Reasoning and Problem Solving
Step 4: Understand Thousandths

National Curriculum Objectives:

Mathematics Year 5: (5F6b) **Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents**

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Explain which fraction or decimal is the odd one out of 3 options. Includes numbers smaller than 1.
Expected Explain which fraction or decimal is the odd one out of 5 options. Includes numbers smaller than 1 and the use of zero as a place holder.
Greater Depth Explain which fraction or decimal is the odd one out of 5 options. Includes numbers greater than 1, improper fractions and mixed numbers.

Questions 2, 5 and 8 (Problem Solving)
Developing Use digit cards to complete a place value grid and write the equivalent fraction. Includes numbers smaller than 1.
Expected Use digit cards to complete a statement using understanding of thousandths. Includes numbers smaller than 1 and the use of zero as a place holder.
Greater Depth Use digit cards to complete a statement using understanding of thousandths. Includes numbers greater than 1 and improper fractions.

Questions 3, 6 and 9 (Problem Solving)
Developing Match 2 children to the number they are describing. Includes numbers smaller than 1.
Expected Match 3 children to the number they are describing. Includes numbers smaller than 1 and the use of zero as a place holder.
Greater Depth Match 3 children to the number they are describing. Includes numbers greater than 1 and mixed numbers.

More Year 5 Decimals and Percentages resources.

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Understand Thousandths

1a. Circle the odd one out.

$$\frac{637}{1000} \qquad 0.673 \qquad \frac{673}{1000}$$

Explain your reasoning.

R

1b. Circle the odd one out.

$$\frac{298}{1000} \qquad 0.298 \qquad \frac{289}{1000}$$

Explain your reasoning.

R

2a. Use the digit cards to complete the place value grid in 3 different ways.

| 5 | 4 | 9 |

ones	tenths	hundredths	thousandths
0			

Write the matching fraction for each one.

| | | |

1000

PS

2b. Use the digit cards to complete the place value grid in 3 different ways.

| 3 | 6 | 1 |

ones	tenths	hundredths	thousandths
0			

Write the matching fraction for each one.

| | | |

1000

PS

3a. Match the children to their numbers.

Sasha: My number has 7 tenths, 8 hundredths and 2 thousandths.

Luke: My number has 8 tenths, 2 hundredths and 7 thousandths.

A = 0.827   B = 0.782

PS

3b. Match the children to their numbers.

Jason: My number has 4 tenths, 5 hundredths and 3 thousandths.

Freya: My number has 5 tenths, 3 hundredths and 4 thousandths.

A = 0.534   B = 0.453

PS

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Reasoning and Problem Solving – Understand Thousandths – Year 5 Developing

4a. Circle the odd one out.

$$\frac{405}{1000} \quad\quad \frac{45}{1000}$$

0.045 0.45 0.405

Explain your reasoning.

⭐ (E) R

4b. Circle the odd one out.

$$\frac{37}{1000} \quad\quad \frac{370}{1000}$$

0.037 0.307 0.37

Explain your reasoning.

⭐ (E) R

5a. Use the digit cards to complete the statement below in 3 different ways.

Each card can be used more than once.

| 6 | 0 | 2 | 4 | 7 |

$$\frac{\boxed{}\boxed{}\boxed{}}{1000} = 0.\boxed{}\boxed{}\boxed{}$$

⭐ (E) PS

5b. Use the digit cards to complete the statement below in 3 different ways.

Each card can be used more than once.

| 0 | 8 | 1 | 9 | 5 |

$$\frac{\boxed{}\boxed{}\boxed{}}{1000} = 0.\boxed{}\boxed{}\boxed{}$$

⭐ (E) PS

6a. Match the children to their numbers.

Violet: My number has 0 tenths, 3 hundredths and 5 thousandths.

Ali: My number has 0 tenths, 5 hundredths and 3 thousandths.

Katy: My number has 5 tenths, 0 hundredths and 3 thousandths.

A = 0.053 B = 0.503 C = 0.035

⭐ (E) PS

6b. Match the children to their numbers.

