



Assessment in mathematics toolkit to support pupils for whom English is an additional language





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- This toolkit is best used by someone who knows the pupil.
- There is no need to use all of the activities for a year group at the same time. Many key objectives can be covered by one activity, for example when reading numbers the adult may wish to encourage the pupil, as appropriate, to record numbers, to incorporate decimals, measures ...
- This pack links closely with the 'Using assess and review lessons'. Materials from the 'Using assess and review lessons' can be used to support and enhance the work in this toolkit.
- The pack lends itself to finding out other things about the pupil, for example what mathematics they know in their own language, how successful they are at picking up cues, responding to positive reinforcement ...
- Throughout the pack the pupil's own language and scripts can be used as appropriate.
- For some of the resources the year group has been identified so that pupils will not be assessed on work that is beyond expectations for their age.

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About this assessment toolkit

This toolkit is a suggested method of gauging whether pupils in the early stages of learning English will be able to access the mathematics in the planned teaching programme for the year group concerned. It is a useful starting point that can help with matching the pupil's skills and knowledge to the class, group or set in which they are placed. It can also help identify strengths, obvious gaps and the pupil's skill in using visual and other cues. The pack works well when used in conjunction with the 'Using assess and review lessons' publication.

The toolkit is based on the key objectives for each strand from the *Framework for teaching mathematics from Reception to Year 6* and the *Framework for teaching mathematics: Years 7, 8 and 9*, with additional objectives added as appropriate. It is designed to be visual and not reliant on language, although oral and written forms of language are used.

The idea is that an adult will demonstrate and model what the pupil is to do using the resources. The adult will assess whether the pupil knows some or all of the mathematics by the ease and confidence with which the pupil approaches or carries out the task from the cues given. This can be assessed using either English or a language with which the pupil is familiar.

It is recommended that at the beginning of each unit of work, the adult chooses the appropriate task to assess the pupil. This may be one that is appropriate for the pupil's year, or close to it. However, it may be better to begin the assessment with activities from a younger year group and move through the year groups depending on the success at each stage. The approach may be different for different strands; the aim is to find a close match to the pupil's attainment level for a particular unit of work in as comfortable a way as possible.

The toolkit has resources for each strand in the *Frameworks*. The resources needed for a particular unit are printed in bold in the activities section. They are also listed in the resources column. *Many of the resources are designed to be cut up for use.* The following resources are needed in addition to those provided: counters, clock, real coins, whiteboards, paper clips and dice.

Acknowledgments This toolkit draws on the experiences and expertise of National Numeracy Strategy consultants. We are grateful for their contributions and suggestions and particularly for the work done by consultants from the London Boroughs of Enfield, Islington, Richmond-upon-Thames, Tower Hamlets and Waltham Forest.

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NUMBERS AND THE NUMBER SYSTEM

- Counting, properties of numbers and number sequences
- Place value and ordering: reading
- Place value and ordering: writing
- Place value and ordering
- Place value, ordering and rounding
- Integers, powers and roots
- Fractions, decimals, percentages, ratio and proportion

CALCULATIONS

- Addition and subtraction
- Multiplication and division
- Number operations and the relationships between them
- Checking results

ALGEBRA

- Equations, formulae and identities
- Sequences, functions and graphs

SOLVING PROBLEMS

- Solve problems involving money

HANDLING DATA

- Interpreting data
- Processing and representing data
- Probability

SHAPE, SPACE AND MEASURES

- Length, weight and capacity
- Area and perimeter
- Time
- Shape and space
- Geometrical reasoning
- Transformations
- Construction and loci

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Objectives	Assessment activities	Resources
<p>Reception</p> <ol style="list-style-type: none"> Count reliably up to 10 objects. Recognise small numbers without counting. 	<ul style="list-style-type: none"> Can the pupil count ducks from the duck cards, if not in English, in their own language? If shown a number from the 0 to 10 cards, can the pupil count out the appropriate number of counters? If shown up to 5 counters, can the pupil tell you how many there are, without counting, by showing you the same number of fingers or the correct 0 to 10 card? 	<p>Duck cards (1 to 10) 0 to 10 cards (from 0 to 20 cards) Counters</p>
<p>Year 1</p> <ol style="list-style-type: none"> Count reliably at least 20 objects. Count on and back in ones from any small number. Count on and back in tens from 0 to 100. 	<ul style="list-style-type: none"> Can the pupil count ducks from the duck cards, if not in English, in their own language? Can the pupil count out the correct number of counters on to a randomly chosen card from the 0 to 20 cards? From any small number written at the beginning of the blank number line, can the pupil count on to the end of the line and back again? After your demonstration using your hands, can the pupil count in tens to 100 in the same way and back again? 	<p>Duck cards (1 to 20) Counters 0 to 20 cards Blank number line</p>

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Objectives	Assessment activities	Resources
<p>Year 2</p> <ol style="list-style-type: none"> Count reliably up to 100 objects. Count on and back in ones from any 2-digit number. Count on and back in tens from any 2-digit number. Recognise odd and even numbers. 	<ul style="list-style-type: none"> Can the pupil count out the correct number of counters to match the 2-digit cards, if not in English, in their own language? From a given single or 2-digit number written at the beginning of the blank number line, can the pupil count on in ones to the end of the line? From a given single or 2-digit number written at the end of the blank number line, can the pupils count back in ones to the beginning of the line? After demonstrating using the number square, can the pupil count on/back in tens from a given number? After showing the first 2 or 3 odd or even numbers on the number square, can the pupil continue the sequences by selecting the correct numbers? 	<p>Counters 2-digit cards Blank number line Number square</p>
<p>Year 3</p> <ol style="list-style-type: none"> Count on and back in tens from any 3-digit number. Count on and back in hundreds from any 3-digit number. 	<ul style="list-style-type: none"> When shown a 3-digit card, can the pupil count on and back in tens? When shown a 3-digit card, can the pupil count on or back in hundreds? 	<p>3-digit cards</p>

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Objectives	Assessment activities	Resources
<p>Reception</p> <ol style="list-style-type: none"> 1. Recognise numerals from 1 to 5 and then to 9. 2. Reading of number names from zero to five and then to ten. 	<ul style="list-style-type: none"> • Can the pupil read a number up to 10 from the 0 to 10 cards when it is shown to them, if not in English, in their own language? • If told a number up to 10, can the pupil find the correct card? • Can the pupil match the duck cards to the correct written numerals (from 0 to 10 cards)? 	<p>0 to 10 cards (from 0 to 20 cards) Duck cards</p>
<p>Year 1</p> <ol style="list-style-type: none"> 1. Recognise numerals from 0 to 20. 2. Read number names from zero to twenty. 	<ul style="list-style-type: none"> • Can the pupil read a number up to 20 from the 0 to 20 cards when it is shown to them, if not in English, in their own language? • If told a number up to 20, can the pupil find the correct card? • Can the pupil match the duck cards to the correct written numerals (from 0 to 20 cards)? • Can the pupil read numbers written in words up to 20 from the vocabulary cards? 	<p>0 to 20 cards Duck cards Vocabulary cards</p>

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Objectives	Assessment activities	Resources
Year 2 1. Recognise numerals from 0 to 100. 2. Read number names in figures and words from zero to 100.	<ul style="list-style-type: none">• Can the pupil read a number up to 100 on a 2-digit card when it is shown to them, if not in English, in their own language?• If told a number up to 100, can the pupil show the correct number on the number square?• Can the pupil read numbers written in words up to 100 by combining vocabulary cards?	2-digit cards Vocabulary cards 0 to 20 cards Number square
Year 3 1. Read and write whole numbers to at least 1000 in figures and words.	<ul style="list-style-type: none">• Can the pupil read numbers written in figures from the 3-digit cards or written by you including numbers with zero as the place holder e.g. 408, reversed digits e.g. 531 and 135?• Can the pupil read numbers written in words up to 1000 by combining vocabulary cards?	Vocabulary cards 3-digit cards

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Objectives	Assessment activities	Resources
Year 1 1. Read and write numerals from 0 to at least 20.	<ul style="list-style-type: none">• Say and write a number up to 20.• Say any number up to 20. Can the pupil write it? (You may need to say and write a few numbers until the pupil understands what to do).	
Year 2 1. Read and write whole numbers from 0 to at least 100 in figures and words.	<ul style="list-style-type: none">• Say and write a number up to 100.• Say any number up to 100. Can the pupil write it?	
Year 3 1. Read and write whole numbers to at least 1000 in figures and words.	<ul style="list-style-type: none">• Say any number up to 1000. Can the pupil write it?	
Year 4 1. Read and write whole numbers to at least 10 000 in figures and words.	<ul style="list-style-type: none">• Say any number up to 10 000. Can the pupil write it?	

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Objectives	Assessment activities	Resources
<p>Reception</p> <ol style="list-style-type: none"> Order a set of given numbers e.g. 1 to 6 in a random order. Order a set of selected numbers from 1 to 10 e.g. 2, 5, 1, 8, 4. 	<ul style="list-style-type: none"> Can the pupil count to 10, count to 20 (with objects)? Can the pupil identify numerals covered up on a line? Can the pupil identify numerals (from 1 to 10) covered up on a 0 to 20 number line? Can the pupil order 0 to 10 cards from 1 to 5 and then 1 to 10? Can the pupil order a set of five selected 0 to 10 cards? 	<p>0 to 20 number line 0 to 10 cards (from 0 to 20 cards)</p>
<p>Year 1</p> <ol style="list-style-type: none"> Order a set of given numbers from 0 to 20 e.g. 6 to 12 in a random order and selected numbers e.g. 10, 9, 15, 3, 6. Begin to know what each digit in a 2-digit number represents. Partition a teens number and begin to partition larger numbers. 	<ul style="list-style-type: none"> Can the pupil identify numerals covered up on a 0 to 20 number line? Can the pupil order cards from 0 to 20? Can the pupil order a randomly selected number of cards from 0 to 20? From a given number, can the pupil write subsequent numbers in order on the blank number line? After pointing to a number up to 30 on the number square, can the pupil use the correct partitioning cards to make the number? 	<p>0 to 20 number line 0 to 20 cards Blank number line Number square Partitioning cards</p>

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Objectives	Assessment activities	Resources
<p>Year 2</p> <ol style="list-style-type: none"> Order a set of given numbers from 0 to 100 e.g. 44 to 52 in a random order and selected numbers e.g. 60, 39, 15, 3, 76. Know what each digit in a 2-digit number represents. Partition 2-digit numbers into a multiple of ten and ones. 	<p>Before carrying out these activities the pupils should be shown a visual representation of the numbers in order.</p> <ul style="list-style-type: none"> After writing a few numbers on the blank number line (up to 100), can the pupil fill in those that are missing? Can the pupil order a randomly selected number of cards from 0 to 100? Can the pupil make 2-digit numbers using partitioning cards and read them? After pointing to a number on the number square or showing a 2-digit card can the pupil use the correct partitioning cards to make the number? 	<p>Blank number line 2-digit cards Partitioning cards Number square</p>
<p>Year 3</p> <ol style="list-style-type: none"> Order a set of given numbers from 0 to 1000 e.g. 698 to 712 in a random order and selected numbers e.g. 104, 569, 157, 43, 656. Partition 3-digit numbers into a multiple of 100, a multiple of 10 and ones. Compare two 3-digit numbers and say which is more. 	<ul style="list-style-type: none"> After writing a few numbers on the blank number line (up to 1000), can the pupil fill in those that are missing? Can the pupil order a randomly selected number of 2 and 3-digit cards from 0 to 900? After showing a 3-digit card, can the pupil use partitioning cards to make it? Can the pupil show you which is the larger of two 3-digit cards? 	<p>Blank number line 2 and 3-digit cards Partitioning cards</p>

Note: For pupils in years 2 and 3 it will be important to check that they can order and distinguish between numbers such as 19 and 90, 18 and 81, 13 and 30, and in year 3, 104 and 140, 201 and 210.

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Objectives	Assessment activities	Resources
<p>Year 4</p> <ol style="list-style-type: none"> 1. Use symbols correctly, including less than (<), greater than (>), equals =. 2. Round any positive integer less than 1000 to the nearest 10 or 100. 	<ul style="list-style-type: none"> • Write down a selection of 3, 4 and 5-digit numbers. Can the pupil order these? Can the pupil compare numbers using the symbols correctly? • Can the pupil round 3-digit numbers to the nearest 10 or 100? Demonstrate this using a blank number line, if necessary. 	<p>Blank number line</p>
<p>Year 5</p> <ol style="list-style-type: none"> 1. Multiply and divide any positive integer up to 10 000 by 10 or 100 and understand the effect. 2. Order a given set of positive and negative integers. 	<ul style="list-style-type: none"> • Use a selection of the multiplication and division number sentences that show multiplying and dividing by 10 and 100. Can the pupil multiply and divide by 10 and 100 mentally? (Choose about four examples, encourage recordings to identify strategies used.) • Can the pupil order 0 to 20 cards and negative number cards using a blank number line with zero marked if necessary? 	<p>Multiplication and division number sentences Negative number cards 0 to 20 cards Blank number line</p>
<p>Year 6</p> <ol style="list-style-type: none"> 1. Multiply and divide decimals mentally by 10 or 100 and integers by 1000 and explain the effect. 	<ul style="list-style-type: none"> • Use a selection of multiplication and division number sentences that show multiplying and dividing by 10, 100 and 1000. Can the pupil multiply and divide mentally? Encourage jottings and use of place value grid to support explanation. 	<p>Multiplication and division number sentences Place value grid</p>

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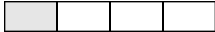

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Objectives	Assessment activities	Resources
<p>Year 7</p> <p>1. Understand negative numbers as positions on a number line; order, add and subtract positive and negative integers in context.</p>	<ul style="list-style-type: none">• Can the pupil place negative number cards on to a blank number line with zero marked?• Can the pupil add and subtract integers using a number line using 0 to 20 and negative number cards? <p><i>(For these activities you may prefer to use the baseboards.)</i></p>	<p>Negative number cards 0 to 20 cards Baseboards Number line</p>
<p>Year 8</p> <p>1. Add, subtract, multiply and divide integers.</p>	<ul style="list-style-type: none">• Can the pupil add, subtract, multiply and divide integers using 0 to 20 and negative number cards? <p><i>(For these activities you may prefer to use the baseboards.)</i></p>	<p>Negative number cards 0 to 20 cards Baseboards</p>

