# Opposite and collinear vectors	Season	01
	Episode	15
	Time frame	1 period

Prerequisites : Notions of vector. Basic notions about grids.

Objectives :
- Understand the concepts of opposite and collinear vectors.

Materials :
- *Five groups of 4 cards with vectors on a grid.*
- *Cards with non-collinear vectors for the bingo.*
- *Cards with vector coordinates.*

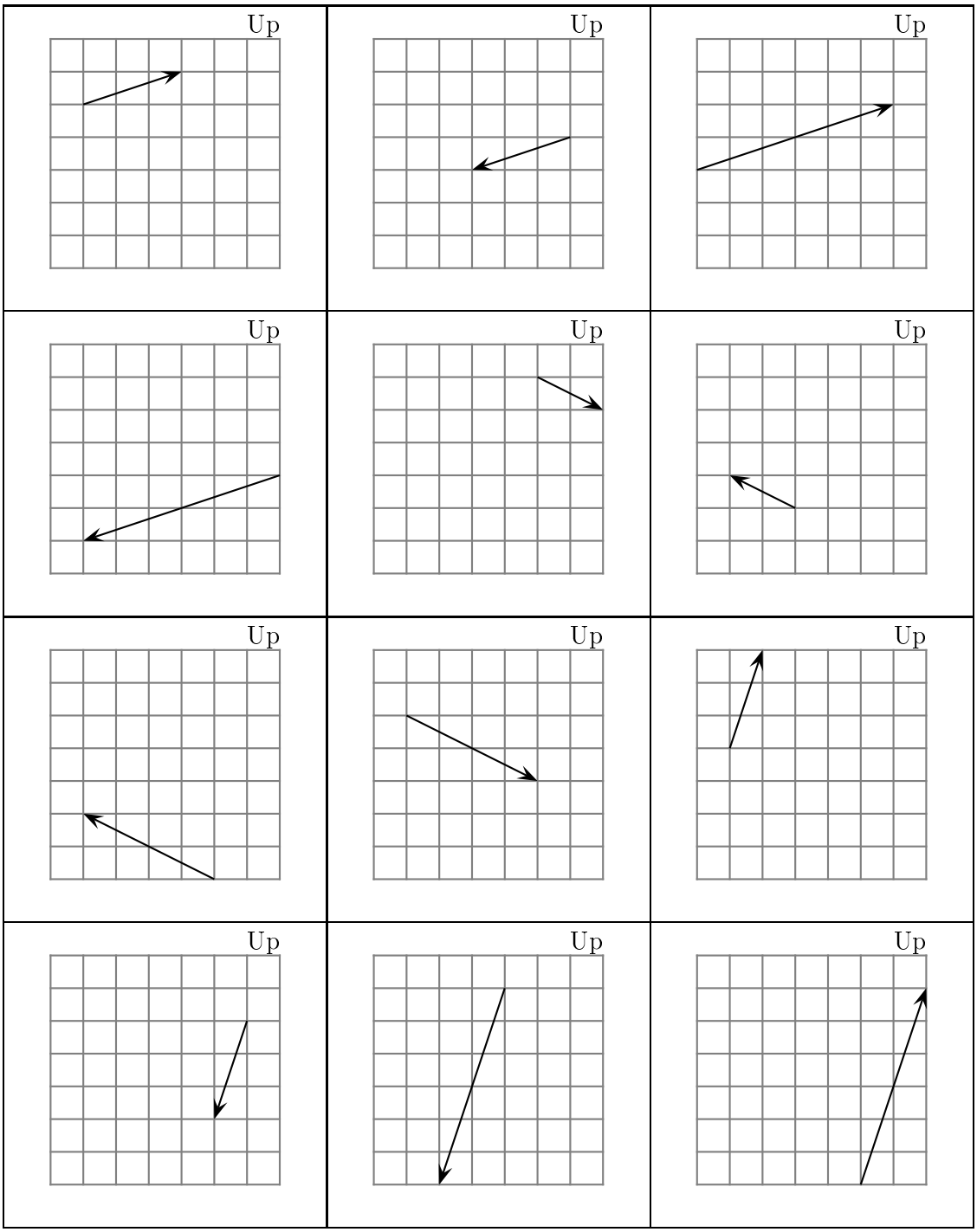
1 – Matching games — 25 mins

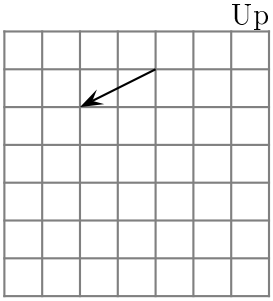
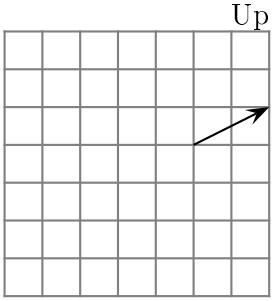
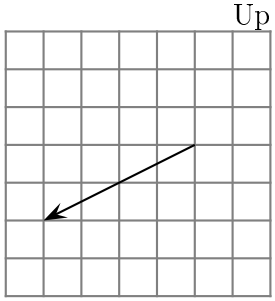
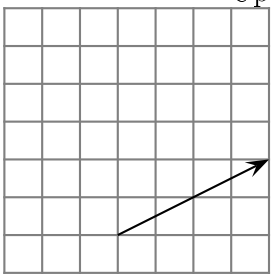
