Times Tables Champions: Beat the Tricky Ones

Teacher		**Class**	Year 4
Subject	Maths	**Topic**	Times tables up to 12 × 12
Date		**Room**	
Lesson length	60 minutes	**Country**	United Kingdom

Pupils recall multiplication and division facts up to 12 x 12. They play a timed pairs game to beat the tricky facts.

Curriculum links

- recall multiplication and division facts for multiplication tables up to 12 x 12 [2]

Learning objectives

- Students will recall multiplication facts for tables up to 12 x 12 quickly.
- Students will recall matching division facts for tables up to 12 x 12.
- Students will use known facts to work out tricky facts accurately.

Success criteria

- I can answer mixed multiplication facts to 12 x 12 fast.
- I can turn any multiplication fact into its division facts.
- I can explain a trick for a tricky fact.

What students already know

Show 2 x 4, 5 x 3, 10 x 6 on mini whiteboards in 2 minutes to check confident tables.

Key words

multiplication	adding equal groups lots of times
division	sharing into equal groups
product	answer you get when you multiply
factor	number you multiply with another number

Materials

- Slides 1-7 and 9-11
- Video clip 1 (0:15-3:20) on slide 6
- fact cards to 12 x 12 including 6 x 8 and 8 x 6
- score sheet
- timer
- printed 12 x 12 grid for checking
- mini whiteboards and pens
- Worksheet Task B copies

Before the lesson

- Print class set of 12 x 12 grids and Worksheet Task B, print and cut fact cards and score sheets
- Test Slide 6 Video clip 1 (0:15-3:20) with sound and timer display
- Set tables in pairs with cards face down, grids ready, room kept seated for game

Lesson outline

0–7 min **Starter** 7 min · Whole class

Hook pupils on tricky facts and revisit confident tables for the objectives.

YOU DO

1. Show Slide 1 Times Tables Champions and say hook: Most classes trip on the same few facts - shall we beat them?
2. Show Slide 2 Today we will and read the three goals for recall to 12 x 12 [2].
3. Show Slide 3 Key words and chant meanings for multiplication, division, product and factor.
4. Quick-fire 2s, 5s and 10s facts and ask what stays the same when order swaps.

STUDENTS DO

1. Chant and show answers for 2s, 5s and 10s on whiteboards.
2. Repeat key words and explain product means the answer in own words.

Say: Today we become Times Tables Champions. We will recall multiplication facts to 12 x 12 and the matching division facts fast. First let us warm up with the tables you know best, then we attack the tricky ones.

Ask: What is 5 x 4 and what division fact does it give us? (20, so 20 ÷ 5 = 4 and 20 ÷ 4 = 5.) · If 2 x 7 = 14, what is 7 x 2? (14, swapping the order still works.)

Check understanding: Whiteboards up on 4 questions; if many hesitate, repeat 2s, 5s, 10s once more before moving on.

Support: Show answers on a small 2, 5 and 10 strip to read and say aloud. **Stretch:** Ask for both division facts for each warm-up multiplication without looking.

Use: Slides 1-3

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7–19 min **Teaching** 12 min · Whole class

Model fact families and tricks for hard facts to 12 x 12.

YOU DO

1. Show Slide 4 Our biggest fact: 144 is 12 x 12, our biggest fact, in the corner of the 12 times grid [4].
2. Show Slide 5 Think, pair, share: If you know 6 x 7 = 42, what else do you know? Model 7 x 6 = 42, 42 ÷ 6 = 7, 42 ÷ 7 = 6.
3. Show Slide 7 mindmap and Slide 10 bullets; model double your 2s to get 4s and double your 6s to get 12s [13].
4. Work 6 x 4 = 24, so 12 x 4 = 48 on the board and check on the printed grid [4]. Note all products in the 12 table are even numbers that can be divided by 2 [13].

STUDENTS DO

1. Pair-share answers to Slide 5 and write the full fact family on whiteboards.
2. Practise doubling 6 x 3 = 18 to get 12 x 3 = 36 and say the division pair.