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Objectives	Assessment activities	Resources
<p>Year 3</p> <p>1. Recognise unit fractions e.g. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$.</p>	<ul style="list-style-type: none"> Can the pupil match the unit fraction number to the fraction strip? Can the pupil read the fraction number? Can the pupil mark $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$ and tenths on the blank fraction strips with a paper clip? Can the pupil find $\frac{1}{4}$ of 12 counters or similar objects? 	<p>Fraction cards Fraction strips Blank fraction strips Paper clip Counters</p>
<p>Year 4</p> <p>1. Recognise similar fractions that are part of a whole e.g. $\frac{2}{3}$, $\frac{4}{5}$, $\frac{5}{8}$.</p> <p>2. Order simple fractions.</p> <p>3. Recognise the equivalence of simple fractions (e.g. fractions equivalent to $\frac{1}{2}$, $\frac{1}{4}$ or $\frac{3}{4}$).</p>	<ul style="list-style-type: none"> Can the pupil match the fraction cards to the fraction strip? Can the pupil read the fraction? Can the pupil order $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{10}$ from smallest to largest? Can the pupil mark $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, tenths and fifths on the blank fraction strip with a paper clip? Can the pupil find $\frac{1}{5}$ of 20 counters or similar objects? Can the pupil match equivalent fractions using the fraction cards? (Model this using fraction strips.) <div style="margin-top: 10px;">   </div>	<p>Fraction cards Fraction strips Blank fraction strips Paper clip Counters</p>

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Objectives	Assessment activities	Resources
<p>Year 5</p> <ol style="list-style-type: none">1. Order simple fractions, no conversion needed.2. Order sets of numbers, same number of decimal places.3. Relate fractions to decimals.4. Relate fractions to division.5. Use decimal notation for tenths and hundredths.6. Round a number with one or two decimal places to the nearest integer.	<ul style="list-style-type: none">• Can the pupil order a selection of decimal cards?• Can the pupil mark the fractions and decimal fractions on the blank fraction strip with a paper clip?• Can the pupil match $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ cards with the equivalent decimal and percentage cards?• Can the pupil calculate simple fractions of numbers and quantities using the fraction number sentences?• Using the decimal and fraction cards can the pupils match equivalent tenths, hundredths and fraction cards?• Can the pupil round the decimal cards to 1 decimal place and 2 decimal places to the nearest integer?	<p>Decimal cards Fraction cards Blank fraction strips Paper clip Percentage cards Fraction number sentences</p>

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Objectives	Assessment activities	Resources
<p>Year 6</p> <ol style="list-style-type: none"> Order fractions. Order sets of numbers, different numbers of decimal places. Reduce a fraction to its simplest form by cancelling common factors. Use a fraction as an 'operator' to find fractions of numbers or quantities. Solve simple problems involving ratio and proportion. Find simple percentages of small whole number quantities. 	<ul style="list-style-type: none"> Can the pupil match the fraction cards to the equivalent decimal and percentage cards? Can the pupil mark all the fraction, decimal and percentage cards on the blank fraction strip with a paper clip? Can the pupil order a selection of decimal cards? Can the pupil match equivalent fractions using the fraction cards? Can the pupil explain why they match? Can the pupil calculate fractions of numbers and quantities using the fraction number sentences? Can the pupil calculate simple percentages of numbers, quantities or measures using the percentage number sentences? 	<p>Decimal cards Percentage cards Fraction cards Blank fraction strip Paper clip Fraction number sentences Percentage number sentences</p>
<p>Year 7</p> <ol style="list-style-type: none"> Simplify fractions by cancelling all common factors and identify equivalent fractions. Recognise the equivalence of percentages, fractions and decimals. 	<ul style="list-style-type: none"> Can the pupil match equivalent fractions using the fraction cards? If you write a fraction can the pupil simplify it to find an equivalent fraction? Can the pupil match the fraction cards to the equivalent decimal and percentage cards? 	<p>Fraction cards Decimal cards Percentage cards</p>

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Objectives	Assessment activities	Resources
<p>Year 8</p> <ol style="list-style-type: none"> 1. Use the equivalence of fractions, decimals and percentages to compare proportions. 2. Calculate percentages and find the outcome of a given percentage increase or decrease. 3. Divide a quantity into two or more parts in a given ratio. 4. Use the unitary method to solve simple word problems involving ratio and direct proportion. 	<ul style="list-style-type: none"> • Can the pupil order fractions such as $(\frac{3}{7}, \frac{4}{9}, \frac{3}{5})$ or $(\frac{5}{8}, \frac{7}{9}, \frac{9}{11})$ or $(\frac{4}{7}, \frac{13}{20}, \frac{5}{8})$ using the fraction cards. (Model the process for one set of fractions.) • Can the pupil calculate percentages of numbers, quantities or measures using the percentage number sentences? • Using the pizza and chocolate bar cards can the pupil calculate the costs of other quantities of pizzas and chocolate bars? 	<p>Fraction cards Percentage number sentences Pizza and chocolate bar cards</p>

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Objectives	Assessment activities	Resources
<p>Year R</p> <ol style="list-style-type: none"> 1. Practical addition, combining groups. 2. Practical subtraction. 3. One more than or one less than a number from 1 to 10. 	<ul style="list-style-type: none"> • Can the pupil add two small groups of counters together to make a total of 5? • Can the pupil take 1, 2 or 3 counters away from a pile of 5 and say how many are left? • Can the pupil point to the number that is one more than the number you indicate on the 0 to 20 number line? • Can the pupil point to the number that is one less than the number you indicate on the 0 to 20 number line? 	<p>Counters 0 to 20 number line</p>
<p>Year 1</p> <ol style="list-style-type: none"> 1. Practical addition to 10. 2. Practical subtraction to 10. 3. Add zero, take away zero. 	<ul style="list-style-type: none"> • Can the pupil add two small groups of counters together to make a total of up to 10? • Can the pupil take counters away from a pile of 10 and say how many are left? • Can the pupil point to the number that is one more or one less than the number you indicate on the 0 to 20 number line? • Can the pupil add or subtract zero from a group of counters? 	<p>Counters 0 to 20 number line</p>
<p>Year 2</p> <ol style="list-style-type: none"> 1. Know addition and subtraction facts to at least 10. 2. Add/subtract 9 or 11 by adding 10 and adjusting. 	<ul style="list-style-type: none"> • Show a selection of 0 to 10 cards. Can the pupil find the 'partner' card to make 10? • Using a selection from the number sentences can the pupil add 9 or 11 to a 2-digit number by adding 10 and adjusting using a number square? • Using selected number sentences can the pupil take away 9 or 11 from a 2-digit number by subtracting 10 and adjusting using a number square? 	<p>0 to 10 cards (from 0 to 20 cards) Number sentences Number square</p>

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Objectives	Assessment activities	Resources
<p>Year 3</p> <ol style="list-style-type: none"> 1. Know addition and subtraction facts to at least 20. 2. Add/subtract mentally a near multiple of 10 and adjust. 	<ul style="list-style-type: none"> • Show a selection of 0 to 20 cards. Can the pupil find the 'partner' card to make a total up to 20? • Show a selection of the number sentences. Can the pupil add or subtract by adding or subtracting a near multiple of 10 and adjusting using a number square? <p><i>(For these activities you may prefer to use the baseboards.)</i></p>	<p>0 to 20 cards Number sentences Number square</p>
<p>Year 4</p> <ol style="list-style-type: none"> 1. Derive quickly all number pairs that total 100. 2. Use known number facts and place value to add or subtract mentally including any pair of 2-digit whole numbers. 3. Develop and refine written methods for addition and subtraction of two whole numbers less than 1000. 	<ul style="list-style-type: none"> • Show a selection of 2-digit cards. Can the pupil find the 'partner' card to make 100? • Show a selection of number sentences. Can the pupil add or subtract and describe how they did it using a number square or pen and paper? • Use a selection of the addition and subtraction number sentences. Can the pupil add or subtract them using a written method (this includes jottings)? <p><i>(For these activities you may prefer to use the baseboards.)</i></p>	<p>2-digit cards Number sentences Number square Addition and subtraction number sentences</p>

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Objectives	Assessment activities	Resources
<p>Year 5</p> <ol style="list-style-type: none"> 1. Derive quickly decimals that total 10 (e.g. $6.2 + 3.8$). 2. Calculate differences by counting up; such as $8006 - 2993$. 3. Extend written methods for addition/subtraction of two integers less than 10 000. 	<ul style="list-style-type: none"> • Show a selection of decimal cards (to one place). Can the pupil find the 'partner' card to make a whole number? • Show a selection of 4-digit number sentences from the number sentences. Can the pupil find the difference by counting up? • Use a selection of the addition and subtraction number sentences. Can the pupil add or subtract them using a written method (this includes jottings)? <p><i>(Use the baseboards as required)</i></p>	<p>Decimal cards 4-digit number sentences Addition and subtraction number sentences</p>
<p>Year 6</p> <ol style="list-style-type: none"> 1. Extend written methods to addition and subtraction of numbers involving decimals. 	<ul style="list-style-type: none"> • Use a selection of the addition and subtraction number sentences. Can the pupil add or subtract them using a written method (this includes jottings)? <p><i>(Use the baseboards as required)</i></p>	<p>Addition and subtraction number sentences</p>

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Objectives	Assessment activities	Resources
<p>Year 2</p> <ol style="list-style-type: none"> 1. Know and use halving as the inverse of doubling. 2. Know multiplication facts for the 2 and 10 times-tables. 	<ul style="list-style-type: none"> • Can the pupil double numbers up to 152 and halve the answer? • Can the pupil halve an even number? • Can the pupil answer 10 times questions? <p>(Use the 0 to 20 cards, doubling and multiple cards or baseboards as required.)</p>	<p>0 to 20 cards Doubling and multiple cards</p>
<p>Year 3</p> <ol style="list-style-type: none"> 1. Derive quickly doubles of multiples of 5 up to 50. 2. Know multiplication facts for the 5 times-table. 3. Halve multiples of 10 e.g. halve 70. 	<ul style="list-style-type: none"> • Can the pupil double numbers for multiples of 5? • Can the pupil write the answer to number sentences for multiples of 5? <p>(Use the baseboards as required.)</p>	<p>Doubling and multiple cards</p>
<p>Year 4</p> <ol style="list-style-type: none"> 1. Doubling all whole numbers to 50. 2. Know multiplication facts for the 3 and 4 times-tables. 	<ul style="list-style-type: none"> • Can the pupil double the numbers shown on the 0 to 20 cards and find the numbers on the number square? • Can the pupil answer questions on the 3 and 4 times-tables from the multiplication fact cards by writing the answer on paper or matching with the appropriate digit card? 	<p>0 to 20 cards Number square Multiplication fact cards 2 and 3-digit cards</p>

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Objectives	Assessment activities	Resources
<p>Year 5</p> <ol style="list-style-type: none"> 1. Use doubling and halving starting from known facts e.g. $\times 16$ by doubling $\times 8$ table. 2. Know by heart all multiplication facts to 10×10. 3. Extend written methods to short multiplication of HTU by U; long multiplication of TU by TU; short division of HTU by U. 	<ul style="list-style-type: none"> • Can the pupil find the answers to a variety of calculations from the multiplication sentence cards using doubling and halving or other strategies? • Can the pupil answer questions from the multiplication fact cards up to 10×10 by writing the answer on paper or matching with the appropriate digit card? (Reinforce using the multiplication baseboard.) • Use a selection of multiplication and division number sentences. Can the pupil answer calculations using a written method (this includes jottings)? <p>(Use the baseboards as required.)</p>	<p>Multiplication sentence cards Multiplication fact cards 2 and 3-digit cards Multiplication and division number sentences</p>
<p>Year 6</p> <ol style="list-style-type: none"> 1. Use a variety of strategies for multiplication and division of 2-digit numbers e.g. $\times 24$ by $\times 6$ and doubling twice, using factors ($35 \times 18 = 35 \times 6 \times 3$). 2. Derive quickly division facts corresponding to tables up to 10×10. 3. Extend written methods to short multiplication of numbers involving decimals; long multiplication of a 3-digit by 2-digit integer. 	<ul style="list-style-type: none"> • Can the pupil find the answers to a variety of calculations from the multiplication sentence cards using different strategies? • Can the pupil answer questions from the division fact cards by writing the answer on paper or matching with the appropriate digit card? • Use a selection of multiplication number sentences. Can the pupil answer calculations using a written method (this includes jottings)? <p>(Use the baseboards as required.)</p>	<p>Multiplication sentence cards Division fact cards 2 and 3-digit cards Multiplication and division number sentences</p>

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Objectives	Assessment activities	Resources
<p>Year 7</p> <ol style="list-style-type: none"> 1. Extend mental methods of calculation to include decimals, fractions and percentages. 2. Multiply and divide 3-digit by 2-digit whole numbers; extend to multiplying and dividing decimals with one or two places by single-digit whole numbers. 	<ul style="list-style-type: none"> • Use multiplication and division number sentences. Can the pupil do appropriate calculations mentally? You might begin with fraction and percentage number sentences. • Use multiplication and division number sentences. Can the pupil answer calculations using a written method (this includes jottings)? <p>(Use the baseboards as required.)</p>	<p>Multiplication and division number sentences Fraction number sentences Percentage number sentences</p>
<p>Year 8</p> <ol style="list-style-type: none"> 1. Use standard column procedures for multiplication and division of integers and decimals, including by decimals such as 0.6 or 0.06; understand where to position the decimal point by considering equivalent calculations. 	<ul style="list-style-type: none"> • Use multiplication and division number sentences. Can the pupil answer calculations using a written method (this includes jottings)? <p>(Use the baseboards as required.)</p>	<p>Multiplication and division number sentences</p>

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Year 7</p> <p>1. Know and use the order of operations.</p>	<ul style="list-style-type: none"> Can the pupil work out the correct answers to a variety of calculations from the mixed operation cards? Can the pupil show knowledge of the conventions used e.g. brackets, powers, \times and \div, $+$ and $-$? 	<p>Mixed operation cards</p>

