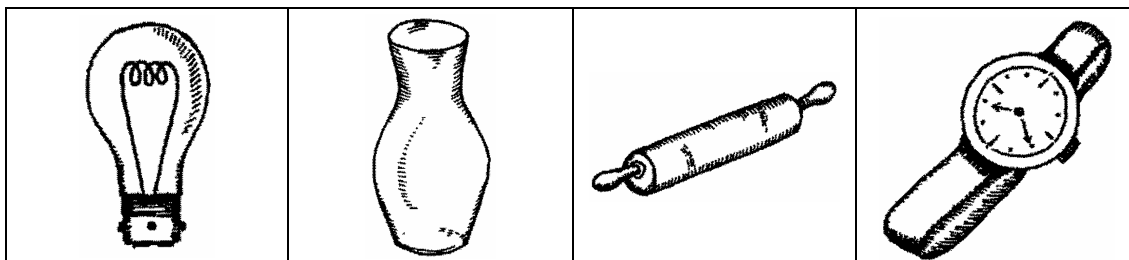
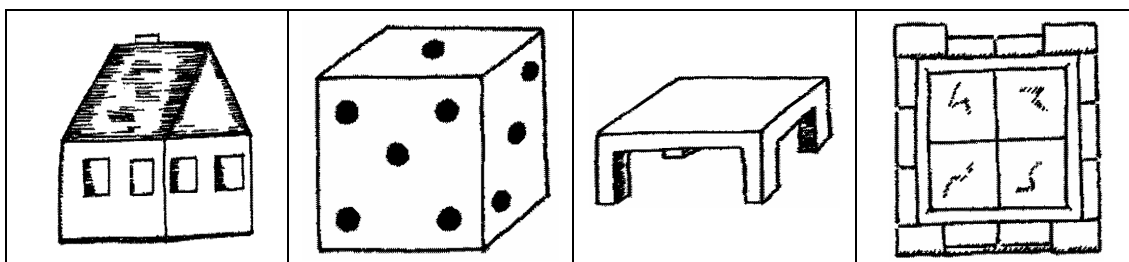


WORK IT OUT	Recognise shapes “Objects and shapes”	2-21 Level 2 Exercise 1
Aims	<ul style="list-style-type: none"> - Practise identifying geometric shapes that are made up of everyday objects. - Identify different simple geometric shapes. - Find what several different drawings have in common. 	
Applications (examples)	In class, at work or in everyday life: understand or make by yourself a shape in diagram form; enlarge the field of vision so as not to limit yourself to the details but to have an overall view. This practice can be extended to reading, with a view to improving their skills (comprehension, speed, etc.).	
Materials	A page with four series of drawings and four geometric shapes.	
Instructions	The pupils will match a geometric shape to a series of objects all or part of which is comparable to the geometric shape.	
Remarks	<ul style="list-style-type: none"> - When the solutions are being pooled, the pupils should describe in as much detail as possible the strategy they used; this exercise shows just how many different approaches and methods of investigation there can be. - Certain pupils will only identify the most obvious objects in each line or those that most resemble the shapes below, for example the watch in row A. It is also easy to imagine the objects from different angles than those shown in the drawings; for example the glass vase seen from below: the shape would therefore be close to the circle but for a different reason, as it is seen from a different angle. - Certain pictures show shapes that can belong to several of those shown at the bottom of the page, like the house which could belong to the square, with the front wall, or the trapezium with the roof (see extension 1). 	
Variation(s) (examples)	<ol style="list-style-type: none"> 1. The pupils can look for other shapes in the objects drawn, corresponding to the geometrical shapes 1, 2, 3 or 4 than the one suggested in the answers (unless the solutions were very varied). 2. One pupil chooses an object in the room and shows it to the group from different perspectives. The other pupils will determine each time the different geometric shapes that they sees. 3. At this stage, the teacher can probably begin to talk of the hidden side of objects, for example the dice or the weight in the pictures shown here; the pupils will then try to imagine or to represent the invisible sides. 4. The teacher can try to initiate the pupils in the idea of perspective with, for example, the stool whose legs are not the same length in the picture. 	
Individualisation	Yes.	
Answers	Yes.	