Say: One fact gives you a whole family. If you know 6 x 7 = 42, you also know 7 x 6 = 42 and the divisions. If you know your sixes, you half-know your twelves because you just double the answer.

Worked example: 12 x 4: start with 6 x 4 = 24 [4]. Double the product: 24 + 24 = 48, so 12 x 4 = 48 [13]. Family: 4 x 12 = 48, 48 ÷ 4 = 12, 48 ÷ 12 = 4.

Ask: If 6 x 8 = 48, what is 12 x 8? (96, double 48, check where row 12 and column 8 meet on the grid [8].) · We know 7 x 8 = 56, what two divisions do we know? (56 ÷ 7 = 8 and 56 ÷ 8 = 7.) · Why does doubling 6 work to get 12? (Because 12 is double 6, so 12 groups is twice 6 groups.)

Check understanding: Hinge on whiteboards: write family for 7 x 8 = 56; if wrong, rebuild 3 x 4 as 3 rows of 4 dots to show what multiplication means [10].

Support: Give a 6 times table strip to copy from, so pupils only practise the doubling step. **Stretch:** Try splitting 12 another way, such as 10 + 2, and add the two parts together.

Use: Slides 4-5, 7, 10

19–28 min **Guided quiz** 9 min · Whole class

Practise fast mixed recall and spotting division pairs together.

YOU DO

1. Show Slide 6 Quiz time and explain: listen for the fact, say the answer fast, spot the division pair.
2. Play Video clip 1 (0:15-3:20) Easy 2 to 12 quiz, pause after every 3-4 facts.
3. Cold-call division pair each time, e.g. 7 x 8 = 56 so 56 ÷ 8 = 7, recalling tables up to 12 x 12 [2].
4. List 3 class tricky ones on the board, including 6 x 8 and 8 x 6 which pupils often get wrong [8].

STUDENTS DO

1. Join in out loud with the video and show division on whiteboards when paused.
2. Vote for own tricky one and copy the class list of 3 to beat.

Say: Listen for the fact and shout the answer on three. Then tell your partner the division straight away. If it is tricky, we keep it for our game.

Worked example: Heard: 9 x 4. Answer: 36. Division pair: 36 ÷ 9 = 4. Check: digits 3 + 6 = 9 pattern for nines.

Ask: You heard 8 x 6 = 48, what divisions prove it? (48 ÷ 8 = 6 and 48 ÷ 6 = 8.) · Which facts feel slowest and why? (6 x 8, 7 x 8, 12 x 8, the bigger facts, with 6, 7, 8 and 12 as factors.)

Check understanding: Thumbs up if keeping up; if many lost, replay last 30 seconds without timer and chant answers.

Support: Allow printed grid for checking answers during the quiz [4]. **Stretch:** Say the division fact before the answer is confirmed on screen.

Use: Slide 6, Video clip 1 (0:15-3:20)

28–50 min **Main activity** 22 min · Pairs

Improve accuracy on hard facts through timed pairs play and short written recall.

YOU DO

1. Show Slide 9 Your task and deal fact cards including 6 x 8 and 8 x 6 [8], score sheet, timer and printed grid [4].
2. Time 2-minute rounds: Student A asks, Student B answers, then swap; check each answer on the printed grid [4].
3. Direct sorting into know it and still learning it piles and tick fast ones, circle tricky ones on score sheet.
4. Hand out Worksheet Task B Practice questions: recall each fact quickly, use the inverse to check division; stop game at 14 minutes for 8 minutes writing.

STUDENTS DO

1. Play timed pairs rounds, say multiplication then division, sort cards and record score.
2. Complete Worksheet Task B on their own, using inverse to check each division.

Say: Take turns to ask six facts. Say the matching division fact every time. Tick fast ones and circle tricky ones. Keep cards on tables, stay seated, and check with the grid if you disagree.

Worked example: Card: 7 x 8. Say: 56, so 56 ÷ 7 = 8. Partner checks grid where row 7 and column 8 meet [8]. Score 1 point, card moves to know it pile.