Topic
Checking results

Objectives	Activities	Resources
<p>Year 7</p> <p>1. Check a result by considering whether it is of the right order of magnitude.</p>	<ul style="list-style-type: none"> Can the pupil follow these strategies? Model the following examples: 8×47 is about $8 \times 50 = 400$, so the answer would be about 400; $2804 - 1903$ is about $3000 - 2000 = 1000$, so the answer would be about 1000. <p>Ask the pupil to try approximations for other examples: $2.38 + 76$ $796 \div 19$ 12% of 160 $\frac{1}{5}$ of 190</p> <p>(Use the baseboards as required.)</p>	<p>Baseboards</p>

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Year 7</p> <ol style="list-style-type: none">1. Use letter symbols to represent unknown numbers or variables.2. Understand that algebraic operations follow the same conventions and order as arithmetic operations.	<p>This is best assessed during lessons on this topic.</p> <ul style="list-style-type: none">• Can the pupil match equivalent expressions using algebra cards?	<p>Algebra cards (use cards F1 and F2 only)</p>
<p>Year 8</p> <ol style="list-style-type: none">1. Simplify or transform linear expressions by collecting like terms.2. Multiply a single term over a bracket.3. Substitute integers into simple formulae.	<ul style="list-style-type: none">• Using the algebra cards, can the pupil match equivalent expressions which contain several terms?• Using the algebra cards, can the pupil match equivalent expressions which contain brackets?• Using the algebra cards and the value cards, can pupils substitute values into expressions? Choose one value for a and one for b.	<p>Algebra cards (use cards F3 and F4) Value cards</p>

EXIT



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Objectives	Assessment activities	Resources
Year 7 1. Plot the graphs of simple linear functions.	<ul style="list-style-type: none">Show the pupil the graph of $y = x + 1$. Can the pupil draw the graphs of $y = x + 3$, $y = 3x$, $y = x - 1$ on the same axes? Model this using a table of values and linking it to the graph.	Graph of $y = x + 1$
Year 8 1. Plot the graphs of linear functions, where y is given explicitly in terms of x . 2. Recognise that equations of the form $y = mx + c$ correspond to straight line graphs.	<ul style="list-style-type: none">Show the pupil the graph of $y = x + 1$. Can the pupil draw the graphs of $y = 2x - 1$, $y = 2x + 3$, $y = 2x + 5$, $y = 2x - 5$ on the same axes?Can the pupil show any similarities and differences in the set of graphs that have been drawn? e.g. some are parallel.	Graph of $y = x + 1$

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Year R</p> <p>1. Begin to recognise coins.</p>	<ul style="list-style-type: none"> • Can the pupil sort 'like' coins? • Can the pupil match coins to the amount labels? 	<p>Bag of coins (you may want to limit the variety of coins used)</p> <p>Amount labels</p>
<p>Year 1</p> <p>1. Recognise all coins.</p> <p>2. Exchange coins to 10p and then 20p.</p>	<ul style="list-style-type: none"> • Can the pupil match all the coins to the amount labels? • Can the pupil show different ways of making 10p using coins? • Can the pupil show different ways of making 20p using coins? 	<p>Coins</p> <p>Amount labels</p>
<p>Year 2</p> <p>1. Recognise the value of all coins.</p> <p>2. Exchange coins.</p>	<ul style="list-style-type: none"> • Can the pupil show different ways of making 5p, 10p, 20p, 50p, £1, £2 using coins? 	<p>Coins</p>
<p>Year 3</p> <p>1. Understand and use £ p notation.</p>	<ul style="list-style-type: none"> • Can the pupil make different amounts over £1 and write down the amounts using the correct notation? • Using the shopping cards, can the pupil find the correct coins to 'buy' one? 	<p>Shopping cards</p> <p>Coins</p>
<p>Years 4, 5 and 6</p> <p>1. Solve problems involving money, including giving change.</p>	<ul style="list-style-type: none"> • Can the pupil find total costs of the items from the shopping cards? • Show the 'How much more' card. Can the pupil work out how much more one item is than another? • Show the question cards and read them. Can the pupil work out how much change is needed from £10 or £20 if they buy one or more items from the shop? 	<p>Shopping cards</p> <p>Question cards (includes 'How much more' card)</p>

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Years 3, 4, 5 and 6 Interpret numerical data from simple graphs: Year 3 – Bar charts in intervals of one Year 4 – Bar charts in intervals of 5 Years 5 and 6 – Pie charts.</p>	<ul style="list-style-type: none"> • Can the pupil match the sport with the correct number of voters on the popular sports bar chart, using the sport labels and 0 to 18 number cards? • Can the pupil match the transport with the correct number of voters on the 'ways we get to school' bar chart, using the transport picture labels and 0 to 18 number cards? • Can the pupil answer such questions as 'How many more . . .' 'How many altogether . . .', using the bar charts, 0 to 18 number cards and pictures as an aid? • Using the fruit pie chart and fruit pictures, ask questions such as: What fraction of the children liked bananas? How many children liked pears? Or questions such as: Which fruit did the children like most? Or least? • Can the pupil work out how many children voted for each fruit by converting % into the actual numbers, using 'number of children' labels? 	<p>Popular sports bar chart Sport labels 0 to 18 number cards 'Ways we get to school' bar chart Transport picture labels Bar chart Fruit pie chart Fruit pictures 'Number of children' labels</p>
<p>Year 7 1. Compare two simple distributions using the range and one of the mode, median and mean.</p>	<p>This is best assessed during lessons on this topic.</p>	

EXIT



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Objectives	Assessment activities	Resources
<p>Year 8</p> <p>1. Construct, on paper and using ICT:</p> <ul style="list-style-type: none">– pie charts for categorical data;– bar charts and frequency diagrams for discrete and continuous data;– simple line graphs for time series;– simple scatter graphs; identify which are most useful in the context of the problem.	<p>This is best assessed during lessons on this topic.</p>	

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Year 7</p> <ol style="list-style-type: none">1. Understand and use the probability scale from 0 to 1.2. Find and justify probabilities based on equally likely outcomes in simple contexts.	<ul style="list-style-type: none">• Use a 1 to 6 dice and a blank number line and show that the probability of throwing a '6', is 1 out of 6 ($\frac{1}{6}$). Label this on the blank number line – probability line. Can the pupil show you the probability of throwing a '2', a '7', a number less than 3, a number between 4 and 6, a number more than 3 and label the probability line?	<p>Blank number line Dice</p>
<p>Year 8</p> <ol style="list-style-type: none">1. Find and record all possible mutually exclusive outcomes for single events and two successive events in a systematic way.	<ul style="list-style-type: none">• Can the pupil find all the possible outcomes when choosing two ice cream scoops from chocolate, vanilla and strawberry? (Use pictures to support if necessary.)	

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Years 3, 4, 5 and 6</p> <ol style="list-style-type: none"> 1. Check the pupil knows the names of the metric measures. 2. Check the pupil knows the notation of the appropriate metric measure activity. 3. Suggest suitable units to measure length, mass or capacity. 4. Know relationship between the standard metric units of length, mass and capacity. 	<ul style="list-style-type: none"> • Show the relevant part of the metric measure cards and check that the pupil recognises and knows the more common ones. • Can the pupil match the more common metric measure with their abbreviations? • Can the pupil match the measures pictures to the correct metric measure cards? What unit would you use to measure this? • Can the pupil match metric measurement relationship cards e.g. 1000 g and 1 kg? • Using the weighing scale images can the pupil put the weights in order? <p>(There are picture cards to help with some of these activities but real objects are better.)</p>	<p>Metric measure cards Measures pictures Metric measurement relationship cards Weighing scale images</p>
<p>Year 7</p> <ol style="list-style-type: none"> 1. Convert one metric unit to another (e.g. grams to kilograms). 2. Read and interpret scales on a range of measuring instruments. 	<ul style="list-style-type: none"> • Can the pupil match metric measurement relationship cards? e.g. 36 cm and 360 mm. • Using the weighing scale images can the pupil read the scales? 	<p>Metric measurement relationship cards Weighing scale images</p>

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Year 5</p> <ol style="list-style-type: none"> Understand area measured in square centimetres (cm²). Understand and use the formula in words 'length × breadth' for the area of a rectangle. 	<p>This is best assessed during lessons on this topic.</p> <ul style="list-style-type: none"> Can the pupil calculate areas of rectangles from the area cards? 	<p>Area cards</p>
<p>Year 6</p> <ol style="list-style-type: none"> Calculate the perimeter and area of simple compound shapes that can be split into rectangles. 	<ul style="list-style-type: none"> Can the pupil calculate perimeters and areas of simple compound shapes from the area cards? 	<p>Area cards</p>
<p>Year 8</p> <ol style="list-style-type: none"> Deduce and use formulae for the area of a triangle, parallelogram and trapezium. Know and use the formula for the volume of a cuboid. Calculate volumes and surface areas of cuboids. 	<ul style="list-style-type: none"> Can the pupil calculate the area of a triangle, parallelogram and trapezium from the area cards and select the appropriate unit of measure? Can the pupil calculate volumes and surface areas of cuboids from the volume cards and select the appropriate unit of measure? 	<p>Area cards (I10) Volume cards (I11)</p>

EXIT



PRINT

Objectives	Assessment activities	Resources
<p>Year R</p> <p>1. Begin to read o'clock times.</p>	<ul style="list-style-type: none"> Can the pupil find o'clock times on a clock as indicated by the o'clock labels? 	<p>Clock Time labels</p>
<p>Year 1</p> <p>1. Read o'clock and half hour times. 2. Order familiar events in time.</p>	<ul style="list-style-type: none"> Can the pupil find o'clock and half past labels on a clock as indicated by the time labels? Can the pupil order familiar events to show a progression in time? You may wish to use pictures from a familiar book to model the sequence of one or more sets of events for the pupil as a start, the idea being that the pupil can convey simple sequencing e.g. assembly happens before/after mathematics. 	<p>Clock Time labels</p>
<p>Year 2</p> <p>1. Read o'clock, half and quarter hour times. 2. Read digital times for $\frac{1}{2}$ past.</p>	<ul style="list-style-type: none"> Can the pupil find o'clock, half past, quarter past and quarter to time labels on a clock for different times? Can the pupil match analogue and digital time labels for o'clock and half past times? 	<p>Clock Time labels Analogue time labels Digital time labels</p>
<p>Year 3</p> <p>1. Read time to five minute intervals. 2. Read digital times for above.</p>	<ul style="list-style-type: none"> Can the pupil find and read the times on the five-minute interval cards on a clock? Can the pupil match analogue and digital time labels for times to five-minute intervals? 	<p>Five-minute interval cards Clock Time labels Analogue time labels Digital time labels</p>
<p>Years 4, 5 and 6</p> <p>1. Read time to one minute intervals. 2. Read all digital times for above. 3. Solve problems related to time.</p>	<ul style="list-style-type: none"> Can the pupil find and read the times on the one-minute interval cards on a clock? Can the pupil match analogue and digital time labels for times to one-minute intervals? Can the pupil order times and solve the 'feeding time at the zoo' problem? 	<p>One-minute interval cards Clock Analogue time labels Digital time labels 'Feeding time at the zoo' problem cards</p>

Note: This work is heavily reliant on much oral input from the adult and a really appropriate use of visuals and modelling.

EXIT



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Objectives	Assessment activities	Resources
<p>Years 3, 4, 5 and 6</p> <ol style="list-style-type: none"> Classify and describe 2-D shapes according to their name, the number of sides and the number of angles. Recognise right angles and identify them in shapes. Identify obtuse and acute angles. 	<ul style="list-style-type: none"> Can the pupil match the shape cards with their shape names? Can the pupil identify the shapes with particular properties, e.g. 4 sides, 8 angles, right angles? Can the pupil match the angle cards? Can the pupil point to acute, obtuse and right angles on the shape cards? 	<p>Shape cards Shape names Angle cards Angle and side labels</p>
<p>Year 5</p> <ol style="list-style-type: none"> Recognise parallel and perpendicular lines. 	<ul style="list-style-type: none"> Can the pupil match the line cards with the line labels to identify parallel and perpendicular lines (This may need to be modelled)? 	<p>Line cards</p>
<p>Year 6</p> <ol style="list-style-type: none"> Read and plot co-ordinates in all four quadrants. 	<ul style="list-style-type: none"> Can the pupil read the co-ordinates of A and B from four quadrants? Can the pupil plot the points (6, 2) (2, 5) (-1, 1) and (3, -2)? Use four quadrants to model the co-ordinates of the square. 	<p>Four quadrants</p>

EXIT



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Objectives	Assessment activities	Resources
Year 7 1. Identify parallel and perpendicular lines. 2. Know the sum of angles at a point, on a straight line and in a triangle.	<ul style="list-style-type: none">• Can the pupil match the line cards with the line labels to identify parallel and perpendicular lines (This may need to be modelled)?• Can the pupil calculate the missing angles on the missing angle cards?	Line cards Missing angle cards
Year 8 1. Identify alternate angles and corresponding angles. 2. Understand a proof that: – the sum of the angles of a triangle is 180° and of a quadrilateral is 360° .	<ul style="list-style-type: none">• Can the pupil use the line cards with the line labels to show alternate and corresponding angles? <p>Understanding of proof is best assessed during the lessons on this topic.</p>	Line cards

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Objectives	Assessment activities	Resources
<p>Year 8</p> <p>1. Enlarge 2-D shapes, given a centre of enlargement and a positive whole-number scale factor.</p>	<p>This is best assessed during the lessons on this topic.</p>	

Topic
Construction and loci

Objectives	Assessment activities	Resources
<p>Year 8</p> <p>1. Use straight edge and compasses to construct:</p> <ul style="list-style-type: none"> – the mid-point and perpendicular bisector of a line segment; – the bisector of an angle; – the perpendicular from a point to a line. 	<p>This is best assessed during the lessons on this topic.</p>	

EXIT



PRINT

Menu

Considerations

Introduction

Strands and Topics

Resources

Where to next

A – Number cards

- Duck cards
- 0 to 20 cards
- Negative number cards
- 2-digit cards
- 3-digit cards
- Number square
- Number lines
- Place value grid

B – Vocabulary cards

C – Partitioning cards

D – Fractions, decimals and percentages

- Fraction cards
- Fraction strips
- Decimal cards (to 1 decimal place)
- Decimal cards (to 2 and 3 decimal places)
- Percentage cards
- Fraction number sentence
- Percentage number sentences
- Pizza cards
- Chocolate bar cards

