Number and Place Value: Number Comparisons

Aim:	**Success Criteria:**	**Resources:**
Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. To order and compare numbers to at least 1 000 000.	I can determine the value of each digit in numbers up to 1 000 000. I can use visual and abstract methods to compare numbers. I can choose a suitable method to compare numbers in a range of mathematical contexts.	Lesson Pack Box – one per group, if not using the Popcorn Box Net
	Key/New Words: Place value, number, digit, greater than, less than, order, compare, partition.	**Preparation:** Popcorn Box Net – one per child/pair Popcorn Number Cards – one per group of three, cut out and screwed up into a ball to look like popcorn, and placed into the Popcorn Box or a different, suitable box Popcorn Symbol Cards – one per group of three, cut out and screwed up into a ball to look like popcorn, and placed into the Popcorn Box or a different, suitable box Diving into Mastery sheets – as required

Prior Learning:	It will be helpful if children have covered reading and writing numbers up to at least 1 000 000, and identifying the value of each digit. Click here for lessons that cover this.

Learning Sequence

	Remember it: Using the Lesson Presentation, subtract digits provided from numbers up to 1 000 000. Discuss methods of calculation and final answers.	
	Numbers in Words: Children solve the calculations shown on the Lesson Presentation on their whiteboards. Can children solve the calculations using written and visual methods?	
	Greater Than and Less Than: Introduce the use of the greater than and less than symbols to compare numbers, referring to the examples shown on the Lesson Presentation. Explain how the wider side of the symbol opens out towards to bigger number, using the diagram on the Lesson Presentation. Click to identify the meaning of the symbol. Can children solve the calculations using written and visual methods?	
	Symbol Selection: Children select the correct symbol to complete each number sentence. Choose children to click on a symbol for each number sentence. If they choose correctly, the symbol will turn green. Can children use the greater than, less than and equals symbols to compare numbers? Can children recognise which digit in a number they should look at first when comparing numbers?	
	Popcorn Comparisons: Put children into groups of three, where possible. Give each group their Popcorn Box (if using) filled with the screwed up Popcorn Number Cards and the Popcorn Symbol Cards. Each group member takes a Popcorn Card. Each group should have two white cards and one yellow card. Groups assemble their cards to create an accurate inequality. Repeat with the remaining Popcorn Cards in the box. You may wish to photograph children's work or they could record their calculations in their books. Can children use the correct mathematical symbols when comparing numbers?	

Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Children use concrete and pictorial resources (including place value counters and place value grids) to compare numbers as digits or written in words. They compare numbers using the correct mathematical symbols.

Children answer a range of reasoning and problem solving questions using concrete, pictorial and abstract representations. They use the correct mathematical symbols to compare numbers, justifying their responses with reasoning and examples.

Children answer problem solving questions that have a wide variety of potential solutions. Using the mastery approach, children find all potential solutions to a given problem, justifying their reasoning with evidence and explanation where necessary.

Destroy the Digits: Using the Lesson Presentation, children decide which digits need to be destroyed to make the calculation correct.

ExploreIt

RollIt: Children work in pairs and take turns to roll a four-digit, five-digit or six-digit number. Children compare their numbers using the greater than or less than symbols.

CompareIt: Use these differentiated Order and Compare Numbers Mastery Activity Sheets to master ordering and comparing numbers.

LearnIt: Children will find this visually exciting Knowledge Organiser a useful tool for learning how to compare numbers up to 1 000 000.

Maths

Number and Place Value

Compare Numbers to 1 000 000

Aim

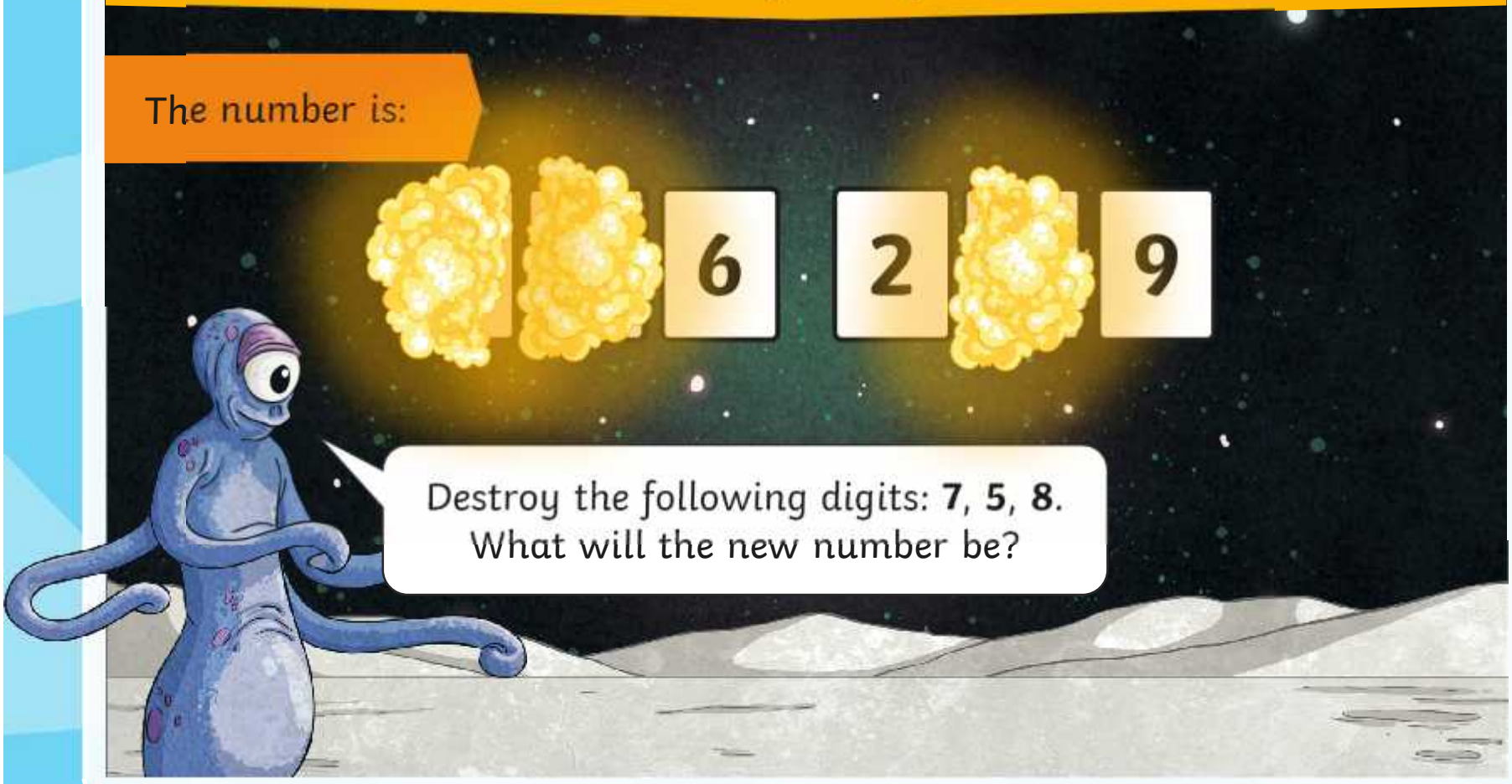
- To compare numbers to at least 1 000 000.