Ask: You circled 12 x 7 = 84, how could sixes help? (6 x 7 = 42, double to 84, so 12 x 7 = 84 [13].) · How do you know 96 ÷ 12 = 8 is right? (Because 12 x 8 = 96, use the inverse to check.)

Check understanding: Collect score sheets, count how many moved from still learning to know it; if time up, finish current pair then pens down.

Support: Remove the 6, 7, 8 and 12 cards at first and build up from confident tables. **Stretch:** Add division cards such as 96 ÷ 12 and 84 ÷ 7, with a shorter time limit.

Use: Slide 9, Worksheet Task B

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50–60 min **Plenary** 10 min · Whole class

Check recall of multiplication and division facts and tricks learned.

YOU DO

1. Show Slide 11 True or false and read each: 7 x 8 = 56, 72 ÷ 9 = 8, 12 x 11 = 132 where the grid shows 132 [4], 48 ÷ 6 = 8.
2. Ask pairs to show true or false on whiteboards and explain with family or trick.
3. Return to objectives: who can answer mixed facts fast and turn them to divisions?
4. Set homework and collect in Worksheet Task B for marking.

STUDENTS DO

1. Show true or false, justify with multiplication family or grid check.
2. Self-assess against I can statements and note two facts to practise.

Say: Prove you are champions. Show true or false and tell us how you know. Use the grid, the family, or a trick like doubling sixes.

Worked example: 72 ÷ 9 = 7 is false. Correct is 72 ÷ 9 = 8 because 9 x 8 = 72. 12 x 11 = 132 is true, grid row 12 column 11 shows 132 [4].

Ask: True or false: 48 ÷ 6 = 7? (False, 48 ÷ 6 = 8 because 6 x 8 = 48.) · What trick helped most with 12s today? (Double the 6s product, e.g. 6 x 4 = 24 so 12 x 4 = 48 [13].)

Check understanding: Exit whiteboards on 3 questions; if divisions weak, revisit fact circles next lesson before new tables check practice like Year 4 in-school check to 12 [3].

Support: Point to grid intersection to prove answer while saying fact aloud. **Stretch:** Explain why square numbers like 8 x 8 = 64 give only two facts, not four.

Use: Slide 11

Common mistakes

Mistake	How to spot it	How to fix it
Mixing 6 x 8 and 7 x 8, saying 54 or 52 instead of 48 and 56	Wrong answers cluster on 6, 7, 8 and 12 cards which pupils often get wrong [8].	Anchor 6 x 8 = 48 on grid where row 6 and column 8 meet [8], then build 7 x 8 = 56 as one more 8.
Reversing division, e.g. 56 ÷ 8 = 7 written as 8 ÷ 56 = 7	Pupil writes small number first in Task B inverse check.	Rebuild 3 rows of 4 dots is 12 so 12 ÷ 3 = 4 [10]; product always goes first in division.
Saying 72 ÷ 9 = 7 or 48 ÷ 6 = 7	True or false Slide 11 shows thumbs for false statements.	Check with multiplication: 9 x 8 = 72 so 72 ÷ 9 = 8; use finger pattern and grid [4].

Support

- Remove the 6, 7, 8 and 12 cards at first and build up from confident tables.
- Allow printed 12 x 12 grid for checking answers [4] and a 6 times table strip for doubling.

Stretch

- Add division cards such as 96 ÷ 12 and 84 ÷ 7, with a shorter time limit.
- Explain square facts and split-12 methods like 10 + 2 to prove answers.

For the LSE or teaching assistant

Sit with target pair in main game, prompt division each turn, manage timer and grid checking, scribe score sheet if needed.

Safety

- Keep the game seated and cards on tables to avoid rushing and tripping.

Check for understanding

Question	Answer
What is 7 x 8 and its fact family?	56; 8 x 7 = 56, 56 ÷ 7 = 8, 56 ÷ 8 = 7
What is 12 x 11?	132
If 6 x 7 = 42, what is 12 x 7? How do you know?	84; double 42 because 12 is double 6

Homework

Practise your two circled tricky facts and teach someone the trick you used.

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