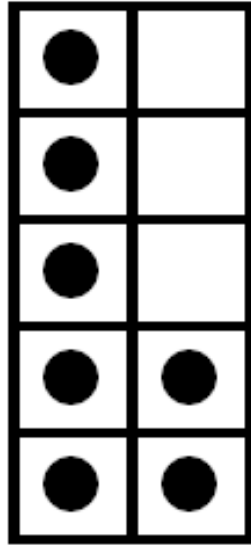
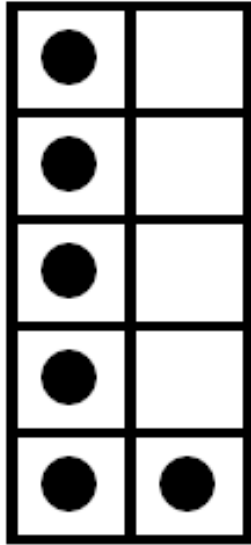
INVESTIGATIONS OVERVIEW PAGE

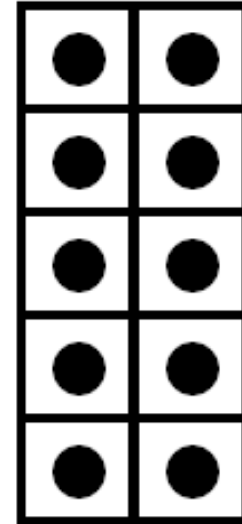
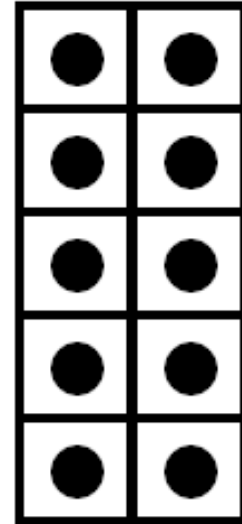
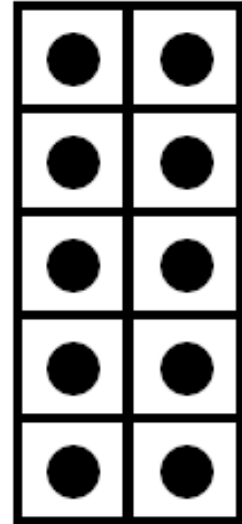
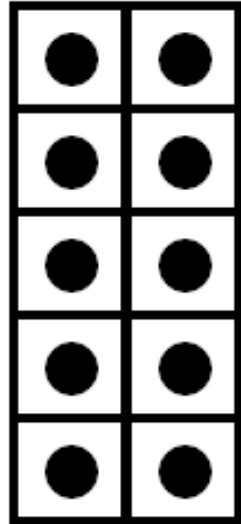
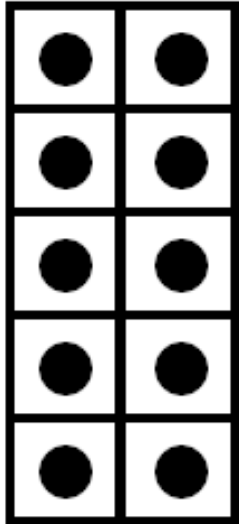
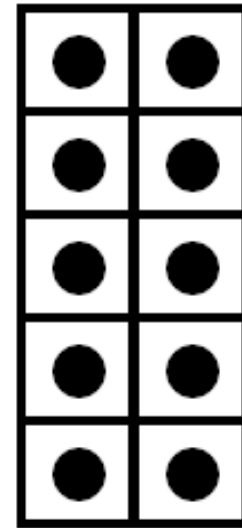
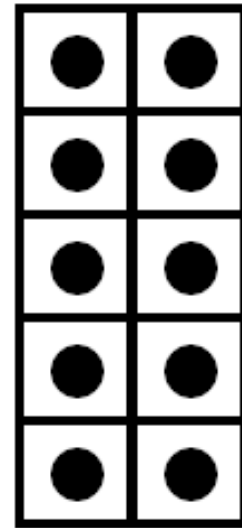
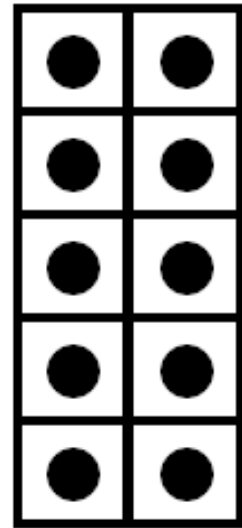
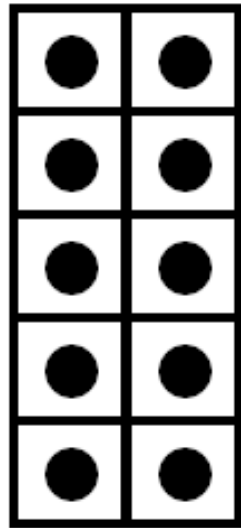
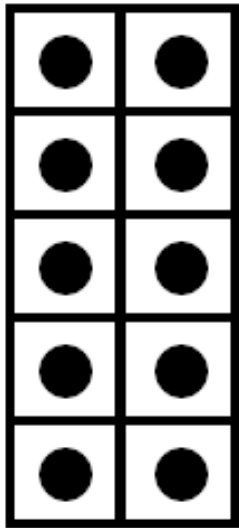
THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

