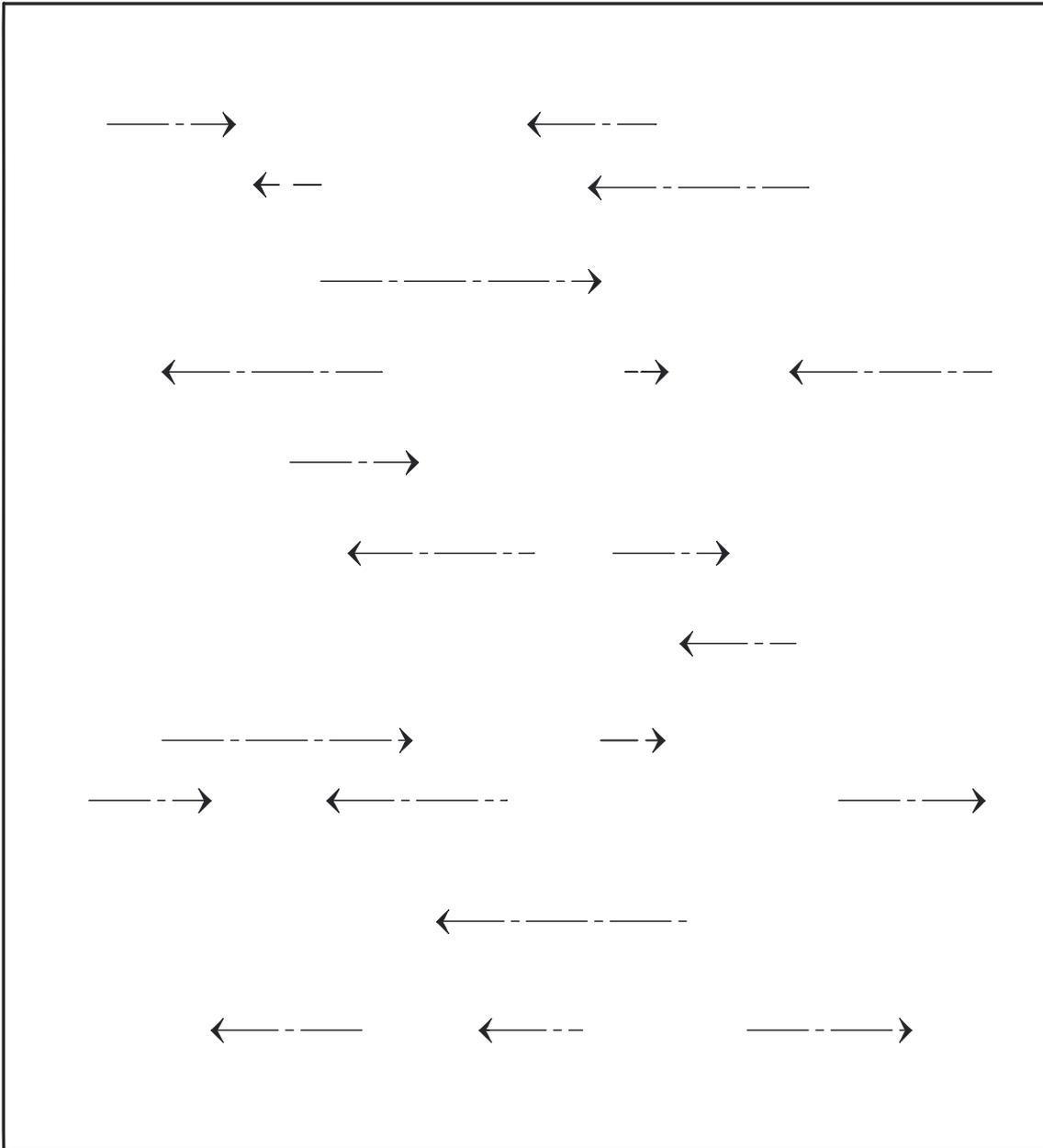
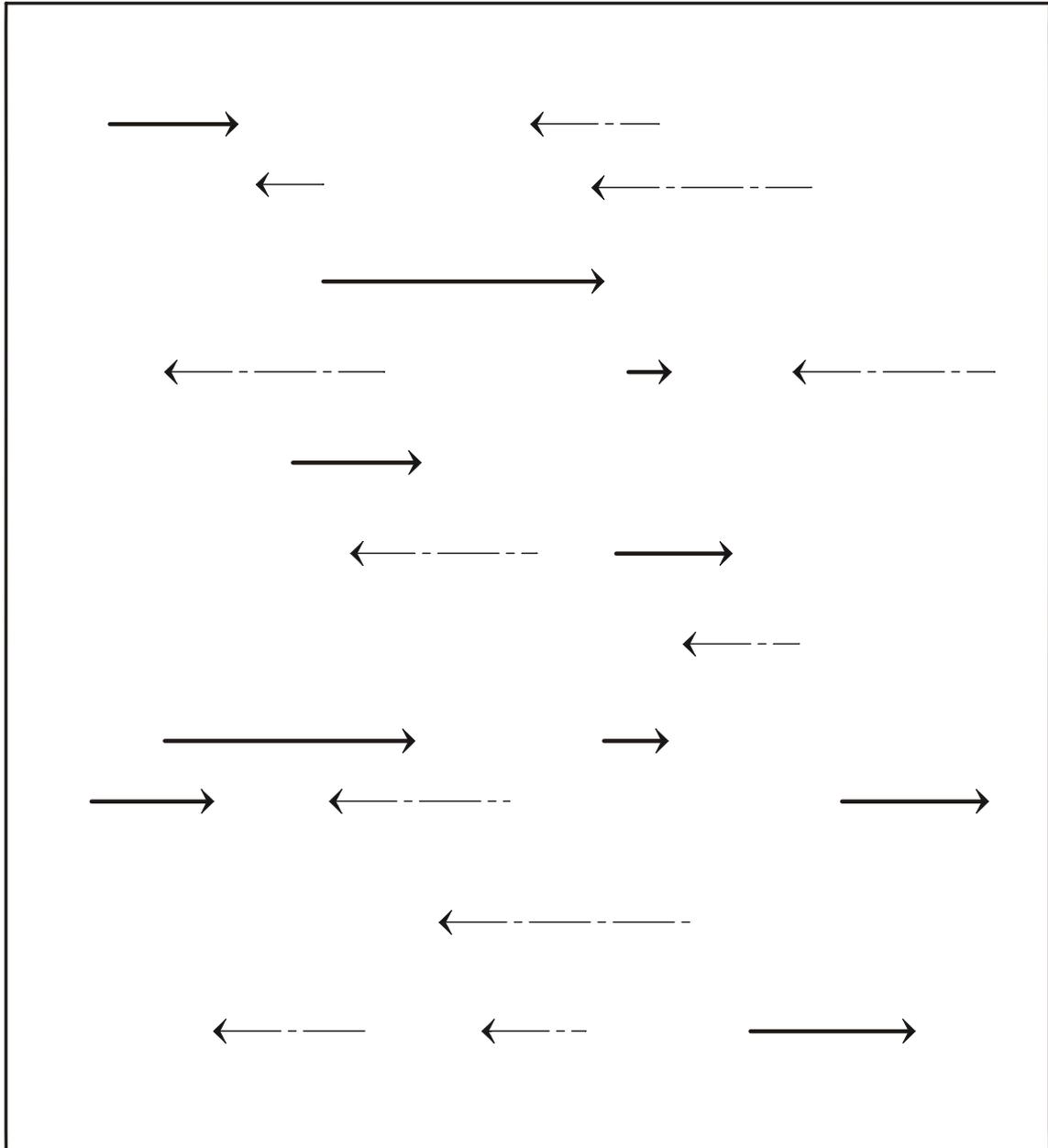


Aims	<ul style="list-style-type: none">- Training in directional representation using arrows.- Getting used to following the direction of an arrow and interpreting its symbol.- Practising drawing a long straight line.
Applications (examples)	<p><u>In class</u>: understanding and using arrows to indicate or point to something (on a map, a street plan or a drawing in science or in biology.).</p> <p><u>At work</u>: interpreting any indication represented by an arrow (showing directions, placing, the direction of a line or a movement).</p> <p><u>In everyday life and for leisure</u>: interpreting any indication represented by an arrow (directions for the highway code, where to put money, for example in drinks dispensers, directions to follow on a journey, following a recipe, assembling a piece of furniture following the illustrated instructions, knitting, sewing or embroidery instructions in a magazine, etc.).</p>
Materials	A page with continuous horizontal dots suggesting a straight line and ending in an arrow on one side, either on the left or on the right.
Instructions	The pupils will join, with an unbroken line, all the dots corresponding to the arrows which indicate the direction LEFT to RIGHT.
Remarks	<ul style="list-style-type: none">- Students who wish may of course use a ruler.- During this exercise, it can be pointed out that scanning is different depending on where people come from, and corresponds in general to the direction we read in, i.e. from left to right in countries where people read from left to right, and from right to left, for example in countries where Arabic is spoken. This scanning is part of our cultural background, so that it is also characteristic in people who do not know how to read at all. It is important for pupils to be aware of this, in particular if there are people among them whose mother tongue is written from right to left.- It is interesting for the pupils if each one can describe the method he used to avoid forgetting any arrows pointing in the required direction.
Variations (examples)	<ol style="list-style-type: none">1. The exercise can be done again looking at the page lengthways and asking the participants, for example, to highlight the arrows pointing downwards.2. To ease the transfer to everyday or working life, the teacher can ask the group to list all the arrow signs that they usually see around them, and to give their uses.
Individualisation	Yes.
Answers	Yes.



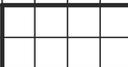


<i>Aims</i>	<ul style="list-style-type: none">- Training in directional representation with arrow signs.- Practise determining the direction of an arrow and interpreting its symbol.- Practise drawing a long straight line.
<i>Applications (examples)</i>	<p><u>In class</u>: understanding and using arrow systems to indicate, point to (on a map, a street map, on a drawing in science or biology, etc.).</p> <p><u>At work</u>: know how to interpret any indication represented by arrows (indications of direction, placing, the direction of movement, etc.)</p> <p><u>In everyday life and for leisure</u>: know how to interpret any indication marked with arrows (directions for the highway code, where to put money, for example in drinks dispensers, directions to follow on a journey, following a recipe, assembling a piece of furniture following the illustrated instructions, knitting, sewing or embroidery instructions in a magazine, etc.).</p>
<i>Materials</i>	A page with continuous horizontal dots suggesting a straight line, and ending in an arrow on one side, either right or left.
<i>Instructions</i>	The pupils will use an unbroken line to join all the dots corresponding to the arrows which indicate the direction LEFT to RIGHT.
<i>Remarks</i>	<ul style="list-style-type: none">- Of course, those pupils who wish may use a ruler.- During this exercise, it can be pointed out that scanning is different depending on where people come from, and corresponds in general to the direction we read in, i.e. from left to right in countries where people read from left to right, and from right to left, for example in countries where Arabic is spoken. This scanning is part of our cultural background, so that it is also characteristic in people who do not know how to read at all. It is important for pupils to be aware of this, in particular if there are people among them whose mother tongue is written from right to left.- It is interesting for the pupils if each one can describe the method he used to avoid forgetting any arrows pointing in the required direction.
<i>Variations (examples)</i>	<ol style="list-style-type: none">1. The exercise can be done again looking at the page lengthways and asking the participants, for example, to highlight the arrows pointing downwards.2. To ease the transfer to everyday or working life, the teacher can ask the group to list all the arrow signs that they usually see around them, and to give their uses.
<i>Individualisation</i>	Yes.
<i>Answers</i>	Yes.

