

# Varied Fluency

## Step 10: Decimal Sequences

### National Curriculum Objectives:

Mathematics Year 5: (5F10) [Solve problems involving number up to 3dp](#)

Mathematics Year 5: (5M9a) [Use all four operations to solve problems involving measure \[for example, length, mass, volume, money\] using decimal notation, including scaling](#)

### Differentiation:

**Developing** Questions to support calculating decimal sequences. Decimal places involve tenths and hundredths. Sequences involve either addition or subtraction.

**Expected** Questions to support calculating decimal sequences. Decimal places involve tenths, hundredths and thousandths. Sequences involve either addition or subtraction.

**Greater Depth** Questions to support calculating decimal sequences. Decimal places involve tenths, hundredths and thousandths. Sequences may involve addition and subtraction of differing values in an increasing or decreasing pattern.

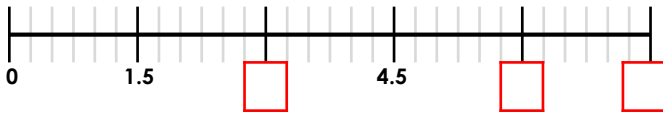
More [Year 5 Decimals](#) resources.

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# Decimal Sequences

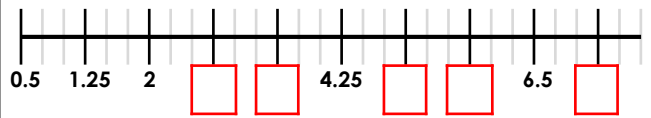
# Decimal Sequences

1a. Use the number line to find the missing numbers in the sequence.



VF

1b. Use the number line to find the missing numbers in the sequence.



VF

2a. Look at the sequences below.

0.4	0.6	0.8	1	1.2
-----	-----	-----	---	-----

0.2	0.7	1.2	1.7	2.2
-----	-----	-----	-----	-----

0.25	0.38	0.51	0.64	0.77
------	------	------	------	------

Write a rule for each and find the next 3 terms in the sequences.



VF

2b. Look at the sequences below.

1.5	1.3	1.1	0.9	0.7
-----	-----	-----	-----	-----

4.5	3.9	3.3	2.7	2.1
-----	-----	-----	-----	-----

1	0.89	0.78	0.67	0.56
---	------	------	------	------

Write a rule for each and find the next 3 terms in the sequences.



VF

3a.

The first term is 2.3  
The rule is + 0.09

Find the 3<sup>rd</sup>, 5<sup>th</sup> and 7<sup>th</sup> term of the sequence.



VF

3a.

The first term is 0.75  
The rule is + 0.1

Find the 4<sup>th</sup>, 6<sup>th</sup> and 10<sup>th</sup> term of the sequence.



VF

4a.

The 1<sup>st</sup> term is 0.95  
The 3<sup>rd</sup> term is 0.75  
The 5<sup>th</sup> term is 0.55

Find the rule of this sequence.



VF

4b.

The 2<sup>nd</sup> term is 1.35  
The 4<sup>th</sup> term is 1.85  
The 6<sup>th</sup> term is 2.35

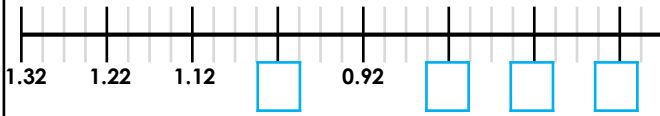
Find the rule of this sequence.



VF

## Decimal Sequences

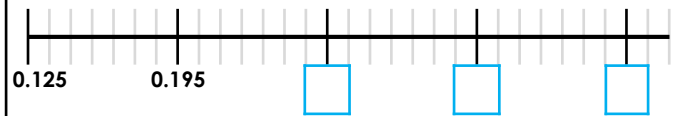
5a. Use the number line to find the missing numbers in the sequence.



VF

## Decimal Sequences

5b. Use the number line to find the missing numbers in the sequence.



VF

6a. Look at the sequences below.

2.53	2.553	2.576	2.599	2.622
------	-------	-------	-------	-------

0.99	0.96	0.93	0.9	0.87
------	------	------	-----	------

0.892	0.885	0.878	0.871	0.864
-------	-------	-------	-------	-------

Write a rule for each and find the next 3 terms in the sequences.



VF

6b. Look at the sequences below.

7.98	6.99	6	5.01	4.02
------	------	---	------	------

0.043	0.11	0.177	0.244	0.311
-------	------	-------	-------	-------

9.239	9.109	8.979	8.849	8.719
-------	-------	-------	-------	-------

Write a rule for each and find the next 3 terms in the sequences.



VF

7a.

The first term is 0.23  
The rule is + 0.46

Find the 2<sup>nd</sup>, 4<sup>th</sup> and 7<sup>th</sup> term of the sequence.



VF

7b.

The first term is 0.452  
The rule is - 0.005

Find the 3<sup>rd</sup>, 5<sup>th</sup> and 7<sup>th</sup> term of the sequence.



VF

8a.

