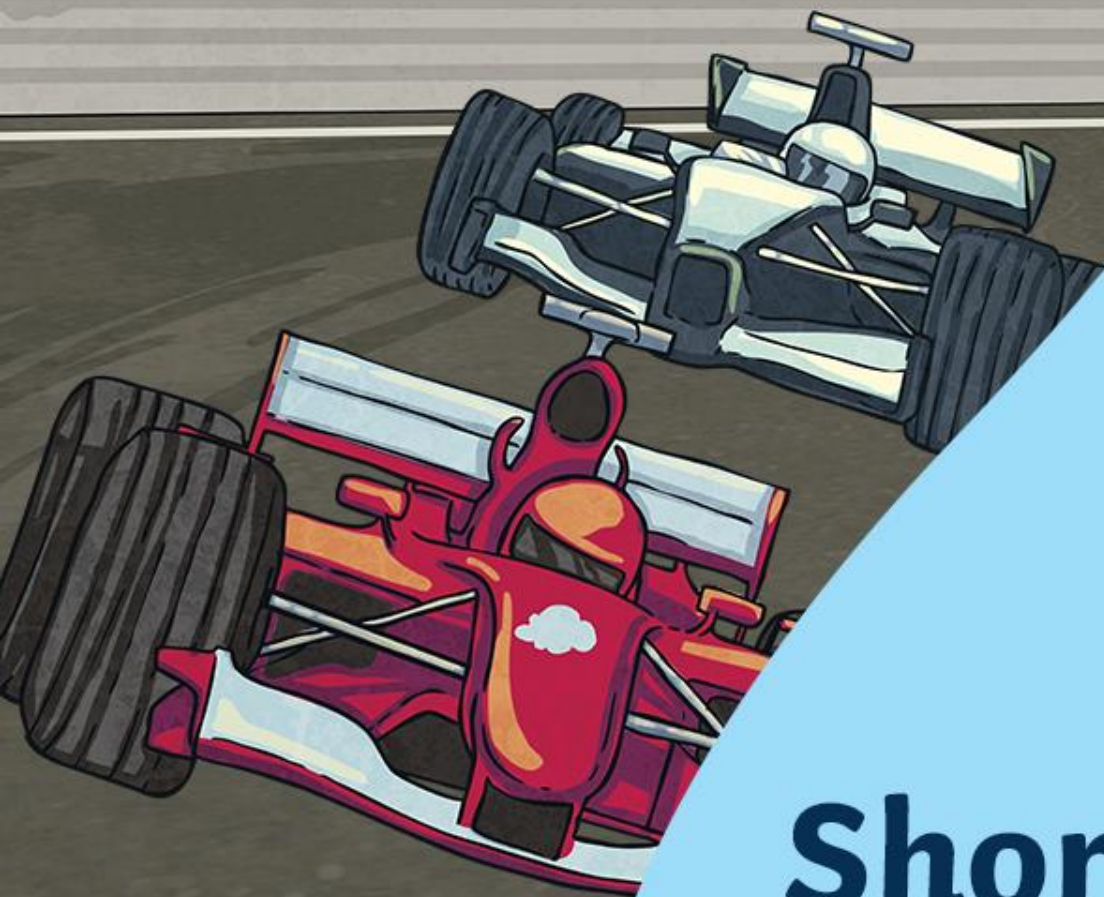


Diving into Mastery



# Short Division

# Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



**Diving**



**Deeper**



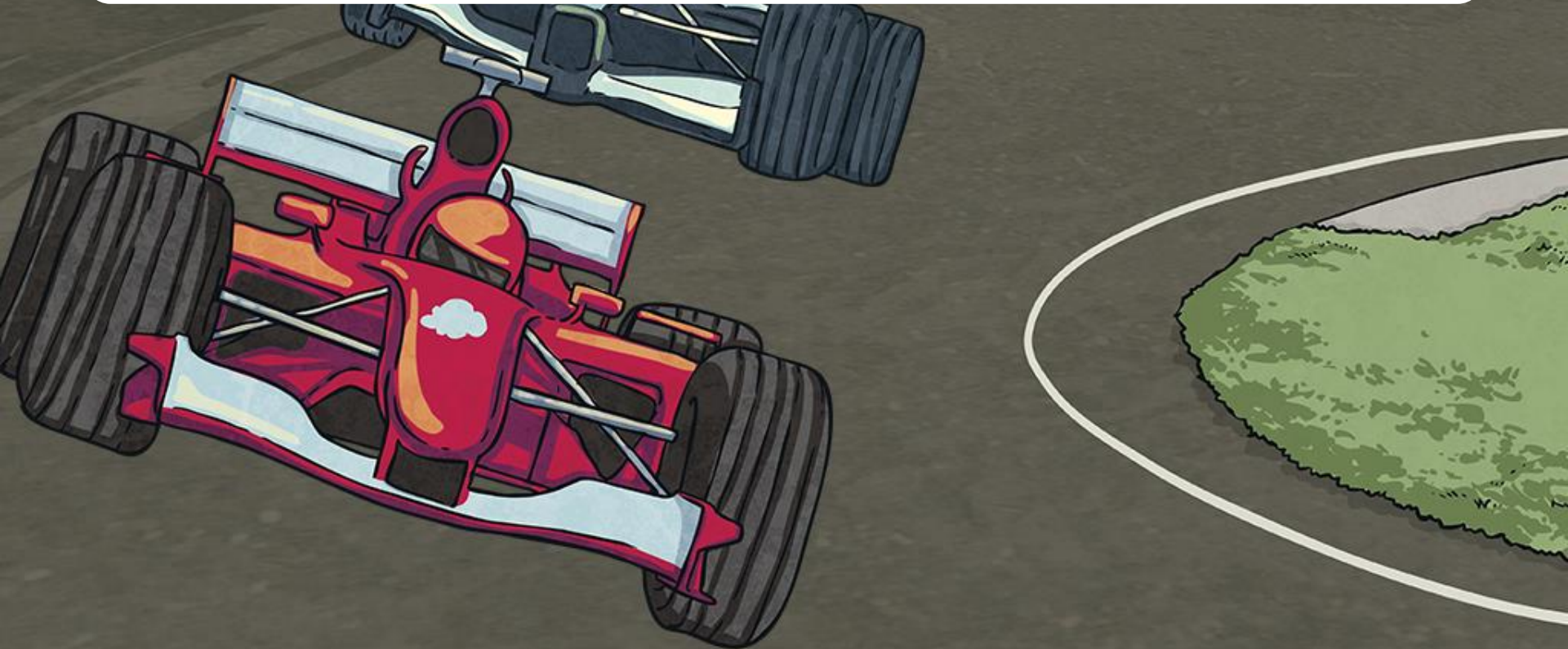