“Lines or dots”

The grid is divided into two 10x10 sections by a vertical line. The left section contains the following shapes in rows 1 through 8:

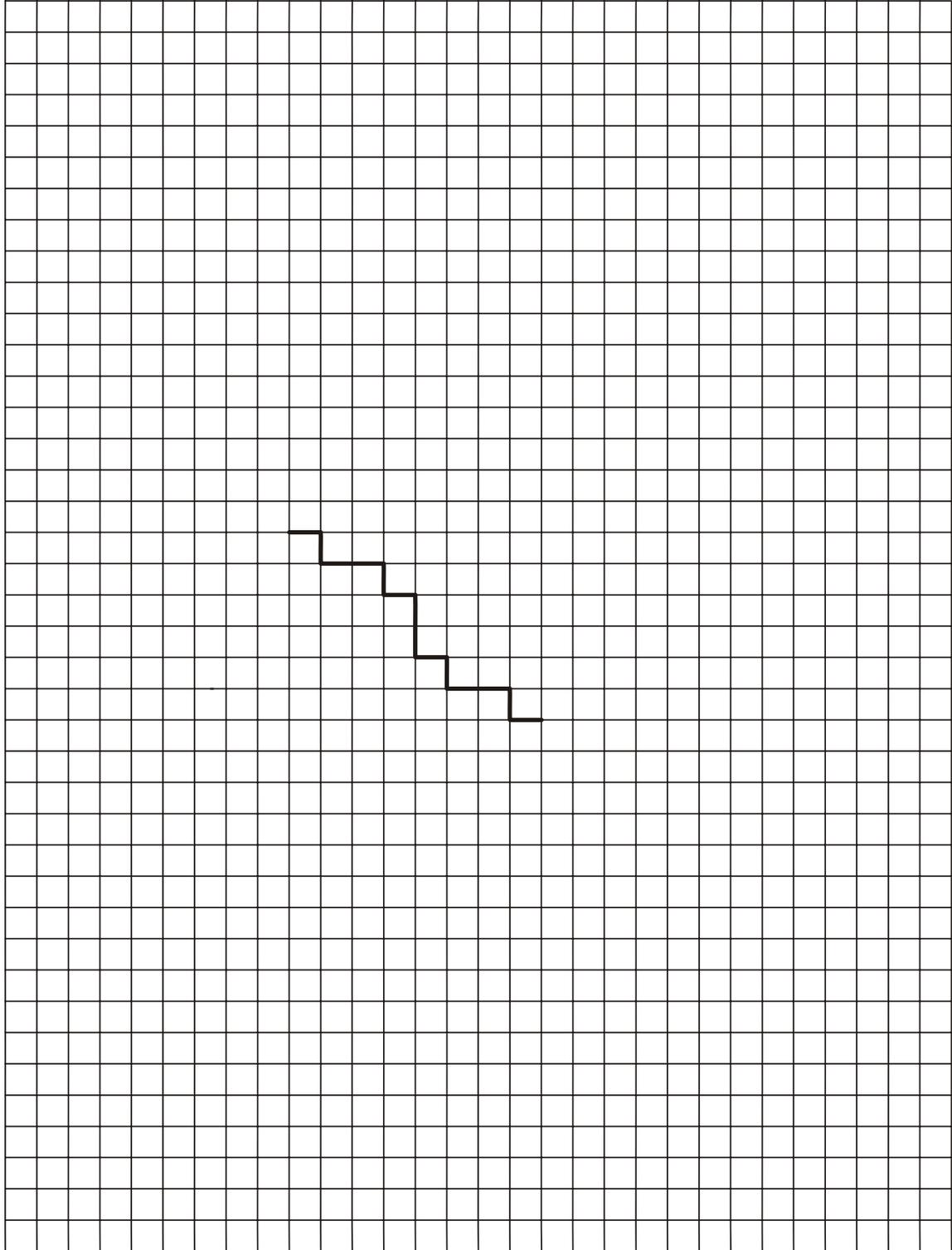
- Row 1: A horizontal line of three dots.
- Row 2: A vertical line of two dots.
- Row 3: A plus sign (+).
- Row 4: A square with four dots at its corners.
- Row 5: An 'X' shape.
- Row 6: A square.
- Row 7: A rectangle.
- Row 8: A rectangle.

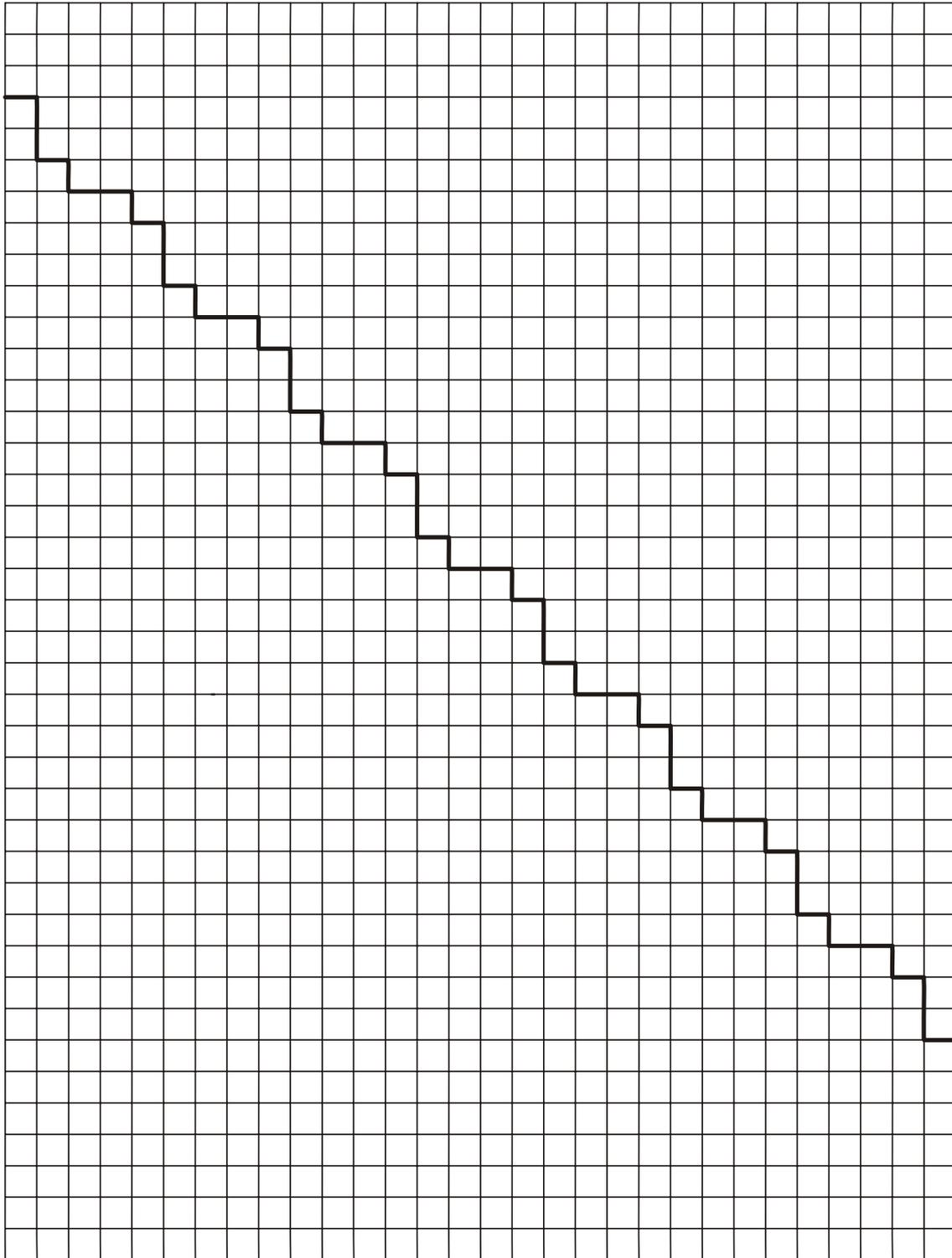
	
	
	
	
	
	
	

**WORK IT
OUT****Reproduce - Represent****3-13****“A strange staircase”****Level 1
Exercise 3**

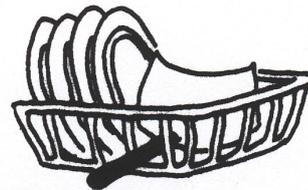
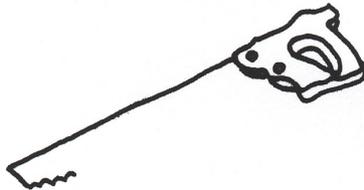
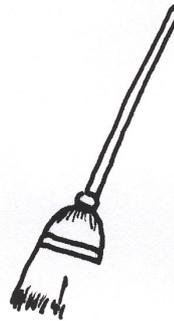
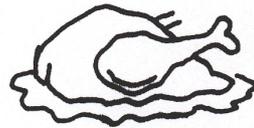
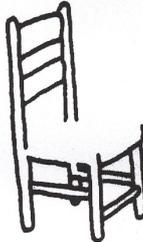
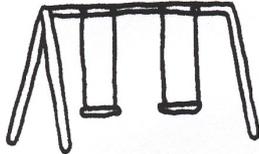
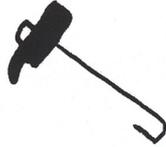
Aims	<ul style="list-style-type: none">- Practise "matching" an existing drawing and continuing it with your own.- Observe the characteristics of a simple drawing with a repetitive pattern.- Practice in continuing a drawing already begun keeping exactly the same characteristics.- Beginning seriation.- Using squared paper for precision drawing.
Applications (examples)	<p><u>In class</u>: any exercise consisting in reproducing a line identically and continuing it (in geometry, drawing, etc.) and highlighting the importance of giving precise instructions. In learning to read and write, copying letters, words and sentences.</p> <p><u>At work</u>: any task requiring anticipation in a rhythm, or recurring sequences, for example, in making motifs on material, leather, craftwork objects, etc.</p> <p><u>In everyday life and for leisure</u>: finding your place and anticipating the reproduction of sequences that recur in a regular pattern, in sewing, for example, embroidery, tapestry work, interior decorating, etc. Becoming aware that the oral expression in formulating instructions can lead to (mis-)interpretation if it is left unclear, with often serious consequences.</p>
Materials	A sheet of squared paper with the beginning of a broken line drawn on it, resembling a sort of staircase with steps that seem irregular at first sight, but which obey a repeated pattern.
Instructions	Les pupils continue the existing drawing in keeping with its characteristics.
Remarks	The instructions are intentionally vague on the number of lines required. It is indeed not specified whether the drawing has to be continued upwards or downwards or both, nor whether the line should continue right to the edge of the squares. Each person will explain, during the pooling phase, how he/she interpreted the instructions, unless questions are asked before or during the exercise.
Variations (examples)	<ol style="list-style-type: none">1. During the pooling of the techniques used to continue the drawing, very different ways of proceeding will be found, often expressed in images to describe a certain rhythm, for example, to define the lines, you will hear "formulas" such as "small - small - big; small - small - big" or "long - short - short". Some will talk of mountains: "one small one – two big ones next to it", others will draw a diagonal going along the line and use this new mark as a basis for the rest. The wealth of techniques used can easily be exploited by the teacher; the exercise is particularly suitable. The variation will then consist in discovering ways to create sequences requested other than those which are given.2. Using the page on which the work was done, it is possible to choose one of the techniques shown during the pooling of results to trace the same broken line, but starting from the top right-hand corner of the squares to go down to the opposite corner, crossing the first line. The pupils can then compare amongst themselves the exact place of their last line.3. For this exercise the group could look for a way to formulate the instructions so as to explain the work explicitly, leaving no room for interpretation.
Individualisation	Yes.
Answers	Yes, suggested.

