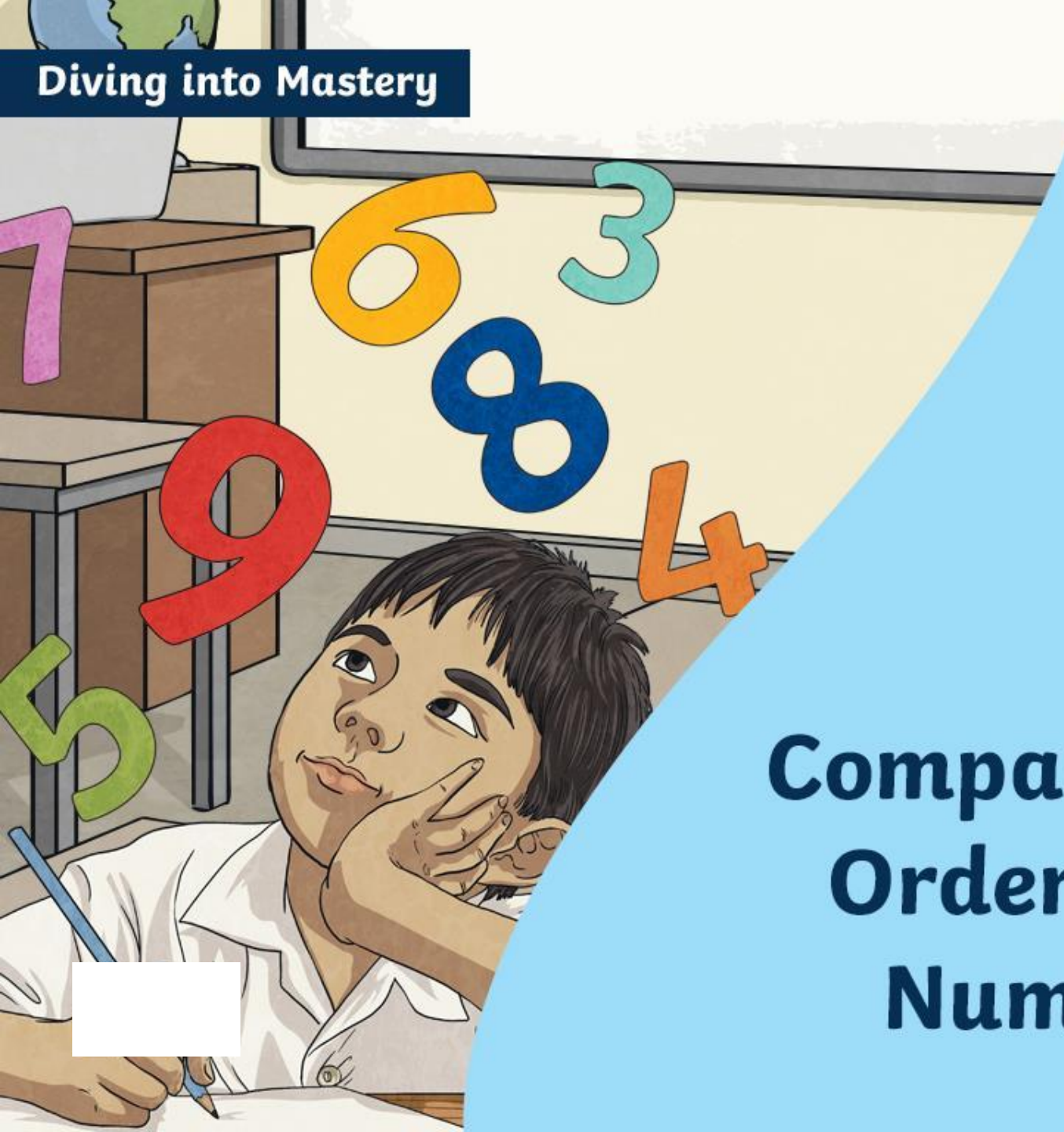
Diving into Mastery



Compare and Order Any Number

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

Diving

Deeper

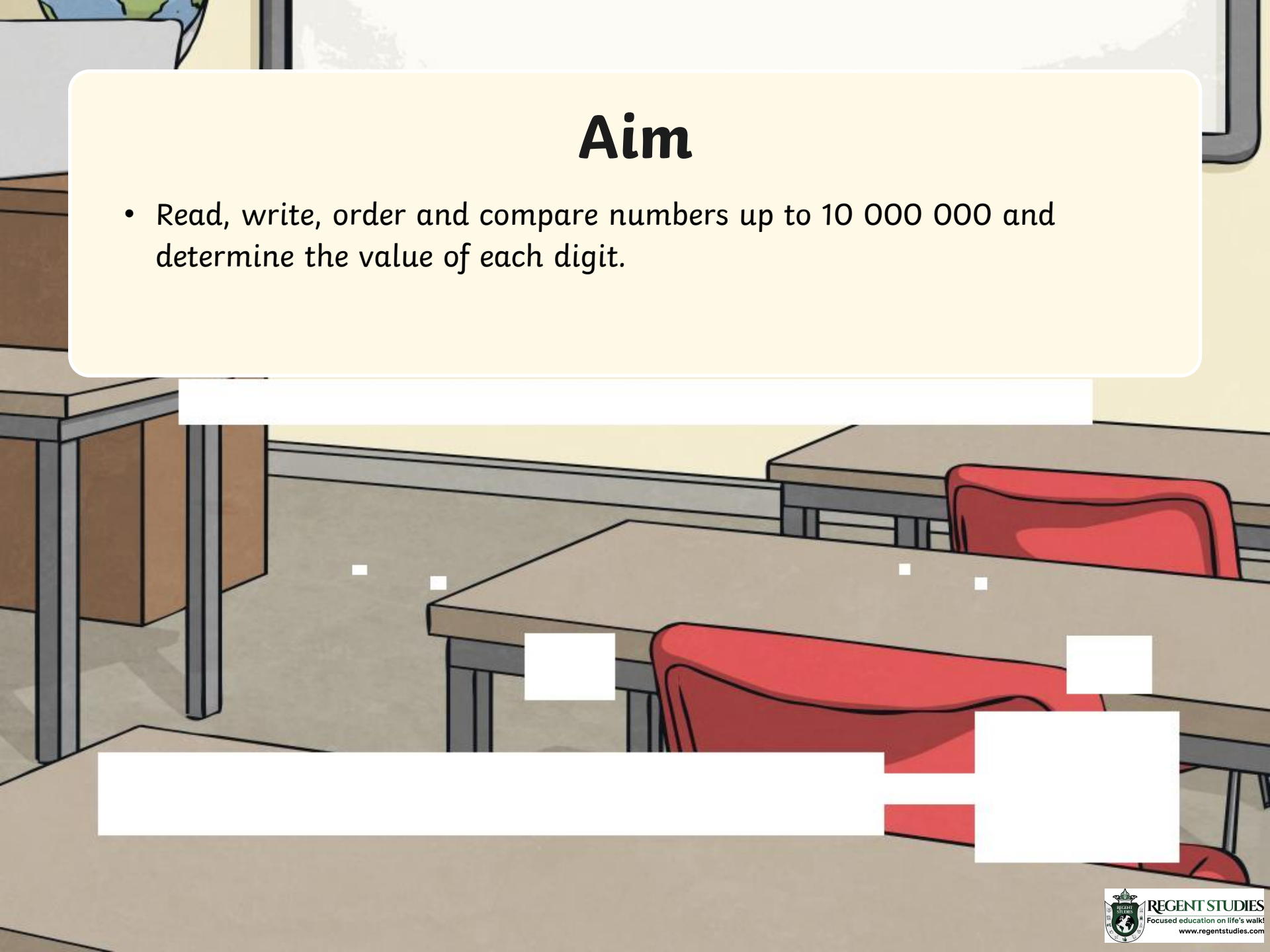
Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

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.

Aim

- Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.



Compare and Order Any Number

Diving

What are the greatest and smallest possible numbers that can be used in these comparisons?

Smallest Possible Number		Greatest Possible Number
678 948	678 947 < _____ < 688 947	**688 946**
2 345 624	2 445 623 > _____ > 2 345 623	**2 445 622**
8 987 431	8 987 430 < _____ < 8 987 530	**8 987 529**

Compare and Order Any Number

Diving

Give either the greatest or smallest possible answers that can be used to complete this comparison.

M	HTh	TTh	Th	H	T	O
●● ●●	●● ●	●● ●● ●	●	●● ●● ●●	●● ●● ●	●

M	HTh	TTh	Th	H	T	O
● ●	●● ●		●● ●● ●● ●●	●● ●● ●●	●●	●● ●● ●● ●

M	HTh	TTh	Th	H	T	O
●● ●●	●● ●	●● ●● ●	●	●● ●● ●●	●● ●●	●

> 4 351 650 >

2 308 628

M	HTh	TTh	Th	H	T	O
●● ●	●● ●		●● ●● ●● ●	●● ●● ●●	●●	●● ●● ●● ●

Compare and Order Any Number

Diving

Insert a digit in each box so that the numbers are written in order from greatest to smallest.