**Deepest**

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

# Aim

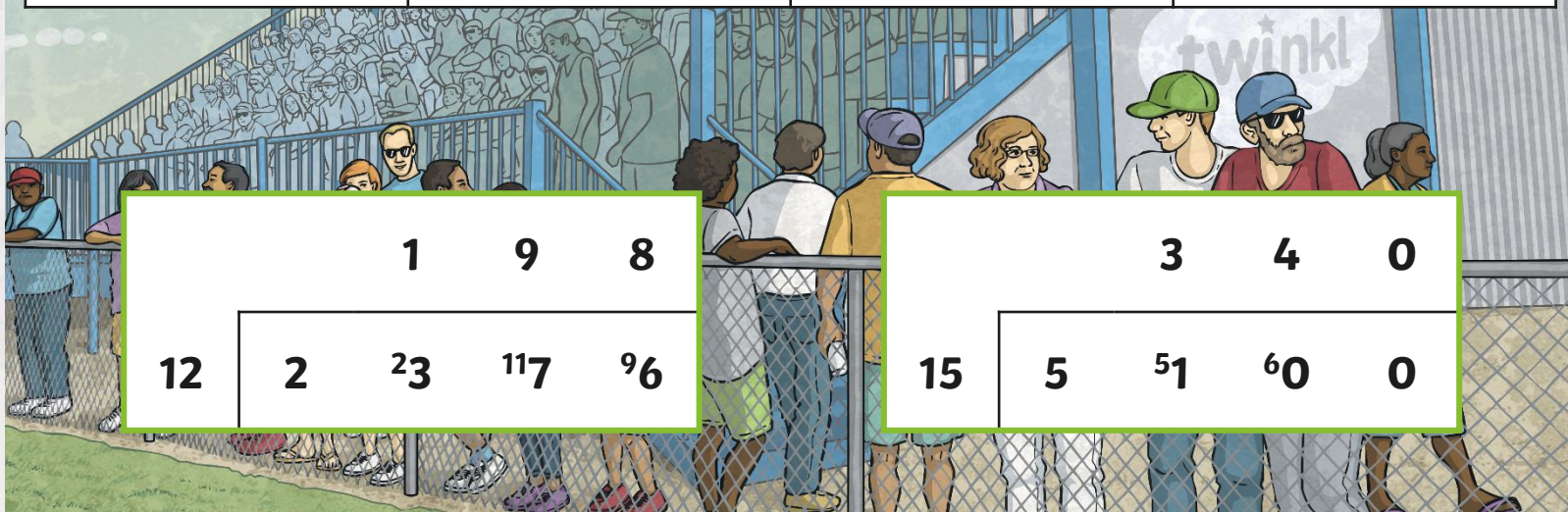
- Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.