“A strange staircase”





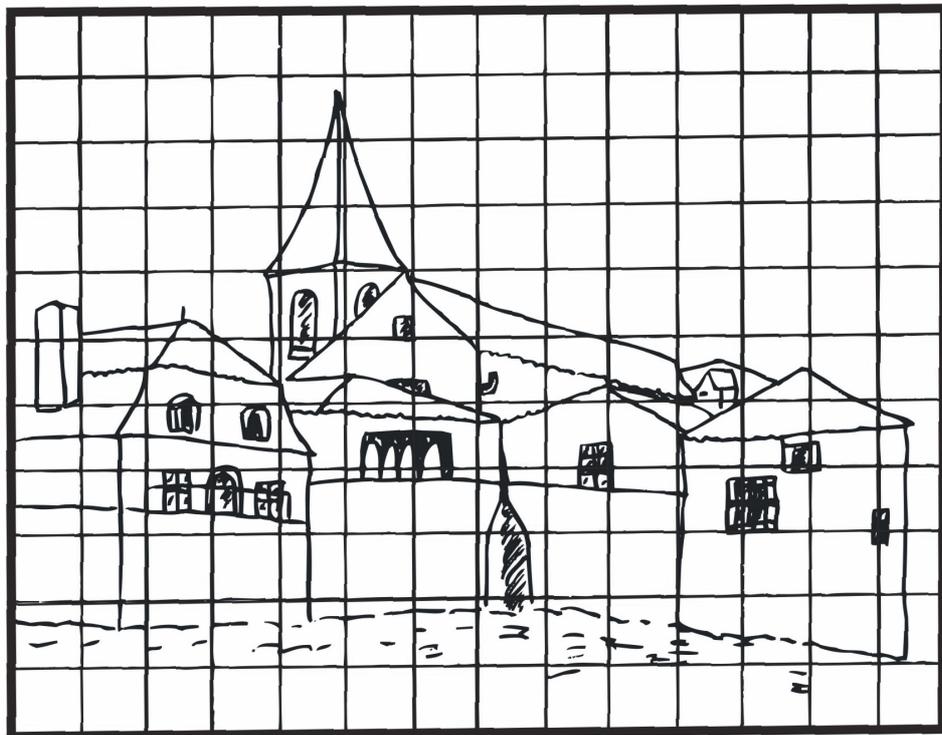
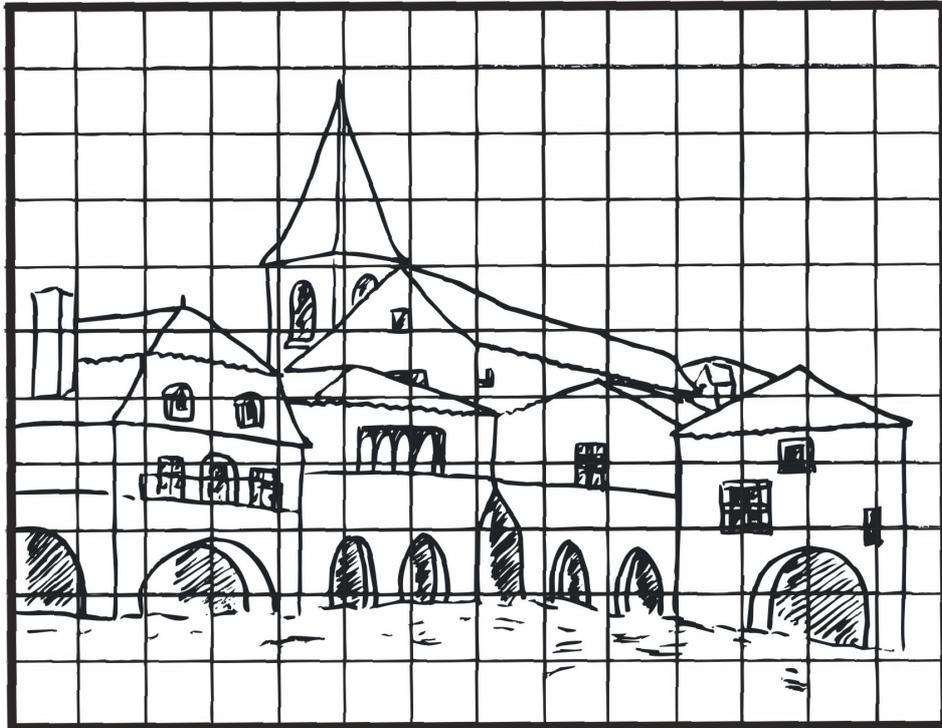
WORK IT OUT	Reproduce - Represent “Unfinished drawings”	3-21 Level 2 Exercise 1
Aims	<ul style="list-style-type: none"> - Identify objects represented by a drawing that has been begun but is unfinished. - Identify the parts to be completed in an incomplete drawing. - Complete the missing parts of an unfinished drawing with a few simple lines. 	
Applications (examples)	<p><u>In class</u>: any exercise consisting in identifying what an unfinished drawing might be and finishing it according to your ideas.</p> <p><u>At work</u>: any task requiring you to find out what is missing in a drawing, a diagram or a manufactured piece in order to complete the missing elements.</p> <p><u>In everyday life and for leisure</u>: find and anticipate more easily when reproducing patterns, for example in embroidery, tapestry, cutting, sewing or home decoration or model building...</p>	
Materials	A page with drawings of 12 objects. For each object, the drawings have been begun but not finished: there are one, two or three lines missing to make them complete.	
Instructions	The pupils must draw the few lines required to complete each of the 12 drawings shown. They can erase as often as necessary. You do not have to know how to draw to complete the drawings.	
Comments	<ul style="list-style-type: none"> - The pupils and the teacher can decide that the group should first determine what the unfinished objects are. - As the objects are shown in perspective, the teacher can have them compare the different results to see how they managed the perspective, especially for the chest of drawers, the chair and the swing. 	
Variations (examples)	<p>1. On a blank page, the pupils can start the drawing of an object within a frame of about 5 to 7 centimetres square. The teacher will cut out each object drawn and stick it on a piece of paper. This can be photocopied and given to each pupil so that they all complete at least three drawings of their choosing. The pooling of the results will highlight the wealth and variety of references, points of view and perceptions. The pupils will explain in detail why they completed the objects as they did.</p> <p>2. If appropriate, the teacher can suggest that they spend some time (preferably no longer than half an hour) playing a game like "Pictionary" or similar, that you can find in the shops. Thus, the teacher can explain the main principles of the game, and the group of pupils can put the finishing touches to them. The pupils will play in small groups, and will have a word to draw as clearly as possible, so that the others can guess the word (a concrete object, but also perhaps an action or adjective). Playing a game like this shows the many different ways of looking at things; this can be an excellent exercise in communication, which has the added benefit of being fun to do.</p>	
Individualisation	Yes.	
Answers	Yes, suggested.	





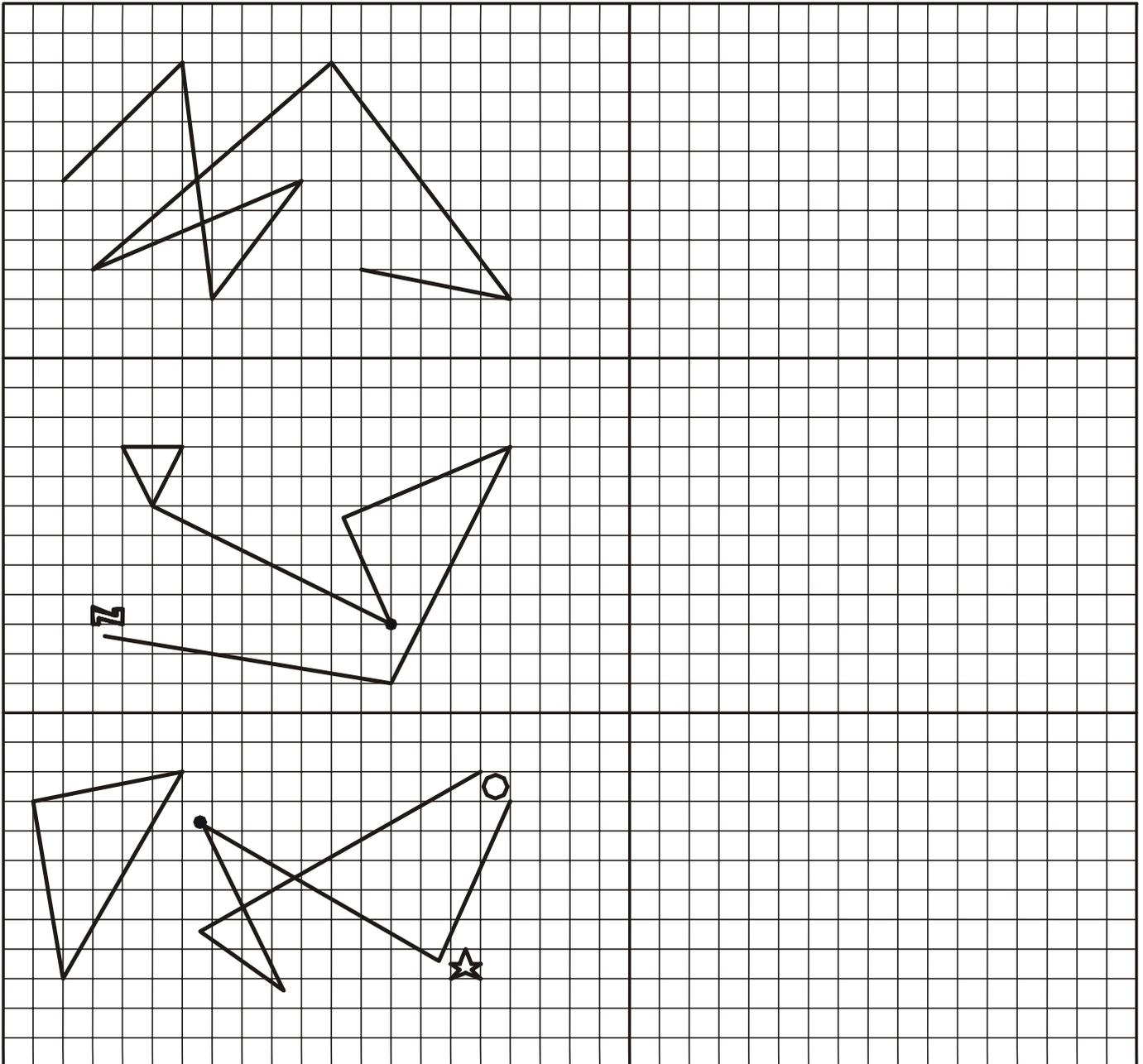
<i>Aims</i>	<ul style="list-style-type: none">- Compare the reproduction of a picture to its model in order to complete what is missing.- Keep strictly to the lines and proportions by using reference points in the squares.
<i>Applications (examples)</i>	<p><u>In class</u>: any exercise consisting in identifying an unfinished picture and completing it according to a model, with precision and using reliable reference points.</p> <p><u>At work</u>: any task requiring you to find the missing parts of a drawing, a diagram, or a manufactured piece in order to complete the missing elements according to a model.</p> <p><u>In everyday life and for leisure</u>: find and anticipate more easily when reproducing patterns, for example in embroidery, tapestry, cutting, sewing or home decoration or model building ...</p>
<i>Materials</i>	A page with the sketched drawing of a group of houses and the same picture reproduced without drawing the doors.
<i>Instructions</i>	The pupils look at the model (above) and its reproduction (below) in order to find what is missing in the reproduction. They then draw the missing parts after finding reference points in the squares and sticking to the lines and proportions.
<i>Comments</i>	<ul style="list-style-type: none">- The pupils and the teachers can decide together whether or not to draw the shading.
<i>Variations (examples)</i>	<ol style="list-style-type: none">1. Looking at the shading under the arches, the pupils can try to work out where the light (or the sun) is coming from. Work on lighting can be done using reproductions of paintings.2. The pupils work in pairs: they each draw the houses (or anything else that is relatively complex) but only do half the drawing. The teacher photocopies the pages, which are then exchanged two by two, so that another pupil can finish the drawing; he must then explain the reasons for deciding to finish it the way he did.
<i>Individualisation</i>	Yes.
<i>Answers</i>	Yes, the model is the answer.