4 656 789

□ 656 967

3 □ 56 789

3 5 □ 1 891

3 54 □ 891

There are many correct answers, including:

4 656 789	4 656 789
3 656 967	**3** 656 967
3 **5**56 789	3 **6**56 789
3 5**4**1 891	3 5**5**1 891
3 54**0** 891	3 54**9** 891

Compare and Order Any Number

Deeper

M	HTh	TTh	Th	H	T	O
●	● ● ●	●		● ● ●	●	● ● ●

<

M	HTh	TTh	Th	H	T	O

Aimee says that, in order to complete the empty place value chart with the smallest possible answer, she will need twelve counters. Is she correct?

Aimee is incorrect. The smallest possible answer is 1 310 314, which would need thirteen counters.

Compare and Order Any Number

Deeper

Charlie must sort these numbers into the table below. Each number can only be used once. Can you help him sort as many of the numbers as possible into the table?

Numbers between 1.5 million and 2.5 million	Numbers between 150 000 and 250 000	Numbers between _____ and _____
1 500 001	199 245	
2 001 010	150 010	
2 499 245	175 000	
1 750 010	151 010	

175 000	199 245	99 010
1 500 001	149 010	2 001 010
2 610 245	3 495 245	150 010
151 010	1 750 010	2 499 245

Charlie groups the remaining numbers in the final box. He says that he can group them with one statement. Explain why Charlie is incorrect.

If Charlie wrote, for example, numbers between 99 000 and 3 495 245, he would find that some of the numbers he has already sorted belong in his new box. If he does this, he will not be correctly sorting them as he would have to use some of the numbers twice.

Compare and Order Any Number

Deepest

Each pupil has a number. Can you work out the number each pupil has by using their statements?

Jessica says, "To get my number, you take Alfie's number away from Sophie's number and then add one hundred thousand."

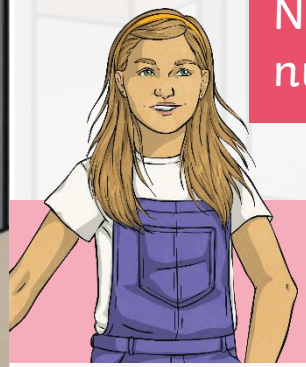
1 050 000

Alfie says, "My number is half of Sophie's number."

950 000

Nizar says, "My number is all of the other children's numbers added together and divided by one thousand."

3900



Sophie says, "My number is one hundred thousand less than two million."

1 900 000

Compare and Order Any Number | Deepest

1	3	7	6	8	2	5

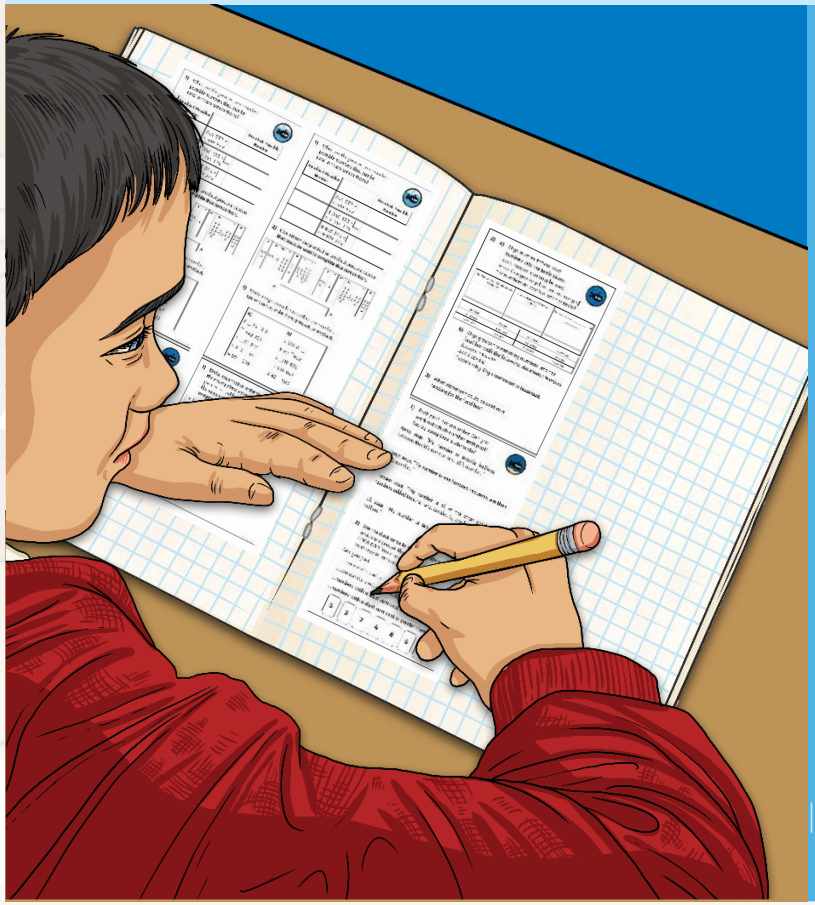
Use the digit cards to make ten different numbers which are between 100 000 and 300 000. You can only use a digit card once in each number. Can you find:

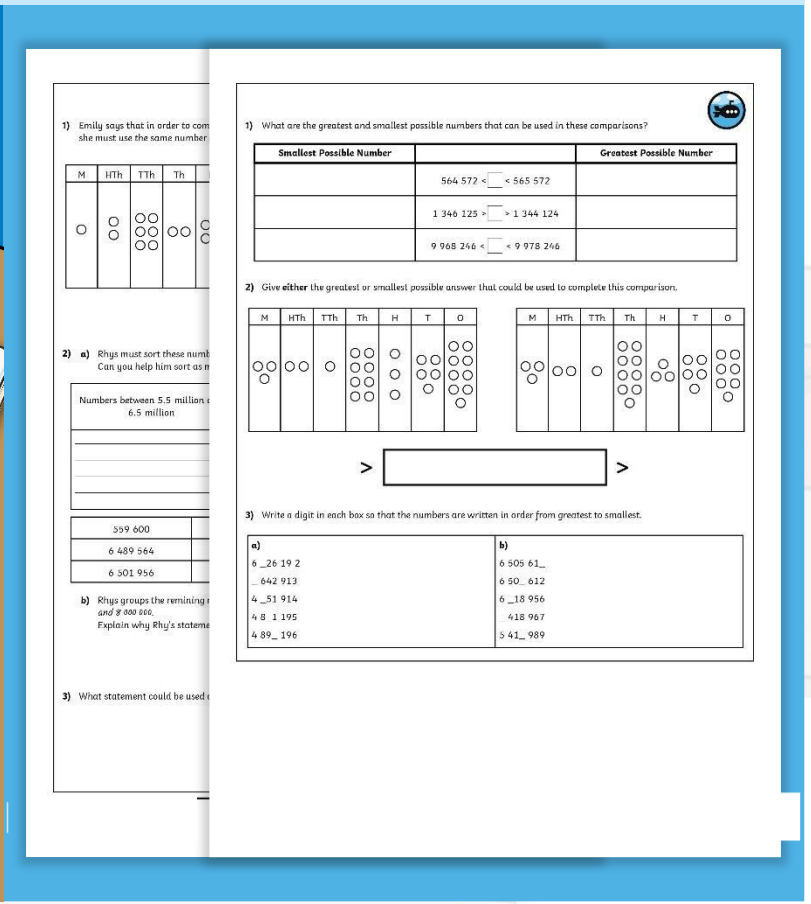
- two numbers with the greatest total;
- two numbers with the smallest total;
- numbers with a digit sum greater than 28?

Accept ten different values that are greater than 100 000 and less than 300 000.
The greatest sum possible will be 575 304.
The smallest sum possible is 247 135.
Other answers will vary depending on which numbers the children create.

Compare and Order Any Number

Dive in by completing your own activity!





1) What are the greatest and smallest possible numbers that can be used in these comparisons?

Smallest Possible Number		Greatest Possible Number
	564 572 < ___ < 565 572	
	1 346 125 > ___ > 1 344 124	
	9 968 246 < ___ < 9 978 246	

2) Give **either** the greatest or smallest possible answer that could be used to complete this comparison.

M	HTh	TTh	Th	H	T	O
○○	○○	○	○○○○	○	○○○	○○○○○

> ☐ >

M	HTh	TTh	Th	H	T	O
○○	○○	○	○○○○○	○	○○○	○○○○

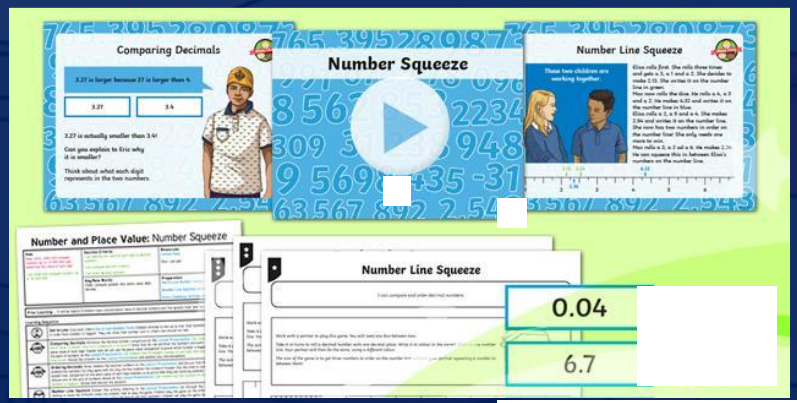
3) Write a digit in each box so that the numbers are written in order from greatest to smallest.