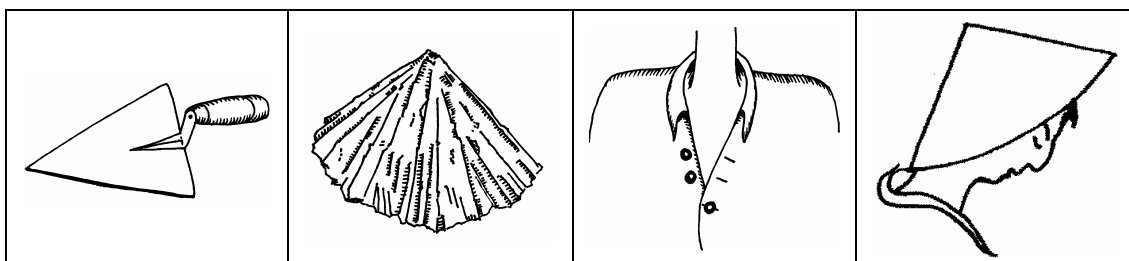
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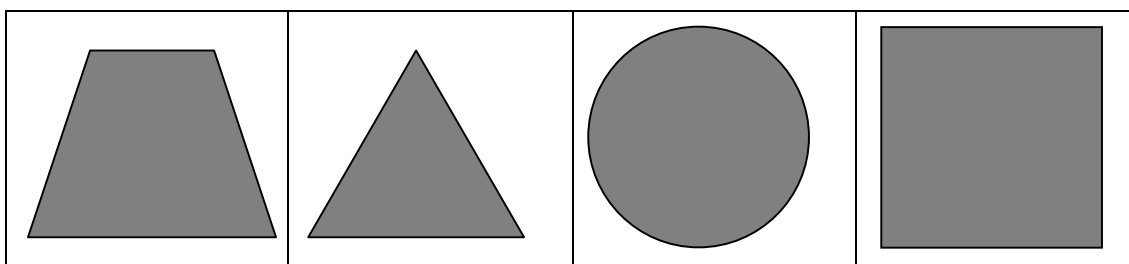
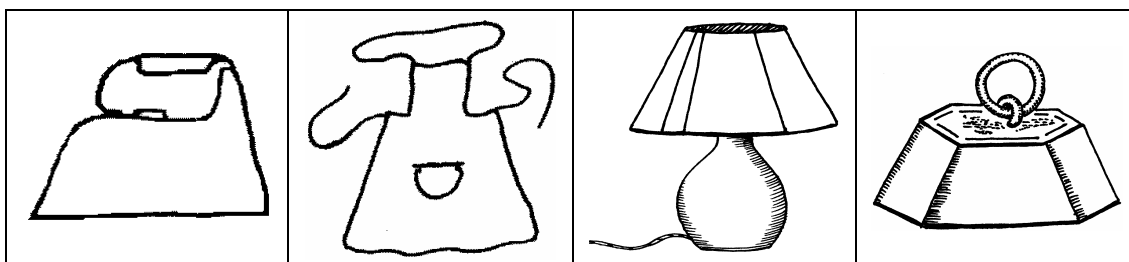
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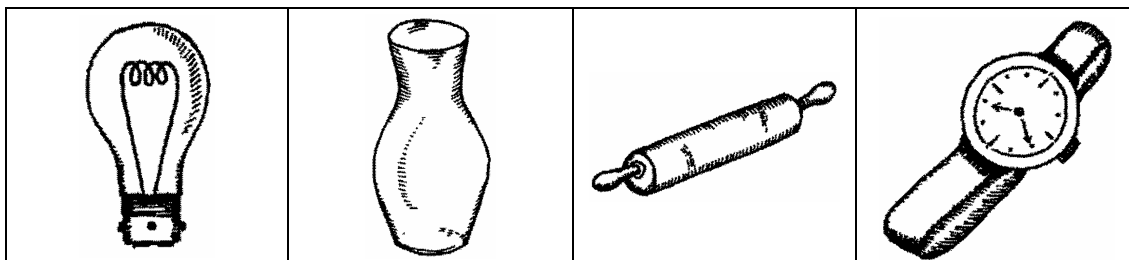
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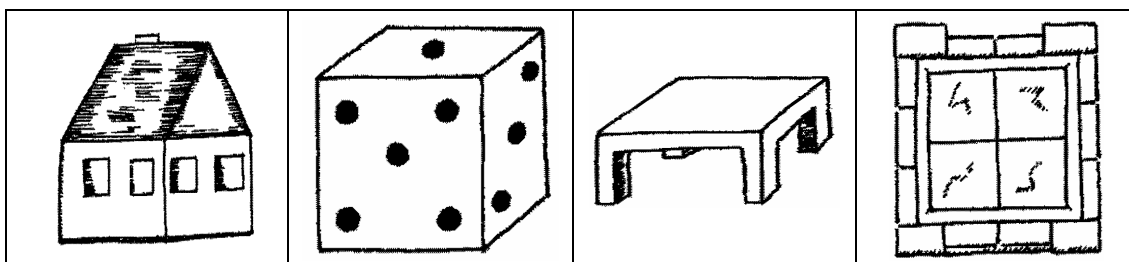
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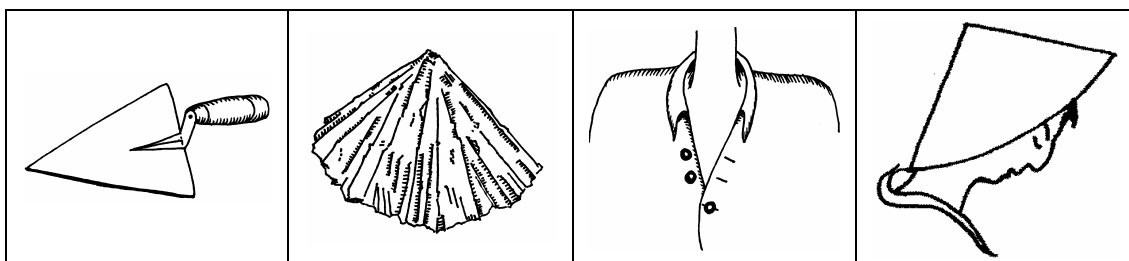
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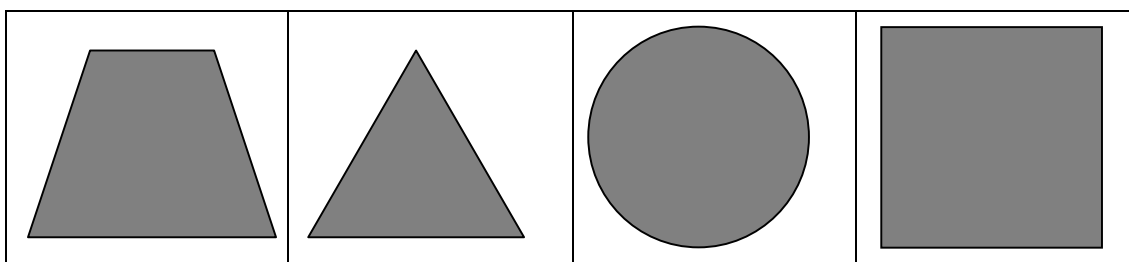
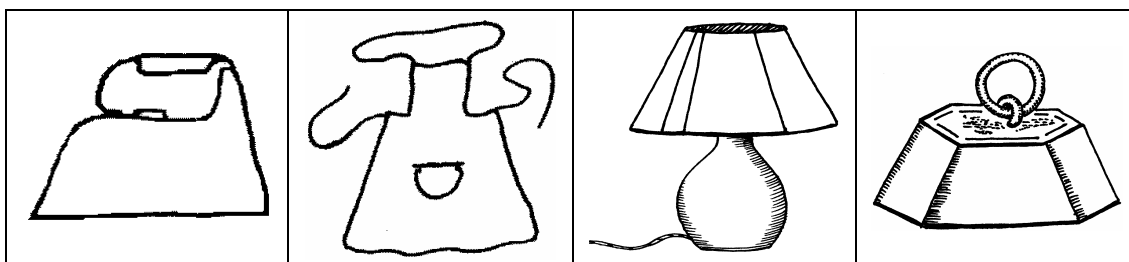
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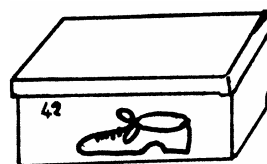
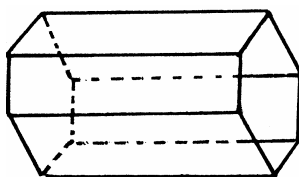
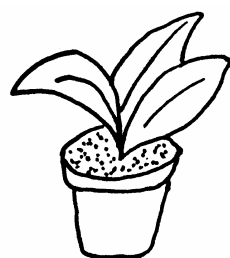
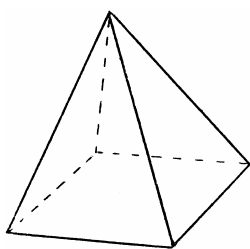
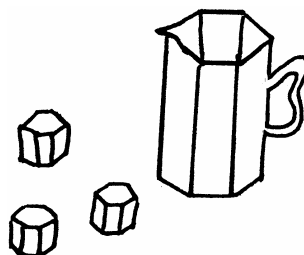
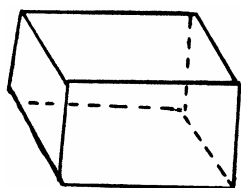
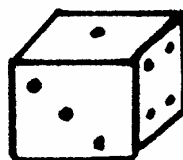
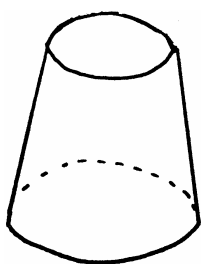
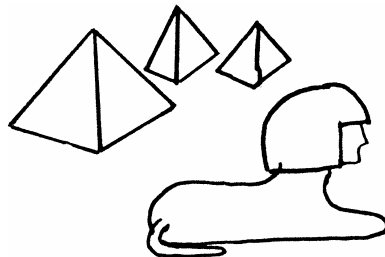
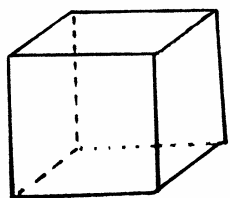