How many seats are in each row of each of the grandstands?

Grandstand	Total Number of Seats	Number of Rows	Number of Seats per Row
Spa Straight	2376	12	198
Bookets	5100	15	340



	1	9	8
12	2	23	117
			96

	3	4	0
15	5	51	60
			0

## Short Division

## Diving



The team has 9610 flags to give out to fans at twenty races.

**How many flags should they take to each race? Will there be any flags left over?**

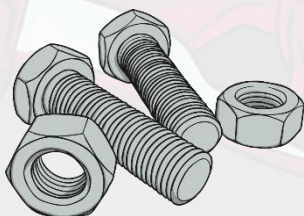


$$\begin{array}{r} 480 \text{ r}10 \\ 20 \overline{) 9610} \\ \underline{90} \phantom{0} \\ 61 \phantom{0} \\ \underline{60} \phantom{0} \\ 10 \phantom{0} \\ \underline{10} \\ 0 \end{array}$$

**10 flags will be left over.**

Bolts are packed in boxes of 15.

**How many boxes will be needed if the team needs 2466 bolts for the season?**



$$\begin{array}{r} 164 \text{ r}6 \\ 15 \overline{) 2466} \\ \underline{30} \phantom{00} \\ 66 \phantom{00} \\ \underline{60} \phantom{00} \\ 66 \phantom{00} \\ \underline{60} \phantom{00} \\ 66 \phantom{00} \\ \underline{60} \phantom{00} \\ 66 \phantom{00} \\ \underline{60} \\ 6 \end{array}$$

**165 boxes will be needed.**

## Short Division

## Deeper



$$\begin{array}{r}
 7 \quad 8 \quad 0 \quad r10 \\
 30 \overline{) 3780} \\
 \underline{30} \phantom{0} \\
 78 \phantom{0} \\
 \underline{60} \phantom{0} \\
 180 \\
 \underline{180} \\
 0
 \end{array}$$



Michael has driven 3780 laps of Toby's Tor Circuit. Each race is 30 laps long. Michael carries out the short division below to work out how many races he has completed.

**Explain Michael's mistakes and work out the correct answer.**

Michael has written the remainder in the answer space and has positioned the answers to be exchanged in each column. 37 (hundreds) divided by 30 gives one (hundred) and 7 (hundreds) to be exchanged and regrouped as 70 (tens).

$$\begin{array}{r}
 1 \quad 2 \quad 6 \\
 30 \overline{) 3780} \\
 \underline{30} \phantom{0} \\
 78 \phantom{0} \\
 \underline{60} \phantom{0} \\
 180 \\
 \underline{180} \\
 0
 \end{array}$$



Organisers of a race have seat numbers and possible rows in the list below.

Can you find three ways of organising the seats into rows that will leave no remainders? Explain how you calculated your answer.

Number of Seats per Row	Number of Seats
12	3800 (multiple of 25)
15	1992 (multiple of 12)
25	1965 (multiple of 15)



$$\begin{array}{r}
 1 \quad 5 \quad 2 \\
 25 \overline{) 38150} \\
 \underline{30} \phantom{0} \\
 80 \phantom{0} \\
 \underline{75} \phantom{0} \\
 50 \phantom{0} \\
 \underline{50} \\
 0
 \end{array}$$

$$\begin{array}{r}
 1 \quad 3 \quad 1 \\
 15 \overline{) 1965} \\
 \underline{15} \phantom{0} \\
 46 \phantom{0} \\
 \underline{45} \phantom{0} \\
 15 \phantom{0} \\
 \underline{15} \\
 0
 \end{array}$$

$$\begin{array}{r}
 1 \quad 6 \quad 6 \\
 12 \overline{) 1992} \\
 \underline{12} \phantom{0} \\
 79 \phantom{0} \\
 \underline{72} \phantom{0} \\
 72 \phantom{0} \\
 \underline{72} \\
 0
 \end{array}$$


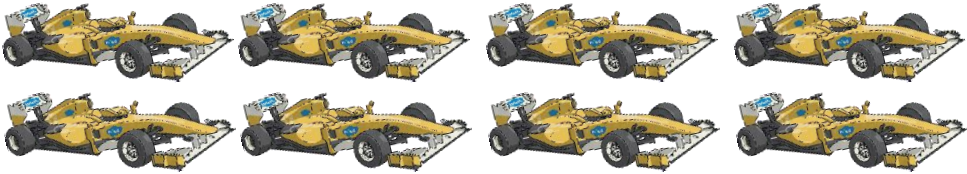



## Short Division

## Deepest



The images relate to one lap made by each vehicle.