“The village”



**WORK IT
OUT****Reproduce - Represent****3-23****“Shapes”****Level 2
Exercise 3**

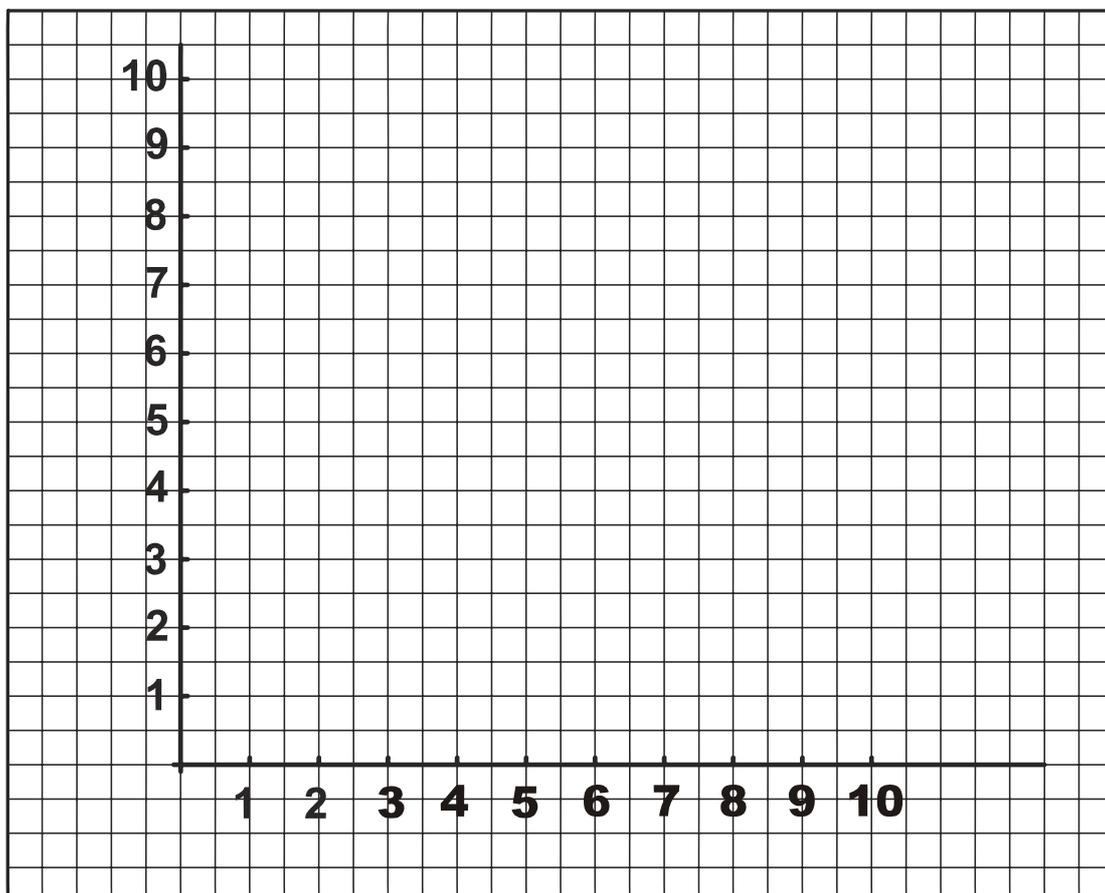
Aims	<ul style="list-style-type: none">- Observe and abstract shape and identify the reference points in a grid.- Use the reference points to reproduce an abstract shape.- Find reference points in a grid quickly, reliably and effectively.
Applications (examples)	<p><u>In class</u>: any exercise consisting of finding reliable reference point in squared paper to reproduce a geometric shape, a drawing or a technical diagram...</p> <p><u>At work</u>: any task consisting of finding reliable reference points in order to reproduce or finish a part, reproduce signs or drawings, or reporter indications...</p> <p><u>In everyday life and for leisure</u>: find and anticipate more easily when reproducing patterns, for example in embroidery, tapestry, cutting, sewing or home decoration or model building, craftwork, etc.</p>
Materials	A page with 4 squared grids, the 2 on the left containing an abstract shape and the 2 on the right left blank.
Instructions	The pupils will use the reference points in the grid that they feel are necessary to reproduce exactly, in the right-hand grid, the shape shown on the left.
Comments	<ul style="list-style-type: none">- As the task might be fairly long for pupils who are not used to using pencils, the teacher can decide to have them choose one or other of the shapes.- If the pupils are willing to reproduce the 2 shapes, it would be profitable for the teacher to pool the results immediately after the first one. The pupils can then draw inspiration from the most effective strategies revealed during this stage to reproduce the second shape.
Variations (examples)	<p>1. A very useful variation of this exercise consists in giving the pupils a page with 2 squared parts but with no drawing. (To do this, the teacher can cut out the blank grids of the exercise and stick them on to a page that can be photocopied.) Each pupil has to draw any abstract shape he likes on the left-hand side, in order to reproduce it exactly in the right-hand grid. He therefore has to anticipate any likely difficulties and create his shape according to any reference points he might use in order to reproduce it.</p> <p>2. Another variation consists in giving each pupil two blank grids. The pupils have to draw an abstract shape in the left-hand grid, consisting of a certain number of lines to be defined in the group (for example 6 lines). The papers are then exchanged in twos, and the pupils have to reproduce the shape shown on the left in the grid on the right. The one who created the shape will then question the one who reproduced it on his strategies and any difficulties encountered.</p>
Individualisation	Yes.
Answers	No, the model is the answer.



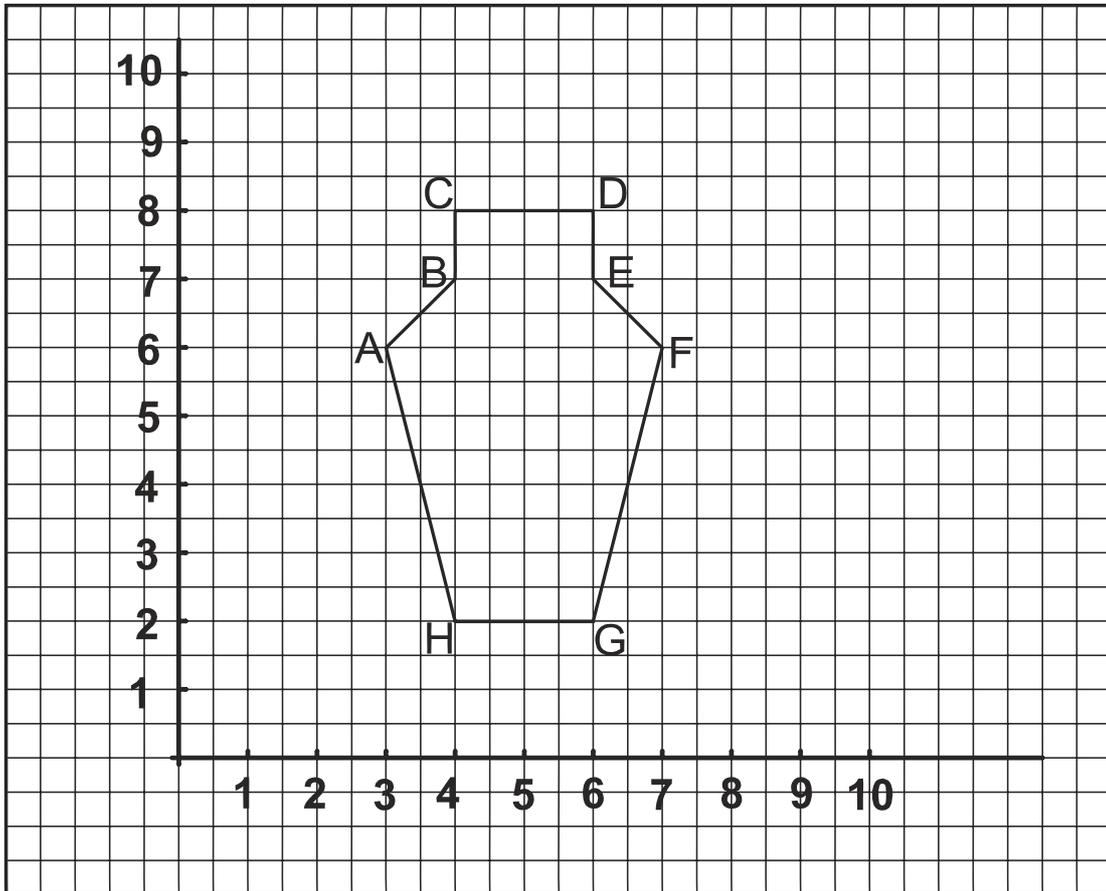
**WORK IT
OUT****Reproduce - Represent****3-31****“The object...”****Level 3
Exercise 1**

