

Percentage Target Game

Overview

This activity is designed to encourage students to estimate percentages and to use the percentage function on their calculator to check these estimates. The aim of the game is to achieve the target on their calculator display in the minimum number of tries.

As a game for two students in competition, it motivates students to focus on their estimates in order to win.

As a game for one person this motivation comes from trying to improve on their previous score.

Once it has been introduced, this game can be used many times: as a class starter, as a change in pace during the class or as a means to bring students together during a class.

Skills and Knowledge

- Estimating percentages
- Percentages on a calculator

Preparation and Materials

Photocopy *Activity Sheet 1* (at least 1 per student)

Calculators (1 between 2 students)



Suggested Procedure

Introducing the game

Arrange students into pairs.
Distribute a copy of Activity Sheet 1 to each student.

Explain:

- *This is a new game for practising percentage estimations*
- *It also lets you practice using the calculator*
- *The aim of the game is to reach the target of 10 in the smallest number of tries*

Explaining the rules - the example

Ask students to look at the example on Activity Sheet 1

Explain:

- *I will explain how it works by working through the example with you*

Step 1



- The first person (Player A) chooses a number between 10 and 100
- They write the number on the grid
- *In the example, Player A has chosen 74*

Step2

- Player B estimates what percentage of the number will give 10
- Player A tests it using the calculator
- *In the example, they have estimated 60%*
- *They tried 60% of 74 and got 44.4 – too big!*
- Player B records this on the grid

Number	%	Result
74	60%	44.4
	10%	7.4
	11%	8.8
	15%	11.1
	14%	10.36
Number of tries		5

Step 3

- Player A deletes the first try and enters the number (74) again on the calculator
- Player B suggests another estimate of the percentage (still aiming at 10)
- *In the example, the second estimate is 10%*
- *10% of 74 ... 7.4 – too small!*
- Player B records this on the grid

Go through the steps one by one with the students.

For example:

- *For the next estimate Player B sees that 60% is far too big*
- *10% is quite close but it needs to be a bit higher ...*

Explain:

- *They repeat this last step until they get a 10 on the display*
- *The important thing is to do it with as few tries as possible*

Finishing the game

- *In the example, Player B finally got 10.36*
- *It doesn't matter if there are decimals after the 10*
- *Player B did it in 5 tries – so 5 is Player B's score for this round*
- *Player A will try for a lower score than 5*

Let students try one round of the game together to make sure they are clear about the procedure.

Playing the Game

Get students to continue playing in pairs, taking turns to choose different numbers.

Encourage them to vary between higher and lower numbers.

Circulate whilst students play.

Make sure that they are thinking about the numbers they choose, not just making a series of wild guesses.



If you see that one player is continually winning in a pair, suggest some numbers that will be more challenging.

More challenging numbers

When pairs or individual students gain confidence with numbers between 10 and 100, challenge them further by expanding the range below 10 and over 100.

Numbers less than 10 will require students to appreciate percentages greater than 100%. For example, if 8 is the chosen number, 125% will be the percentage needed to give 10.

The game as an individual activity

The Target Percentage Game can also be given to individuals as a challenge activity. For example, to students who finish exercises earlier than others in the class, or students who are more advanced than others and need further challenge.

In this case, the teacher should select the numbers at a suitable level of difficulty for each student and the students will try to better their own previous scores.



Percentage Target Game

Activity Sheet 1

Number	%	Result
74	60%	44.4
	10%	7.4
	11%	8.8
	15%	11.1
	14%	10.36
Number of tries		5

Number	%	Result
Number of tries		

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Number of tries		