Seth: My number has 6 tenths, 0 hundredths and 2 thousandths.

Jeni: My number has 2 tenths, 0 hundredths and 6 thousandths.

Marc: My number has 0 tenths, 2 hundredths and 6 thousandths.

A = 0.602 B = 0.026 C = 0.206

⭐ (E) PS

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Reasoning and Problem Solving – Understand Thousandths – Year 5 Expected

7a. Circle the odd one out.

$$\frac{7302}{1000} \qquad 7\frac{32}{1000}$$

7.032   7.302   7.32

Explain your reasoning.

GD   R

7b. Circle the odd one out.

$$\frac{5096}{1000} \qquad 5\frac{960}{1000}$$

5.96   5.906   5.096

Explain your reasoning.

GD   R

8a. Use the digit cards to complete the statement below in 3 different ways.

Each card can be used more than once.

| 3 | 9 | 0 | 6 | 4 |

$$\frac{\square\square\square}{1000} = \square . \square\square\square$$

GD   PS

8b. Use the digit cards to complete the statement below in 3 different ways.

Each card can be used more than once.

| 2 | 7 | 0 | 8 | 1 |

$$\frac{\square\square\square}{1000} = \square . \square\square\square$$

GD   PS

9a. Match the children to their numbers.

Alina: My number has the same number of ones and hundredths.

Josh: My number is equal to $6\frac{426}{1000}$.

Ella: My number has 6 ones, 2 tenths, 6 hundredths and 4 thousandths.

A = 6.264   B = 6.462   C = 6.426

GD   PS

9b. Match the children to their numbers.

Liam: My number has an odd number of thousandths.

Kelis: My number is equal to $5\frac{831}{1000}$.

Dan: My number has 5 ones, 3 tenths, 1 hundredth and 8 thousandths.

A = 5.831   B = 5.318   C = 5.803

GD   PS

Developing

1a. $\frac{637}{1000}$ is the odd one out because its matching decimal 0.637 is not given.

2a. Various possible answers, for example:
$0.549 = \frac{549}{1000}$, $0.459 = \frac{459}{1000}$, $0.945 = \frac{945}{1000}$

3a. A – Luke, B – Sasha

Developing

1b. $\frac{289}{1000}$ is the odd one out because its matching decimal 0.289 is not given.

2b. Various possible answers, for example:
$0.361 = \frac{361}{1000}$, $0.631 = \frac{631}{1000}$, $0.136 = \frac{136}{1000}$

3b. A – Freya, B – Jason

Expected

4a. 0.45 is the odd one out because its matching fraction $\frac{450}{1000}$ is not given.

5a. Various possible answers, for example:
$\frac{602}{1000} = 0.602$, $\frac{247}{1000} = 0.247$, $\frac{706}{1000} = 0.706$

6a. A – Ali, B – Katy, C – Violet

Expected

4b. 0.307 is the odd one out because its matching fraction $\frac{307}{1000}$ is not given.

5b. Various possible answers, for example:
$\frac{801}{1000} = 0.801$, $\frac{905}{1000} = 0.905$, $\frac{189}{1000} = 0.189$

6b. A – Seth, B – Marc, C – Jeni

Greater Depth

7a. 7.32 is the odd one out because its matching fraction $\frac{7320}{1000}$ or $7\frac{320}{1000}$ is not given.

8a. Various possible answers, for example:
$\frac{3906}{1000} = 3.906$, $\frac{4063}{1000} = 4.063$, $\frac{6409}{1000} = 6.409$

9a. A – Ella, B – Alina, C – Josh

Greater Depth

7b. 5.906 is the odd one out because its matching fraction $\frac{5906}{1000}$ or $5\frac{906}{1000}$ is not given.

8b. Various possible answers, for example:
$\frac{2071}{1000} = 2.071$, $\frac{8207}{1000} = 8.207$, $\frac{7028}{1000} = 7.028$

9b. A – Kelis, B – Dan, C – Liam