E – Calculations

- Mixed operation cards
- Number sentences
- Addition and subtraction number sentences
- Doubling and multiple cards
- Multiplication fact cards
- Division fact cards
- Multiplication sentence cards
- Multiplication and division number sentences
- Baseboards

F – Algebra

- Algebra cards
- Value cards
- Graph of $y = x + 1$

G – Solving problems involving money

- Shopping cards
- Question cards
- Amount labels

H – Data handling

- ‘Popular sports’ bar chart
- Sports labels
- 0 to 18 number cards
- ‘Ways we get to school’ bar chart
- Transport picture labels
- Fruit pie chart
- Fruit pictures
- ‘Number of children’ labels

I – Shape, space and measures

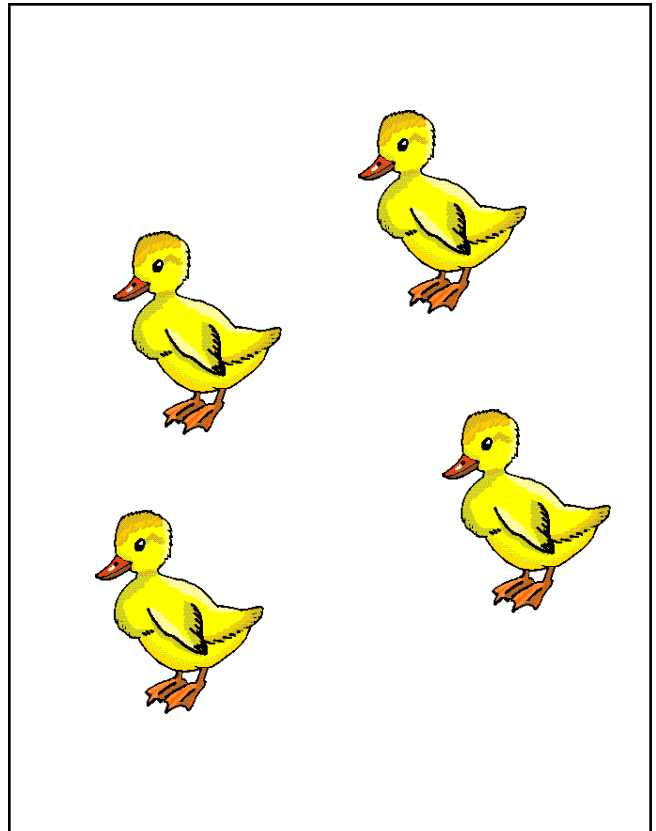
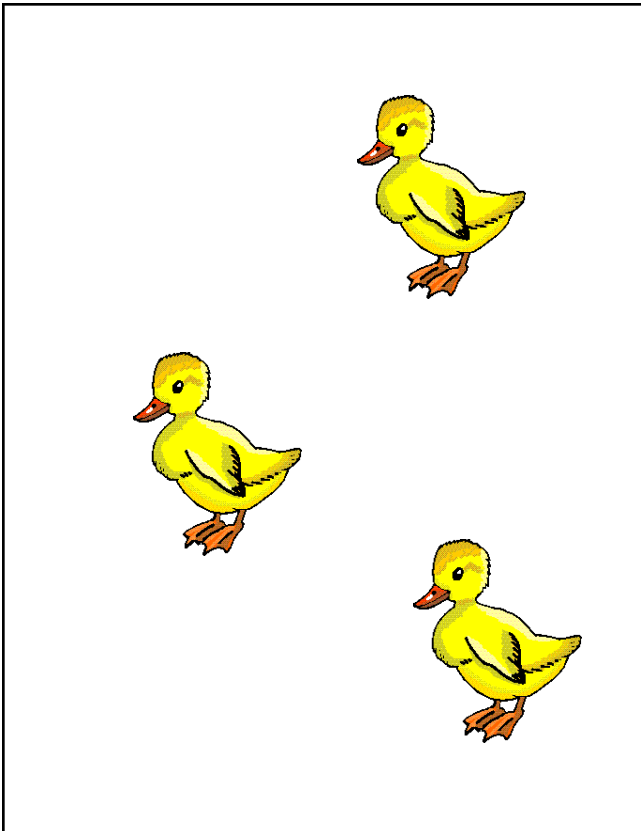
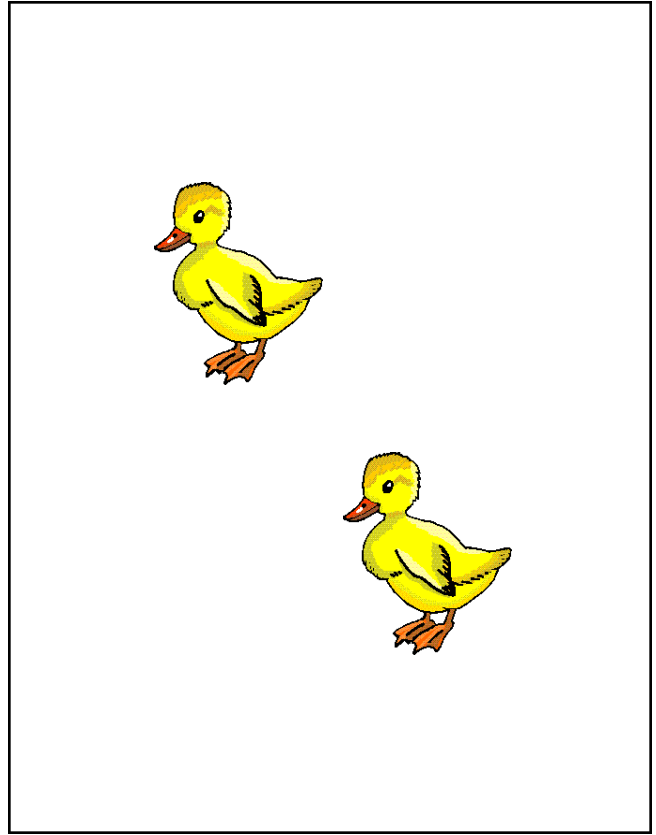
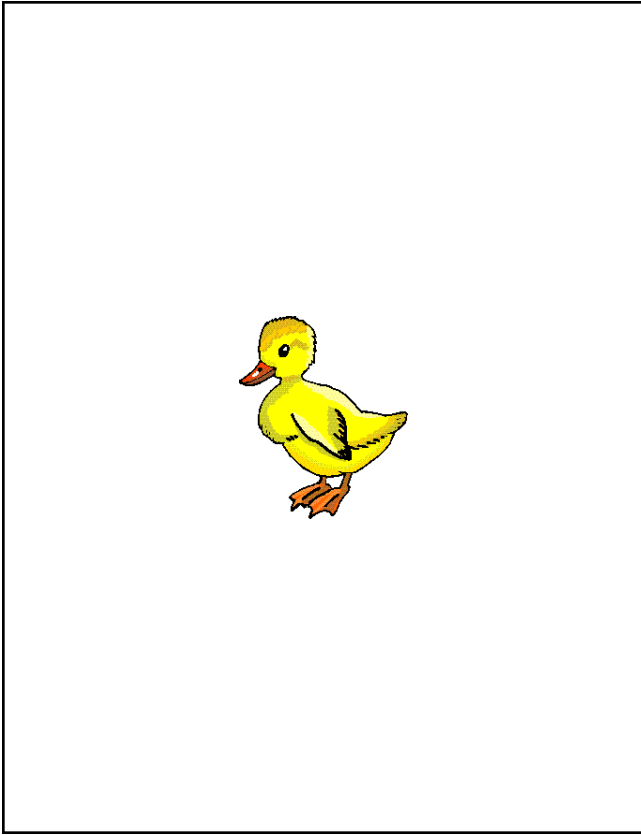
- Measures pictures
- Metric measure cards
- Metric measurement relationship cards
- Weighing scale images
- Area cards
- Volume cards
- Time labels (o’clock, half past, quarter to, quarter past labels)
- Analogue time labels
- Digital time labels
- ‘Feeding time at the zoo’ problem cards

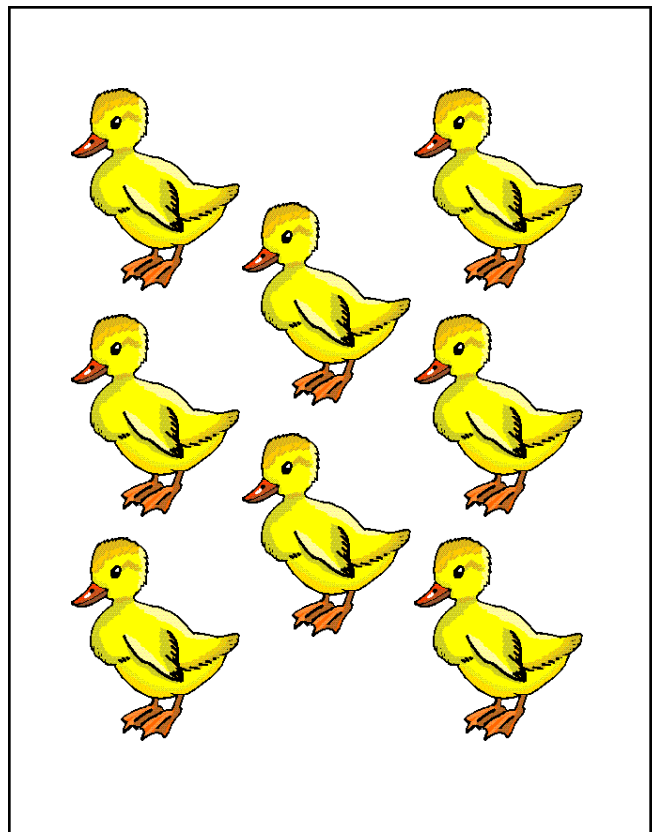
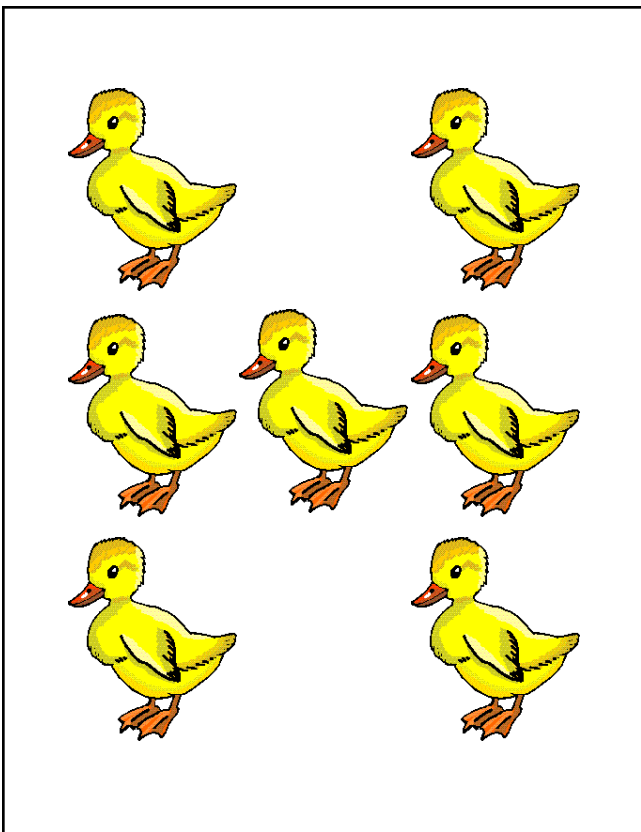
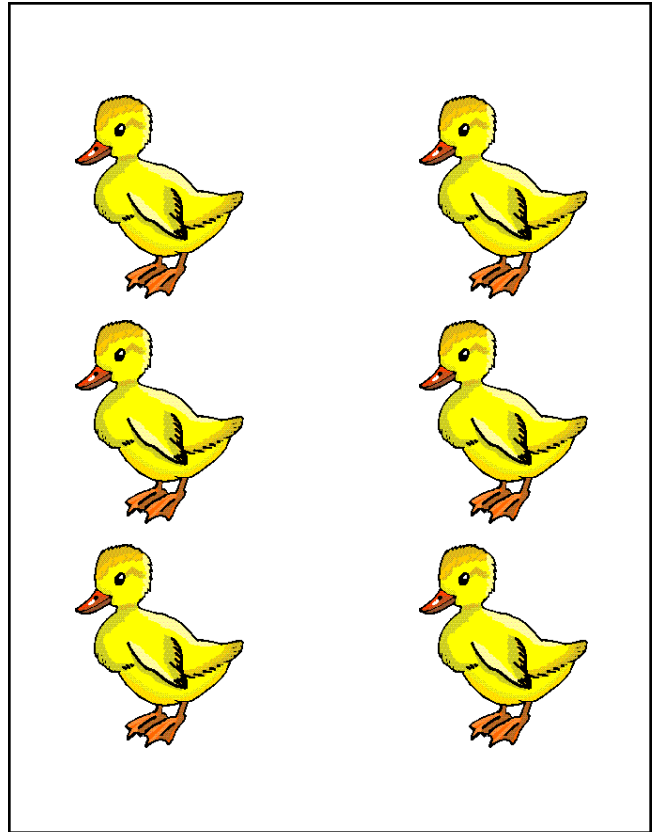
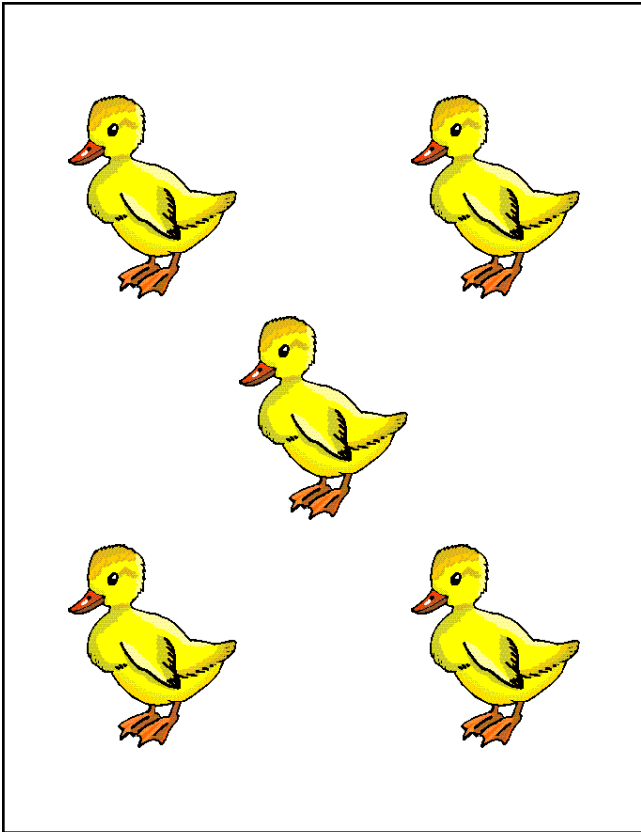
J – Properties of shape