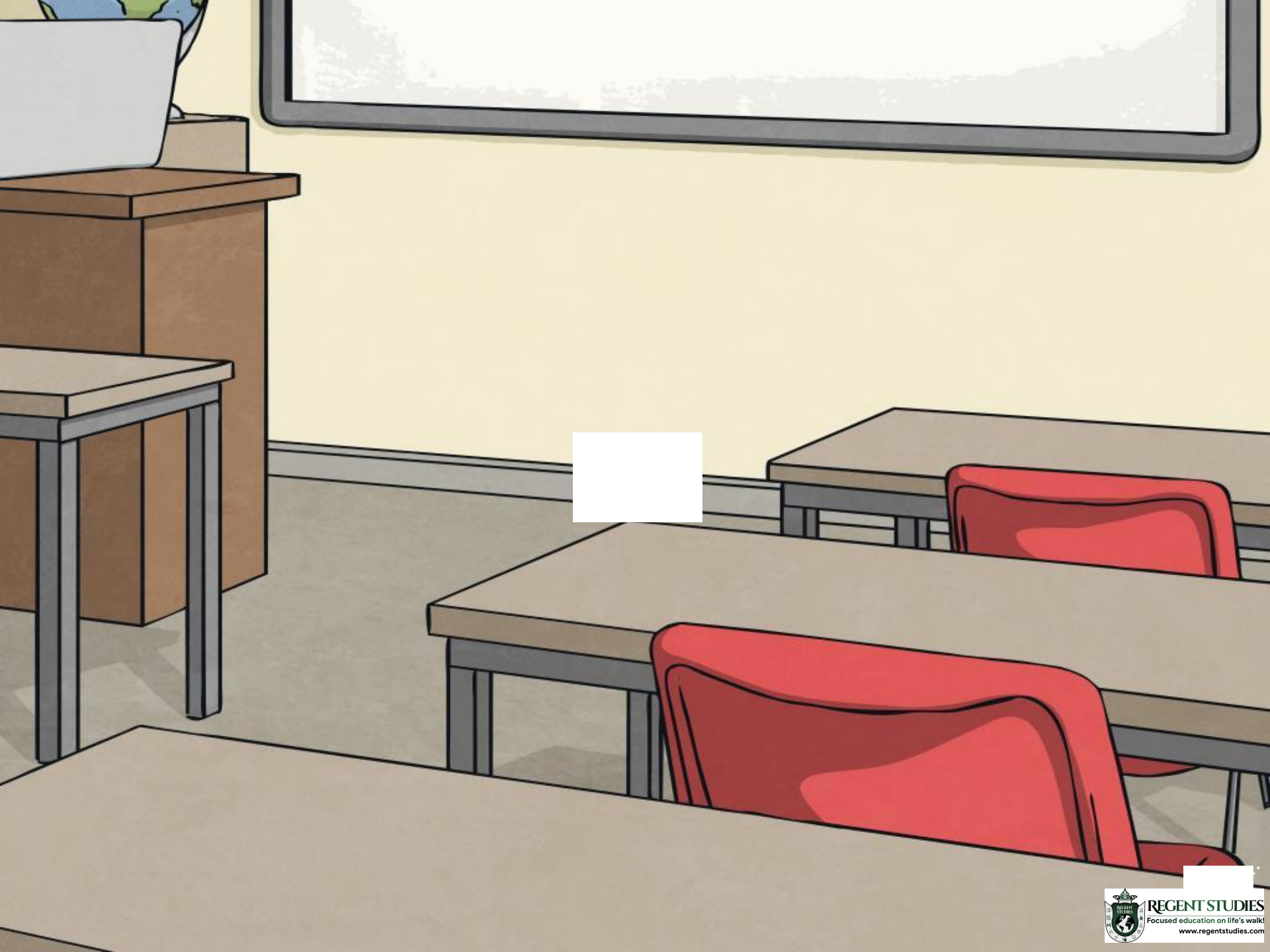
a)	b)
6 _26 19 2	6 505 61_
_ 642 913	6 50_ 612
4 _51 914	6 _18 956
4 8 1 195	418 967
4 89_ 196	5 41_ 989

Need Planning to Complement this Resource?

National Curriculum Aim

Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.

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