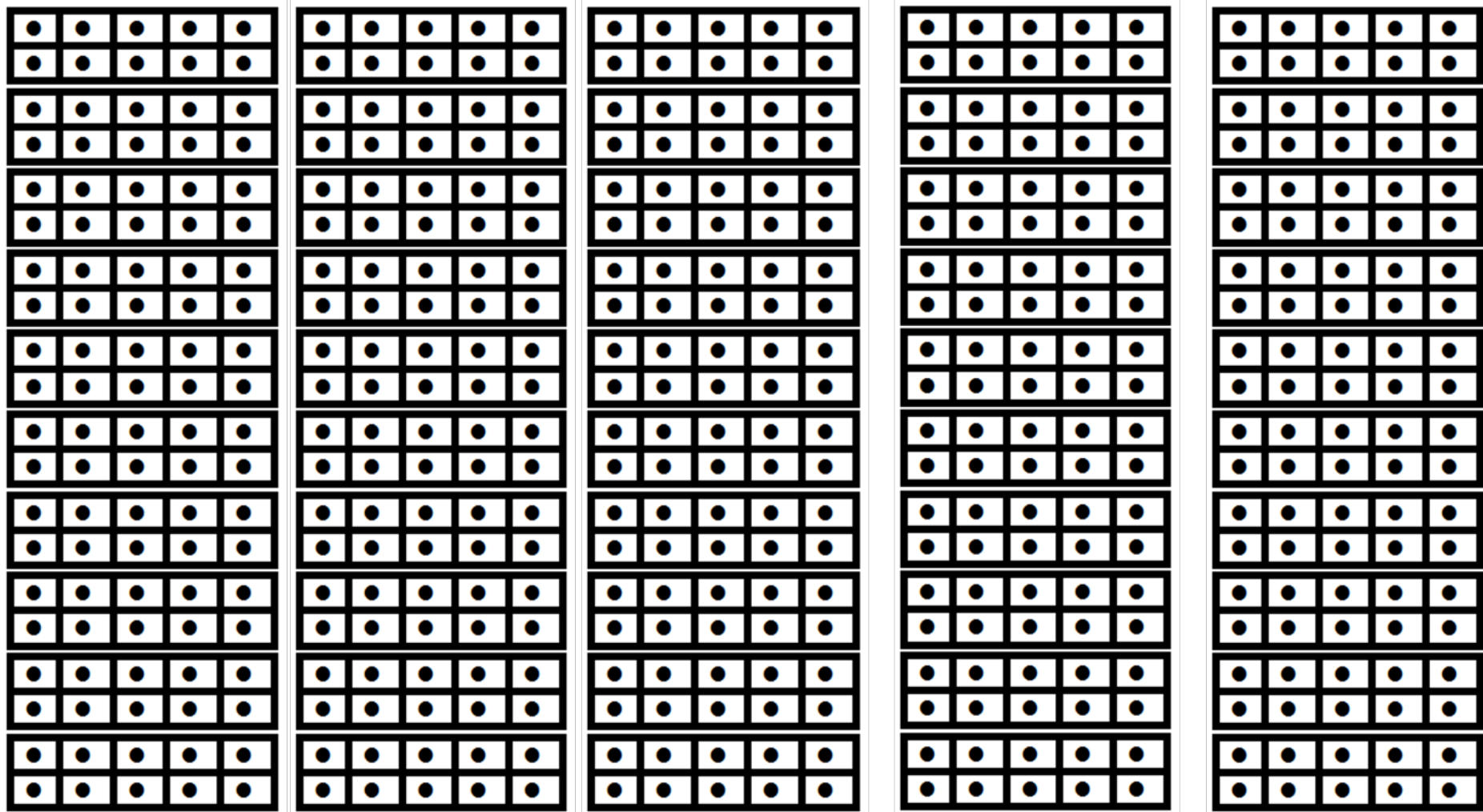
- In pairs, children take turns to take a card and place it in either the ones place or the tens place or the hundreds place. Once placed it cannot be changed. Children read their number out loud and explain their number using standard place value. They each place their number on the same number line, explaining their placements. The child who creates the highest / lowest number takes all cards. *Reflection: How can we see 100 as 1 hundred and as 10 tens and as 100 ones?*
- In pairs, three cards are selected to be a target number. Each child flips 3 cards to make a three-digit number. The child who makes a number closest to the target number wins. *Reflection: How can we describe three-digit numbers using place value?*
- In pairs, children have a calculator. One child enters a three-digit number. The other child 'wipes out' the hundreds, tens or ones digit by subtracting the number of hundreds, tens or ones. *Reflection: How can we describe three-digit numbers using place value?*
- In pairs, each child is dealt 12 cards to make 4 three-digit numbers and place them in a row. The remaining cards are placed face down in a pile. In turns, children select 3 cards from the pile and make a three-digit number to replace one of their three-digit numbers. The child player to have their four three-digit numbers in ascending (or descending) order is the winner. *Reflection: How can we partition three-digit numbers using standard, non-standard and non-place value?*
- Children play 'guess my three-digit number'. One child records and hides a three-digit number. As the other children guess the child tells them whether the number is higher or lower. *Reflection: How can use place value to order three-digit numbers?*
- In pairs, children select 3 cards. They make the largest possible three-digit number, the second largest possible three-digit number, the third largest possible three-digit number, the smallest possible three-digit number, the second smallest possible three-digit number, the third smallest possible three-digit number, *Reflection: How can use place value to order three-digit numbers?*
- In pairs, children select a page from a hundred chart. Children cut up a hundred chart in a specified hundred into rows or columns or into random pieces. They use their understanding of three-digit numbers to put it back together. *Reflection: How did we use place value to put the hundred chart together?*

