

Lesson 24 **NUMBER****Multiplication facts: practice and fluency**

CURRICULUM ALIGNMENT

NUM.OPS.3

understand and apply flexibly the four operations; and the relationships between operations.

ALG.PRR.3a

identify rules that describe the structure of a pattern and use these rules to make predictions.

INTERACTIVES

Fact Race · challenge, display, explore

WHAT THIS LESSON TEACHES

Multiplication facts are quick times-table answers we learn off by heart so we can say them fast in games. A known fact can also help us reach a new one by doubling.

→ $3 \times 4 = 12$ → 6×2 from 3×2 doubled

MODEL THIS ON THE BOARD

DOUBLE A KNOWN GAME FACT

- 1 Start with a fact you know well from play: $3 \times 2 = 6$.
- 2 Double the first factor to make the new fact 6×2 .
- 3 Double the product as well: 6 doubled is 12.
- 4 So the quick fact is $6 \times 2 = 12$.

DISCUSSION STARTER

REFLECT

Which table feels fastest now, and which fact still needs more practice?

LESSON ARC

Open with three fast hands-up facts from known tables, then ask which table slows each pupil down. On the fact-race cards on the board, build the anchor $3 \times 4 = 12$, then show 6×4 as double that, then rescue a slow 4×7 . Run the deck untimed together, then pupils record their three hardest facts with a helper beside each in copybook. The timed Class Challenge deck follows, finishing on a mixed-tables deck.

TEACHING MOVES

1. **Getting Started.** Fire the three facts fast, hands up not call-outs, three answers each. Then push for an honest answer to the slow-table question — you need at least one pupil naming a table they find slow, because that's the table today's helper-fact trick rescues.
2. **Watch and Notice.** Walk the three cards one at a time. On 3×4 get the class saying 'twelve' fast and hold it. On 6×4 ask 'six fours is double which fact we just did?' before you reveal twenty-four. Land the message hard on 4×7 : a fact you know fast carries you to one you don't.
3. **Try It Together.** Keep it untimed so nobody freezes, rotating five or six pupils across the run. When someone hits a 3s or 4s fact, pause and ask 'which fact did that lean on?' and revoice a good answer — 'so four sixes was double two sixes.'
4. **Write Your Helper Facts in Your Copy.** Walk the room glancing that each hard fact has a sensible helper beside it — this is practice, not marking. If a pupil is stuck picking a helper, point them back to the doubling trick from the board rather than choosing it for them.

5. **Class Challenge.** Race the timer, pupils taking turns at the board, class confirming each answer before moving on — keep it brisk, don't re-explain. Always run the 2s/10s warm-up and finish on the mixed deck; add the 5s and 3s/4s decks between only if time allows. On the 3s/4s deck prompt 'spot the helper before you answer.'
6. **What Did We Notice?** Listen for pupils naming the doubling link — fours from twos, sixes from threes. Draw out that both pupils in the prompt can be right: the fact isn't hard once you have a helper. Revoice: 'a hard-looking fact turns easy when you lean on one you know fast.'

COMMON MISCONCEPTIONS

⚠ Pupils reach for a helper fact on the fast tables too — pausing to work out 2×5 as 'double one five' when they should just know it instantly.

On the Try It Together run, remind them: the helper is only for the 3s and 4s. On 2s, 5s and 10s the win is instant recall — no thinking step. Speed those answers up before you slow down for the trickier decks.

⚠ A pupil doubles the wrong anchor for 6×4 — they double the six instead of the fact, or add $12 + 4$ instead of $12 + 12$.

Go back to the 3×4 card on the board. Show three groups of four, then physically duplicate the whole group so it's now six groups of four — the twelve doubles, not one of the numbers. Have the pupil say 'six fours is two lots of three fours.'

DIFFERENTIATION

EMERGING

- During Try It Together, hand these pupils only 2s, 5s and 10s facts on their board turn — instant-recall tables — and save the helper-fact decks for stronger pupils.
- In the copybook step, let them write just one hard fact with its helper rather than three, and steer them to a doubling pair you've already modelled (fours from twos).

DEVELOPING

- After the mixed deck, ask them to name a helper for 8×4 — can they double 4×4 , or double-double 2×4 ? Which route is faster?
- Ask them to find a fact where the doubling trick does NOT help, and explain why (e.g. odd-times tables like the 5s standing alone).

PROFICIENT

- During the mixed-deck Class Challenge, task a fast finisher with narrating aloud, before each answer appears, which helper fact they'd use and why — turning them into the class's think-aloud voice for one run.
- Pose: 'sevens are hard for everyone — invent a helper-fact route to 7×6 using tables you already own, and prove it works.'

✂ **Cross-curricular:** Tie to PE — count laps in equal groups (three groups of four cones) and race to name the total using a helper fact before anyone counts.

ANSWER KEY

Q1: 10 steps

Q2: 9 points

Q3: 8 cards

Q4: 63 jumps

Q5: 12 matches

Q6: 40

a) **Always** : Two numbers always multiply to the same product.

b) **Always** : Factors can swap order and the product stays the same.

c) **Sometimes** : Doubling helps when the new fact stays inside the tables you are learning.

d) **Never** : Fluency grows from steady practice and timers are only one later tool.

EXTENSION SHEET · STRETCH ANSWERS

S1: 36. One more 6 than 6×5 .

S2: 54. Six nines are double three nines.

S3: 4 and 10

S4: 4×10 and 5×8 . Both make 40.

S5: 42 biscuits