Success Criteria

- I can determine the value of each digit in numbers up to 1 000 000.
- I can use visual and abstract methods to compare numbers.
- I can choose a suitable method to compare numbers in a range of mathematical contexts.

Remember It

Destroy the Digits



Remember It

Which number is ten more than seven thousand and six?

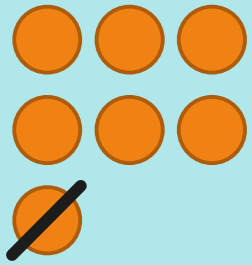
Ten Thousands	Thousands	Hundreds	Tens	Ones
	●●● ●●● ●		●	●●● ●●●

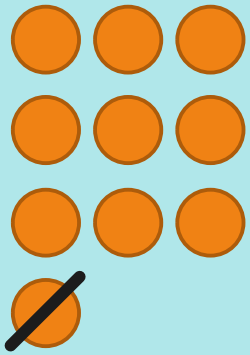
7016

Remember It

Which number is one hundred less than seven thousand?

Ten Thousands	Thousands	Hundreds	Tens	Ones





6900

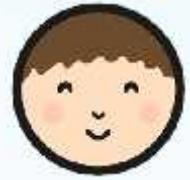
Numbers in Words

Which number is ten less than ten thousand?

Give your answer in words and digits.

Nine thousand, nine hundred and ninety or 9990.

Numbers in Words

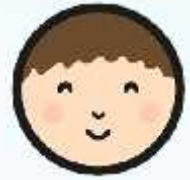


What is one hundred more than one hundred thousand?

Give your answer in words and digits.

One hundred thousand, one hundred or 100 100.

Numbers in Words

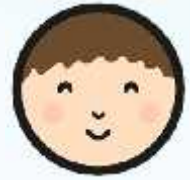


How much less than one million is nine hundred and ninety thousand and one hundred?

Give your answer in words and digits.

Nine hundred or 900.

Numbers in Words

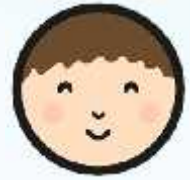


Which number is fifty thousand less than five hundred thousand?

Give your answer in words and digits.

Four hundred and fifty thousand or 450 000.

Numbers in Words



What is twenty thousand more than one thousand?

Give your answer in words and digits.

Twenty-one thousand or 21 000.

Greater Than and Less Than

When we compare numbers, we make decisions about which number in a set is bigger or smaller based on the value of their digits.

We can use the greater than and less than symbols to show how we have compared two or more numbers. We can also use the equals symbol to show when two numbers are the same.

Can you recall what the greater than and less than symbols look like?

>

Greater than

25 > 16

<

Less than

16 < 25

=

Equal to

25 = 25 16 = 16

Symbol Selection

Select the correct symbol from the choices below for each statement.

34 921	>	34 129

<	=	>

15

Symbol Selection

Select the correct symbol from the choices below for each statement.

99 999	<	111 111

<	=	>

15

Please may you insert another slide like this after this one. There will need to be 3 number boxes and two boxes with inequality signs laid out like this:

410 081 __ 500 010 __ 500 081

There will therefore be two inequality signs that need to be highlighted as answers

The correct answer is:

410 081 < 500 010 < 500 081

This slide should help children see that there can be more than 1 inequality symbol in a number sentence :)

Sarah Beard, 6/23/2020

Symbol Selection

Select the correct symbol from the choices below for each statement.

410 081	<	500 010	<	500 081

<	=	>

<	=	>

Symbol Selection

Select the correct symbol from the choices below for each statement.

74 000 + 3500	>	79 000 - 3500

<	=	>

Symbol Selection

Select the correct symbol from the choices below for each statement.

828 500	=	830 000 - 1500

<	=	>

Symbol Selection

Select the correct symbol from the choices below for each statement.

1 345 600 - 40 000	>	955 200 + 350 000

<	=	>

Popcorn Comparisons

Work in groups of 3 to practise using the greater than and less than symbols.

In your popcorn box, you have different types of popcorn. The yellow popcorn pieces contain the symbols whereas the white popcorn pieces contain the numbers.

