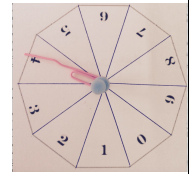


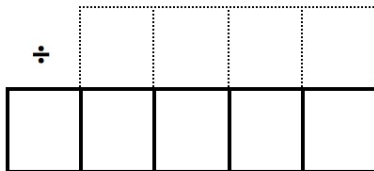
TARGET DIVISION

Play this game as a lesson starter for the whole class or in pairs. Use a 0 to 9 spinner or dice.

You can play this game to divide a 3-digit number by a 1-digit number (TARGET 100) or to divide a 4-digit number by a 1-digit number (TARGET 1000).



VERSION 1 This is a game of chance.



Each player must draw the grid on a showboard or in their notebook.

Draw the grid as shown for dividing a 4 digit number by a 1 digit number or use 4 squares rather than 5 for dividing a 3 digit number by a 1 digit number.

Spin the spinner and the players must write the digit in one of the boxes. Once a number is written the position cannot be changed.

Repeat until you have a number for every box.

Then the players divide the bigger number by the 1-digit number and write the answer on the top line.

The winner is the player (or players) with the quotient closest to 100 for the 3-digit number divided by a 1-digit number or closest to 1000 for the 4-digit number divided by a 1-digit number.

Score 1 point for a win.

VERSION 2 This is a game of skill

Spin the spinner 4 (or 5) times and make a note of the numbers that come up.

The players must write the digits in the boxes so that the answer to the division is as close as possible to 100 for the 3-digit number divided by a 1-digit number or closest to 1000 for the 4-digit number divided by a 1-digit number. A time limit such as 5 minutes is set for this. The player (or players) with the quotient closest to 100 (or 1000) wins. Score 1 point for a win.

Alternative scoring system: Players get penalty points each round equal to the difference between their answer and the target. At the end of the game the player with the LOWEST total of penalty points is the winner.

HELP

Play these games first:

Target 100 <https://aiminghigh.aimssec.ac.za/years-4-5-target-100/> and

Target 1000 <https://aiminghigh.aimssec.ac.za/years-4-7-target-1000/>

Target 10 Thousand <https://aiminghigh.aimssec.ac.za/years-5-7-target-10-thousand/>

NEXT

Organise a knockout competition where everyone in the class plays another learner in Round 1. Then the losers drop out and the winners of Round 1 compete in pairs in Round 2, the winners of Round 2 compete in Round 3 and so on until the Final is played between the last 2 players.

Use the scoring system with 5 Games in each Round, where players get penalty points each Game equal to the difference between their answer and the target. At the end of the 5 Games the player with the LOWEST total of penalty points is the winner.

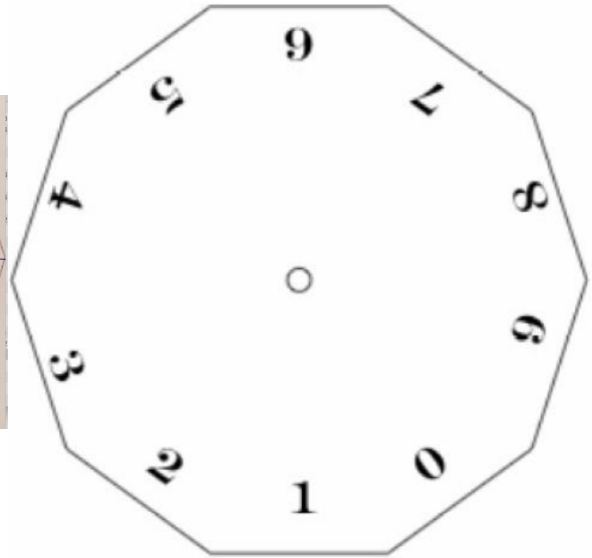
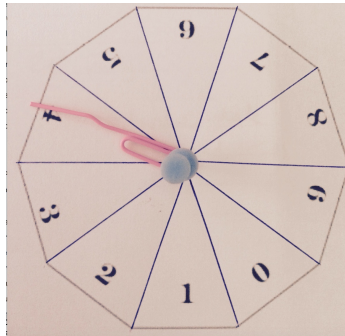
MAKE A 0 – 9 SPINNER

To make your own spinner you will need a paper clip and a pin.

Mark in the lines in the template on the right as in the diagram and cut it out.