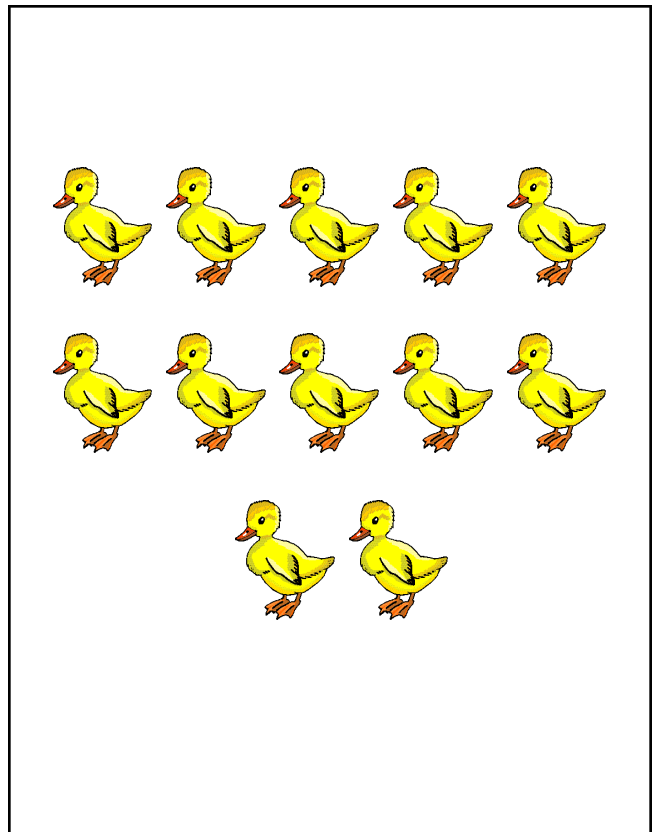
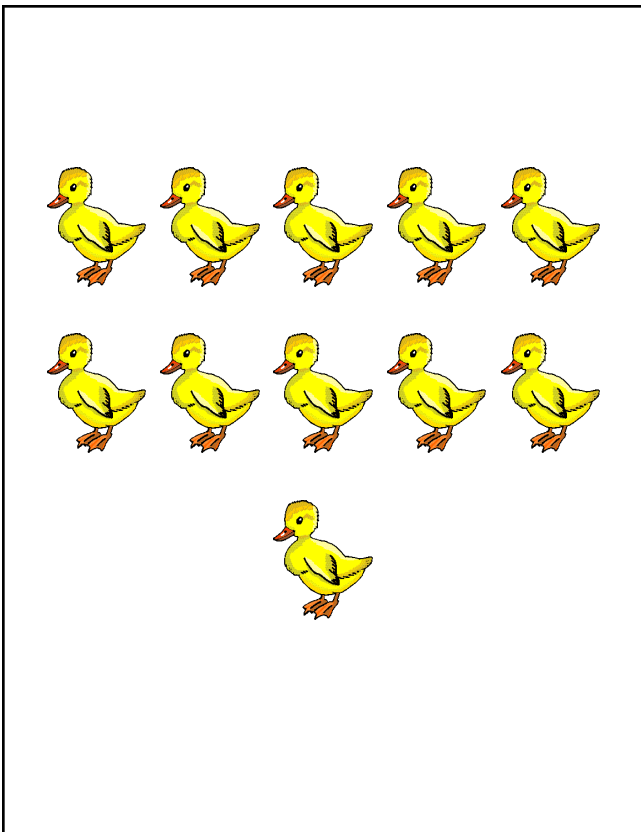
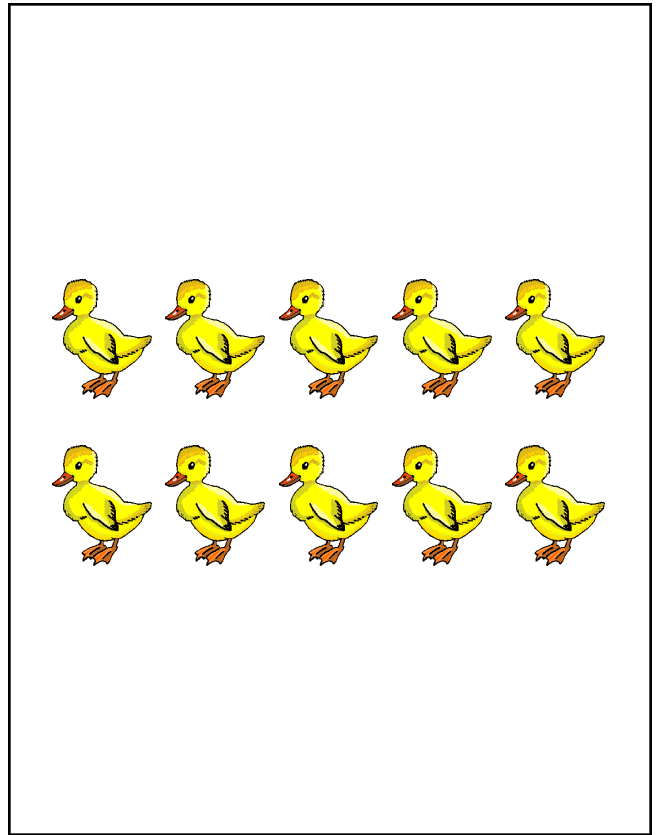
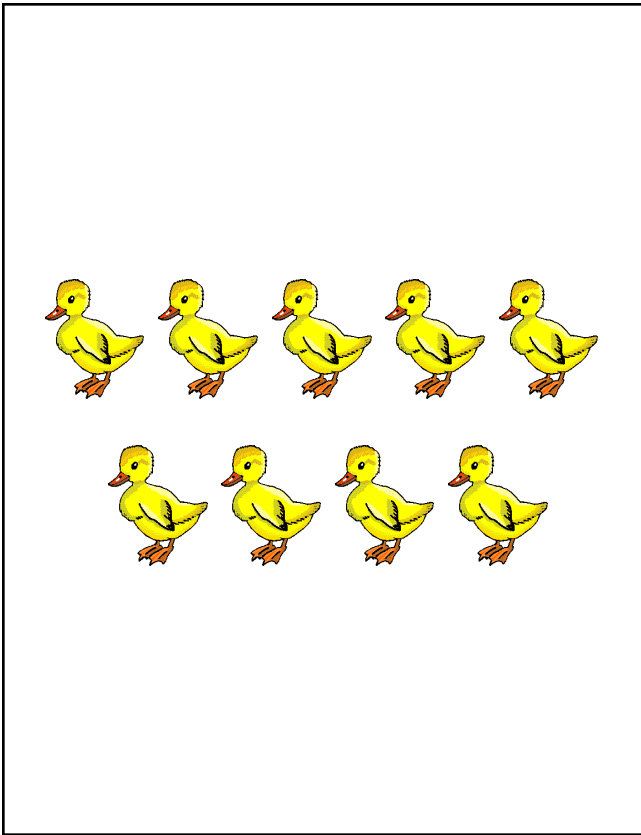
- Shape cards
- Shape names
- Angle cards
- Angle and side labels
- Line cards
- Four quadrants
- Missing angle cards

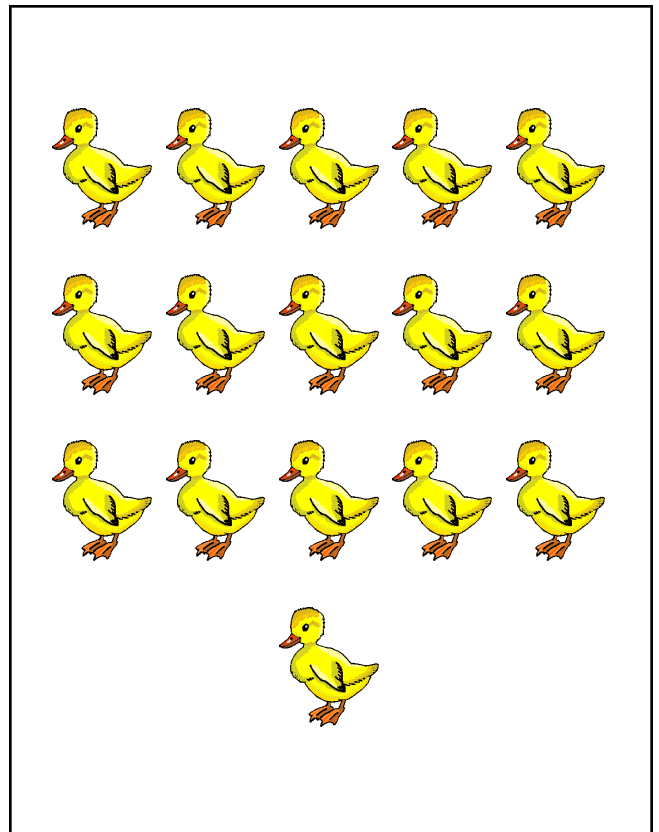
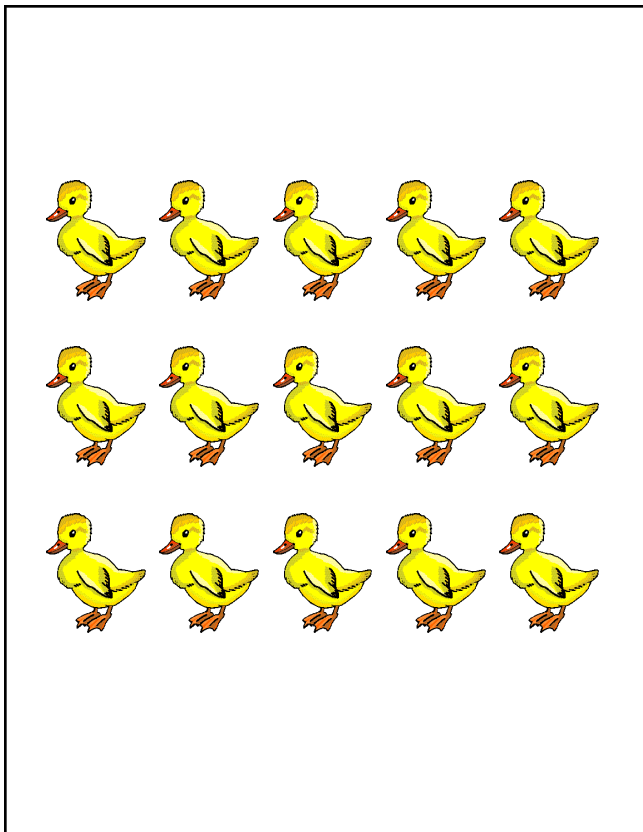
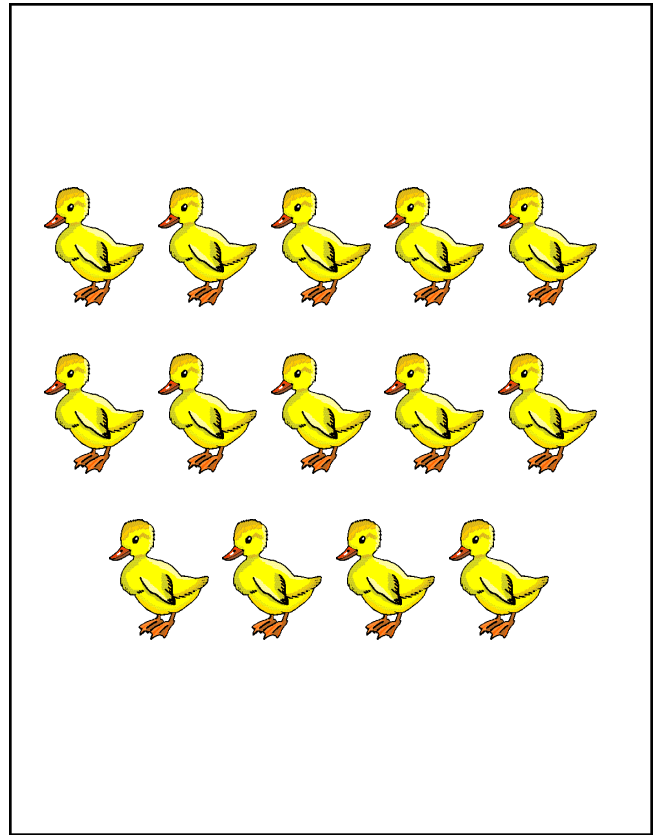
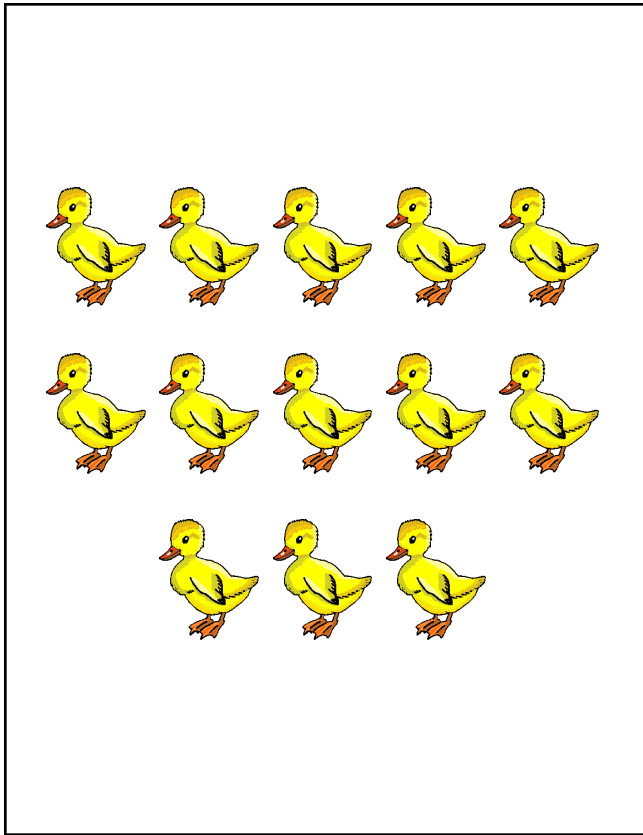
Where to next