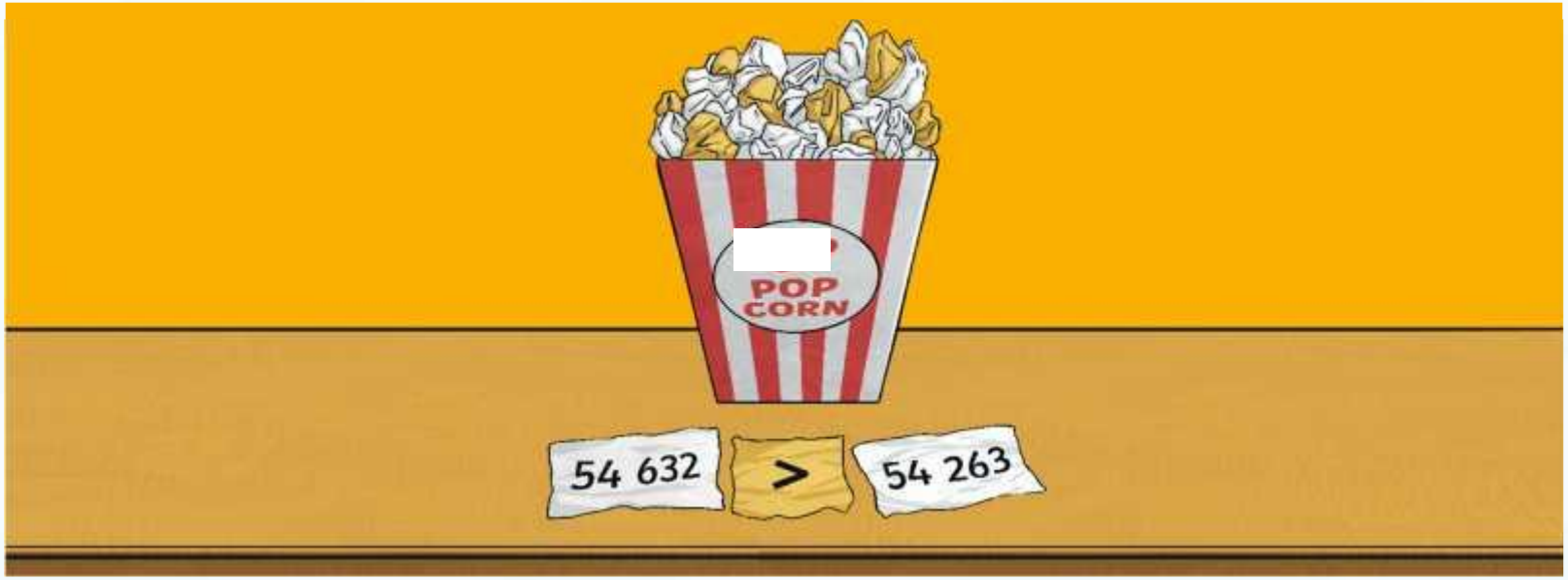
Each member of the group should take a piece of popcorn – there should be 1 yellow and 2 white pieces between you.

Popcorn Comparisons

Organise your numbers and your symbol to make a true number sentence.

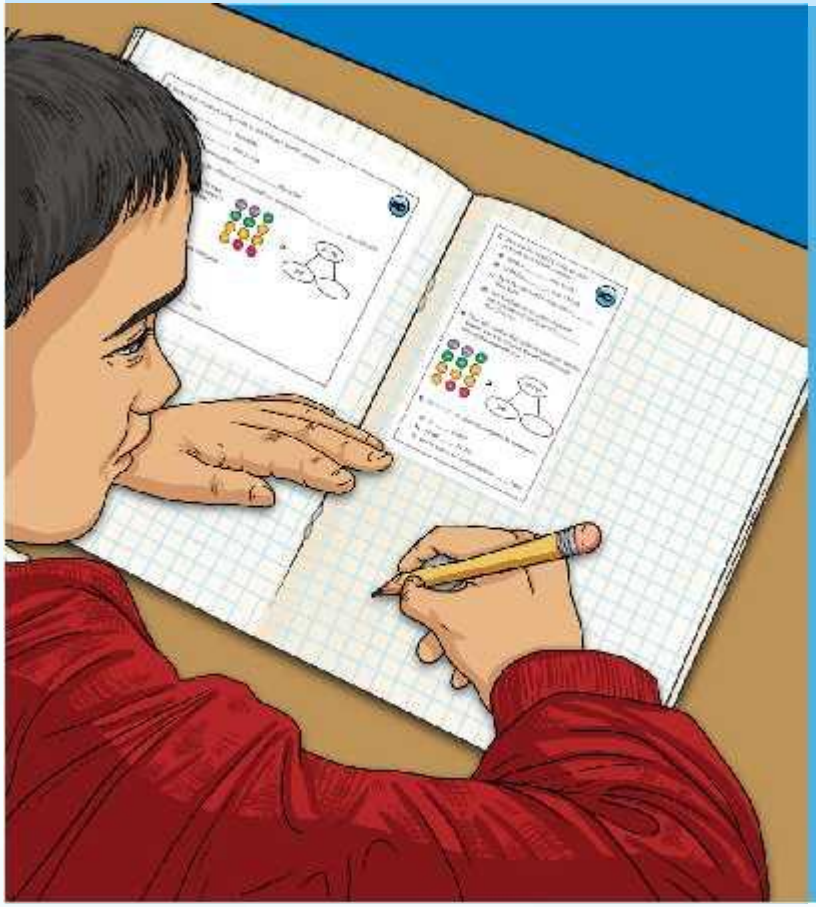
Then take 3 more pieces of popcorn and have another go!

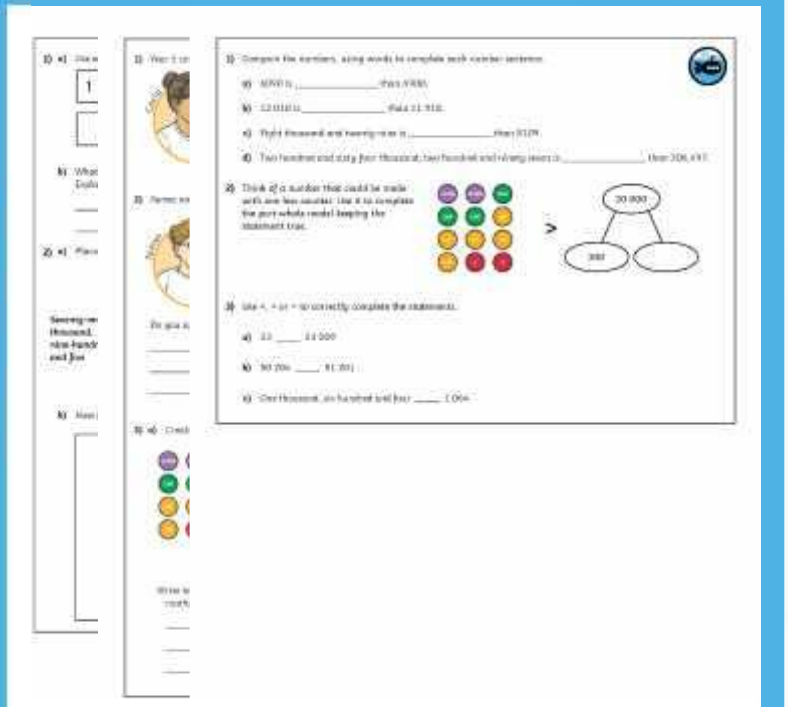
How many true number sentences can you create using your popcorn?



