

LAFLOT

CARDS FOR LAFLOT GAME	LINE
LAF	LOT
EAT	FOE
IF	IT
ON	AN

This is a game for two players played with a set of 9 cards for the words LINE, LAF, LOT, EAT, FOE, IF, IT, ON and AN. Take it in turns to choose one of the words. Aim to collect 3 words that contain the same letter and to stop your opponent from doing so. Continue until someone wins or all the words are taken. Words can only be used once.

HELP



The image shows two winning combinations of words. For each of the 8 letters write down three of these words that contain that letter, the winning combinations. Write down the winning combinations for the letters L, I, N, E, A, O, F, and T.

Think strategically. Success often depends on recognising that you have seen something similar before and using the earlier experience to help in the new situation. Is this game similar to

another game in a different format (as if it were the same challenge in disguise)?

NEXT

Here are two sets of words. One set can be arranged in a 3 by 3 grid with each row, column and diagonal having 3 words with a common letter. For the other set, that is impossible and they are no use for playing the game. Decide which is which and why?

- GAME, GOT, PIG, PET, OIE, AI, AT, PM, MO
- ALOE, PAT, GET, PIG, LOG, IO, EL, IT, PA

Can you create your own set of 9 word cards with which to play the game with words that are that are all in the Scrabble dictionary? You could also try changing the rules.

**CARDS FOR
LAFLOT GAME**

LINE

LAF

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NOTES FOR TEACHERS

SOLUTIONS

LAFLOT is equivalent (isomorphic) to Tic Tac Toe (Noughts and Crosses) and to The Fifteen Game, The Magic Square Game, Siege and Three Mens Morris. In some of these variants, each player has 3 pieces and moves them around on the gameboard.

In all the games there are 9 pieces that make up combinations or sets of 3. For the winning sets, there is:

- **1 position** on the board (the centre) that occurs in **4 combinations** (like the 4-letter word LINE in LAFLOT),
- **4 positions** on the board (the corners) that occur in **3 combinations** (like 3-letter words in LAFLOT) and
- **4 positions** on the board (mid-edge) that occur in **2 combinations** (like 2-letter words in LAFLOT).

This makes altogether 8 combinations (like rows, columns and diagonals in Tic Tac Toe, like 8 sets of 3 words with one letter in common in LAFLOT, like 8 combinations of 3 numbers adding to 15, like 8 towns with 3 roads to block in Siege. Had you spotted the connections?

Why do this activity?

Playing this game with determination to win helps people to develop powers of concentration, strategic planning and logical reasoning. It does not involve school curriculum related knowledge but it is a good game for maths clubs and for families.

Learning objectives

In doing this activity students will have an opportunity to develop the generic competences of powers of concentration, strategic planning and logical reasoning.

Suggestions for teaching

Discuss the objective of the game, and that players need to think several moves ahead. To avoid losing they need to pay attention to the opponent's moves and claim words that the opponent could use in making up a winning combination.

Key questions - PLAY THINK LEARN WIN

1. How many four-letter words are there in this game?
2. How many three-letter words are there in this game?
3. How many two-letter words are there in this game?
4. Is the LAFLOT Game similar to any other game you have played before?
5. Have you found a winning strategy?
6. Is it possible to avoid losing this game?
7. Can you become an expert and never lose this game, although the game may sometimes end in a draw?
8. Which words are most useful in making up a triple of words containing the same letter? Explain why.

9. If you are the first player, is there a word that you should choose first to give you the best chance of winning?
10. Which are the best words to choose, and which are not so useful?
11. How can you stop your opponent from choosing a winning set?

Follow up

Play the other games in the Fifteen Game Collection.

<https://aiminghigh.aimssec.ac.za/fifteen-game-collection/>

Go to the **AIMSSEC AIMING HIGH** website for lesson ideas, solutions and curriculum



links: <http://aiminghigh.aimssec.ac.za>

Subscribe to the **MATHS TOYS YouTube Channel**

<https://www.youtube.com/c/MathsToys/videos>

Download the whole AIMSSEC collection of resources to use offline with the **AIMSSEC App** see <https://aimssec.app> or find it on Google Play.

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 school years up to Secondary 5 in East Africa.

New material will be added for Secondary 6.

For resources for teaching A level mathematics (Years 12 and 13) see <https://nrich.maths.org/12339>

Mathematics taught in Year 13 (UK) & Secondary 6 (East Africa) is beyond the SA CAPS curriculum for Grade 12

	Lower Primary Approx. Age 5 to 8	Upper Primary Age 8 to 11	Lower Secondary Age 11 to 15	Upper Secondary Age 15+
South Africa	Grades R and 1 to 3	Grades 4 to 6	Grades 7 to 9	Grades 10 to 12
East Africa	Nursery and Primary 1 to 3	Primary 4 to 6	Secondary 1 to 3	Secondary 4 to 6
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