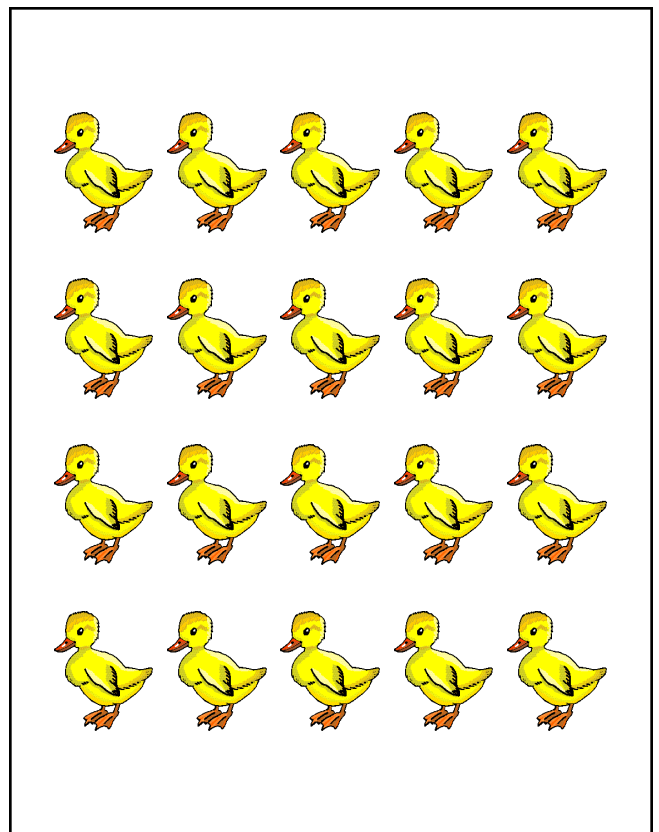
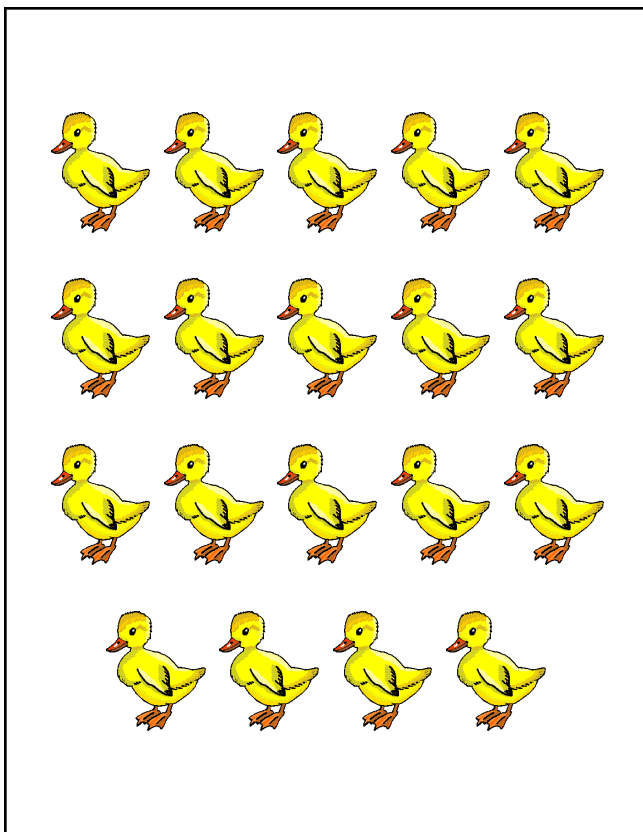
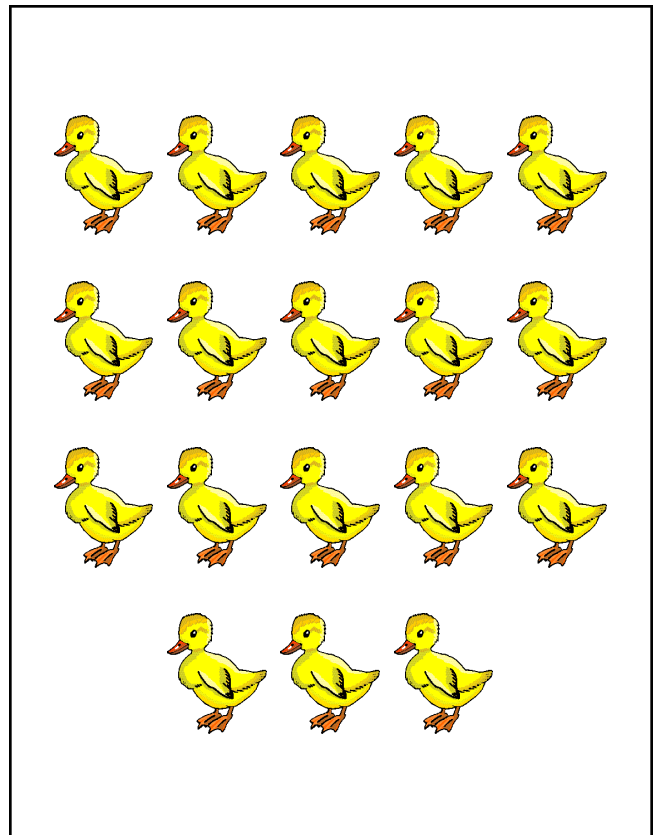
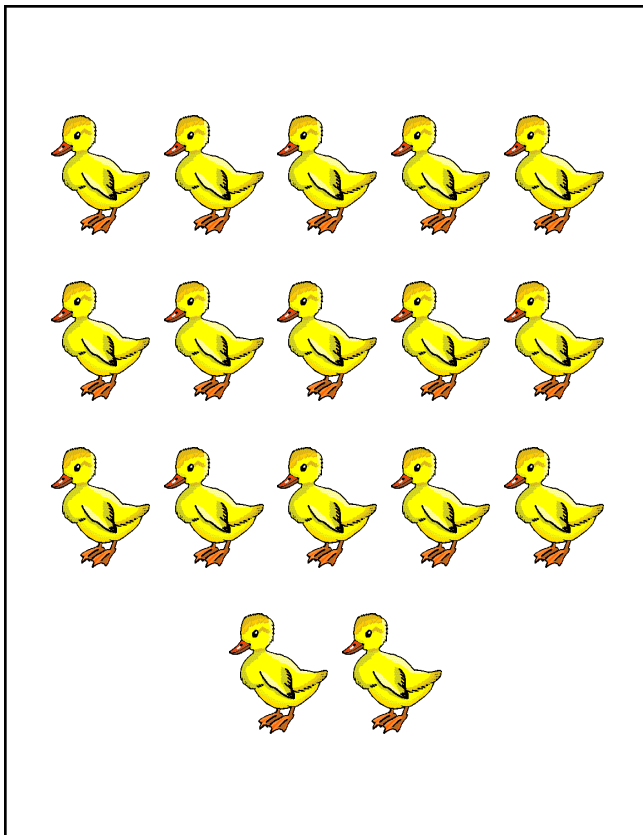
EXIT













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34

49

52

63

77



134

253

387

460

576

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685

790



798

813

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103

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706

880

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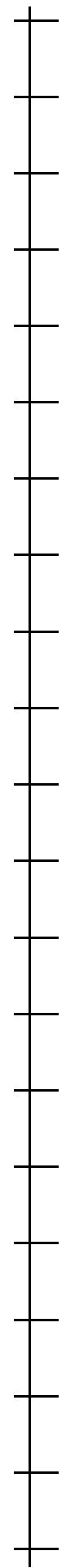
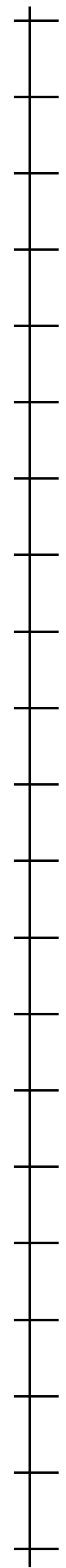
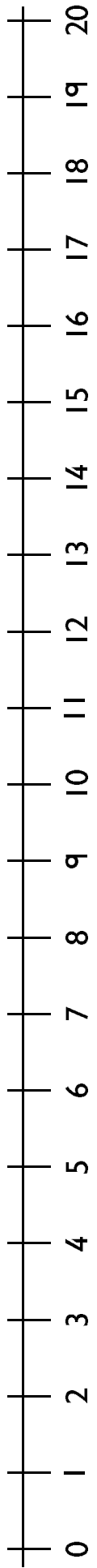
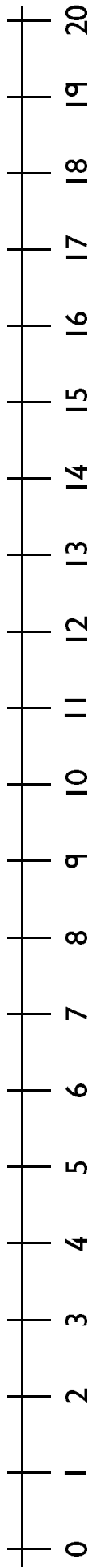
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11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