Diving into Mastery

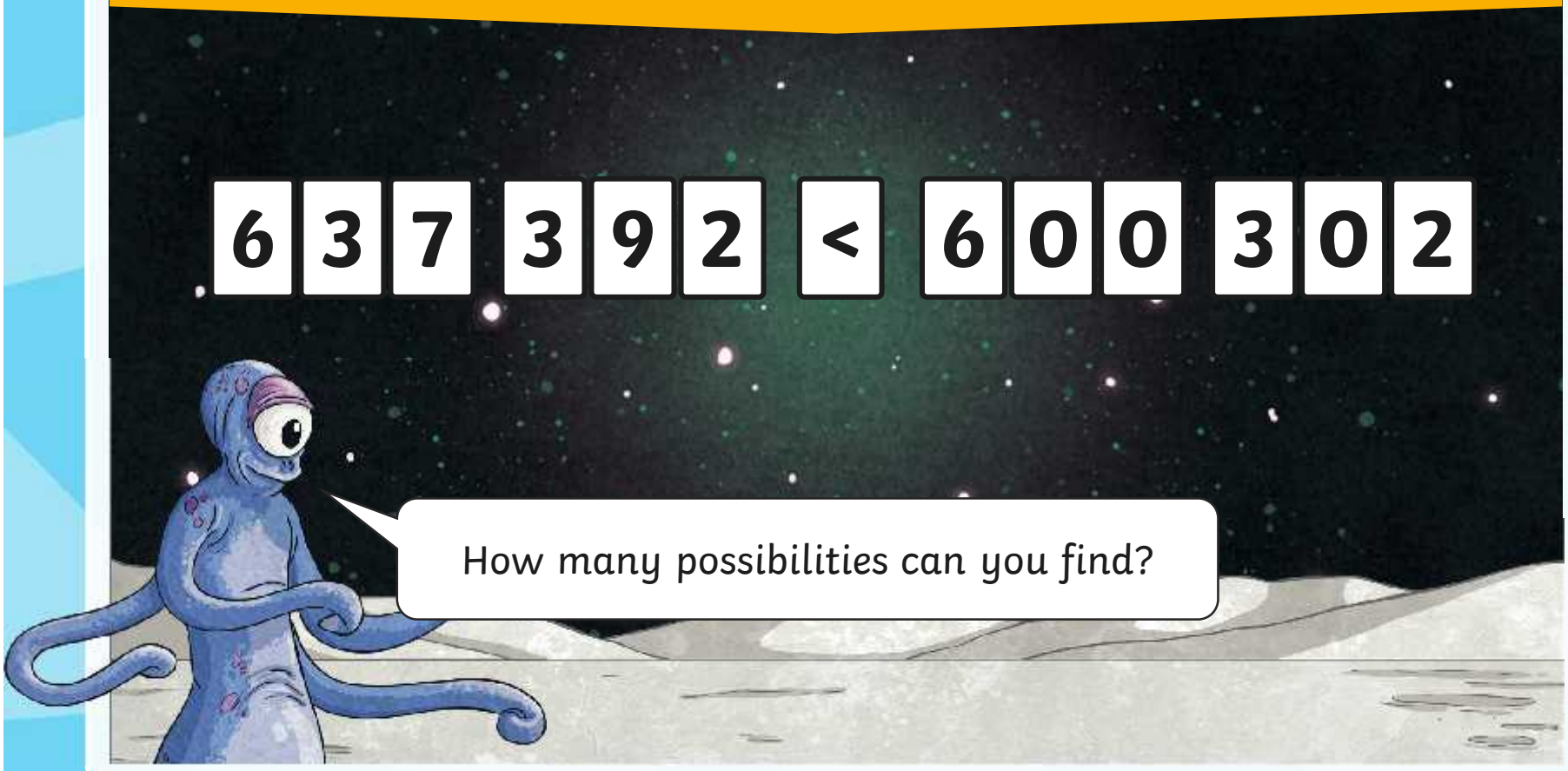
Dive in by completing your own activity!





Destroy the Digits

Which digits of the first number need to be destroyed to make the statement true?

