# Diagnostic TASK

FOCUS
**Understand Numbers**
- Key Understanding 7

## Digit Values and Number Sequence Years/Grades 6–7

## Purpose

Digit Values: To see whether students understand how the values in each place can be renamed.

Number Sequence: To see whether students understand the multiplicative relationships between the numbers in the given sequence.

## Producing work samples

**Whole class or small group activity**

Depending on the age of your students, give them either both examples together, or if they are younger students, one at a time. After distributing the worksheet ask students to write a full explanation of their reasons for each of their answers. You may need to conduct some individual interviews where children's reasoning is not clear from the written explanation

Number Sequence: It is best to give this task without a calculator to begin with to see if students know what is needed without experimentation. If they do not know, then make a note of this then you can provide a calculator and ask them to try and find out what they can enter. If they don't understand what 'generate a number sequence' means they are likely to just tell you how to enter each of those numbers in the calculator, rather than suggesting a single operation on 2 that would result in 0.2 and then 0.02 and so on.

Name _____ Year/Grade _____ Date _____

## Digit Values

Alan said the 2 in 0.203 means *2 tenths* but Kerryn said the 2 also means *20 hundredths*, and Adrian said the 2 means *200 thousandths*. What do you think?

How could the 2 in 0.203 mean different fractions?

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## Number Sequence

Explain how you could use a calculator to generate this number sequence? (That is, if you enter 2 and then press some keys and then the = key you will get 0.2, and so on.)

**2 0.2 0.02 0.002**