Aims	<ul style="list-style-type: none">- Find reference points in a grid.- Understand a double entry table.- Mark information on a grid or graph.- Given precise information, draw an object that will end up being identifiable.
Applications (examples)	<p><u>In class</u>: any exercise consisting in using reference points and observing the information in order to draw a line, for example in geometry or technology...</p> <p><u>At work</u>: any task requiring the use of reference points and attention to information or constraints; any task requiring the use of a double entry table to mark information or results. Better understanding of graphs, such as those seen in workshops describing increase in production or rates of defective parts...</p> <p><u>In everyday life and for leisure</u>: know how to use reference points, particularly those given in a double entry table. Understand a graph such as those one might see in the newspapers.</p>
Materials	<p>A page with a graph that has horizontal and vertical marks: each centimetre is defined by a number, from 1 to 10.</p> <p>Below this graph there is a table giving information that will enable pupils to do the required drawing on the graph. This information is composed partly of letters from A to H, which indicate the different points to be defined on the graph. Under each letter there are 2 numbers separated by a semi-colon. The number on the left refers to the horizontal marks on the grid and the number on the right, after the semi-colon, refers to the vertical marks.</p>
Instructions	<p>Using the information given, the pupils will mark the letters on the grid, remembering that the first number is in the horizontal line, and the second number, after the semi-colon, in the vertical line. The place where the two numbers cross will define where the letter is to be marked. The pupils will then join all the letters that they have placed on the grid to obtain the drawing of an object that can be easily identified.</p>
Comments	<ul style="list-style-type: none">- The teacher will have to make sure that the pupils understand the terms "vertical" and "horizontal" which will be used to do the exercise. The difficulty here is to take the reference points without inverting the information on the graph.
Variations (examples)	<ol style="list-style-type: none">1. The teacher can do the drawing by following the information in reverse order (for point A, he takes 3 on the vertical axis and 6 on the horizontal axis, and so on). The letters will not be marked; only the drawing will appear: the vase will then be shown on its side. The prepared page will be given out to the pupils, who will try to work out how the drawing was done from the elements given in the exercise.2. One could imagine that the vase in variation 1 (which seems to have fallen compared to the original drawing) was cracked when it fell. The pupils would imagine a broken line representing the crack, and would just mark the reference points, as is done in the exercise, for example, or in any other way that they would have to explain. Each pupil then gives his reference points to another pupil, who tries to draw the corresponding lines on the vase.
Individualisation	Yes.
Answers	Yes.

“The object...”



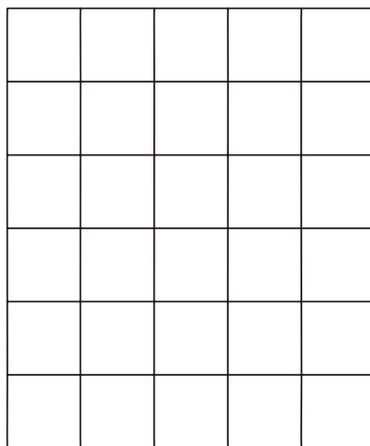
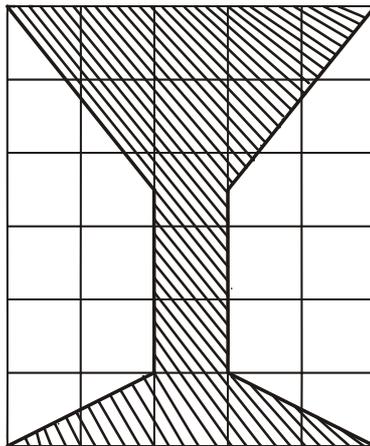
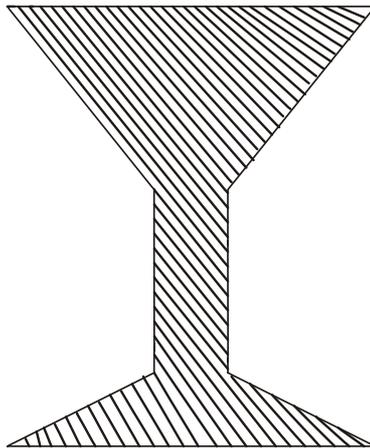
A	B	C	D	E	F	G	H
(3;6)	(4;7)	(4;8)	(6;8)	(6;7)	(7;6)	(6;2)	(4;2)

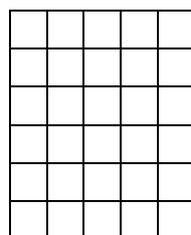
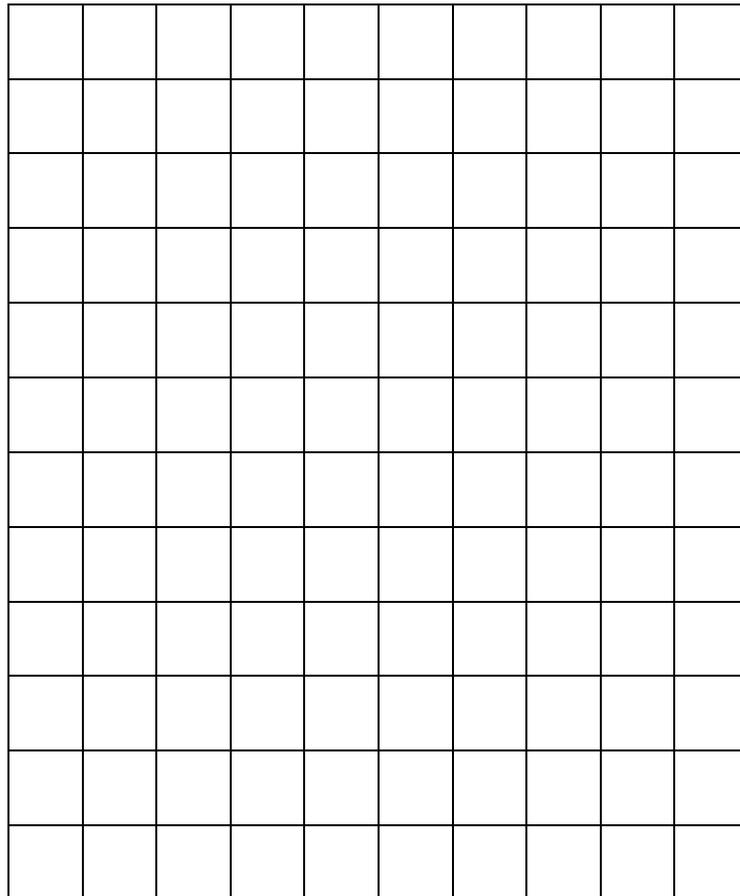


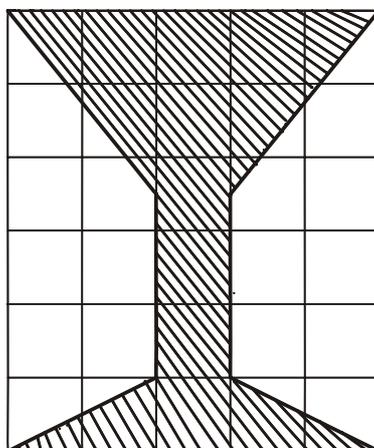
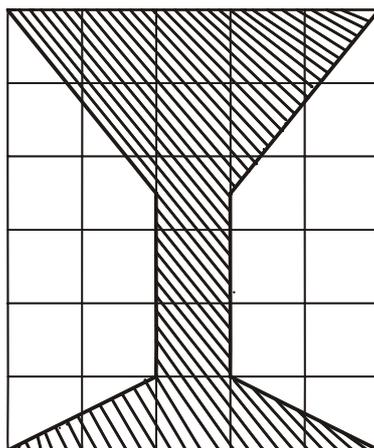
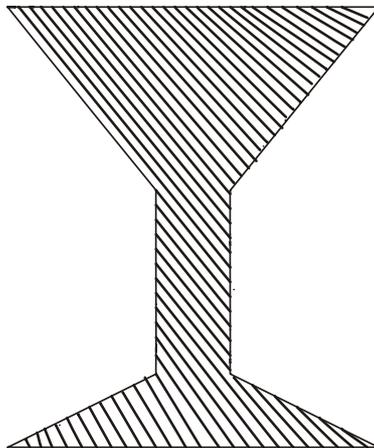
A	B	C	D	E	F	G	H
(3;6)	(4;7)	(4;8)	(6;8)	(6;7)	(7;6)	(6;2)	(4;2)

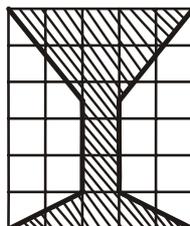
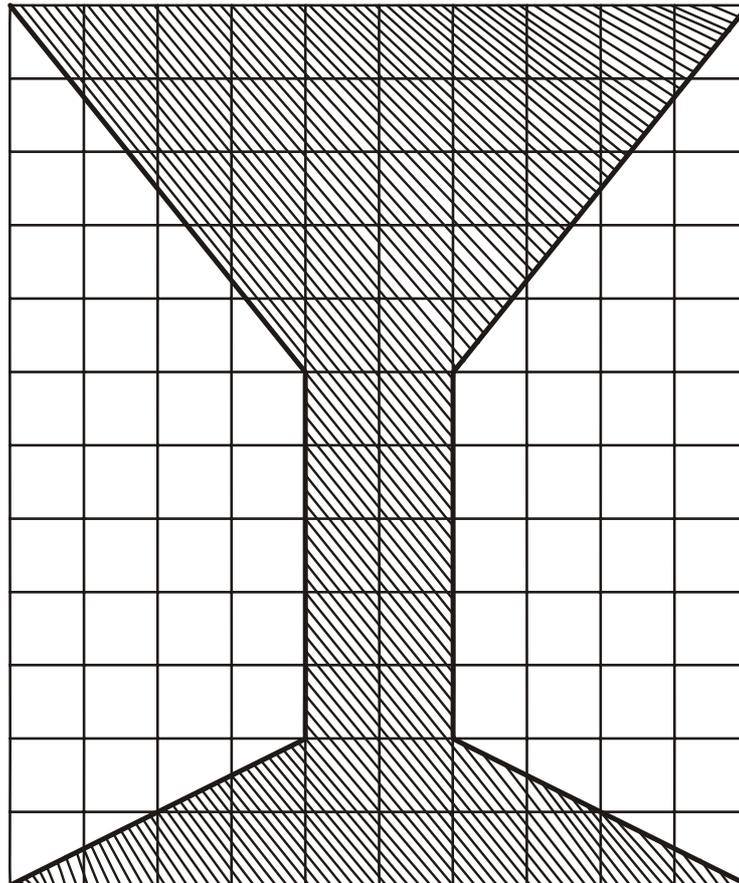
**WORK IT
OUT****Reproduce - Represent****3-32****“The stemmed glass”****Level 3
Exercise 2**