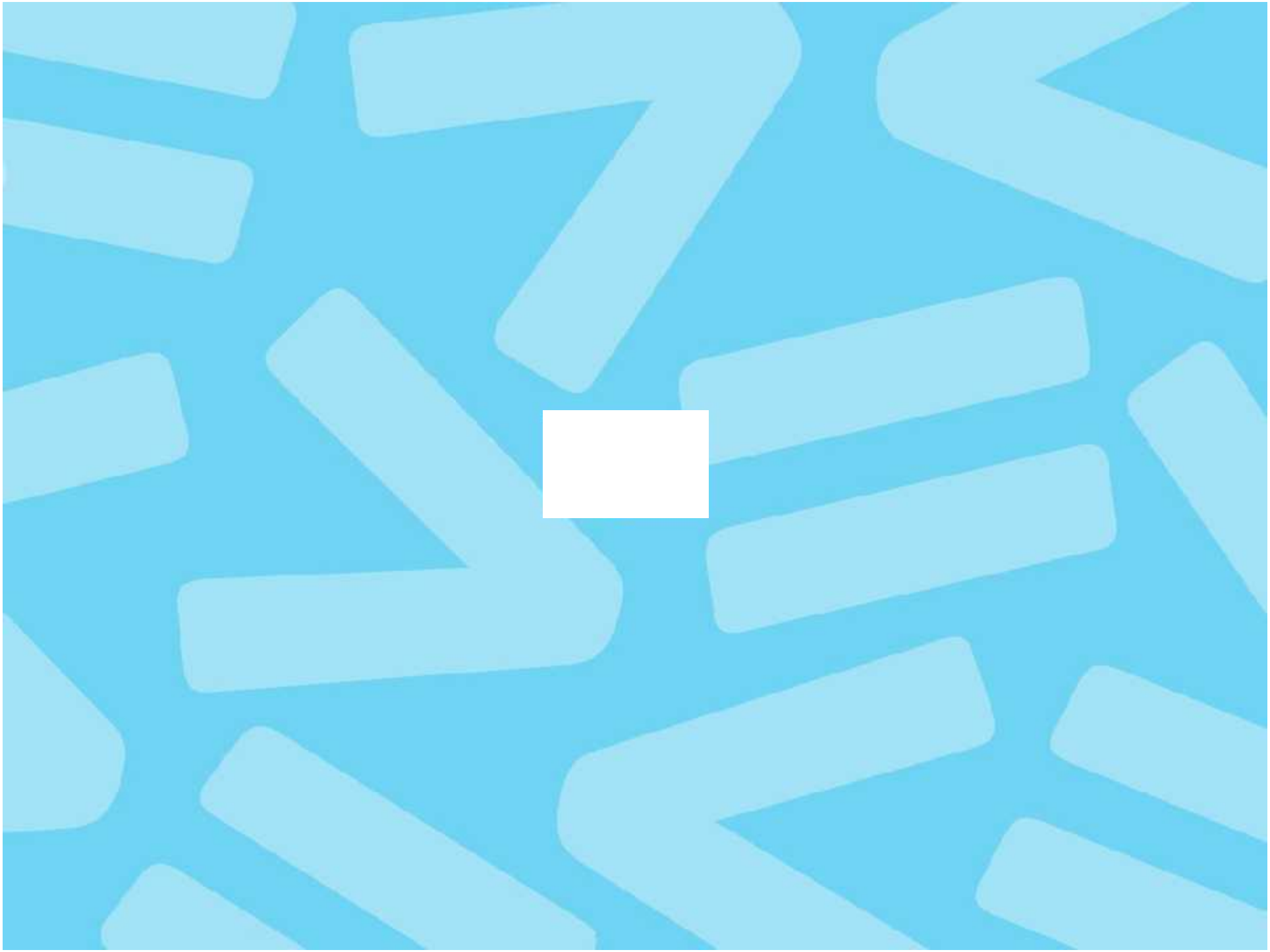


Aim

- To compare numbers to at least 1 000 000.

Success Criteria

- I can determine the value of each digit in numbers up to 1 000 000.
- I can use visual and abstract methods to compare numbers.
- I can choose a suitable method to compare numbers in a range of mathematical contexts.



Aim: To order and compare numbers to at least 1 000 000.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I can determine the value of each digit in numbers up to 1 000 000.				**Notes/Evidence**					
I can use visual and abstract methods to compare numbers.									
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Next Steps

- _____
- _____

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

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T	Teacher	**I**	Independent
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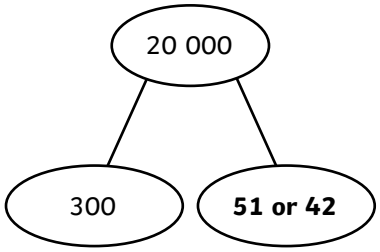
1) a) 6090 is less than 6900.

b) 12 010 is greater than 11 918.

c) Eight thousand and twenty-nine is less than 8109.

d) Two hundred and sixty-four thousand, two hundred and ninety seven is greater than 206,497.

2)



3) a) 23 < 23 009

b) 50 204 < 51 201

c) One thousand, six hundred and four > 1 064

1) Carla is incorrect.
For example:
12 < 24 > 13 = 13

2) James is wrong. Only numbers with 7 hundreds that also have a 6 or more in the ten thousands column and a 4 or more in the thousands column will be greater than 64 020. Rio is correct as 7 ten thousands is greater than 6 ten thousands.

3) a) Examples could include:
20 352
20 242
20 151
20 111
10 352

b) A wide variety of number statements could be created, compared and ordered using the greater than and less than symbols.

1) a) Examples include:
9876 > 12 < 345
9876 > 21 < 543

b) The largest selection of digits that can be chosen is 9876. Starting with the largest digit and selecting digits in descending order helps to find the largest number.

2) a) Many possible answers. For example:

Ten Thousands	Thousands	Hundreds	Tens	Ones
● ● ● ● ● ● ●	○	● ● ● ● ● ●	● ● ○	● ● ●

b) No counters can be placed in the tens of thousands column.
Only one counter can be placed in the thousands column.
Both counters can be placed in the hundreds column.
Both counters could be placed in the tens column.
Both counters can be placed in the ones column.

Variations of these examples are also acceptable. For example, one counter in the tens column and one counter in the ones column.

1) Compare the numbers, using words to complete each number sentence.

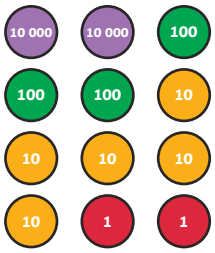
a) 6090 is _____ than 6900.

b) 12 010 is _____ than 11 918.

c) Eight thousand and twenty-nine is _____ than 8109.

d) Two hundred and sixty-four thousand, two hundred and ninety seven is _____ than 206,497.

2) Think of a number that could be made with one less counter. Use it to complete the part-whole model keeping the statement true.



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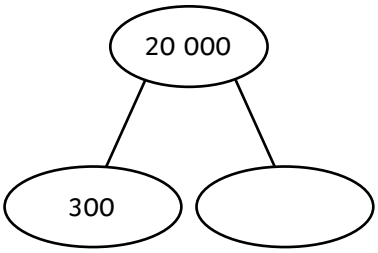


3) Use <, > or = to correctly complete the statements.

a) 23 _____ 23 009

b) 50 204 _____ 51 201

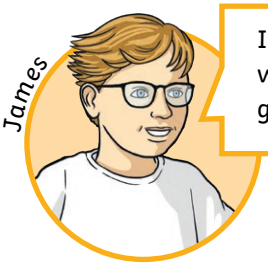
c) One thousand, six hundred and four _____ 1 064

1) Year 5 are discussing different ways that mathematical symbols can be used in number sentences.

You cannot use the greater than, less than and equal to symbols in the same number statement.

Do you agree with Carla? Explain with reasoning.

2) James and Rio are looking at the number 64 020.

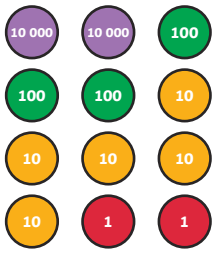


I think any number with 7 hundreds will be greater than 64 020.

I think any number with 7 ten thousands will be greater.

Do you agree with James and Rio? Explain your answer.

3) a) Create five different numbers using the place value counters. Write each number into the place value grid.



Ten Thousands	Thousands	Hundreds	Tens	Ones

Write ten different number statements using the numbers in the grid above and the inequality and equality mathematical symbols.

1) a) Use each digit once to complete the number statement.

1	2	3	4	5	6	7	8	9

				>			<			

b) What is the largest number that can be made to satisfy the first number in the statement? Explain your thinking.