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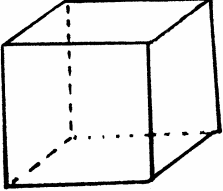
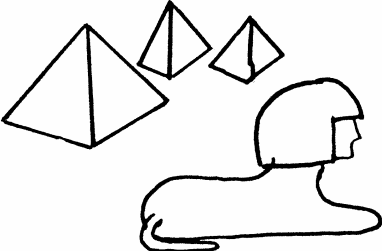
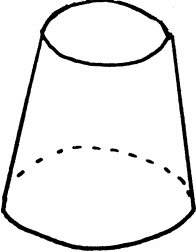
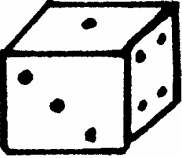
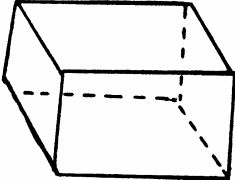
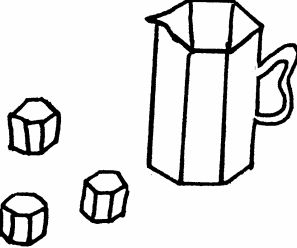
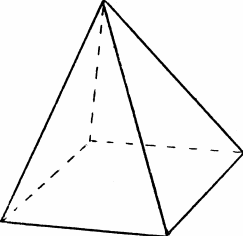
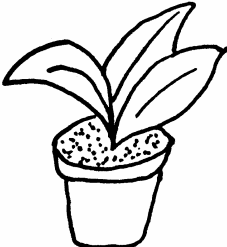
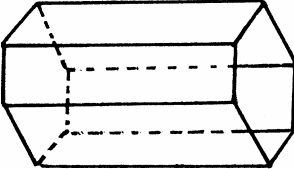
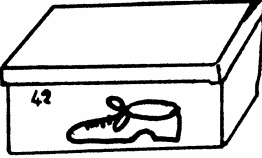
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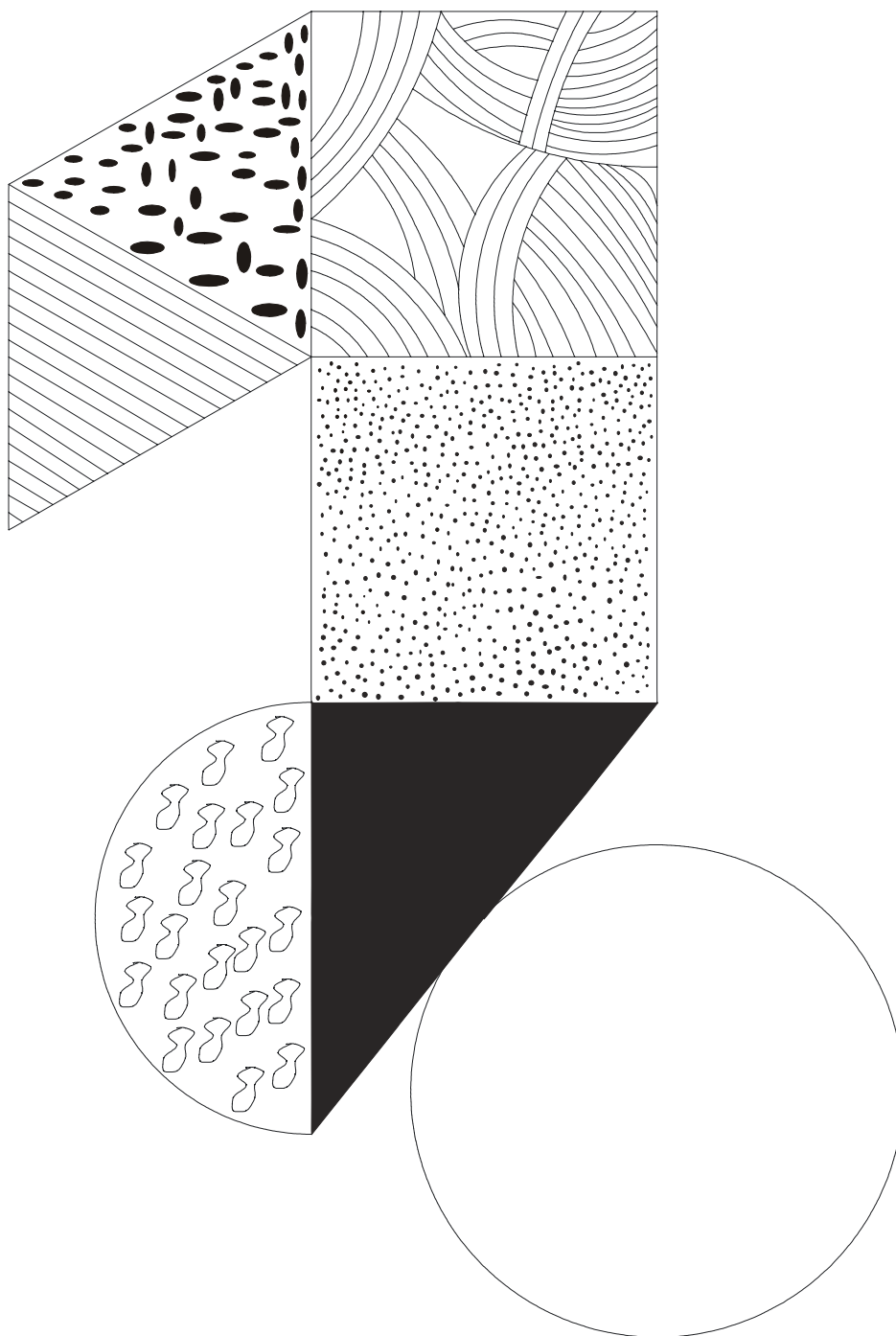
WORK IT OUT	Recognise shapes “Volumes”	2-22 Level 2 Exercise 2
Aims	<ul style="list-style-type: none"> - Get used to representing objects and shapes in volume. - Get used to schematisation. - Recognise a geometric shape shown in volume. - Compare by using rotation. 	
Applications (examples)	<p><u>In class</u>: any mental operation consisting in finding shapes represented by volume with a view to matching, comparing or superimposing them (geometry, drawing and technical drawing with views in perspective and work on the non visible sides).