Can you calculate the lap time for each vehicle using the information below?

	=	8568 seconds
	=	
	=	



= 952 seconds



= 119 seconds

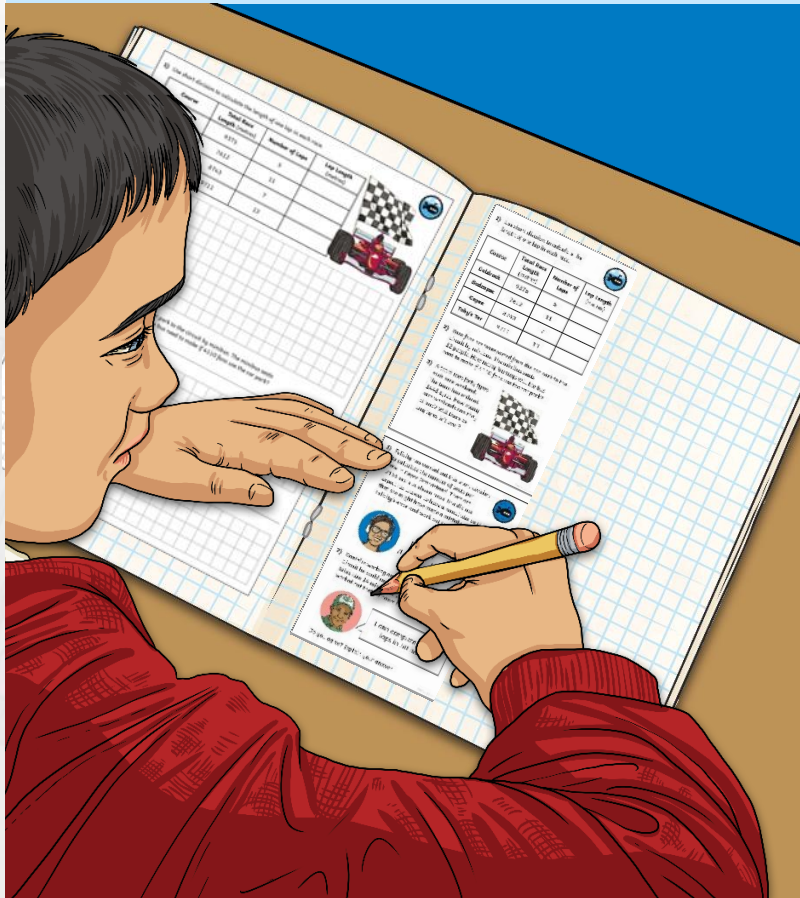


= 17 seconds



# Short Division

Dive in by completing your own activity!



1) Organise the race. There are 100 laps in each race. The number of laps that she has to complete is 100. Finally, she has to complete 100 laps.

2) The information given is: The number of laps that she has to complete is 100. The number of laps that she has to complete is 100.

3) Daniel takes him to the race. He has to complete 100 laps. He has to complete 100 laps.

4) Do you think it is a good idea to have a race? Why or why not?

1) Use short division to calculate the length of one lap in each race.

Course	Total Race Length (metres)	Number of Laps	Lap Length (metres)
Goldrock	9375	5	
Badcopse	7612	11	
Copse	8743	7	
Toby's Tor	9711	13	

2) Race fans are transported from the car park to the circuit by minibus. The minibus seats 12 people. How many journeys will the bus need to make if 6110 fans use the car park?

3) A team uses forty tyres each race weekend. The team has ordered 1648 tyres. How many race weekends can they attend? Will there be any tyres left over?

