

Lesson 12 **NUMBER****Place-value investigation and review: make the biggest and smallest number**

CURRICULUM ALIGNMENT

NUM.PVT.3

explore equivalent numerical expressions of numbers using the base ten system.

INTERACTIVES

Place Value Blocks (Dienes) · challenge, display, explore

WHAT THIS LESSON TEACHES

To make the biggest number, put the largest digit in the thousands column, then the next largest in the hundreds, and so on. To make the smallest, put the smallest digit first, but a 0 can never lead, so the next-smallest digit goes in front instead.

→ With 3, 7, 0, 5 the biggest is 7,530 and the smallest is 3,057.

→ With 2, 5, 8, 0 the biggest is 8,520 and the smallest is 2,058.

MODEL THIS ON THE BOARD

BIGGEST AND SMALLEST FROM 3, 7, 0, 5

- ① Sort the digits largest to smallest: **7, 5, 3, 0**.
- ② Biggest number: put **7** in Th, then **5, 3, 0** → **7,530**.
- ③ Smallest four-digit number: put smallest non-zero digit **3** in Th, then **0, 5, 7** → **3,057**.

Th	H	T	U
7	5	3	0
3	0	5	7

DISCUSSION STARTER

REFLECT

What rule did you use to build the biggest number from a set of digits?

ANSWER KEY

a) 9641

b) 3068

c) 9752

Q1: 8,621

Q2: 1,048

Q3: 7,532

Q4: 8,520 and 2,058

a) Always : The thousands column is worth the most, so its digit should be the biggest.

b) Never : A leading 0 would make it a three-digit number, so it is never allowed.

c) Always : Ordering the same digits differently always makes the biggest bigger than the smallest.

d) Sometimes : It does unless the smallest digit is 0, when the next-smallest leads instead.

EXTENSION SHEET · STRETCH ANSWERS

S1: 1,578

S2: 1,348

S3: 6,431

S4: 9,541

S5: 1,348

Investigation: Shuffle the digits — open-ended; scan pupils' working for valid solution paths rather than a single answer.