

Lesson 71 MEASURES

Sale prices in a shop: multi-step money problems

CURRICULUM ALIGNMENT

MEA.MON.4

solve and pose practical tasks to investigate and make informed judgements about transactions and financial plans.

NUM.FRC.4a

explore (model, compare and convert) the relationships between fractions, decimals and percentages.

INTERACTIVES Coin Counter · challenge, display

WHAT THIS LESSON TEACHES

To find a sale price, work out the percent discount and take it off the original price. Then subtract the sale price from the cash you hand over to find the change.

→ A €25 jumper at 20% off: 20% of €25 is €5, so the sale price is €20.

→ €40 at 25% off is €30; a further €5 off makes €25.

MODEL THIS ON THE BOARD

JUMPER SALE AND CHANGE

- 1 A jumper is marked €25 with 20% off.
- 2 10% of €25 is €2.50, so 20% is €5.
- 3 Sale price = €25 - €5 = €20.
- 4 You hand over a €50 note.
- 5 Change = €50 - €20 = €30.

LESSON ARC

Open with one shop tag on the IWB — €25 jumper, 20% off, €50 handed over — and pull the two hidden questions out of it before solving anything. Model the 10%-then-double method on the coin tray: 10% of €25 is €2.50, double to €5 off, sale price €20, count on to €50 for €30 change. Pupils take turns at the board through the Try It Together and Class Challenge tags, then work three-line solutions in their copy.

TEACHING MOVES

1. **Getting Started.** Put the €25 / 20%-off / €50 tag on the board and take two or three hands-up — not open call-outs. Push until pupils name both hidden questions: what's the sale price, and what's the change from €50. Resist solving either; that reveal is the whole lesson.
2. **Watch and Notice.** Model 10%-then-double aloud as you point: 10% of €25 is €2.50, double to €5 off, so pay €20. This method finds any percentage — make it explicit. On the second tag, hold out and ask 'what does the second €5 come off?' Land that it comes off the reduced €30, not the original €25 — that's the trap.
3. **Try It Together.** Pupils take turns at the board; the class agrees or corrects aloud. For €60 at 30% off, prompt 10% (€6) then triple (€18 off) to reach €42, count on to €50 for €8 change. On the two-shop tag keep asking 'is the milk discounted?' — only the cereal is.
4. **Work It in Three Lines in Your Copy.** Walk the room checking the three-line layout is holding: line 1 the percent off, line 2 the sale price, line 3 the change, change underlined. Glance for pupils who jump straight to change without the percent line — that ordering is the point.

5. **Class Challenge.** Work the first tag aloud so the discount step is visible, then keep the board work brisk — pupils take turns and check each answer as they go, class confirms before moving on. Before the final stacked-50% tag, ask whether 50% then 50% equals 100% off. Leave it hanging for the maths-talk.
6. **What Did We Notice?.** Run the €40 jacket down the board: 50% off to €20, then 50% off the €20 to €10 — not free. Re-voice the rule: 'each discount comes off the price you have left, not the price you started with.' Display only — this is talk, not a written answer.

COMMON MISCONCEPTIONS

⚠ Pupils take the second discount off the original price: for €40 at 25% off then €5 off, they do $€40 - €10 - €5 = €25$ by chance but reason from the wrong number, or worse write $€40 - €5 = €35$ first. Stop and ask 'what does the €5 come off?' Rebuild on the coin tray: $€40 \rightarrow €30$ after 25%, and lay the €5 discount physically against the €30 pile, not the €40 tag. Say 'the second cut always comes off what's left.'

⚠ Pupils say 50% off then a further 50% off is the same as 100% off, so the €40 jacket is free. Follow the price down the board with coins: $€40 \rightarrow €20 \rightarrow €10$. Have a pupil count out the €10 that's still owed. 'Half of a half is a quarter left, not nothing' — the second half comes off the smaller €20 pile.

⚠ Pupils count the change straight from €50 to the original price instead of from the sale price (e.g. change on the €25 jumper counted as €25 not €30). Point back to the three-line layout: the change is always built from line 2, the sale price. Count on aloud from €20 with the coin tray — $€20 \rightarrow €30 \rightarrow €50$ — so the €30 is heard, not just calculated.

DIFFERENTIATION

EMERGING

- Stick to 10%, 25% and 50% tags where the discount is friendly; skip the stacked-discount tags until the single-step order is secure.
- Give the sale price already worked so the pupil only builds the change on the coin tray, counting on from the sale price to the cash paid.

DEVELOPING

- After the copy page, hand a tag with an odd percent — 15% off €30 — and ask them to combine 10% (€3) and 5% (half of that, €1.50) to reach €4.50 off.
- Ask them to write the stacked-discount tag as one question a friend could get wrong, then answer their own trap.

PROFICIENT

- Pose: 'does 50% then 50% ever equal 100% off? Find a discount pair that IS the same as one bigger single discount, or show why none is' — narrate one attempt at the board for the class.
- Pull them ahead into the Student Activity Book practice page while the class finishes the Class Challenge trail.

✓ **Cross-curricular:** Tie to the SESE local-shop context — pupils bring a real sale flyer from a Centra or Dunnes and price one item at the advertised percent off.

ANSWER KEY

Scaffold: visual check on the page

Q1: €30, change €20

Q2: €10, change €10

Q3: €42, change €8

a) Always : 20% of 25 is 5 and 25 minus 5 equals 20.

b) Always : 50 minus 20 equals 30.

c) Never : Half then half of what is left leaves one quarter of the original price.

d) Sometimes : For the same item a bigger discount always leaves more change, but 50% off €80 leaves less change from €100 than 10% off €20.

EXTENSION SHEET · STRETCH ANSWERS

S1: €410.95 (discount: €56.04)

S2: €22.61 (discount: €6.38)

S3: €311.94 (discount: €55.05)

S4: €287.29 (discount: €50.70)

S5: €1068.90