A - Number cards
Number lines

PRINT
EXIT

MENU
A18





Hundreds H	Tens T	Units U	tenths t	hundredths h

zero

one

two

three

four

five

six

seven

eight

nine

ten

and



eleven

twelve

thirteen

fourteen

fifteen

sixteen

seventeen

eighteen

nineteen

twenty



thirty

forty

fifty

sixty

seventy

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hundred

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2	0	

5	0	

3	

7	

1	0	

4	0	

2	

6	

9	

3	0	

1	

5	

6	0



C - Partitioning cards

PRINT

EXIT



MENU



C3

8	0	0
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1	0	0
---	---	---

7	0	0
---	---	---

9	0	0
---	---	---



$$\frac{1}{2}$$

$$\frac{1}{4}$$

$$\frac{3}{4}$$

$$\frac{1}{5}$$

$$\frac{3}{5}$$

$$\frac{1}{8}$$

$$\frac{7}{8}$$

$$\frac{1}{10}$$

$$\frac{3}{10}$$



$$\frac{1}{3}$$

$$\frac{2}{6}$$

$$\frac{6}{8}$$

$$\frac{9}{12}$$

$$\frac{2}{4}$$

$$\frac{2}{10}$$

$$\frac{6}{10}$$

$$\frac{2}{3}$$

$$\frac{2}{8}$$

$$\frac{3}{12}$$



$$\frac{4}{8}$$

$$\frac{4}{6}$$

$$\frac{6}{9}$$

$$\frac{4}{9}$$

$$\frac{3}{7}$$

$$\frac{30}{100}$$

$$\frac{18}{27}$$

$$\frac{20}{100}$$



$$\frac{33}{55}$$

$$\frac{250}{500}$$

$$\frac{28}{35}$$

$$\frac{45}{180}$$

$$\frac{5}{6}$$

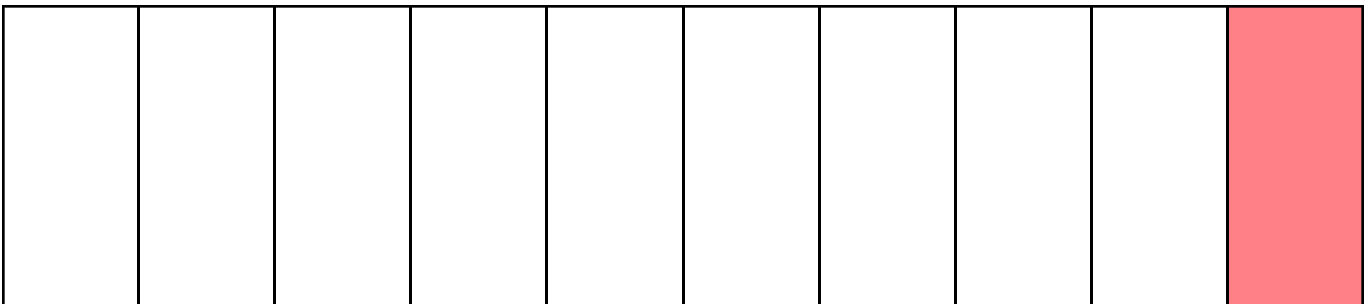
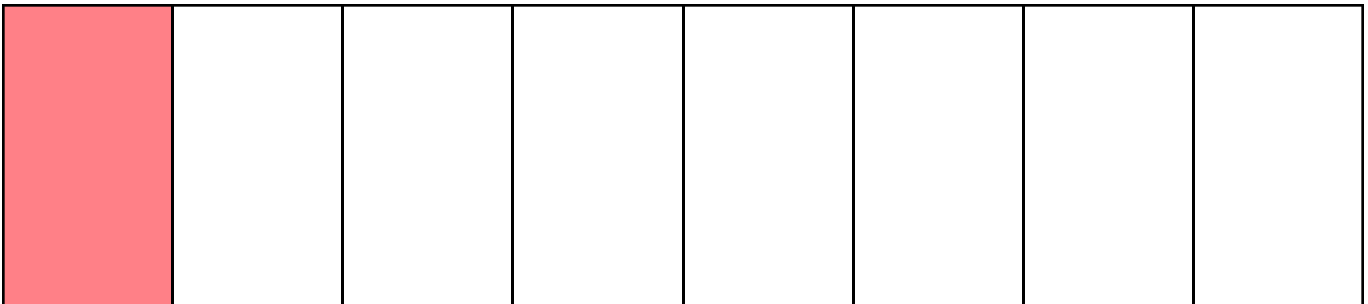
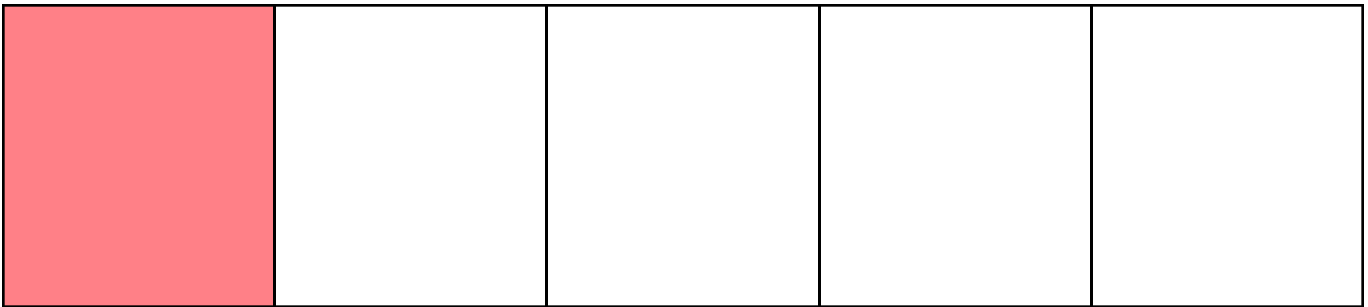
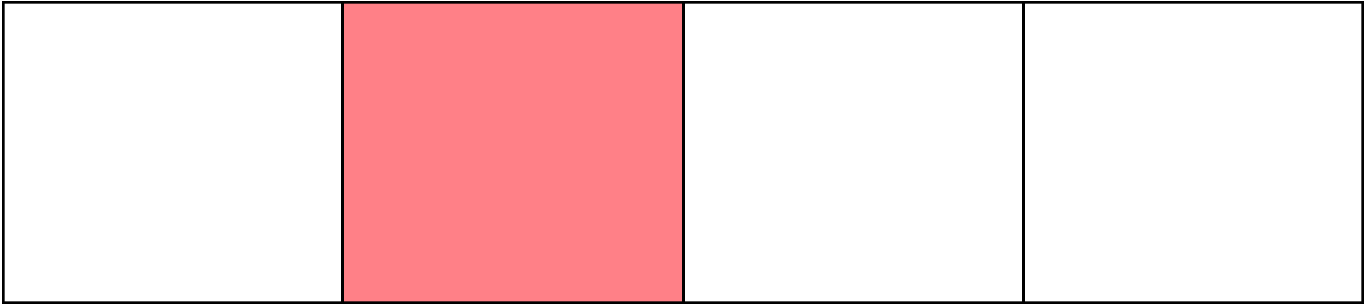
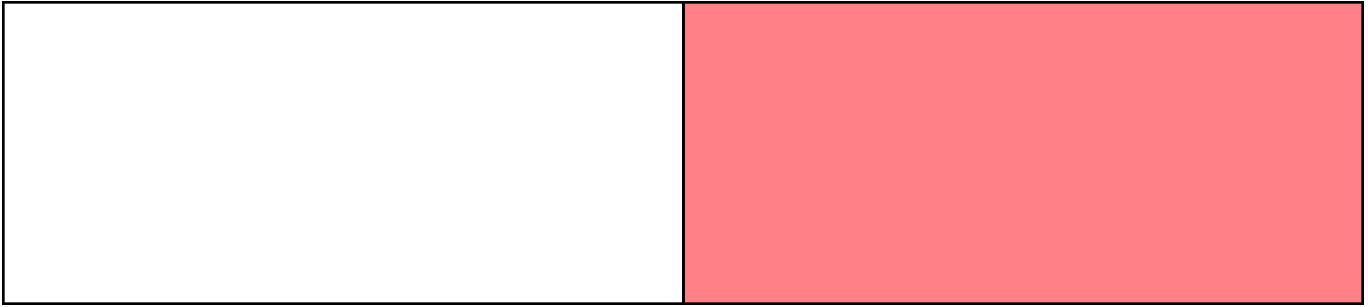
$$\frac{7}{9}$$

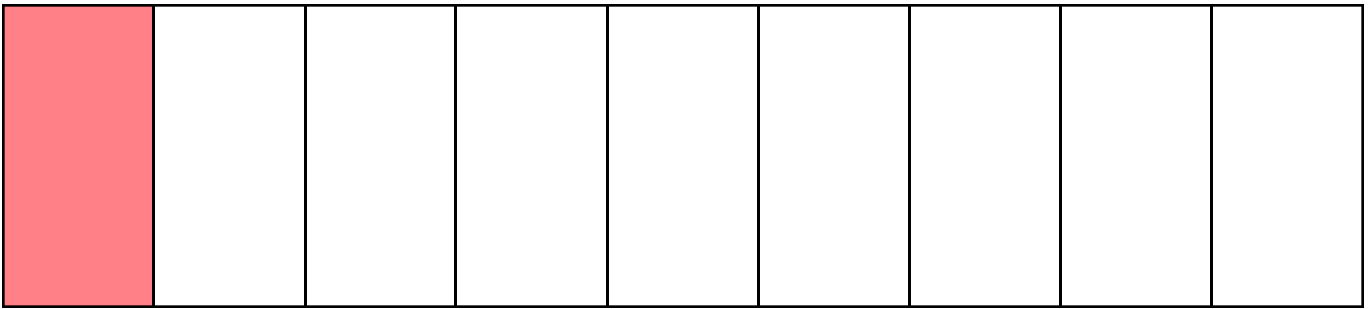
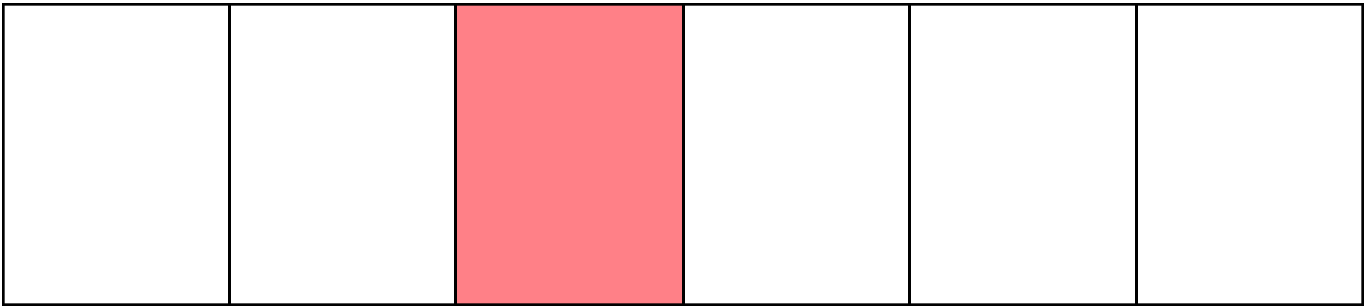
$$\frac{9}{11}$$

$$\frac{4}{7}$$

$$\frac{13}{20}$$

$$\frac{5}{8}$$







0.1

0.9

0.2

0.8

0.3

0.7

0.4

0.6

0.5



4.1

1.9

3.2

2.8

2.3

3.7

4.4

8.6



0.43

0.57

0.38

0.62

0.25

0.75

0.125



10%

20%

25%

30%

50%

60%

75%

$12\frac{1}{2}\%$



$$\frac{1}{10} \text{ of } 80 = \square$$

Y5

$$\frac{3}{10} \text{ of } 20 = \square$$

Y6

$$\frac{1}{100} \text{ of } 500 = \square$$

Y5

$$\frac{3}{4} \text{ of } 16 = \square$$

Y5

$$\frac{1}{3} \text{ of } 15 = \square$$

Y5

$$\frac{2}{3} \text{ of } 9 = \square$$

Y5

$$\frac{1}{5} \text{ of } 75 = \square$$

Y6

$$\frac{2}{5} \text{ of } 75 = \square$$

Y6



$$\frac{7}{10} \text{ of } 90 = \square$$

Y6

$$\frac{9}{100} \text{ of } 400 = \square$$

Y6

$$\frac{4}{5} \text{ of } 35 = \square$$

Y6

$$\frac{5}{6} \text{ of } 24 = \square$$

Y7

$$\frac{2}{3} \text{ of } 21 = \square$$

Y7

$$\frac{4}{7} \text{ of } 56 = \square$$

Y7

$$\frac{3}{8} \text{ of } \text{£}100 = \square$$

Y7

$$\frac{7}{8} \text{ of } 72 = \square$$

Y7



25% of 60 ml

Y6

10% of 30

Y6

50% of 36

Y6

20% of 15

Y7

15% of 20

Y6

75% of 750

Y7

30% of £5

Y7

15% of £75

Y7



11% of 55 kg

Y7

23% of 62 m

Y8

12% of 45

Y8

72% of £360

Y8

35% of 240

Y8

24% of 34

Y8

6% of 140

Y8

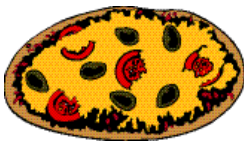
14% of 36 m

Y8

5 pizzas cost £23.75



1 pizza costs?



7 pizzas cost?



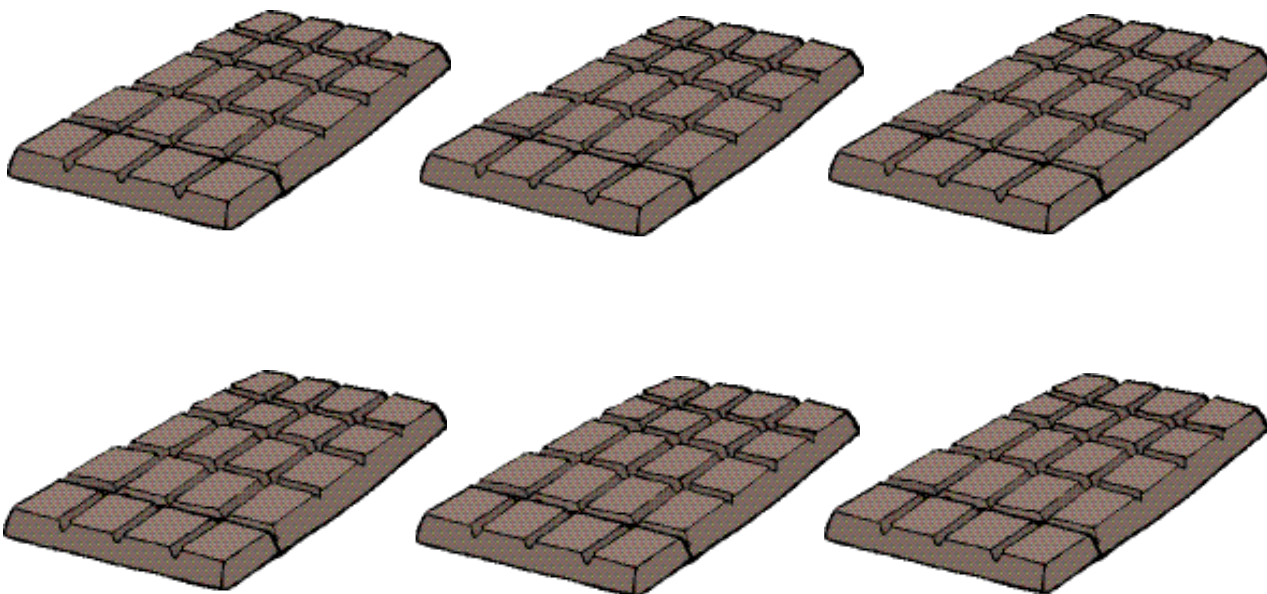
3 pizzas cost?



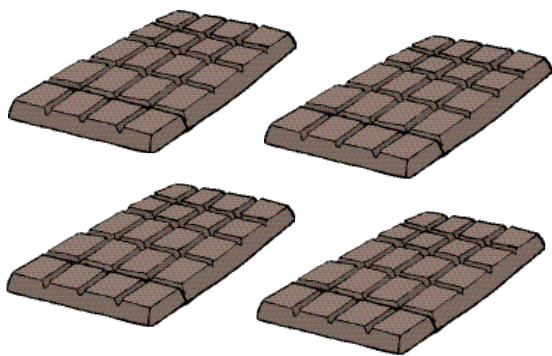
2 pizzas cost?



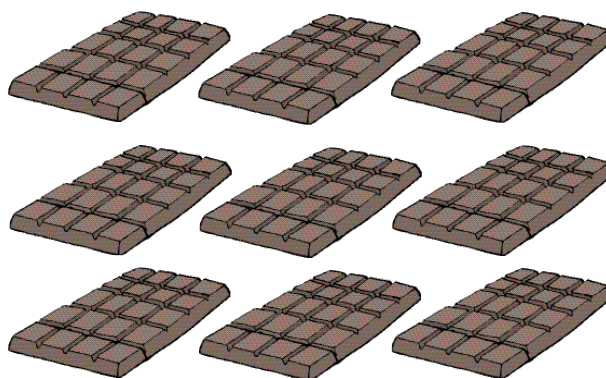
6 bars of chocolate cost £3.42



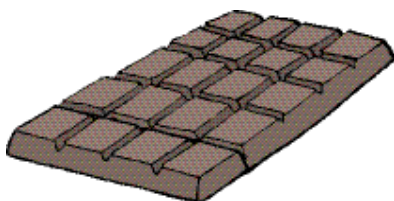
4 bars of chocolate cost?



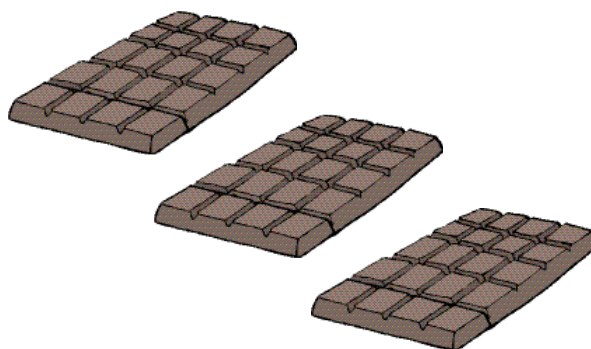
9 bars of chocolate cost?



1 bar of chocolate costs?