</p> <p><u>At work</u>: improving the layout of the workstation in order to make it more practical, more efficient or more ergonomic.</p> <p><u>In everyday life and for leisure</u>: arranging furniture in a room, equipment in a kitchen or a bathroom, etc.</p>	
Materials	A page with, in the left-hand column, the volumes of 5 geometrical shapes (cube, prism, etc.) and in the right-hand column the drawings of 5 objects in perspective.	
Instructions	The pupils will match volumes and objects whose shapes seem fairly similar.	
Remarks	<ul style="list-style-type: none"> - This exercise lends itself well to the discovery of the instructions by the pupils. However, the teacher should make sure s/he does not influence the pupils' methods of investigation while they are looking for and formulating the instructions (some look first at the objects then look for the shapes; others do the opposite; still others go back and forth constantly between the two with no preference for which comes first). - As always when using <i>WORK IT OUT</i>, during the pooling of solutions, the pupils give as much detail as possible when describing how they proceeded. This exercise shows just how numerous and varied the methods can be. 	
Variation(s) (examples)	<ol style="list-style-type: none"> 1. Work can be done on the hidden sides of the objects shown (how many hidden sides are there? What might they look like? Can we try to draw them? Etc.) 2. As the scale to which the objects are drawn are totally different (the pyramids and the die for example), the group can look at drawings or photos, diagrams in a magazine for example, or an encyclopaedia, the map of a region or country, road map, etc. and think of the proportions and scale. 3. The teacher can emphasise the principle of perspective in drawing using the 3 pyramids drawn in different sizes, to give an idea of depth of field. The pupils can practise by drawing a rough outline of 3 trees on 3 different planes, from the closest to the observer to the furthest away. 	
Individualisation	Yes.	
Answers	Yes.	

