Reasoning and Problem Solving
Step 17: Estimate Answers

National Curriculum Objectives:

Mathematics Year 3: (3C3) Estimate the answer to a calculation and use inverse operations to check answers

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Using given clues, estimate the 2-digit number that meets the criteria. Number line with start, end and middle markers given.
Expected Using given clues, estimate the 3-digit number that meets the criteria. Number line with start and end markers given.
Greater Depth Using given clues, estimate the 3-digit number that meets the criteria. No number line given.

Questions 2, 5 and 8 (Problem Solving)
Developing Create a 2-digit addition or subtraction that produces a given estimated answer using six digit cards. Number line with start, end and middle markers given.
Expected Create a 3-digit addition or subtraction that produces a given estimated answer using six digit cards.
Greater Depth Create a 3-digit addition or subtraction that produces a given estimated answer using six digit cards, where two are blank.

Questions 3, 6 and 9 (Reasoning)
Developing Using estimation, explain which statement is correct. Number line given with start, middle and end markers.
Expected Using estimation, explain which statement is correct. Number line given with start and end markers.
Greater Depth Using estimation, explain which statement is correct. No number line given.

More Year 3 Addition and Subtraction resources.

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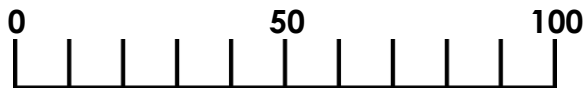
Estimate Answers

1a. Use the clues below to estimate what the number could be.

It is a 2-digit number.

The tens digit is even.

The nearest number is 50.

The ones digit is 8.

```
0            50           100
|--|--|--|--|--|--|--|--|--|--|
```
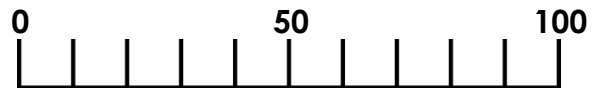
D — PS

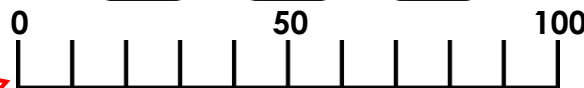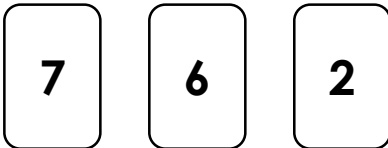**1b.** Use the clues below to estimate what the number could be.

It is a 2-digit number.

The tens digit is odd.

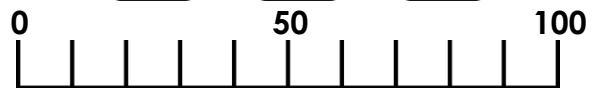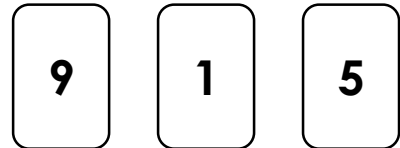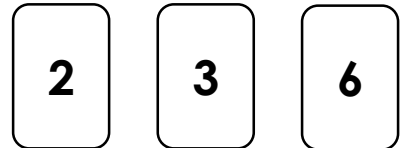The nearest number is 100.

The ones digit is 6.

```
0            50           100
|--|--|--|--|--|--|--|--|--|--|
```

D — PS

2a. Use the digit cards to create two 2-digit numbers that can be added or subtracted to produce an estimated answer of 60.

| 1 | 3 | 4 |
| 7 | 6 | 2 |

```
0            50           100
|--|--|--|--|--|--|--|--|--|--|
```
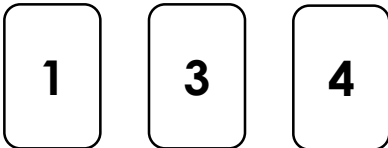
D — PS

2b. Use the digit cards to create two 2-digit numbers that can be added or subtracted to produce an estimated answer of 50.

| 2 | 3 | 6 |
| 9 | 1 | 5 |

```
0            50           100
|--|--|--|--|--|--|--|--|--|--|
```

D — PS

3a. Milo and Jasmine are estimating the answer to 28 + 43.

Milo: I estimate the answer to the calculation will be 70.

Jasmine: I estimate the answer to the calculation will be 60.

```
0            50           100
|--|--|--|--|--|--|--|--|--|--|
```
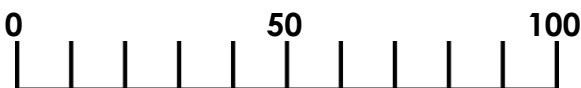
Who is correct? Convince me.

D — R

3b. Alisha and Kai are estimating the answer to 74 – 19.

Alisha: I estimate the answer to the calculation will be 50.

Kai: I estimate the answer to the calculation will be 40.

```
0            50           100
|--|--|--|--|--|--|--|--|--|--|
```

Who is correct? Convince me.

D — R

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Reasoning and Problem Solving – Estimate Answers – Year 3 Developing
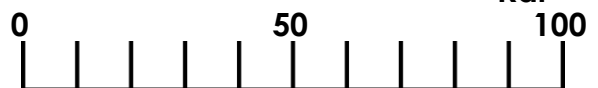
Estimate Answers

4a. Use the clues below to estimate what the number could be.
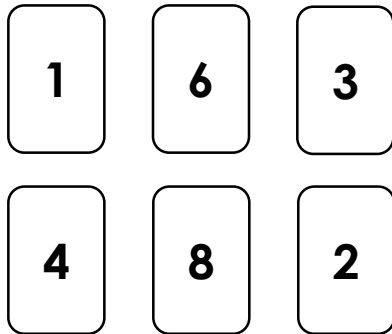
> It is a 3-digit number.