2) a) Place 2 counters in 2 columns in the place value grid so that the number statement is still true.

Seventy-one thousand, nine-hundred and five **>**

Ten Thousands	Thousands	Hundreds	Tens	Ones
○ ○ ○ ○ ○ ○ ○		○ ○ ○ ○ ○ ○ ○	○ ○	○ ○ ○

b) How many different possibilities can you find? Explore.

1) Compare the numbers, using words to complete each number sentence.

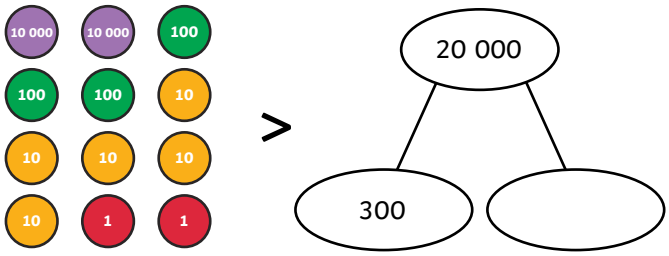
a) 6090 is _____ than 6900.

b) 12 010 is _____ than 11 918.

c) Eight thousand and twenty-nine is _____ than 8109.

d) Two hundred and sixty-four thousand, two hundred and ninety seven is _____ than 206,497.

2) Think of a number that could be made with one less counter. Use it to complete the part-whole model keeping the statement true.



3) Use <, > or = to correctly complete the statements.

a) 23 _____ 23 009

b) 50 204 _____ 51 201

c) One thousand, six hundred and four _____ 1 064

1) Compare the numbers, using words to complete each number sentence.

a) 6090 is _____ than 6900.

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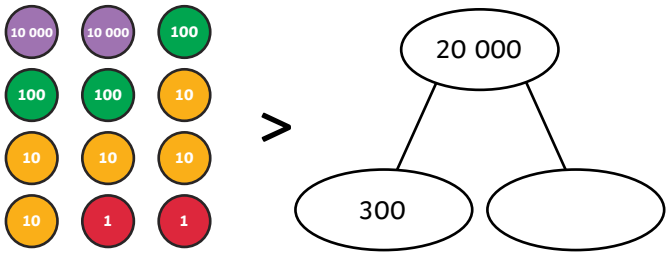

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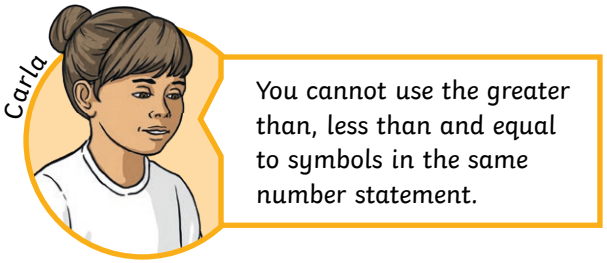
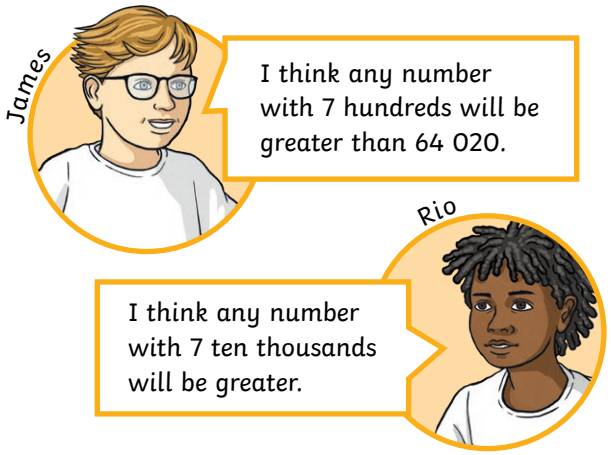
1) Year 5 are discussing different ways that mathematical symbols can be used in number sentences.



Do you agree with Carla? Explain with reasoning.

2) James and Rio are looking at the number 64 020.



Do you agree with James and Rio? Explain your answer.

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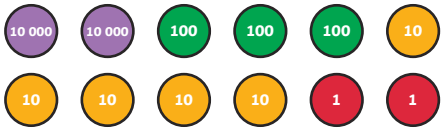


Ten Thousands	Thousands	Hundreds	Tens	Ones

b) Write ten different number statements using the numbers in the grid above and the inequality and equality mathematical symbols.

1) Year 5 are discussing different ways that mathematical symbols can be used in number sentences.

Carla
You cannot use the greater than, less than and equal to symbols in the same number statement.

Do you agree with Carla? Explain with reasoning.

2) James and Rio are looking at the number 64 020.

James
I think any number with 7 hundreds will be greater than 64 020.
Rio
I think any number with 7 ten thousands will be greater.

Do you agree with James and Rio? Explain your answer.

3) a) Create five different numbers using the place value counters. Write each number into the place value grid.

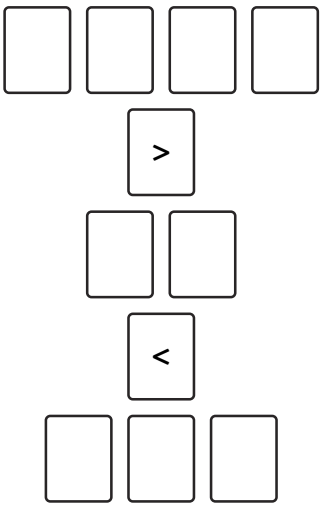
10 000
10 000
100
100
100
10
10
10
10
10
1
1

Ten Thousands	Thousands	Hundreds	Tens	Ones

b) Write ten different number statements using the numbers in the grid above and the inequality and equality mathematical symbols.

1) a) Use each digit once to complete the number statement.

1	2	3	4	5	6	7	8	9



b) What is the largest number that can be made to satisfy the first number in the statement? Explain your thinking.

2) a) Place 2 counters in 2 columns in the place value grid so that the number statement is still true.

