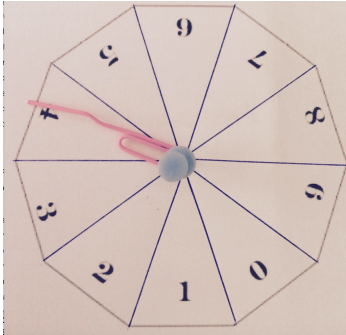


## TARGET 1000



### LESSON STARTER GAME FOR THE WHOLE CLASS

You will need a 0 to 9 spinner or dice.

See instructions for making spinners below.

Each player draws an addition grid like the one shown.

+			

Spin the spinner and all the players must write the digit in one of the top nine boxes.

Once a number is written it cannot be changed.

Repeat eight more times.

Then the learners add up their three 3-digit numbers.

The player (or players) with the total closest to 1000 wins.

Score 1 point for a win.

**ALTERNATIVE VERSION OF THE TARGET 1000 GAME.** The players write down all 9 numbers and then **at the end** decide where to place them. This is a game of skill which involves mathematical thinking and not luck.

**GAME FOR 2 PLAYERS** Each player draws an addition grid like the one shown. Take turns to spin the spinner and each player decides which of their cells to fill in. You can't change the position of the number once it is written in. After 9 spins add up the three 3-digit numbers and write the total on the bottom line.

## HELP

To get a total close to 1000 you should aim to enter 3 numbers of about 333. To adjust for a number greater than 333 you need another number less than 333 by about the same difference.

## NEXT

$$\textcircled{?} \div \textcircled{?} = \textcircled{?}$$

Can you put the numbers 1 to 8 (each number once and only once) into the circles so that the four calculations are correct?

$$- \textcircled{?} \quad \times \textcircled{?}$$

Square of numbers:

$$\textcircled{?} + \textcircled{?} = \textcircled{?}$$

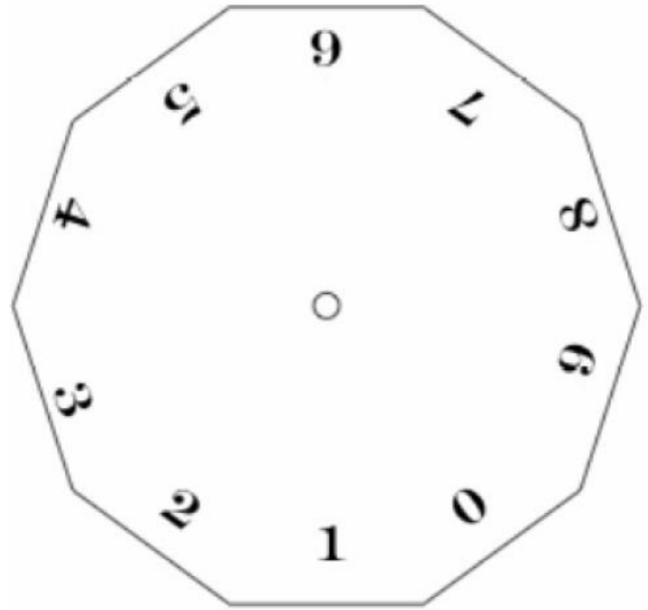
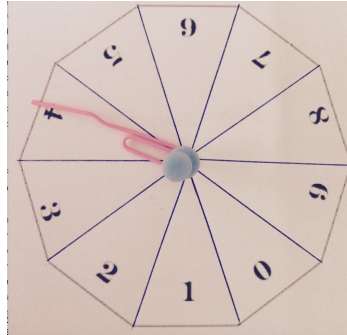
<https://aiminghigh.aimssec.ac.za/years-4-7-a-square-of-numbers/>

## 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

**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.

Choose the correct answer

$$\begin{array}{r} 348 \\ + 216 \\ \hline 437 \end{array}$$

- A. 991      B. 1001      C. 9821      D. 981

The correct answer is B

<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 of place value and how and why the addition 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.

### Learning objectives

In doing this activity students will have an opportunity to:

- develop numeracy and skills at performing addition of 3 digit numbers;
- develop understanding place value and methods of calculation.

### Generic competences

In doing this activity students will have an opportunity to **think flexibly** and be creative and innovative.

### Suggestions for Teaching

Start with the formative assessment using the diagnostic quiz. To play the game as a whole class, first ask the learners to copy the grid into their workbooks. Then the teacher spins the spinner and calls out the numbers and the learners fill in the numbers in their grids. Then ask learners who have got an answer near the target number to come to the board and write up their answer. If anyone has got closer to the target they should show what they have done. After deciding on the winner ask the class if anyone could have got closer to the target if they had known all the numbers before filling any numbers in.

You might vary the game by making the target smaller, for example 500 or 600.

If you have enough spinners for learners to play in pairs you can organise this in your lesson. In this case the first player to get 5 points is the winner. The learners could use a different way of scoring. They 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.

You could alternatively use dice for this activity but 0 – 9 spinners are preferable.

## Key Questions

You are making a total of 1000 with 3 numbers. About how big do you want those numbers to be?

## Follow up

Target 10 thousand multiplying a 3 digit number by a 2 digit number:

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

Note: The Grades or School Years specified on the AIMING HIGH Website correspond to Grades 4 to 12 in South Africa and the USA, to Years 4 to 12 in the UK and up to Secondary 5 in East Africa. New material will be added for Secondary 6. For resources for teaching A level mathematics see <https://nrich.maths.org/12339>  
 Note: The mathematics taught in Year 13 (UK) and Secondary 6 (East Africa) is beyond the school curriculum for Grade 12 SA.

	Lower Primary or Foundation Phase Age 5 to 9	Upper Primary Age 9 to 11	Lower Secondary Age 11 to 14	Upper Secondary Age 15+
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