

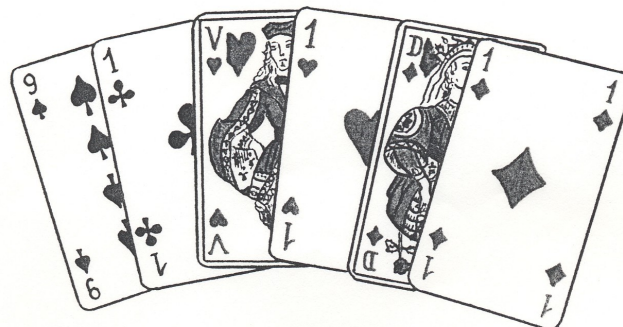
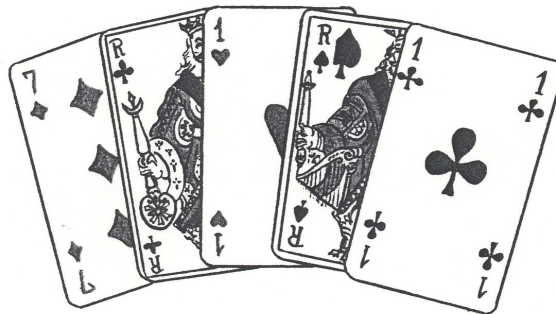
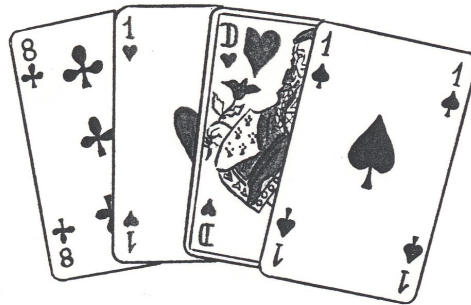
**WORK IT
OUT****Understand a rotation**
“The position of the cards”**7-11**
Level 1
Exercise 1

<i>Aims</i>	<ul style="list-style-type: none">- Practise finding an element in a series after diverse manipulations.- Find where you are in a series of elements after they have been turned face down.- Find where you are in a series of elements after they have been inverted.
<i>Applications (examples)</i>	<p><u>In class</u>: geometry and arithmetic: notions of symmetry and inversion.</p> <p><u>At work</u>: anything that concerns work on your own work environment, relations with neighbouring workstations or activities; look for breakdowns or the causes of various incidents.</p> <p><u>In everyday life and for leisure</u>: finding your way on a map during travel or even walks; ability to keep your self-awareness in the middle of changes (of people, places, or situations) and ability to reorganise yourself after happy or unhappy events.</p>
<i>Materials</i>	A page with some playing cards. The teacher can also use real cards for this exercise, which will probably be more practical.
<i>Instructions</i>	The teacher shows the pupils the first three cards (the pupils should be close enough to see the cards well). The teacher will give the position of the cards for the pupils, from right to left, and name them: first card: jack of diamonds, second card: 7 of spades, etc. The cards are then turned face down and upside down (by turning the page over then upside down). The pupils then have to say where the ace of hearts is (first, second or third card). The same exercise will be done again with 4 then 5 then 6 cards, always picking the ace of hearts to look for.
<i>Comments</i>	The pupils will perhaps notice that when the card they must look for is right in the middle of the series (as in the series of 5 cards), the position of the ace remains the same no matter how you manipulate the series, without dissociating the series.
<i>Variations (examples)</i>	<ul style="list-style-type: none">- With a real pack of cards, the teacher can vary the game indefinitely.- With a real pack of cards, the teacher can ask the pupils to create their own series of cards and to make one or more pupils look for a card after manipulation.
<i>Individualisation</i>	Yes.
<i>Answers</i>	Yes.

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**Understand a rotation
“The position of the cards”**