Seventy-one thousand, nine-hundred and five

>

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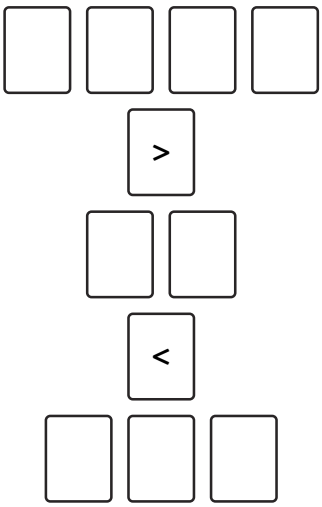

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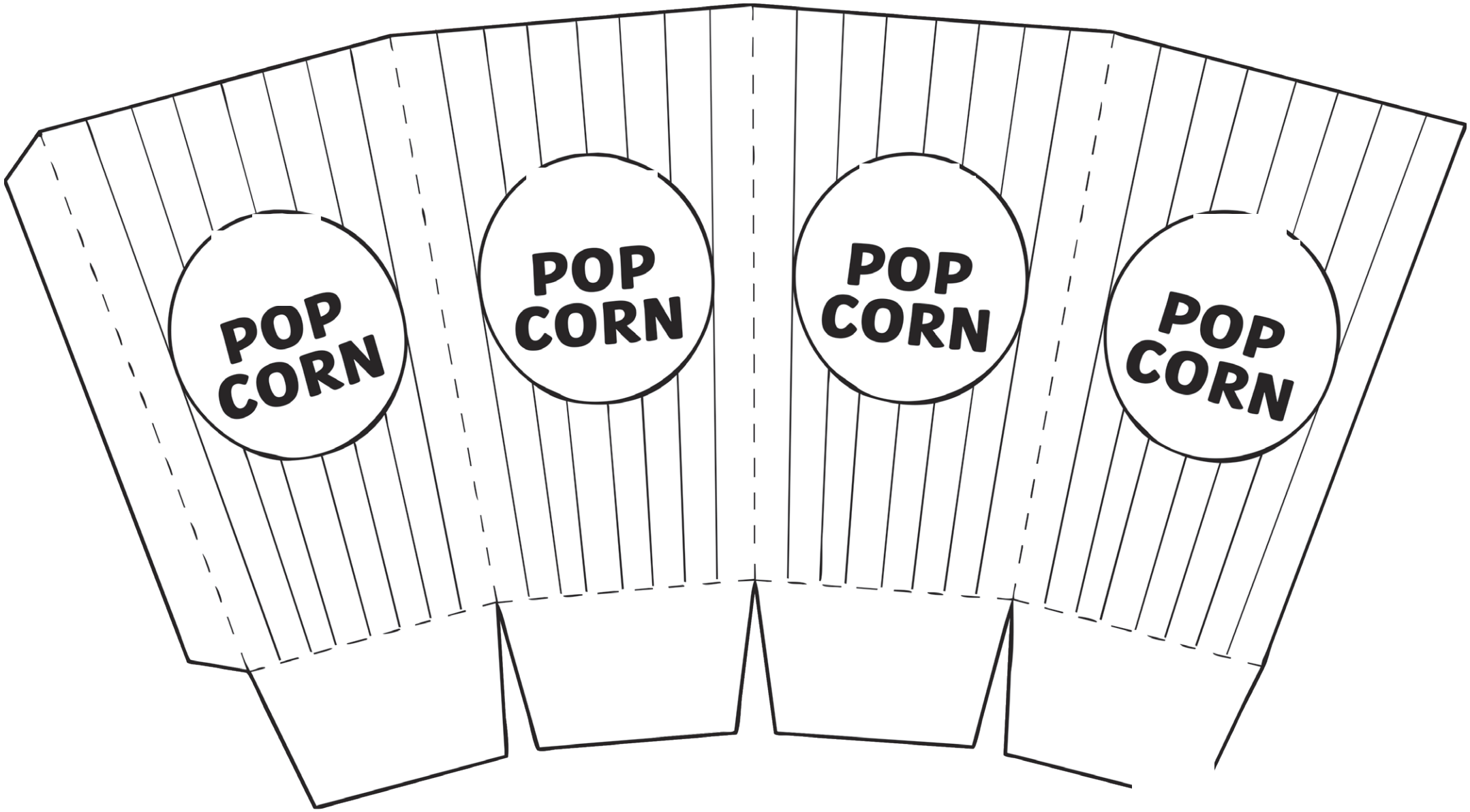
POP CORN
POP CORN
POP CORN
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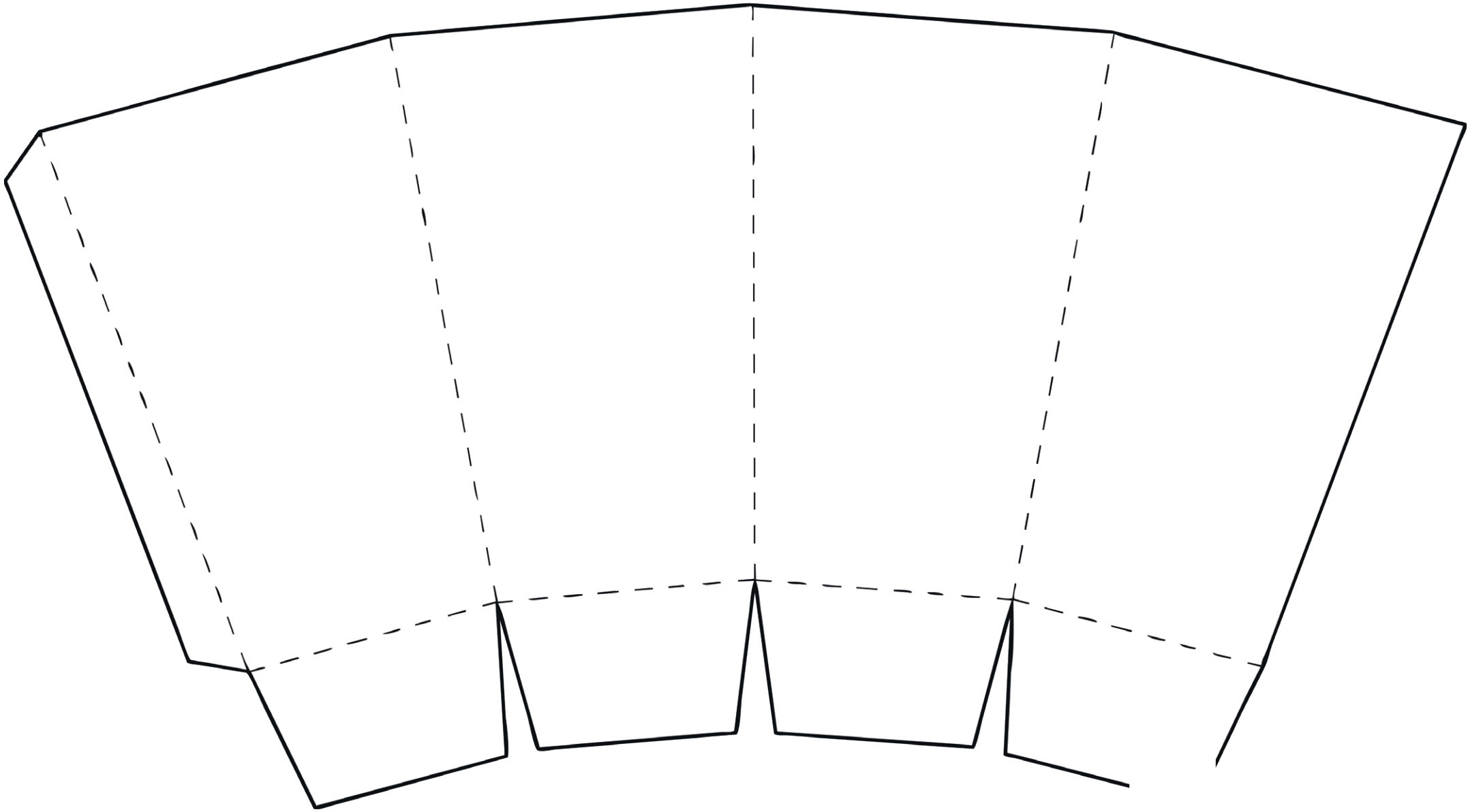

