Part–whole bar models: answers and notes

What your child practised: using a part–whole bar model to choose to add (whole missing) or subtract (a part missing), with numbers up to 3 digits.

Page 1 · Warm up

a **70** · b **30** · c **700** · d **100**

Page 2 · Try it together

Answers will vary. Check: the two parts add up to the whole.

Page 2 · A. Missing numbers

1. 324 + 152 = **476**
2. 580 − 260 = **320**
3. 765 − 432 = **333**
4. 218 + 341 = **559**

Page 3 · B. Cases

1. Add: 136 + 152 = **288** sandwiches
2. Subtract: 465 − 230 = **235** children
3. Subtract: 284 − 150 = **134** pages

Page 3 · C. Write a story

400 − 250 = **150**. Any story with 400 as the whole and 250 as a part, such as "400 people are at the beach. 250 are swimming. How many are not?"

Challenge: No. 360 is already the **whole** (all the shells), so the pink shells are a missing part: 360 − 140 = **220** pink shells. Check: 220 + 140 = 360. Leo added because he saw two numbers, without asking which one was the whole.

Watch out for

- **Adding when the total is already given** (as Leo did). Ask, "Is this number all of them, or just some?" Point to the top bar and say, "This is everything."
- **Mixing up hundreds, tens and ones** when working out, such as 765 − 432 = 433. Work column by column: hundreds 7 − 4, tens 6 − 3, ones 5 − 2.
- **Bars that don't match the numbers.** They needn't be exact, but a bigger part should look bigger: it helps spot answers that don't make sense.

Going further (5 minutes, no paper)

- **Story swap:** say "245 people at a match, 120 are children". Your child asks and answers the question, then makes one up for you.
- **Fact families:** from 150 + 250 = 400, say the other three facts in the family.
- **In the game:** Chapter 2, Change problems: adding on and taking away, has stories where an amount goes up or down.