> The hundreds digit is odd.

> The nearest number is 600.

> The ones digit is 7.

550 | | | | | | | | | | 650

PS

4b. Use the clues below to estimate what the number could be.

> It is a 3-digit number.

> The hundreds digit is even.
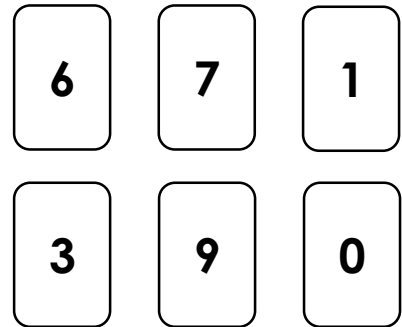
> The nearest number is 300.

> The ones digit is 9.

250 | | | | | | | | | | 350

PS

5a. Use the digit cards to create two 3-digit numbers that can be added or subtracted to produce an estimated answer of 400.

| 1 | 6 | 3 |
| 4 | 8 | 2 |

PS

5b. Use the digit cards to create two 3-digit numbers that can be added or subtracted to produce an estimated answer of 500.

| 6 | 7 | 1 |
| 3 | 9 | 0 |

PS

6a. Grace and Victor are estimating the answer to 408 − 129.

Grace: I estimate the answer to the calculation will be 280.

Victor: I estimate the answer to the calculation will be 380.

200 | | | | | | | | | | 400

Who is correct? Convince me.

R

6b. Holly and Henry are estimating the answer to 673 + 121.

Holly: I estimate the answer to the calculation will be 790.

Henry: I estimate the answer to the calculation will be 780.

600 | | | | | | | | | | 800

Who is correct? Convince me.

R

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Reasoning and Problem Solving – Estimate Answers – Year 3 Expected

7a. Use the clues below to estimate what the number could be.

> Its nearest number is 700.

> All three digits added together make an odd number.

> When the hundreds digit is odd, the tens digit is even.

> When the hundreds digit is even, the tens digit is odd.

PS

7b. Use the clues below to estimate what the number could be.

> Its nearest number is 450.

> The ones digit is more than 4 and less than 8.

> The difference between two of the digits is 2.

> Two of the digits added together make an odd number.

PS

8a. Lucie has used the cards below to create two 3-digit numbers that can be added or subtracted to produce an estimated answer of 450. What could the missing numbers be? Show your working.

| 3 | | 5 |
| 9 | 7 | |

PS

8b. James has used the cards below to create two 3-digit numbers that can be added or subtracted to produce an estimated answer of 650. What could the missing numbers be? Show your working.

| 0 | 1 | |
| 2 | | 7 |

PS

9a. Helen and Lei are estimating the answer to 948 – 252.

Helen: I estimate the answer to the calculation will be 650.

Lei: I estimate the answer to the calculation will be 700.

Who is correct? Convince me.

R

9b. Amaya and Jack are estimating the answer to 302 + 451.

Amaya: I estimate the answer to the calculation will be 800.

Jack: I estimate the answer to the calculation will be 750.

Who is correct? Convince me.

R

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Reasoning and Problem Solving – Estimate Answers – Year 3 Greater Depth

Reasoning and Problem Solving
Estimate Answers

Developing

1a. 48

2a. Various answers, for example:
37 + 16 (40 + 20), 47 + 13 (50 + 10), 73 – 12 (70 – 10).

3a. Milo is correct because he has used the nearest numbers of 30 + 40 = 70.

Expected

4a. Various answers, for example: 577, 587, 597

5a. Various answers, for example: 618 – 243 (600 – 200), 186 + 234 (200 + 200), 348 + 126 (300 + 100)

6a. Grace is correct because she has used the nearest numbers of 410 – 130 = 280.

Greater Depth

7a. Various answers, for example: 724, 742, 692

8a. Various answers, for example: 2̲53 + 1̲95, 7̲4̲9 – 3̲0̲5, 9̲4̲3 – 5̲2̲7.

9a. Lei is correct because he has used the nearest numbers of 950 – 250 = 650.

Reasoning and Problem Solving
Estimate Answers

Developing

1b. 76 or 96.

2b. Various answers, for example:
36 + 12 (40 + 10), 29 + 16 (30 + 20), 62 – 13 (60 – 10).

3b. Alisha is correct because she has used the nearest numbers of 70 – 20 = 50.

Expected

4b. Various answers, for example: 279, 289, 299

5b. Various answers, for example:
397+ 106 (400 + 100), 703 – 196 (700 – 200), 639 – 107 (600 – 100).

6b. Holly is correct because she has used the nearest numbers of 670 + 120 = 790.

Greater Depth

7b. Various answers, for example: 456, 425, 457.

8b. Various answers, for example: 5̲02 + 14̲7, 8̲5̲7 – 1̲9̲0, 7̲5̲2 – 10̲3.

9b. Jack is correct because he has used the nearest numbers of 300 + 450 = 750.

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