As they develop their understanding of Three-digit Place Value, children will apply their understanding to add and subtract tens and two-digit numbers.

small 10 frames (3 pages)







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

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

201	202	203	204	205	206	207	208	209	220
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221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
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261	262	263	264	265	266	267	268	269	270
2712	272	273	274	275	276	277	278	279	280
2812	282	283	284	285	286	287	288	289	290
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691	692	693	694	695	696	697	698	699	700

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711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730
731	732	733	734	735	736	737	738	739	740
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761	762	763	764	765	766	767	768	769	770
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791	792	793	794	795	796	797	798	799	800

801	802	803	804	805	806	807	808	809	880
811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830
831	832	833	834	835	836	837	838	839	840
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861	862	863	864	865	866	867	868	869	870
871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890
891	892	893	894	895	896	897	898	899	900

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911	912	913	914	915	916	917	918	919	920
921	922	923	924	925	926	927	928	929	930
931	932	933	934	935	936	937	938	939	940
941	942	943	944	945	946	947	948	949	950
951	952	953	954	955	956	957	958	959	960
961	962	963	964	965	966	967	968	969	970
971	972	973	974	975	976	977	978	979	980
981	982	983	984	985	986	987	988	989	990
991	992	993	994	995	996	997	998	999	1000

Three-digit Place Value.

Sit with a friend.

Have a 100 small 10 frame, for example,

Record a place value chart with ones, tens and hundreds.

How many hundreds do you see?

How many tens do you see?

How many ones do you see?



Reflection: How can we see 100 as 1 hundred and as 10 tens and as 100 ones?

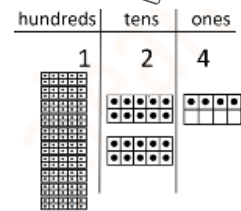
Three-digit Place Value

Make a three-digit number with cards.



Make the three-digit number with small 10 frames.

