# Discussion Problems
# Step 2: Equivalent FDP

## National Curriculum Objectives:

**Mathematics Year 6: (6F6) Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]**
**Mathematics Year 6: (6F11) Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts**

## About this resource:

**This resource has been designed for pupils who understand the concepts within this step. It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.**

**There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.**

**We recommend self or peer marking using the answer page provided to promote discussion and self-correction.**

## More Year 6 Percentages resources.

## Did you like this resource? Don't forget to review it on our website.

# Equivalent FDP

**1. Angel the Archaeologist has uncovered an ancient tomb and a selection of cryptic slabs! She has worked out that less than 6, but more than 3 different slabs are needed in order to unseal the entrance to the tomb.**

**She says,**

> As a decimal, the total value of the slabs must not exceed 0.97. I must also use at least one slab with a fraction.

| | | | |
|---|---|---|---|
| Slab 1<br>27% | Slab 2<br>16% | Slab 3<br>0.275 | Slab 4<br>$\frac{3}{15}$ |
| Slab 5<br>$\frac{10}{25}$ | Slab 6<br>30% | Slab 7<br>$\frac{12}{60}$ | Slab 8<br>0.325 |

**Explore the possible combinations of slabs that are needed in order to unseal the tomb.**

DP

**2. Martin is trying to solve the equation below.**

**He says,**

> I have made sure that one of the calculations uses an equivalent fraction, decimal or percentage.

| Decimal | | Fraction | | Percentage |
|---|---|---|---|---|
| 0.2 | + | $\frac{1}{5}$ | = | 40% |

| | | | | |
|---|---|---|---|---|
| Fraction | | Percentage | | Decimal |
| ? | − | ? | = | ? |

\+ ⇨ Solution: 0.96

**Complete the calculation so that the equation is correct.**

**Investigate other solutions to both of the equations, ensuring an equivalent fraction, decimal or percentage is used in one of the calculations, as shown above.**

DP

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**Explore the possible combinations of slabs that are needed in order to unseal the tomb.**

**Various answers, for example: Slab 2, Slab 3, Slab 4 and Slab 8. This would provide a total of 0.96 as a decimal.**

DP

**2. Martin is trying to solve the equation below.**

**He says,**

> I have made sure that one of the calculations uses an equivalent fraction, decimal or percentage.

| Decimal | | Fraction | | Percentage |
|---|---|---|---|---|
| 0.2 | + | $\frac{1}{5}$ | = | 40% |
| + | | | | |
| Fraction | | Percentage | | Decimal |
| $\frac{6}{8}$ | − | 19% | = | 0.56 |

Solution: 0.96

**Complete the calculation so that the equation is correct.**

**Various answers, for example: As shown above.**

**Investigate other solutions to both of the equations, ensuring an equivalent fraction, decimal or percentage is used in one of the calculations, as shown above.**

**Various answers, for example: $0.1 + \frac{1}{10} = 0.2$; $\frac{9}{10} - 0.14 = 0.76$; $40\% = 0.4 + 0.56 = 0.96$.**

DP