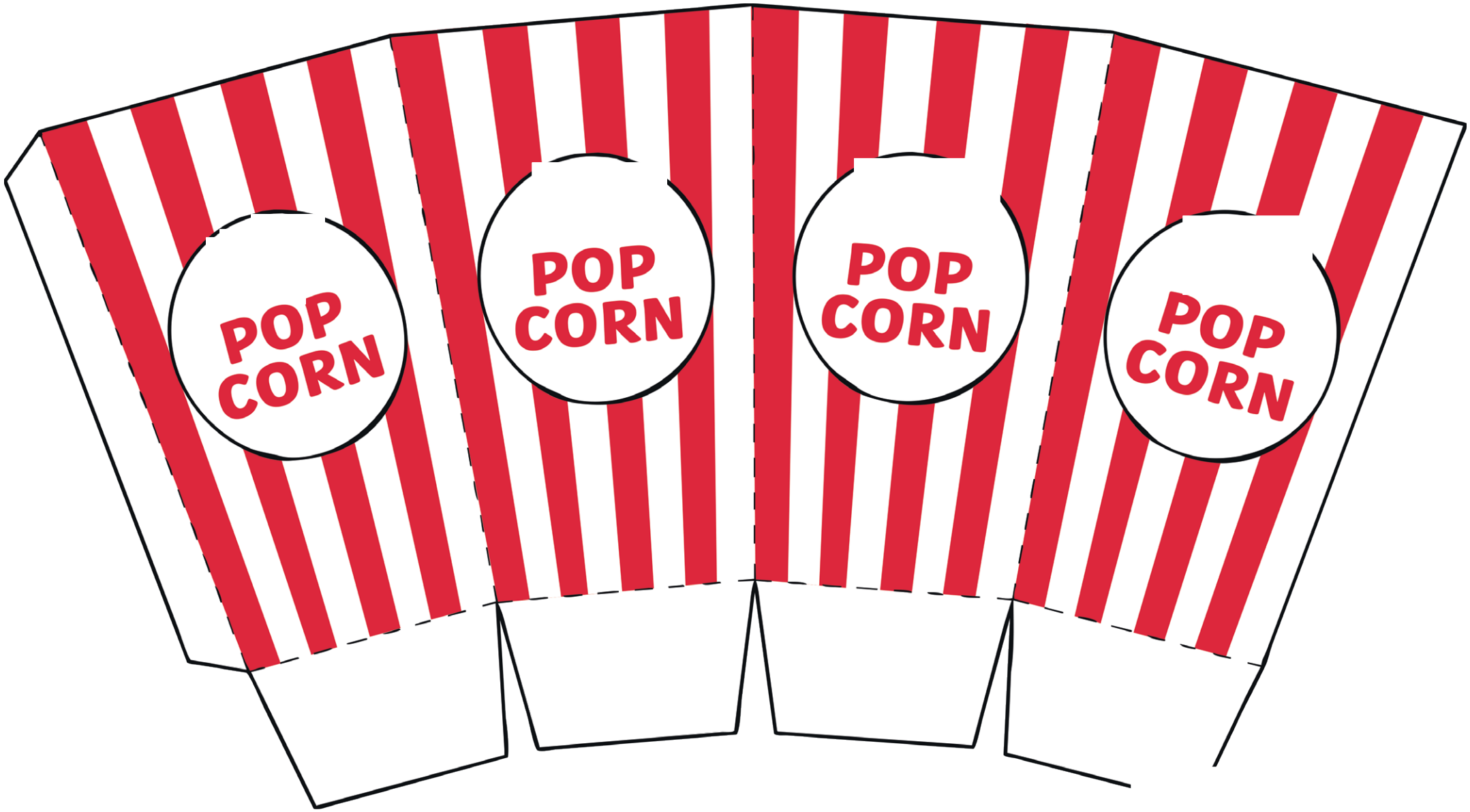
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Popcorn Number Cards

To compare numbers to at least 1 000 000.

Print these cards on white paper and cut out.
Screw up each card to make it look like popcorn and put it in the Popcorn Box.

3645	68 723	585 732	576 134
6 756 294	9821	23 768	10 842
7 758 112	289 103	43 671	562 891
186 375	2 987 105	350 621	500 000
20 000	4000	7 000 000	100 000

Popcorn Symbol Cards

To compare numbers to at least 1 000 000.

Print these cards on yellow paper and cut out.
Screw up each card to make it look like popcorn and put it in the Popcorn Box.

>	>	>	>
>	>	>	>
>	>	<	<
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Number and Place Value | Number Comparisons

To compare numbers to at least 1 000 000.		
I can determine the value of each digit in numbers up to 1 000 000.		
I can use visual and abstract methods to compare numbers.		
I can choose a suitable method to compare numbers in a range of mathematical contexts.		

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