

# Master Representing Numbers with up to 3 Decimal Places

## Rationale

In this step, pupils will deepen their understanding of decimal numbers by representing ones, tenths, hundredths and thousandths in different ways. They will practise and become familiar with representing decimal numbers with up to 3 decimal places using a variety of concrete apparatus in order to fully access the subsequent small steps.

*Pupils will need access to concrete apparatus as shown below to complete this practical step.*



## Key Stem Sentences

- There are \_\_\_ ones \_\_\_ tenths, \_\_\_ hundredths and \_\_\_ thousandths.
- The number is \_\_\_\_ . \_\_\_\_ \_\_\_\_



## Key Vocabulary

- ones / tenths / hundredths
- thousandths
- placeholder



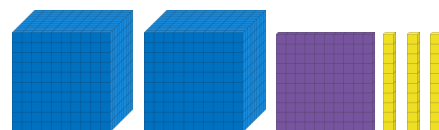
## Common Errors or Misconceptions

- Pupils may misinterpret the concrete apparatus used to represent different values. For example, they may not use the 'thousand' Dienes cube to represent 1 one.



## Key Representations

### Dienes



There are 2 ones, 1 tenth and 3 hundredths. The number is 2.13

### Place Value Counters



There are 4 ones and 2 thousandths. The number is 4.002

### Place Value Charts

1s	0.1s	0.01s	0.001s
3	0	9	6

There are 3 ones, 9 hundredths and 6 thousandths. The number is 3.096

### Arrow Cards



There are 8 ones, 5 tenths and 6 thousandths. The number is 8.506

### Gattegno Chart

1	2	3	4	5	6	7	8	9
0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009

There are 7 ones, 1 tenth, 4 hundredths and 5 thousandths. The number is 7.145



## Pupils will FLOURISH if they can...

- accurately represent decimal numbers with up to 3 decimal places using a variety of concrete apparatus.
- begin to explain their understanding using their own words and representations.