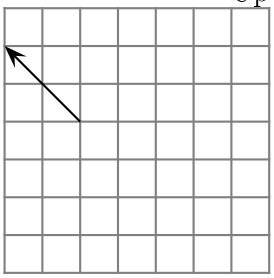
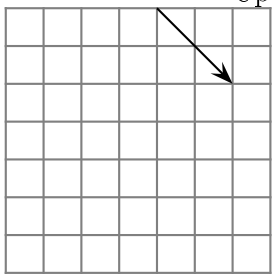
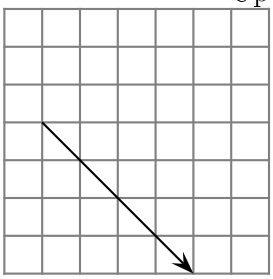
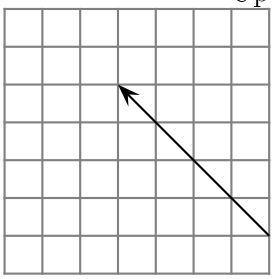
Each student is given a card with a vector on a grid.
Part 1 : Each student has to find who in the class has a vector opposite to his own vector, then find a precise definition of "opposite vectors".
Cards are shuffled then handed out back to the students.
Part 2 : Each student has to find those in the class with a vector collinear to his own vector, then find a precise definition of "collinear vectors".