Aims	<ul style="list-style-type: none">- Find references in a grid.- Reproduce a simple drawing by using reference points in a grid.- Stick closely to the lines and the proportions when reproducing a simple drawing.- Change the proportions of a simple drawing by reproducing it in a space of a different size.
Applications (examples)	<p><u>In class</u>: any exercise consisting in reproducing a simple shape keeping the proportions of the model, then changing the proportions, for example, in geometry exercises, in technology, in industrial drawing, etc.</p> <p><u>At work</u>: any task consisting in using reference points to observe information or constraints; any task consisting in using a grid to mark information or results. Understand graphs, such as those seen in workshops to describe increases in production or the rate of defective parts, etc.</p> <p><u>In everyday life and for leisure</u>: know how to use reference points, particularly those in a grid or graph. Understand a graph, such as those seen in newspapers. Be able to change the proportions of a pattern when making decorations, doing craftwork, knitting or crochet work, making made-to-measure furniture, etc.</p>
Materials	This exercise is in two parts: one page showing the drawing of a stemmed glass, then the same glass placed in a grid; a blank grid of the same size is given below. The second page shows a grid twice as big than the one on the first page, then a grid twice as small.
Task	On the first page, the pupils reproduce the drawing of the glass in the grid so that it looks exactly like the model. The second part of the exercise consists in reproducing the same glass on the second page, so that it looks like the model, but in different proportions, to fit into the two grids shown.
Comments	If the reproduction of the glass in the larger grid seems difficult, the teacher can have the pupils highlight every other line so as to find the reference points in the model. He can also get the pupils to work out this facilitation procedure for themselves.
Variations (examples)	The teacher can draw three grids of different dimensions (or use those given in the exercise) and put them on the same page. The pupils will draw an object of their choice in the three dimensions, knowing that the object drawn must keep the same proportions. To do this, the pupils must anticipate the difficulty when they decide on their first drawing, knowing that they have to reproduce it in different dimensions. They also have to make sure that they give themselves reference points that are easy to use when they come to the proportions of the other two grids.
Individualisation	Yes.
Answers	Yes.

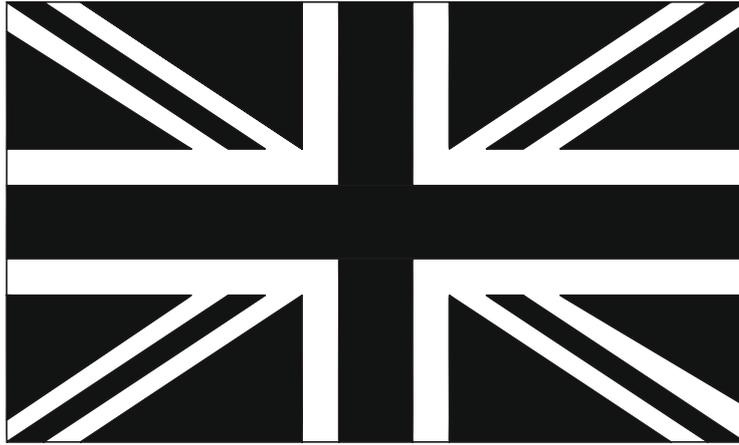




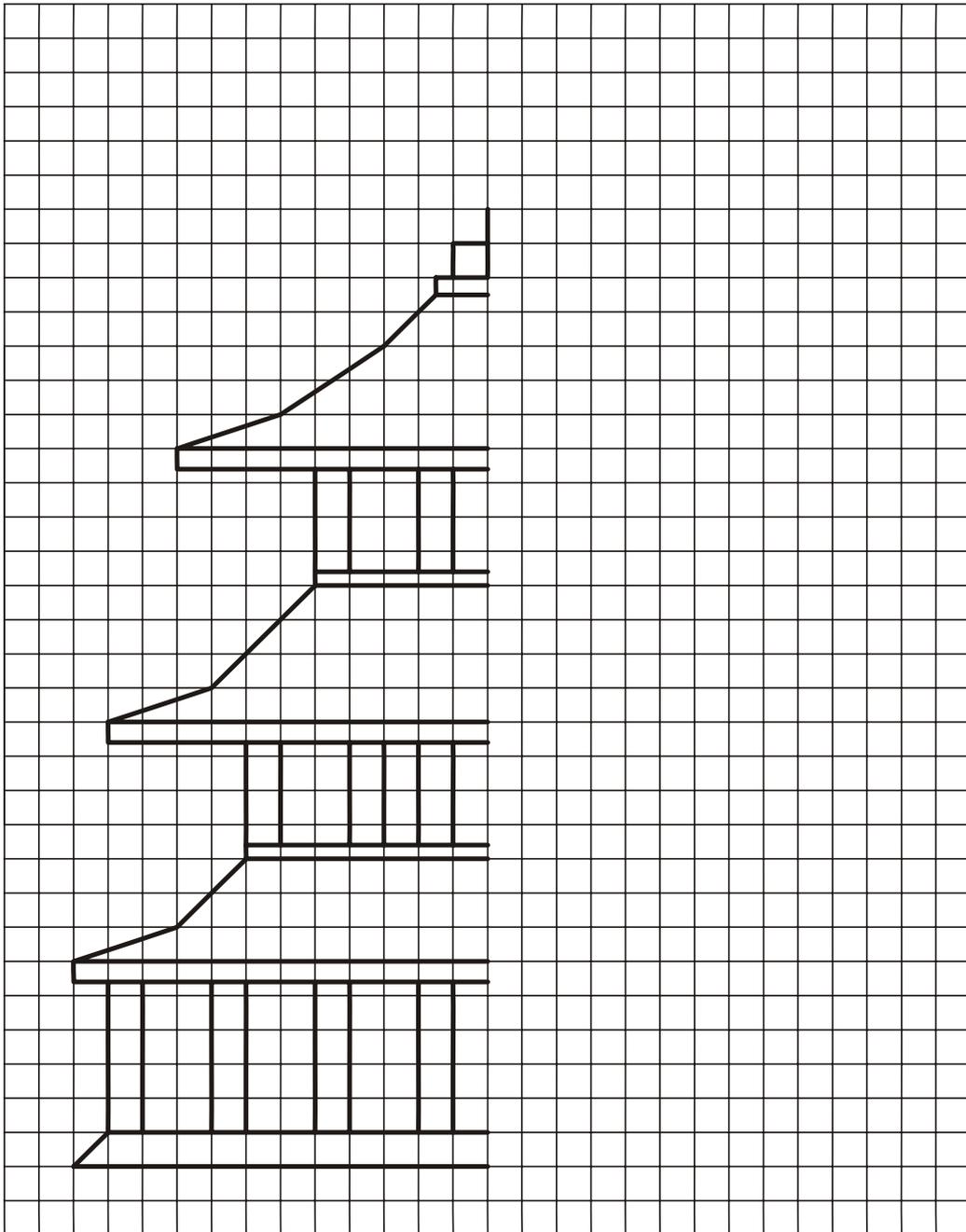




Aims	<ul style="list-style-type: none">- Practise taking reference points and precise measurements.- Reproduce a geometric drawing.- Reproduce a drawing by creating the necessary space by oneself.
Applications (examples)	<p><u>In class</u>: any exercise consisting in reproducing a simple shape keeping the proportions of the model, for example, in geometry exercises, in technology, in industrial drawing, etc.</p> <p><u>At work</u>: any task consisting in reproducing all or part of a model using reference points and keeping to the information or restrictions.</p> <p><u>In everyday life and for leisure</u>: know how to use reference points, reproduce a model in the same proportions when making decorations, doing craftwork, making clothes, knitting or crochet work, making furniture, etc.</p>
Materials	A page with a flag on it, which, if it were in colour, would be that of Great Britain. A ruler for each pupil.
Task	On the bottom half of the page (or on another page), the pupils reproduce the drawing of the flag as it is shown.
Comments	The pupils can try to find the colours of the flag and put them into their version from memory.
Variations (examples)	<ol style="list-style-type: none">1. If there are foreign pupils in the group, the teacher can photocopy the flags of their countries and suggest that the pupils choose one of these flags to reproduce it.2. The teacher can ask each pupil to create a flag, that could be the new European flag or the flag of peace, or that of another country that could be thought up, or a country that could be the ideal country, etc. The pupils would then have to explain to the other members of the group what the different sizes are (or use those in the exercise) and draw them on the same page. The pupils will have to draw an object of their choice in the three sizes, with the obligation to keep the same proportions. To do this, the pupils must anticipate the difficulty when they decide on their first drawing, knowing that they have to reproduce it in different dimensions. They also have to make sure that they give themselves reference points that are easy to use when they come to the proportions of the other two grids.
Individualisation	Yes.
Answers	No, the answer is in the model.