# Need Planning to Complement this Resource?

## National Curriculum Aim

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

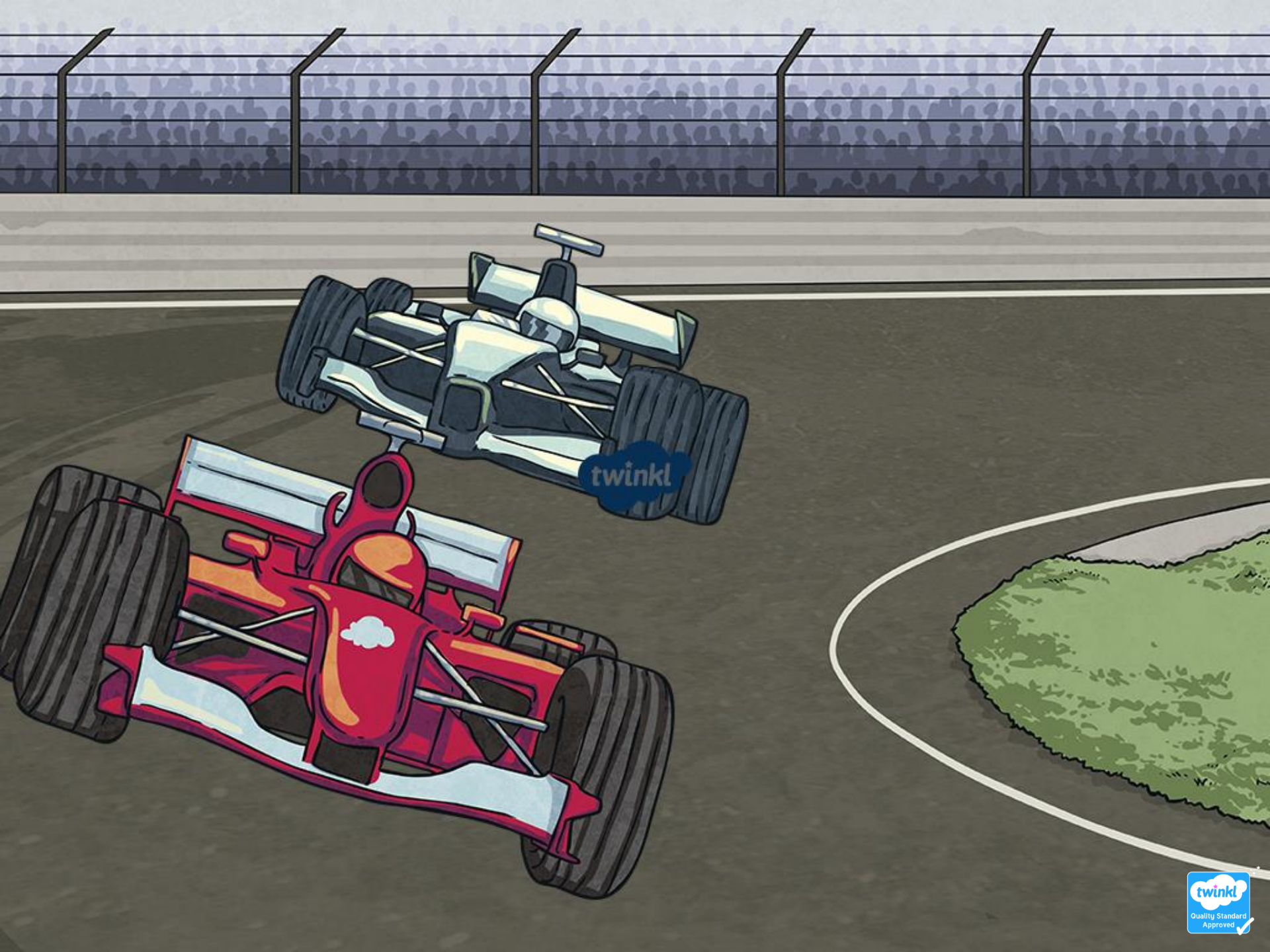
For more planning resources to support this aim, [click here](#).

This screenshot shows three resource cards from the Twinkl Planit collection. The first card, 'Tackle Shop', features an illustration of a man and a child fishing and includes a division problem:  $95 \div 5 = 19$ . The second card, 'Gone Fishing', has a large play button icon. The third card, 'Biggest Fish', shows two fish and includes the division problem  $420g \div 7 = 60g$ . Below the cards are thumbnails of worksheets, including one titled 'Blank Sh' and another with a grid. The Twinkl Planit logo is visible in the bottom right corner.

This screenshot displays three more resource cards. The 'Race Day' card shows a red and white race car and includes the problem  $2937 \div 11 = 267$ . The 'Engines Ready' card features a play button icon. The 'Race Day Problems' card shows a person in a racing suit and includes the problem  $5229 \div 9 = 581$ . Below the cards are thumbnails of worksheets, including one titled 'Extra Challenge' and another titled 'Engines Ready Game'. The Twinkl Planit logo is visible in the bottom right corner.

Twinkl Planit is our award-winning scheme of work with over 4000 resources.





twinkl