2 – Bingo — 30 mins

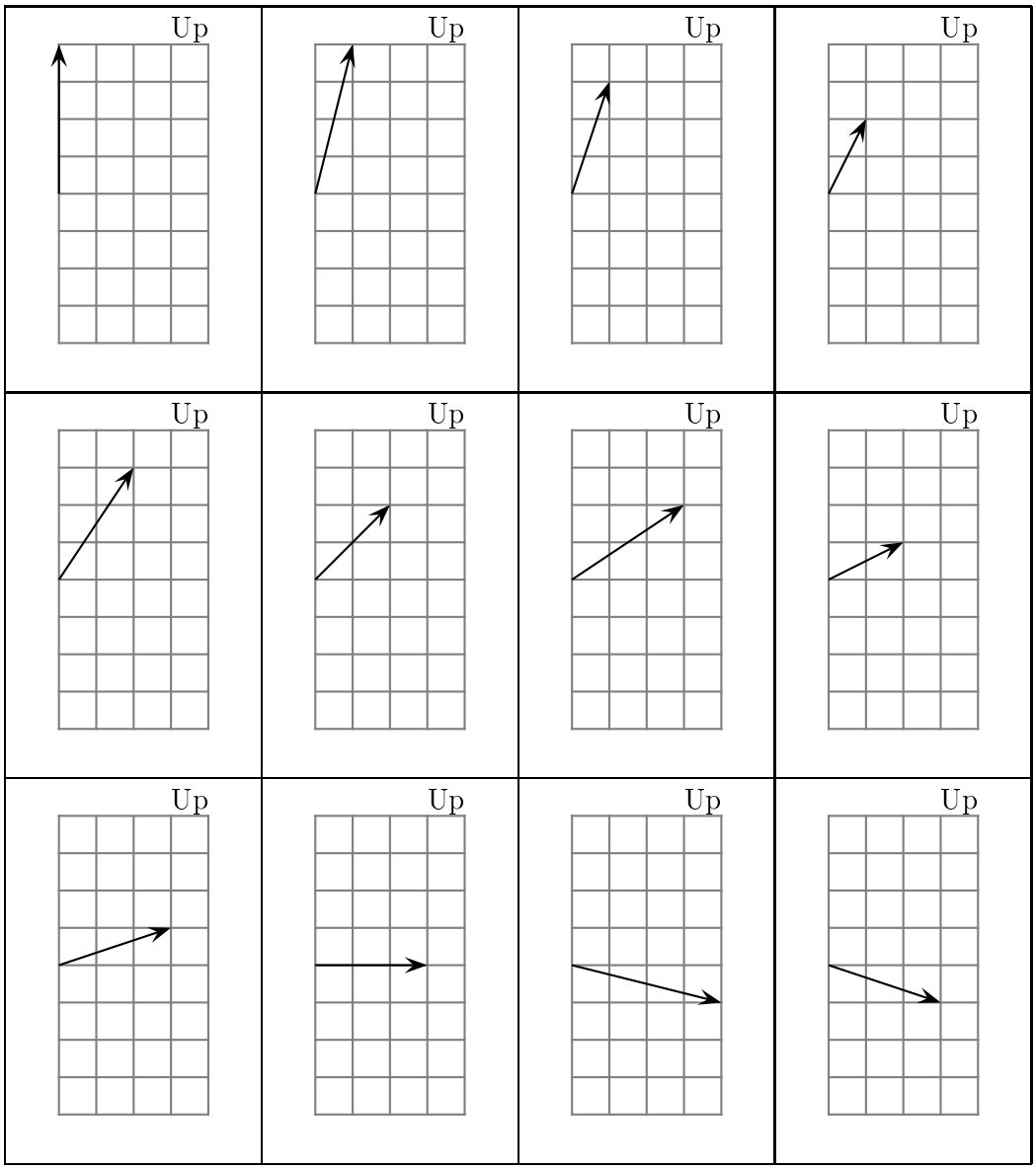
Each student is handed out a card with a vector, with no two vectors collinear in the class. The teacher randomly picks a card a vector. The student who has a vector collinear to it gets one point.