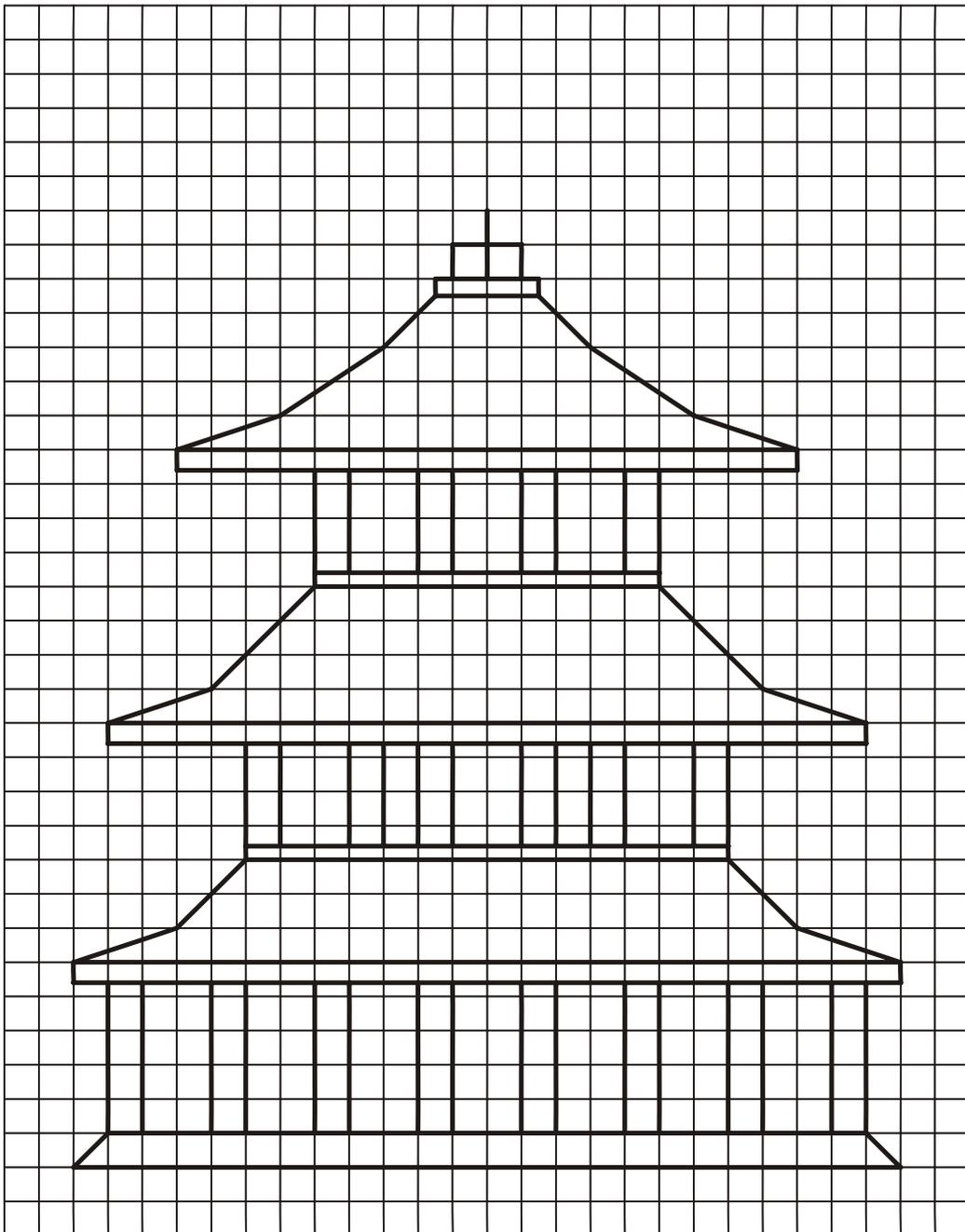
<i>Aims</i>	<ul style="list-style-type: none">- Find reference points in a grid.- Reproduce a simple drawing symmetrically using reference points in a grid.- Keep strictly to the lines and proportions when reproducing a simple drawing.- Observe the principles of symmetry.
<i>Applications (examples)</i>	<p><u>In class</u>: any exercise consisting of reproducing a simple shape symmetrically keeping the same proportions as the model and observing the principles of symmetry, for example in geometry exercises, in technology, in industrial drawing, etc.</p> <p><u>At work</u>: any task consisting in using reference points, keeping to certain information and observing restrictions; any task consisting in using a grid or graph to mark data or results. Understanding graphs such as those seen in workshops to describe increased production or rates of defective parts, etc.</p> <p><u>In everyday life and for leisure</u>: know how to use reference points, particularly those in a grid or graph. Understand graphs such as those that can be seen in newspapers. Know how to use symmetry with a model when making decorations, doing craftwork, making clothes, knitwear or crochet, made-to-measure furniture, etc. Particularly useful for cutting out clothes for which the pattern is given for one side of the body (front and back, left and right) and in sewing and making models where you have to put one part on top of the other to assemble, sew, or adapt to the size, etc.</p>
<i>Materials</i>	A page with the drawing of the left side of a sort of pagoda on the left-hand side of a grid.
<i>Task</i>	The pupils will reproduce “mirror fashion” the drawing on the left hand side of the squares on the right hand side of the page, keeping the continuity of the lines so that the finished drawing looks like a pagoda. The pupils can then look for a practical way to check the symmetry of the two halves of the pagoda.
<i>Comments</i>	The pupils can of course, if they wish, take their measurements and reference points using a ruler, but, because of the squares, it is probably not necessary. It is interesting to compare working methods with a ruler and just with the squares.
<i>Variations (examples)</i>	The opposite exercise can be done by taking a geometric shape with both sides symmetrical (the vase in exercise 3-31 for example) and ask the pupils to draw the line that will enable them to divide the drawing into two perfectly symmetrical halves. They can also look around them to find objects which could be symmetrical, and draw them.
<i>Individualisation</i>	Yes.
<i>Answers</i>	Yes.



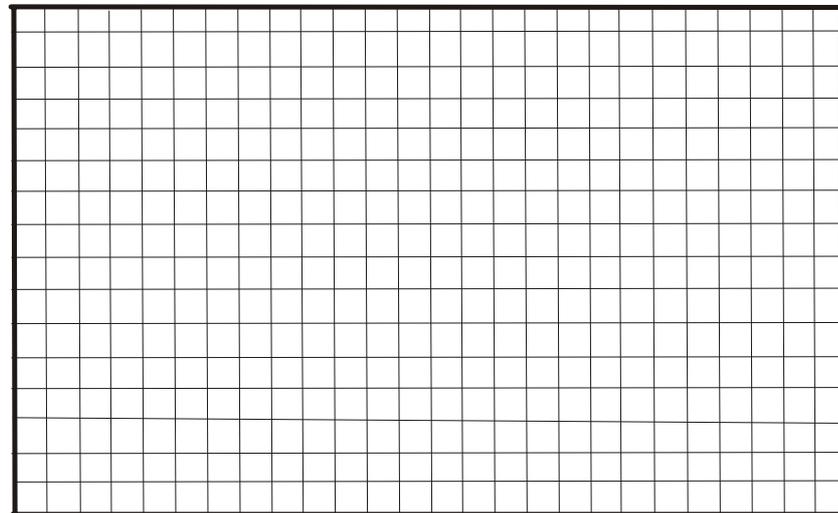
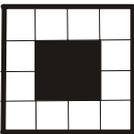
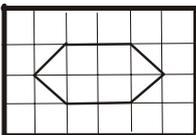
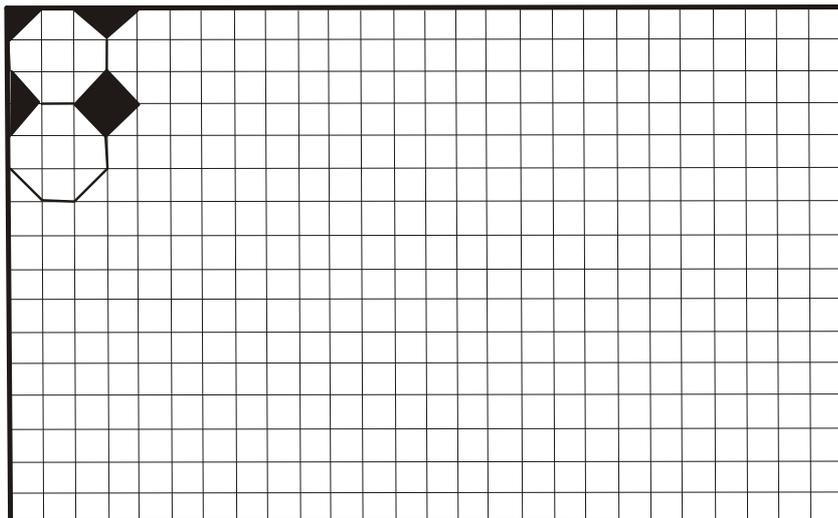
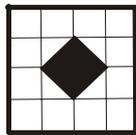
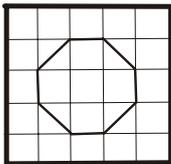
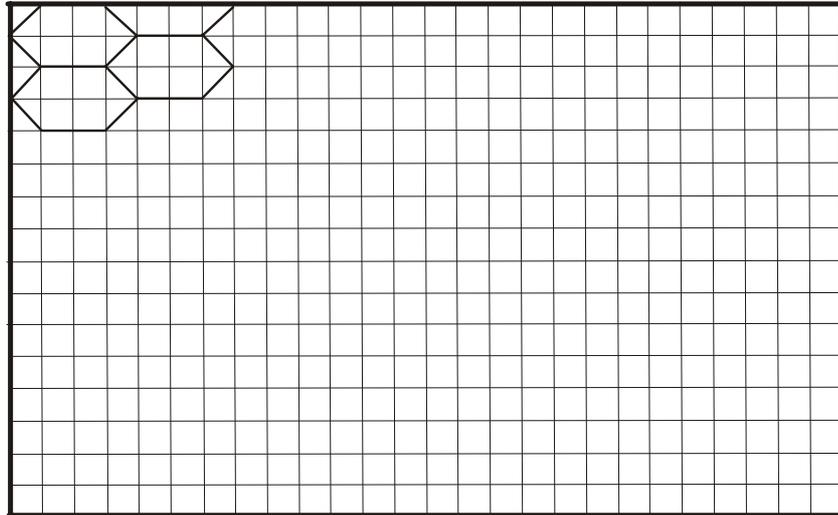
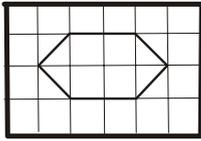
**WORK IT
OUT**

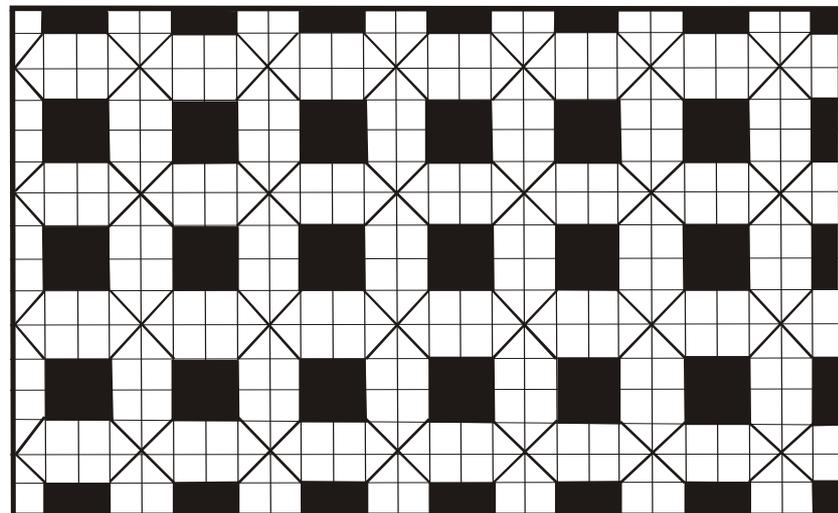
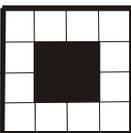
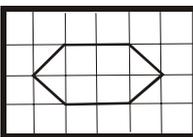
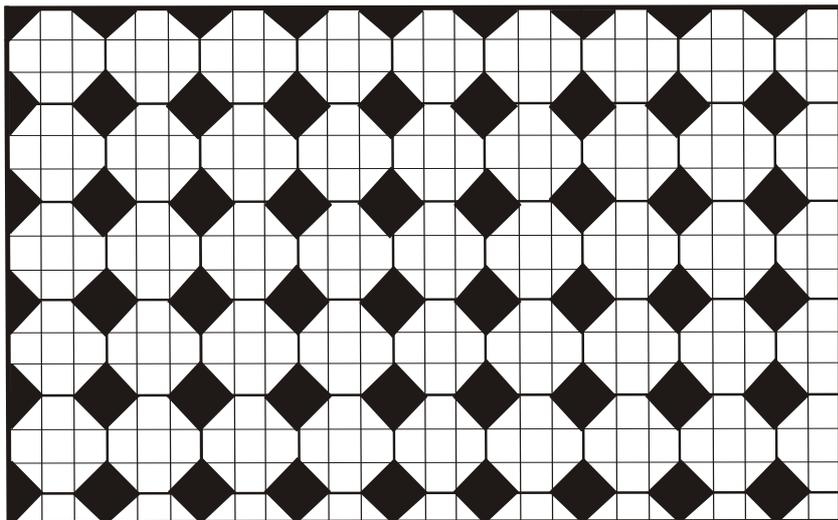
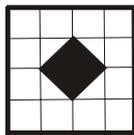
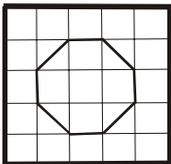
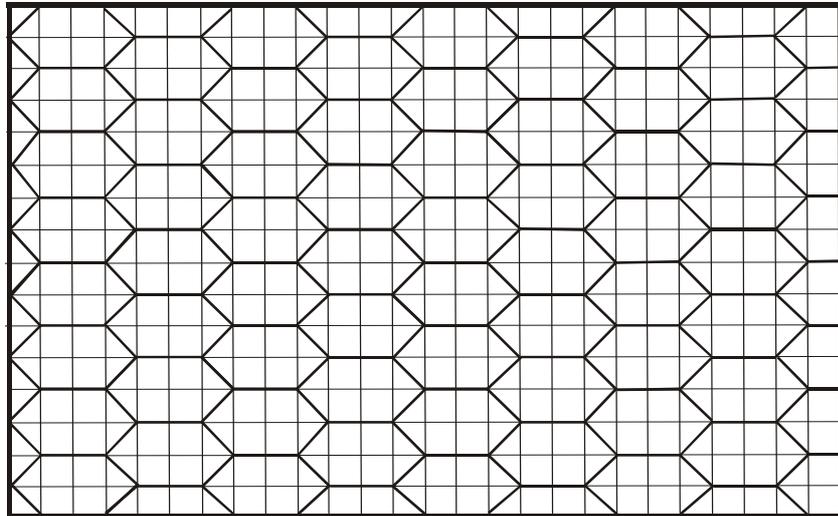
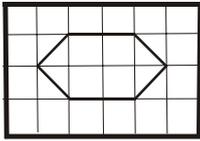
**Reproduce - Represent
“The Pagoda”**

