ANSWERS

Stage 2

Year 3 Maths

# Answers

## A. Breaking Open *a* Thousand

### Worksheet

**A1.** 10 hundreds · 100 tens · 1 000 ones

**A2.** (*a*) 14 · (b) 20 · (c) 36

**B1.** (*a*) 2 999 · (b) 5 099 · (c) 3 999 · (d) 2 010

**B2.** (*a*) 3 000, 3 010 · (b) 4 000, 4 100

**B3.** Names the empty columns — there are no ones and no tens to take one from · Names the regrouping — so *a* thousand is opened into hundreds, then tens, then ones

**C1.** (*a*) 15 hundreds · (b) 30 hundreds · (c) 240 tens · (d) 10 hundreds

**C2.** 2 900 near the right-hand end, 2 090 near the left · 2 090 has 0 hundreds

### Homework

**1. (*a*) 18 hundreds · (b) 26 hundreds · (c) 40 hundreds. (c) is the one to check.** The hundreds **digit** in **4 000** is **0**, but there are **40 hundreds** in it. Put out four thousand-blocks and count the flats.

**2. 10 hundreds · 100 tens · 1 000 ones.** ☆ **The middle one is the one people miss** — one hundred is 10 tens, and there are 10 hundreds, so that's **100 tens**.

**3. (*a*) 1 999 · (b) 4 100 · (c) 8 099.** ☆ **Look at (c):** *a* zero appeared that wasn't there before.

**4. 2 000, 2 010.**

**5. 3 000, 3 100.**

**6. 10 hundreds.** **2 000** = 1 thousand + 10 hundreds. **That's the swap** — you opened one thousand up.

**7. 35 hundreds** and **350 tens**. If you wrote *35* for the tens, you stopped at hundreds — there are **ten tens in every hundred.**

**8.** No right answer. ☆ **If the grown-up got it wrong, that's interesting — most adults have never been asked *why*.**

**9. 9 999** — and **five digits changed**, because there was nothing in any of the columns to take one from. **Same idea, one column further along.**

**10. 4 thousands · 40 hundreds · 400 tens · 4 000 ones.** ☆ **What to notice: each one is ten times the one before it**, because each unit is ten times smaller. **Same amount of stuff,**

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**every time.**

## B. The Gap Stays the Same

### Worksheet

**A1.** (a) 3 · (b) 3 · (c) 3

**A2.** A correct sentence — e.g. 9 − 6 = 53 − 50 · Because the gap is the same / both numbers moved together

**B1.** (a) up 1 → 63 − 40 = 23 · (b) up 2 → 86 − 50 = 36 · (c) up 2 → 147 − 100 = 47 · (d) up 4 → 217 − 100 = 117

**B2.** (a) The 98, aimed at 100 · (b) Both numbers moved the same amount, so the gap between them is unchanged

**C1.** (a) 2 across → 40 + 44 = 84 · (b) 3 across → 60 + 25 = 85 · (c) 1 across → 130 + 35 = 165

**C2.** (a) Both the same way *(both up, or both down)* · (b) Across — one up, one down — because an add is a TOTAL, and moving both up makes it bigger

**C3.** (a) 36 + 48 = 84 · (b) Because doing the same sum again repeats the same mistake

### Homework

**1. (a) 3 · (b) 3 · (c) 3.** ☆ **They're all 3** — the numbers get bigger but the gap between them never changes. **That's the whole week.**

**2. (a)** both up **1** → **52 − 30** = **22** · **(b)** both up **1** → **137 − 100** = **37** · **(c)** both up **2** → **74 − 50** = **24**. **Check you aimed at the second number** — the one being taken away.

**3. (a) 1** across → **30 + 35** = **65** · **(b) 2** across → **200 + 45** = **245** · **(c) 3** across → **50 + 22** = **72**.

**4. A take away is a GAP.** If both numbers move the same way, the gap between them doesn't change. **An add is a TOTAL.** If you give 2 to one number *and* 2 to the other, you've made the total 4 bigger — so you have to **move it across** instead: one up, one down.

**5.** **24 + 48 = 72** . ☆ *(**72 − 24 = 48** also checks it.)* **Adding undoes taking away. Don't check by doing** **72 − 48** **again** — if you got it wrong once you'll get it wrong the same way.

**6.** Lots of right answers. Two $1 + one 20c · one $1 + two 50c + one 20c · eleven 20c · four 50c + one 20c. **Check yours adds to 220 cents.**

**7. 220 cents.** Not 22 — **there are 100 cents in every dollar.**

**8.** No right answer. ☆ **If they used columns in their head, ask them which was faster.**

**9.** Both up **1** → **302 − 200** = **102.**

**10.** **70 − 45** = **25**. ☆ **It still works** — the gap survives whichever way you slide. **But it isn't easier**, because 45 is no nicer than 48. **That's the point: moving is only worth doing if it lands somewhere round.**

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