7-11



1. 1st position

2. 3rd position

3. 3rd position

4. 3rd position

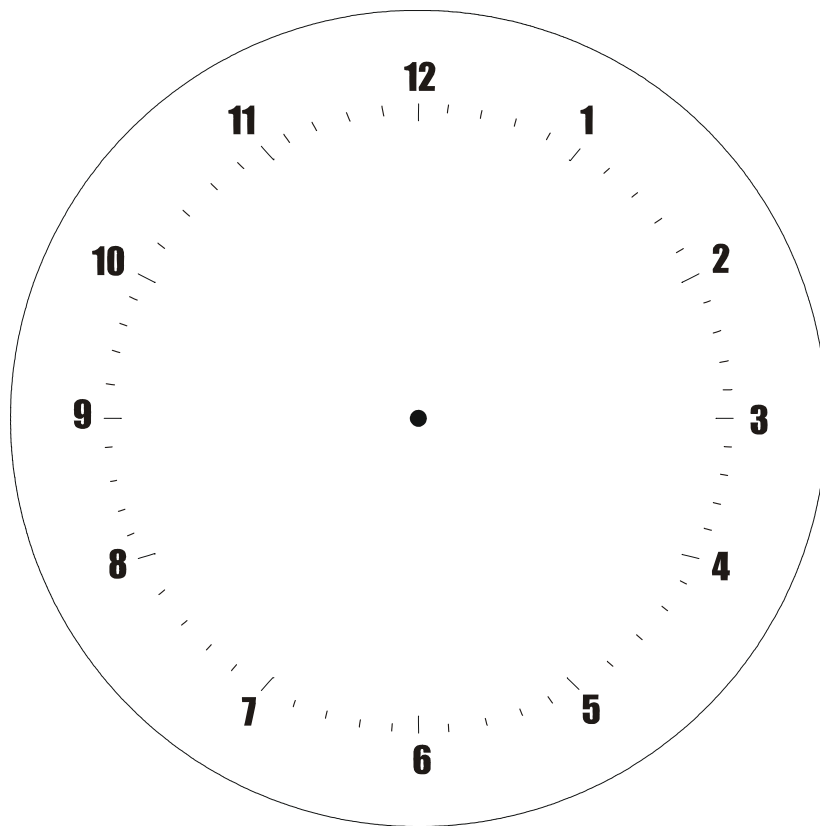
<i>Aims</i>	<ul style="list-style-type: none">- See where you are in a round dial.- Manipulate as instructed.- Transpose time from one code to another (4.00 = 16.00).
<i>Applications (examples)</i>	<p><u>In class</u>: learn to tell the time, begin fractions; also in geometry: questions about angles.</p> <p><u>At work</u>: initiation to group work; differentiation between oneself (the centre) and the others, when taking into account the work of colleagues or in other sectors.</p> <p><u>In everyday life and for leisure</u>: learn to tell the time, find your bearings in relation to the points of the compass.</p>
<i>Materials</i>	<ul style="list-style-type: none">- A page showing a diagram of the face of a clock or alarm clock with numbers but no hands.- Two matches or two sticks per pupil, one of them should be broken so it is shorter than the others. They will represent the hands of the clock.
<i>Instructions</i>	<p>The pupils place the clock hands so as to show the time indicated by the teacher (8.10 – 10.15 – 17.30 – 22.08 – etc.). They must then determine the new time if asked to do:</p> <ul style="list-style-type: none">- a quarter of a turn to the right (or clockwise)- a quarter of a turn to the left (or anticlockwise)- half a turn to the right- a third of a turn to the left <p>This rotation should be done by manipulation.</p>
<i>Comments</i>	<p>The pupils may find it difficult to see the quarters and especially the thirds on the screen. The teacher will have to make sure that the notions of half, quarter and third are understood. If necessary, the third can be omitted.</p>
<i>Variations (examples)</i>	<ul style="list-style-type: none">- The teacher can ask the pupils to take turns giving a manipulation to be done (half a turn, a quarter of a turn, a third of a turn, etc.) after one pupil has suggested a precise time.- This might also be a good opportunity to work with the two different codes for telling the time (4.00 = 16.00 in the 24-hour clock), by asking the pupils to give their results both ways whenever possible.
<i>Individualisation</i>	No.
<i>Answers</i>	No.

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Understand a rotation

7-12

“What time is it?”

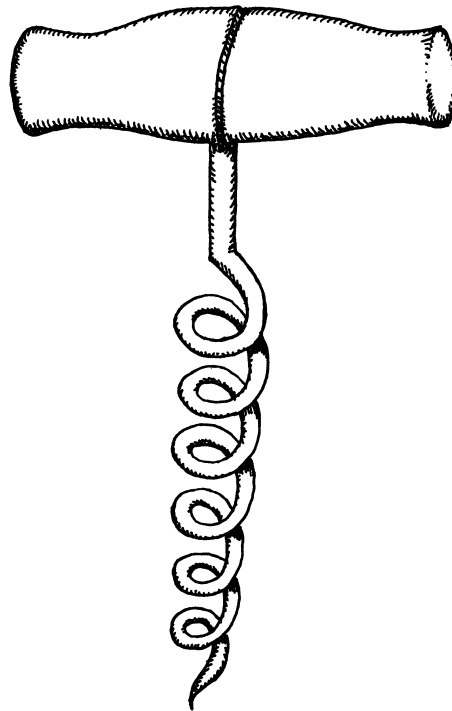


Aims	<ul style="list-style-type: none">- Find the direction of a rotation.- Imagine a manipulation.
Applications (examples)	<p><u>In class</u>: transform a rotation into linear progression: geometry, syntax. Advance in successive approaches. Distinguish between linear progression and successive progression, in drawing for example.</p> <p><u>At work</u>: understand spiral progression, which is frequently found in tools and assembly. Understand the direction of the rotation with the thread to the right (the most common) and the thread to the left (less frequent).</p> <p><u>In everyday life and for leisure</u>: anything related to assembling kits, with right thread and left thread. Understand spiral staircases in historical monuments (for defence purposes, they turned so as to shelter the defender: turning to the left going up, or to the right if the attacker is going down).</p>
Materials	A page with a picture of a corkscrew.
Instructions	The teacher will ask the pupils to indicate by means of an arrow the direction in which the corkscrew must be turned to push it into the cork.
Comments	The teacher can bring in a real corkscrew to help the demonstration when the results are pooled.
Variations (examples)	<ul style="list-style-type: none">- The teacher can ask the pupils to give other examples of a similar mechanism, used in everyday life or at work.- The teacher can ask the pupils to draw a screw and, according to their drawing, put an arrow to show the direction it must be turned to screw in.
Individualisation	Yes.
Answers	Yes.

***WORK IT
OUT***

Understand a rotation
“The corkscrew”

7-13



***WORK IT
OUT***

Understand a rotation
“The corkscrew”

7-13
Answers