The 3<sup>rd</sup> term is 7.603.  
The 6<sup>th</sup> term is 7.693.  
The 9<sup>th</sup> term is 7.783.

Find the rule of this sequence.



VF

8b.

The 5<sup>th</sup> term is 3.98.  
The 10<sup>th</sup> term is 3.93.  
The 15<sup>th</sup> term is 3.88.

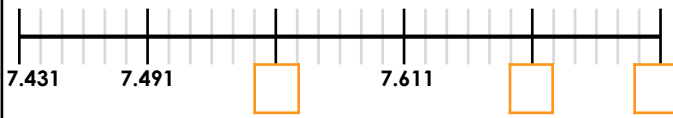
Find the rule of this sequence.



VF

## Decimal Sequences

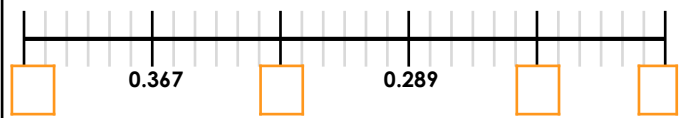
9a. Use the number line to find the missing numbers in the sequence.



VF

## Decimal Sequences

9b. Use the number line to find the missing numbers in the sequence.



VF

10a. Look at the sequences below.

0.085	0.078	0.071	0.064	0.057
-------	-------	-------	-------	-------

12.432	12.4	12.368	12.336	12.304
--------	------	--------	--------	--------

0.543	0.643	0.843	1.143	1.543
-------	-------	-------	-------	-------

Write a rule for each and find the next 3 terms in the sequences.



VF

10b. Look at the sequences below.

0.9	0.804	0.708	0.612	0.516
-----	-------	-------	-------	-------

0.36	0.38	0.42	0.48	0.56
------	------	------	------	------

7.345	7.245	7.045	6.745	6.345
-------	-------	-------	-------	-------

Write a rule for each and find the next 3 terms in the sequences.



VF

11a.

The first term is 12.965  
The rule is  $- 2.9$

Find the 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup> term of the sequence.



VF

11b.

The first term is 1.954  
The rule is  $- 0.032$

Find the 4<sup>th</sup>, 9<sup>th</sup> and 11<sup>th</sup> term of the sequence.



VF

12a.

The 6<sup>th</sup> term is 0.543  
The 9<sup>th</sup> term is 0.567  
The 12<sup>th</sup> term is 0.591

Find the rule of this sequence.



VF

12b.

The 6<sup>th</sup> term is 13.944  
The 13<sup>th</sup> term is 13.965  
The 20<sup>th</sup> term is 13.986

Find the rule of this sequence.



VF

## Varied Fluency Decimal Sequences

### Developing

- 1a. 3, 6, 7.5  
2a. 1.4, 1.6, 1.8 (Rule = + 0.2)  
2.7, 3.2, 3.7 (Rule = + 0.5)  
0.9, 1.03, 1.16 (Rule = + 0.13)  
3a. 2.48, 2.66, 2.84  
4a. The rule is - 0.1

### Expected

- 5a. 1.02, 0.82, 0.72, 0.62  
6a. 2.645, 2.668, 2.691 (Rule = + 0.023)  
0.84, 0.81, 0.78 (Rule = - 0.03)  
0.857, 0.85, 0.843 (Rule = - 0.007)  
7a. 0.69, 1.61, 2.99  
8a. The rule is + 0.03

### Greater Depth

- 9a. 7.551, 7.671, 7.731  
10a. 0.05, 0.043, 0.036 (Rule = - 0.007)  
12.272, 12.24, 12.208 (Rule = - 0.032)  
2.043, 2.643, 3.343 (Rule = the  
difference increases by 0.1 each term).  
11a. 4.265, -1.535, -7.335  
12a. The rule is + 0.008

## Varied Fluency Decimal Sequences

### Developing

- 1b. 2.75, 3.5, 5, 5.75, 7.25  
2b. 0.5, 0.3, 0.1 (Rule = - 0.2)  
1.5, 0.9, 0.3 (Rule = - 0.6)  
0.45, 0.34, 0.23 (Rule = - 0.11)  
3b. 1.05, 1.25, 1.65  
4b. The rule is + 0.25

### Expected

- 5b. 0.265, 0.335, 0.405  
6b. 3.03, 2.04, 1.05 (Rule = - 0.99)  
0.378, 0.445, 0.512 (Rule = + 0.067)  
8.589, 8.459, 8.329 (Rule = - 0.13)  
7b. 0.442, 0.432, 0.422  
8b. The rule is - 0.01

### Greater Depth

- 9b. 0.406, 0.328, 0.25, 0.211  
10b. 0.42, 0.324, 0.228 (The rule is - 0.096)  
0.66, 0.78, 0.92 (The rule is the  
difference increases by 0.02 each term).  
5.845, 5.245, 4.545 (Rule = the  
difference decreases by 0.1 each term).  
11b. 1.858, 1.698, 1.634  
12b. The rule is + 0.003