Open up the paper clip and pin the paper clip and the template down on a flat surface so that the paper clip spins easily.

If you want to make a spinner without using a pin you can hold down the template and the paper clip with the point of a pencil.



NOTES FOR TEACHERS

SOLUTION Can you do better than $909 \div 9$ for Target 100 and $9009 \div 9$ for Target 1000?

Diagnostic Assessment This should take about 5–10 minutes.

1. Write the question on the board, say to the class:
“**Put up 1 finger if you think the answer is A, 2 fingers for B, 3 fingers for C and 4 fingers for D**”.
2. Notice how the learners responded. Ask a learner who gave answer A to explain why he or she gave that answer and **DO NOT** say whether it is right or wrong but simply thank the learner for giving the answer.
3. Then do the same for answers B, C and D. Try to make sure that learners listen to these reasons and try to decide if their own answer was right or wrong.
4. **Ask the class again to vote for the right answer by putting up 1, 2, 3 or 4 fingers. Notice if there is a change and who gave right and wrong answers.** It is important for learners to explain the reason for their answer otherwise many learners will just make a guess.
5. If the concept is needed for the lesson to follow, explain the right answer or give a remedial task.

Work out...

$$805 \div 5$$

A

142

B

161

C

141

D

162

B. is the correct answer.

<https://diagnosticquestions.com>

Why do this activity?

The game develops the learners’ number sense and gives practice in estimating the results of calculations. Doing well in this game depends on an understanding how and why the division algorithm works. The game can be used at different times as a lesson starter. When learning how to do such calculations the game will help to deepen the learners’ understanding of the method as well as giving practice. Subsequently the game can be used from time to time to give learners practice in doing calculations. Players should check their own and each others’ calculations without using a calculator. You might introduce additional penalty points for incorrect calculations to give extra incentive to work accurately.

The game also develops an appreciation of probability as it requires judgement about where to place the numbers in the grid and whether a ‘better’ number for that position is likely to come up. This game also develops skills of rounding numbers and estimating the answers to calculations.

Intended learning outcomes

Development of numeracy and skills at performing division of 4 digit numbers by 1 digit numbers.

Development of understanding place value and methods of calculation.

Development of skills of rounding numbers and estimating the answers to calculations.

Suggestions for teaching

To play the game as a whole class, first ask the learners to copy the grid into their workbooks. To introduce your class to this game, play this as a whole class game using Version 1. Once the learners understand the game and have had some practice, then they can progress to Version 2.

If you have enough spinners you could organise for learners to play in pairs or one pair against another pair. In this case the first player to get 5 points is the winner.

The class might use more than one method to check the calculations, for example **the chunking method** as shown in the calculation below.

6 $\overline{)8759}$	Chunks
- <u>6000</u>	$6 \times 1000 = 6000$
2759	
- <u>2400</u>	$6 \times 400 = 2400$
359	
- <u>300</u>	$6 \times 50 = 300$
59	
- <u>54</u>	$6 \times 9 = 54$
5	

Ask

“How many 6’s do we need to make 8759?”

“Let’s break 8759 into chunks so that we know how many 6’s there are in each chunk.”

$8759 \div 6 = 1459 \text{ remainder } 5 \text{ or } 1459 \frac{5}{6}$.

As an alternative way of scoring, players could get penalty points for the difference between their total and the target number and add up their penalty points. They should play a few games until one of the players gets 1000 penalty points and loses the match.

Key questions

How will you choose your thousands digit and the single digit to get an answer near 1000?

Follow up

Target 4 by 2 Division <https://aiminghigh.aimssec.ac.za/years-6-7-target-4-by-2-division/>

Note: The Grades or School Years specified on the AIMING HIGH Website correspond to Grades 4 to 12 in South Africa and the USA and to Years 4 to 12 in the UK.				
	Lower Primary or Foundation Phase	Upper Primary	Lower Secondary	Upper Secondary
South Africa	Grades R and 1 to 3	Grades 4 to 6	Grades 7 to 9	Grades 10 to 12
USA	Kindergarten and G1 to 3	Grades 4 to 6	Grades 7 to 9	Grades 10 to 12
UK	Reception and Years 1 to 3	Years 4 to 6	Years 7 to 9	Years 10 to 13
East Africa	Nursery and Primary 1 to 3	Primary 4 to 6	Secondary 1 to 3	Secondary 4 to 6