3-41
Answers

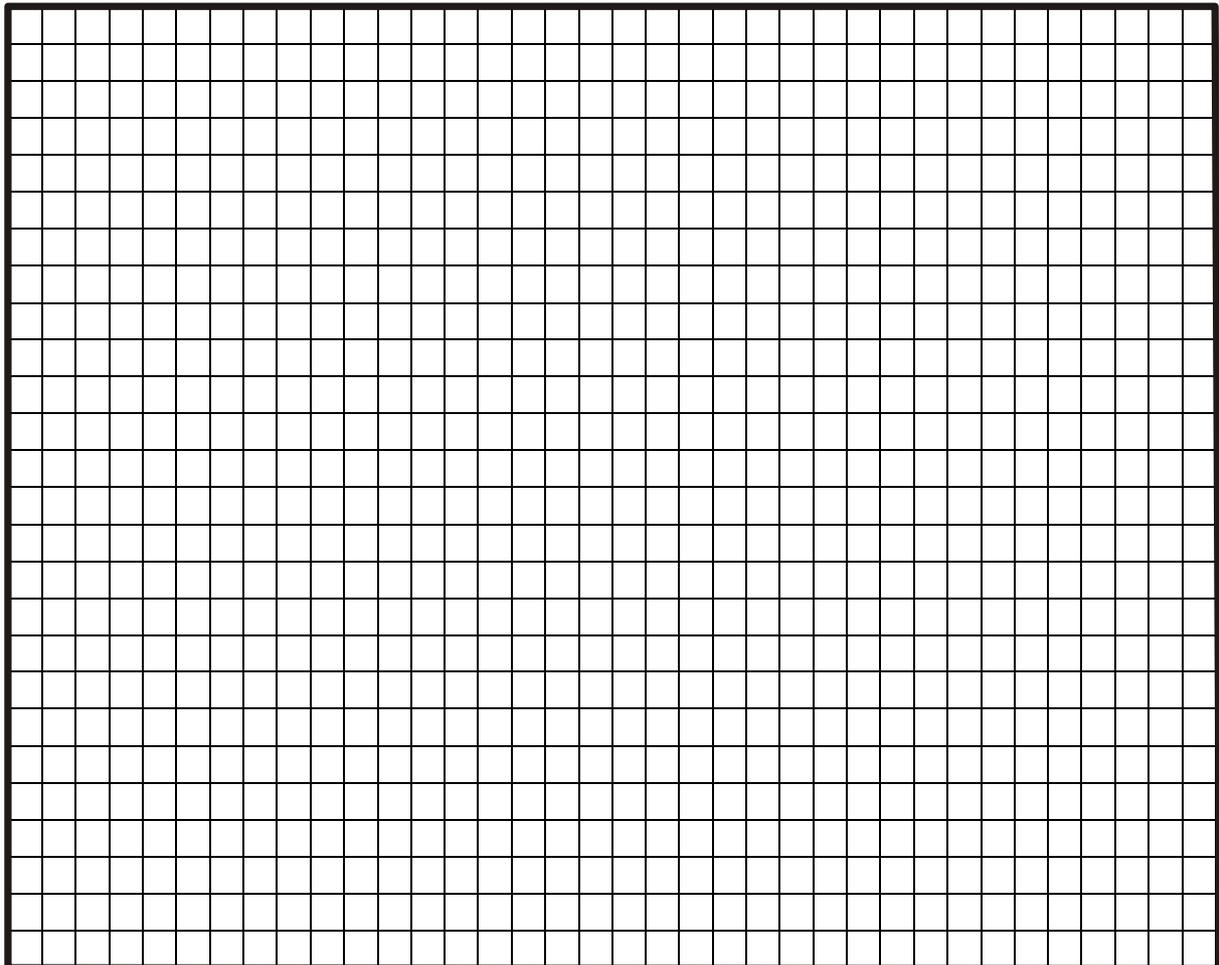
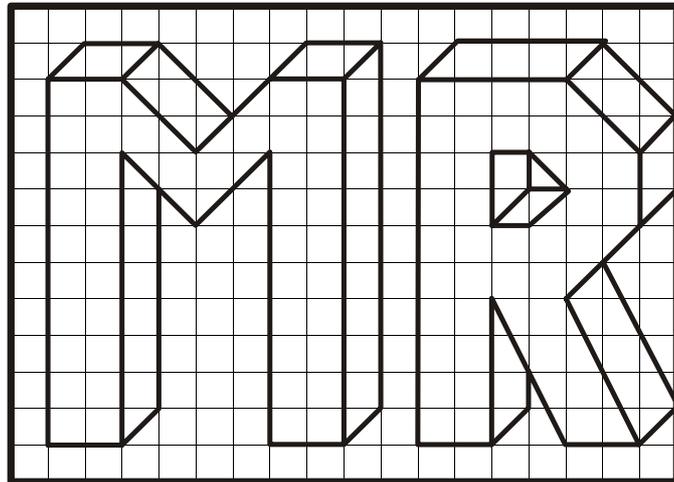


Aims	<ul style="list-style-type: none">- Reproduce a simple drawing using reference points on a page without squares.- Keep strictly to the lines and proportions when reproducing a simple drawing.- Stick to the pattern given to continue arranging the required shapes.- Combine two shapes while paying attention to the restrictions, the main one of which is not to leave any gaps between the shapes.
Applications (examples)	<p><u>In class</u>: any exercise consisting of reproducing a simple shape symmetrically keeping the same proportions as the model and observing the principles of symmetry, for example in geometry exercises, in technology, in industrial drawing, etc</p> <p>Arrangement, choice of layout, reflection and choice of different arrangements et layouts.</p> <p><u>At work</u>: any task consisting in using reference points, keeping to certain information and observing restrictions; any task consisting in using a grid or graph to mark data or results. Any task requiring work without reference points, and therefore necessitating greater autonomy: learning to find your own reference points, choosing a solution and following it closely, all the while checking your progression.</p> <p><u>In everyday life and for leisure</u>: use reference points, particularly those given by squares. Understand a graph, such as those seen in newspapers. Use symmetry in relation to a model when making decorations, doing craftwork, making clothes, knitting or crochet, made-to-measure furniture, etc. Particularly useful for cutting out clothes for which the pattern is given for one side of the body (front and back, left and right) and in sewing and making models where you have to put one part on top of the other to assemble, sew, or adapt to the size, etc.</p>
Materials	A page with tiles on the left hand side that are to be placed in a space without squares. In the first two spaces, a few tiles have already been placed as an example.
Task	In the first two spaces the pupils will reproduce the tiles as many times as is possible, sticking to the arrangement given as a model and staying within the given space. In the third space, the pupils must arrange the two shapes of tiles as well as possible to avoid “gaps”.
Comments	The pupils can of course use a ruler, if they wish, to take the measurements and find the reference points. If the exercise seems too difficult as is, the pupils can draw squares in the blank space. They can use any means they might find to carry out the task.
Variations (examples)	The exercise can be done using tiles of other shapes or by combining three tiles. The pupils can find ideas for shapes and try to arrange them in the blank space observing the rules for laying tiles (no gaps!).
Individualisation	Yes.
Answers	Yes, but for the third part, several arrangements are possible.





Aims	<ul style="list-style-type: none">- Find reference points in a grid.- Reproduce a simple drawing symmetrically, enlarging the model, using reference points in a grid.- Keep strictly to the lines and proportions when reproducing and enlarging a simple drawing.- Underline the difference between identical and similar.
Applications (examples)	<p><u>In class</u>: any exercise consisting of reproducing a simple shape symmetrically keeping the same proportions as the model and observing the principles of symmetry, for example in geometry exercises, in technology, in industrial drawing, etc. Notions of arithmetic and geometric progression. Introduction to perspective: rough perspective.</p> <p><u>At work</u>: any task consisting in using reference points, keeping to certain information and observing restrictions; any task consisting in using a grid or graph to mark data or results. Understanding graphs such as those seen in workshops to describe increased production or rates of defective parts, etc.</p> <p><u>In everyday life and for leisure</u>: know how to use reference points, particularly those in a grid or graph. Understand graphs such as those that can be seen in newspapers. Know how to use symmetry with a model when making decorations, doing craftwork, when making clothes, knitting or doing crochet, made-to-measure furniture. Introduction to sketching and industrial drawing. Rough perspective. Introduction to methodology, a way of working. Transposition, adaptation by changing size (assembling objects in a kit; furniture assembly).</p>
Materials	A page with two capital letters drawn in perspective in a grid. A grid four times as big below, with no letters drawn in it.
Task	The pupils reproduce the two letters but enlarge them in the squares given below the model. They must keep the proportions and the presentation.
Comments	Of course the pupils can, if they so wish, use a ruler to take their measurements and find their reference points, but with the squares it is hardly necessary. It is interesting to compare the work done with a ruler and that done with just the squares. If the exercise seems too difficult because of the enlargement required, the pupils can be asked to reproduce the model without enlarging it and dividing the squared space into 4 parts to make it smaller.
Variations (examples)	The pupils can use a photocopy of the squares to write their own initials, either in the same way as in the model or in any other way they choose. They could also be asked to say which presentation they preferred and encourage them to reproduce their initials using their favourite presentation as a pattern.
Individualisation	Yes.
Answers	Yes.



**WORK IT
OUT**

**Reproduce - Represent
“Initials”**

3-43
Answers