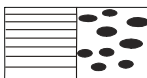
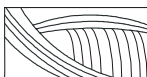
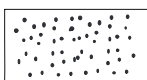
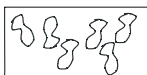


<p>1</p> 	<p>4</p> 
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<p>4</p> 	<p>2</p> 
<p>5</p> 	<p>3</p> 

WORK IT OUT	Recognise shapes “Shapes and patterns”	2-23 Level 2 Exercise 3
Aims	<ul style="list-style-type: none"> - Distinguish geometric shapes – shown in isolation or interwoven – count them and name them. - Get used to enlarging the field of vision to obtain an overall view rather than a fragmented one of what is shown. 	
Applications (examples)	<p><u>In class</u>: initiation into the different simple geometric shapes, discovery of their different characteristics and the vocabulary linked to them ("side, angle, length, width") Possibly and by extension, discovery or rediscovery of a few measurements of these shapes (perimeter, area).</p> <p><u>At work</u>: any operation consisting in recognising and counting similar shapes (putting away, filing, packing, labelling, layout of shelves and departments in a supermarket, etc.). Possibly and by extension, taking measurements in a building in order to put in wallpaper, carpets or floor tiles.</p> <p><u>In everyday life and for leisure</u>: arranging furniture in a room, equipment in a kitchen or bathroom, simple DIY, putting wallpaper or carpeting, cutting material for curtains, etc.</p>	
Materials	<ul style="list-style-type: none"> - A page with different geometric shapes, each with a different pattern inside. - A second page with samples of the patterns as they can be seen on the first page. 	
Instructions	<ol style="list-style-type: none"> 1. The pupils look at the first page and write the number of different shapes they see. 2. On the second page, the pupils work together to try to find, then to write next to each sample, the name of the shape it corresponds to. 	
Remarks	<ul style="list-style-type: none"> - The second part of the exercise supposes that the pupils (or at least some of them) have received some form of initiation in learning geometric shapes. If they have difficulty writing the names, the teacher can help them. - If the pupils do not have the necessary pre-requirements to allow them to find the names of the shapes, the group can simply do the first part of the exercise. To get the best use of the tool <i>WORK IT OUT</i>, the authors recommend that the teacher does not supply all the elements him/herself (like the names of the shapes, for example) if none of the pupils is able to use his own knowledge nor work out his own approach, method or strategy. 	
Variation(s) (examples)	<ol style="list-style-type: none"> 1. The group can be encouraged to approach the vocabulary used to describe geometric shapes ("side, length, width, angle", etc.), to look for the particularities of each shape and to practise describing them clearly. One pupil can, for example, describe – in more or less detail, especially for the dimensions – a shape for the group to try and reproduce. They can compare the results obtained. 2. The teacher can have the group discover or rediscover the elementary calculations for the simplest shapes (measuring the perimeter or the area) and take examples of practical applications (calculating how much paint, carpet, curtain material, etc. is needed). 	
Individualisation	Yes.	
Answers	Yes.	

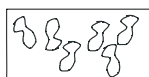
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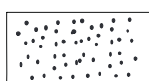




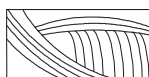
circle



half circle



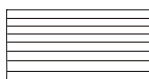
square



square



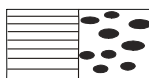
triangle



triangle



triangle



lozenge



rectangle



trapezium



trapezium