Record the number in a place value chart



Describe your number using standard place value.

Describe your number using non-standard place value in up to 4 ways.

$$124 = 1 \text{ hundred} + 2 \text{ tens} + 4 \text{ ones}$$

$$124 = 12 \text{ tens} + 4 \text{ ones}$$

$$124 = 124 \text{ ones}$$

$$124 = 11 \text{ tens} + 14 \text{ ones}$$

$$124 = 10 \text{ tens} + 24 \text{ ones}$$

$$124 = 9 \text{ tens} + 34 \text{ ones}$$

$$124 = 4 \text{ tens} + 84 \text{ ones}$$

Reflection: How can we describe three-digit numbers using place value?

Three-digit Place Value

Make a three-digit number with cards.



Record the number in a place value chart

hundreds	tens	ones
3	6	5

Describe your number using standard place value.

Describe your number using non-standard place value in up to 4 ways.

$$365 = 3 \text{ hundreds} + 6 \text{ tens} + 5 \text{ ones}$$

$$365 = 36 \text{ tens} + 5 \text{ ones}$$

$$365 = 365 \text{ ones}$$

$$365 = 1 \text{ hundred} + 26 \text{ tens} + 5 \text{ ones}$$

$$365 = 1 \text{ hundred} + 21 \text{ tens} + 55 \text{ ones}$$

Reflection: How can we describe three-digit numbers using place value?

Three-digit Place Value

Select cards to make a three-digit number.

Partition your number, using non-place value, standard and non-standard place value.

Reflection: How can we partition three-digit numbers using standard, non-standard and non-place value?

Three-digit Place Value

Select cards to make a three-digit number.

Record the number on an open empty number line.

Record the number before and after on the number line.

Reflection: How can we use place value to order numbers?

Three-digit Place Value

Select cards to make a three-digit number.

Record the number on an open empty number line.

Record the number 10 before and 10 after on the number line.

Reflection: How can we use place value to order numbers?

Three-digit Place Value

Select cards to make three-digit numbers.

Record the numbers in order on an open empty number line.

Record numbers that come between your numbers.

Reflection: How can we use place value to order numbers?

Three-digit Place Value

Sit with a friend.

Each of you record a place value chart with ones, tens and hundreds.

Take turns to take 1 card and place it in either the ones place or the tens place or the hundreds place.

Once placed it cannot be changed.

Read your number out loud and explain your number using standard place value as you place out each card.

Each of you place your complete three-digit number on the same number line, explaining your placements.

The child who created the highest / lowest number takes all cards.

Reflection: How did you use place value to decide what value to give each digit?

Three-digit Place Value

Sit with a friend.

Select 3 cards to make a three-digit target number.

Each person flips 3 cards.

The child who makes the number closest to the target number wins.

Reflection: How did you use place value to arrange your cards to make the number closest to the target number?

Three-digit Place Value

Enter a three-digit number into a calculator.

Wipe out the tens digit.

Enter a three-digit number into a calculator.

Wipe out the hundreds digit.

Enter a three-digit number into a calculator.

Wipe out the ones digit.

Reflection: How did you use place value to wipe out each digit?

Three-digit Place Value

Sit with a friend.

Flip 12 cards to make 4 three-digit numbers.

Place the numbers in a row.

Place the remaining cards face down in a pile.

Take turns to select 3 cards from the pile.

Make a three-digit number to replace one of your three-digit numbers.

The child player to have their four three-digit numbers in ascending (or descending) order is the winner.

Reflection: How did you use place value to place your numbers in order?

Three-digit Place Value

Sit with friends.

Play 'guess my three-digit number'.

One of you records and hides a three-digit number.

As the other children guess, tell them whether your number is higher or lower.

Reflection: How did you use place value to guess the number?

Three-digit Place Value

Select 3 cards.

Make the largest possible three-digit number.

Make the second largest possible three-digit number.

Make the third largest possible three-digit number.

Make the smallest possible three-digit number.

Make the second smallest possible three-digit number.

Make the third smallest possible three-digit number.

Reflection: How did you use place value to make the numbers?

Three-digit Place Value

Select a page from a hundred chart.

Cut up the hundred chart page into rows or columns or into random pieces.

Use your understanding of three-digit numbers to put it back together.

Reflection: How did we use place value to put the hundred chart together?