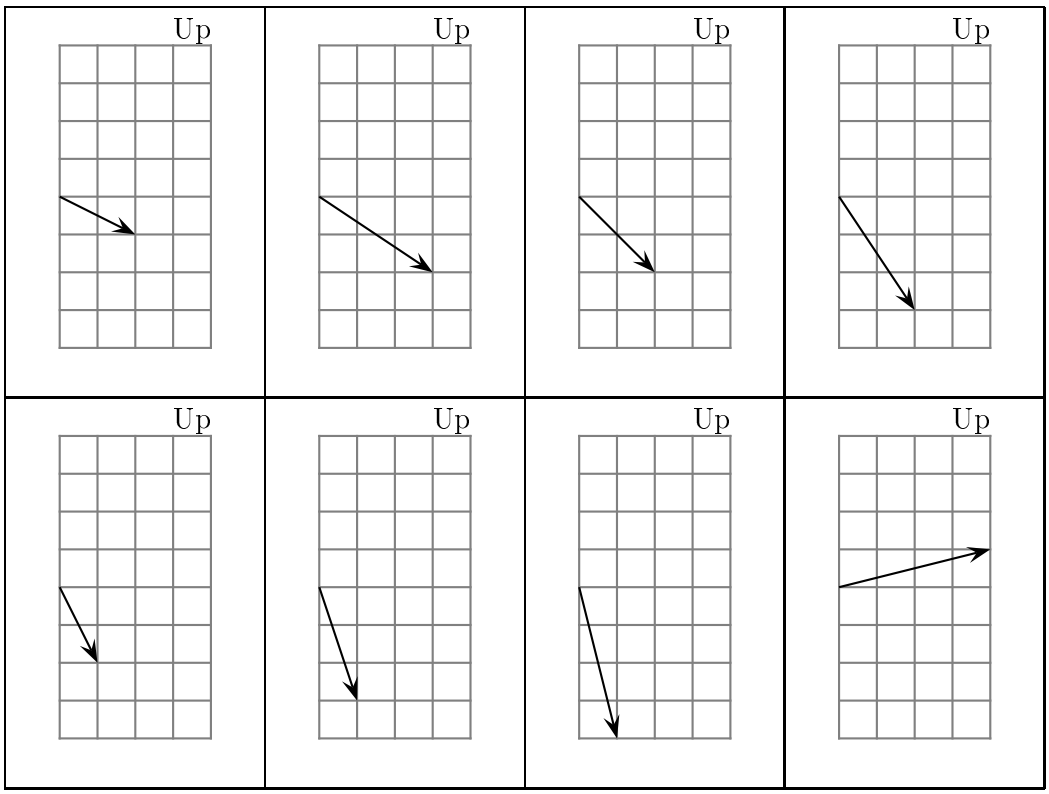
Document 1 Five groups of 4 cards with vectors on a grid



Up 	Up 	Up 
Up 	Up 	Up 
Up 	Up 	

Document 2 Cards with non-collinear vectors for the bingo

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Document 3 Coordinates for the bingo

$(0,4)$	$(1,4)$	$(1,3)$	$(1,2)$	$(2,3)$
$(2,2)$	$(3,2)$	$(2,1)$	$(3,1)$	$(3,0)$
$(4,-1)$	$(3,-1)$	$(2,-1)$	$(3,-2)$	$(2,-2)$
$(2,-3)$	$(1,-2)$	$(1,-3)$	$(1,-4)$	$(4,1)$
$(0,8)$	$(2,8)$	$(2,6)$	$(2,4)$	$(4,6)$
$(4,4)$	$(6,4)$	$(4,2)$	$(6,2)$	$(6,0)$
$(8,-2)$	$(6,-2)$	$(4,-2)$	$(6,-4)$	$(4,-4)$
$(4,-6)$	$(2,-4)$	$(2,-6)$	$(2,-8)$	$(8,2)$
$(0,-4)$	$(-1,-4)$	$(-1,-3)$	$(-1,-2)$	$(-2,-3)$
$(-2,-2)$	$(-3,-2)$	$(-2,-1)$	$(-3,-1)$	$(-3,0)$
$(-4,1)$	$(-3,1)$	$(-2,1)$	$(-3,2)$	$(-2,2)$
$(-2,3)$	$(-1,2)$	$(-1,3)$	$(-1,4)$	$(-4,-1)$
$(0,2)$	$(0.5,2)$	$(0.5,1.5)$	$(0.5,1)$	$(1,1.5)$
$(1,1)$	$(1.5,1)$	$(1,0.5)$	$(1.5,0.5)$	$(1.5,0)$
$(2,-0.5)$	$(1.5,-0.5)$	$(1,-0.5)$	$(1.5,-1)$	$(1,-1)$
$(1,-1.5)$	$(0.5,-1)$	$(0.5,-1.5)$	$(0.5,-2)$	$(2,0.5)$
$(0,-8)$	$(-2,-8)$	$(-2,-6)$	$(-2,-4)$	$(-4,-6)$
$(-4,-4)$	$(-6,-4)$	$(-4,-2)$	$(-6,-2)$	$(-6,0)$
$(-8,2)$	$(-6,2)$	$(-4,2)$	$(-6,4)$	$(-4,4)$
$(-4,6)$	$(-2,4)$	$(-2,6)$	$(-2,8)$	$(-8,-2)$