3 bars of chocolate cost?





$$20 \div 4 + 8 = \square$$

$$20 + 8 \div 4 = \square$$

$$(20 + 8) \div 4 = \square$$

$$13 \times 7 + 9 \times 11 = \square$$

$$\frac{200}{4 \times 5} = \square$$

$$12 - 4 \times 2 = \square$$

$$(12 - 4) \times 2 = \square$$

$$200 \div (4^2 + 3^2) = \square$$



$$19 + 3 = \square$$

Y2

$$25 + 9 = \square$$

Y2

$$27 + 19 = \square$$

Y4

$$26 + 18 = \square$$

Y4

$$35 + 21 = \square$$

Y4

$$42 + 33 = \square$$

Y4

$$48 + 34 = \square$$

Y4

$$14 - 5 = \square$$

Y2



$$17 - 9 = \square$$

Y2

$$36 - 9 = \square$$

Y2

$$28 - 11 = \square$$

Y2

$$58 - 12 = \square$$

Y3

$$34 - 19 = \square$$

Y3

$$56 - 18 = \square$$

Y3

$$68 - 29 = \square$$

Y4



$$2004 - 1998 = \square$$

$$4006 - 3989 = \square$$

$$8004 - 2998 = \square$$

$$3155 - 2999 = \square$$

$$3100 - 2890 = \square$$

$$6012 - 3899 = \square$$

$$6000 - 4999 = \square$$

$$5002 - 3800 = \square$$



$$3119 - 2999 = \square$$

$$5002 - 1899 = \square$$

$$4004 - 1799 = \square$$

$$8050 - 1997 = \square$$

$$2300 - 899 = \square$$

$$9002 - 2999 = \square$$

$$5800 - 3996 = \square$$

$$8009 - 5992 = \square$$



$$623 + 43 = \square$$

Y4

$$348 + 51 = \square$$

Y4

$$204 + 132 = \square$$

Y4

$$754 + 148 = \square$$

Y5

$$235 - 123 = \square$$

Y4

$$145 - 87 = \square$$

Y4

$$129 - 73 = \square$$

Y4

$$671 - 59 = \square$$

Y4



$$42 + 6543 = \square$$

Y5

$$671 + 9 + 58 = \square$$

Y5

$$6574 - 2563 = \square$$

Y5

$$78213 - 4387 = \square$$

Y5

$$97.4 + 14 = \square$$

Y6

$$401.2 + 7.35 = \square$$

Y6

$$324.9 - 7.25 = \square$$

Y6

$$14.56 - 8.7 = \square$$

Y6



$$1 \times 2 = 2$$

$$2 \times 2 = 4$$

$$3 \times 2 = \square$$

$$4 \times 2 = \square$$

$$5 \times 2 = \square$$

$$6 \times 2 = \square$$

$$7 \times 2 = \square$$

$$8 \times 2 = \square$$



$$9 \times 2 = \square$$

$$10 \times 2 = \square$$

$$11 \times 2 = \square$$

$$12 \times 2 = \square$$

$$13 \times 2 = \square$$

$$14 \times 2 = \square$$

$$15 \times 2 = \square$$

$$20 \times 2 = \square$$



$$25 \times 2 = \square$$

$$30 \times 2 = \square$$

$$35 \times 2 = \square$$

$$40 \times 2 = \square$$

$$45 \times 2 = \square$$

$$50 \times 2 = \square$$



6	2×3
---	--------------

9	3×3
---	--------------

21	7×3
----	--------------

15	5×3
----	--------------

27	9×3
----	--------------

12	3×4
----	--------------

16	4×4
----	--------------

20	5×4
----	--------------



48	8×6
----	--------------

54	6×9
----	--------------

64	8×8
----	--------------

72	9×8
----	--------------

28	7×4
----	--------------

32	8×4
----	--------------

36	9×4
----	--------------

18	3×6
----	--------------



24	4×6
----	--------------

30	5×6
----	--------------

35	5×7
----	--------------

42	6×7
----	--------------

49	7×7
----	--------------

56	8×7
----	--------------

63	9×7
----	--------------

45	5×9
----	--------------



2

$6 \div 3$

3

$9 \div 3$

7

$21 \div 3$

5

$15 \div 3$

9

$27 \div 3$

3

$12 \div 4$

4

$16 \div 4$

5

$20 \div 4$



8	$48 \div 6$
---	-------------

6	$54 \div 9$
---	-------------

8	$64 \div 8$
---	-------------

9	$72 \div 8$
---	-------------

7	$28 \div 4$
---	-------------

8	$32 \div 4$
---	-------------

9	$36 \div 4$
---	-------------

3	$18 \div 6$
---	-------------



4	$24 \div 6$
---	-------------

5	$30 \div 6$
---	-------------

5	$35 \div 7$
---	-------------

6	$42 \div 7$
---	-------------

7	$49 \div 7$
---	-------------

8	$56 \div 7$
---	-------------

9	$63 \div 7$
---	-------------

5	$45 \div 9$
---	-------------



$$19 \times 8 = \square$$

$$32 \times 8 = \square$$

$$15 \times 6 = \square$$

$$15 \times 12 = \square$$

$$56 \times 8 = \square$$

$$24 \times 12 = \square$$

$$34 \times 8 = \square$$

$$34 \times 16 = \square$$



$$19 \times 20 = \square$$

Y5

$$19 \times 12 = \square$$

Y5

$$19 \times 15 = \square$$

Y5

$$32 \times 15 = \square$$

Y5

$$36 \times 25 = \square$$

Y5

$$32 \times 20 = \square$$

Y5

$$36 \times 50 = \square$$

Y5

$$32 \times 25 = \square$$

Y5



$$15 \times 18 = \square$$

Y5

$$56 \times 20 = \square$$

Y5

$$15 \times 12 = \square$$

Y5

$$56 \times 15 = \square$$

Y5

$$24 \times 20 = \square$$

Y5

$$24 \times 25 = \square$$

Y5

$$24 \times 16 = \square$$

Y5

$$24 \times 12 = \square$$

Y5



$$60 \times 12 = \square$$

Y5

$$60 \times 15 = \square$$

Y5

$$60 \times 25 = \square$$

Y5

$$34 \times 18 = \square$$

Y5

$$34 \times 12 = \square$$

Y5

$$34 \times 50 = \square$$

Y5



$$327 \times 7 = \square$$

Y5

$$126 \times 5 = \square$$

Y5

$$532 \times 4 = \square$$

Y5

$$176 \div 9 = \square$$

Y5

$$265 \div 7 = \square$$

Y5

$$348 \div 8 = \square$$

Y5

$$5.92 \times 3 = \square$$

Y6

$$2.56 \times 5 = \square$$

Y6

$$3.65 \times 7 = \square$$

Y6

$$1.98 \times 6 = \square$$

Y6



$$9000 \div 100 = \square$$

Y5

$$450 \div 10 = \square$$

Y5

$$0.8 \times 100 = \square$$

Y6

$$7.8 \times 100 = \square$$

Y6

$$6.5 \div 10 = \square$$

Y6

$$76 \div 100 = \square$$

Y6

$$32 \times 1000 = \square$$

Y6

$$4.6 \div 100 = \square$$

Y7

$$438 \times 100 = \square$$

Y5

$$700 \times 10 = \square$$

Y5



$$0.03 \times 100 = \square$$

Y6

$$71 \div 100 = \square$$

Y6

$$5.6 \times 1000 = \square$$

Y7

$$3.4 \div 100 = \square$$

Y7

$$1.4 \times 30 = \square$$

Y7

$$0.04 \times 9 = \square$$

Y7

$$541 \times 32 = \square$$

Y6

$$5.24 \times 8 = \square$$

Y6

$$129.6 \div 8 = \square$$

Y6

$$360 \div 45 = \square$$

Y7



$$246 \times 15 = \square$$

Y7

$$12.3 \div 3.4 = \square$$

Y8

$$35.2 \div 0.6 = \square$$

Y8

$$19.2 \div 0.06 = \square$$

Y8

$$97.4 \div 14 = \square$$

Y8

$$43.2 \times 4.7 = \square$$

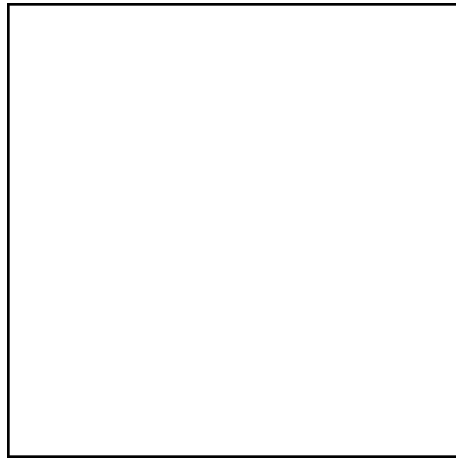
Y8

$$7.9 \div 0.12 = \square$$

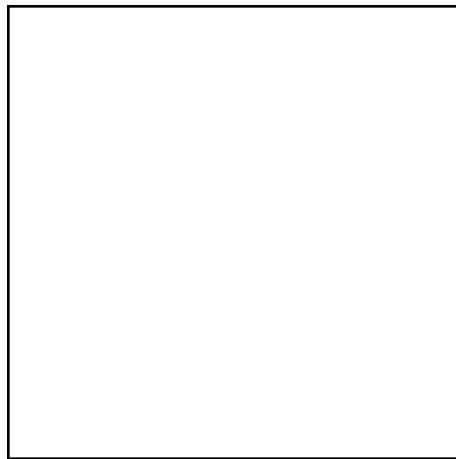
Y8

$$75.8 \times 0.024 = \square$$

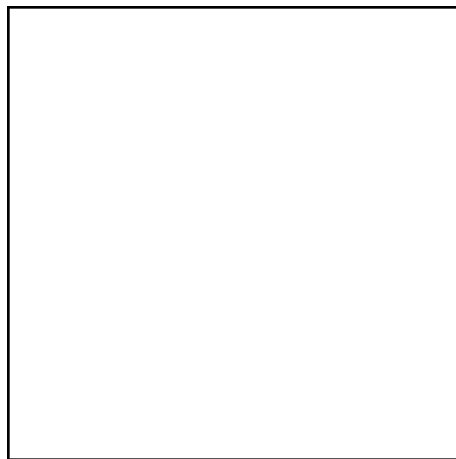
Y8

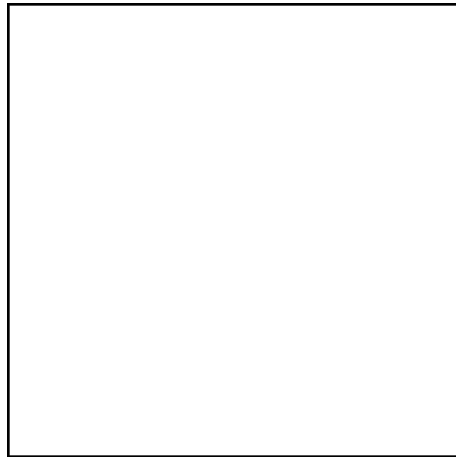


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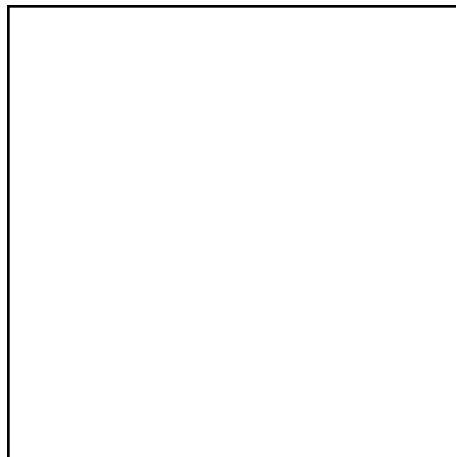


+

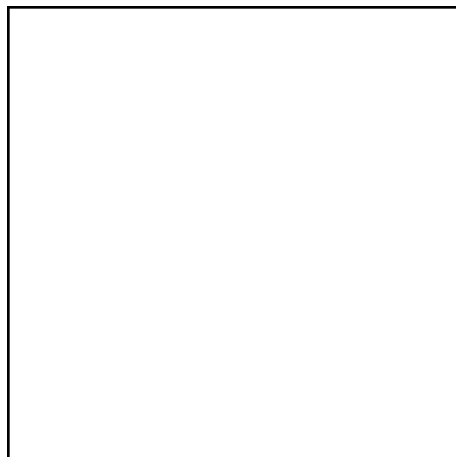


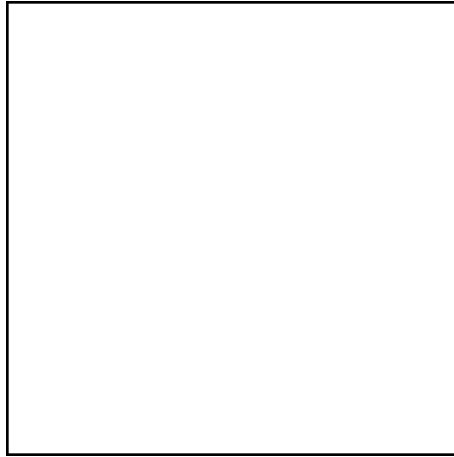


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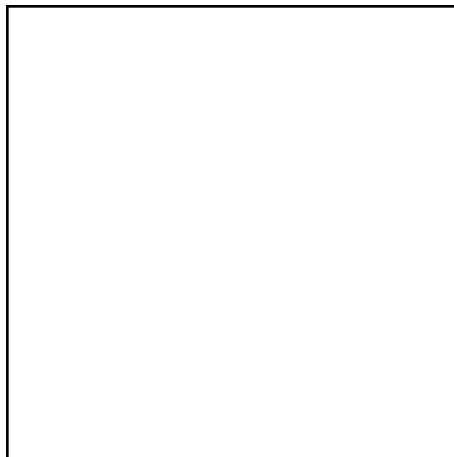


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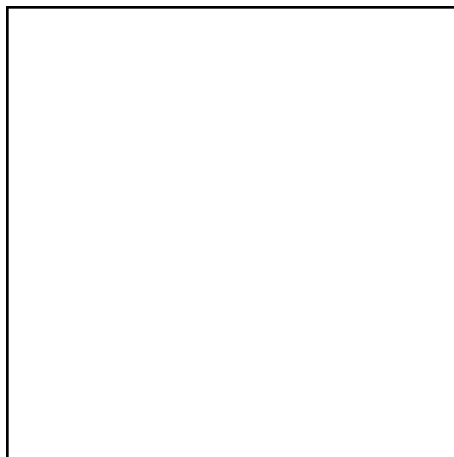


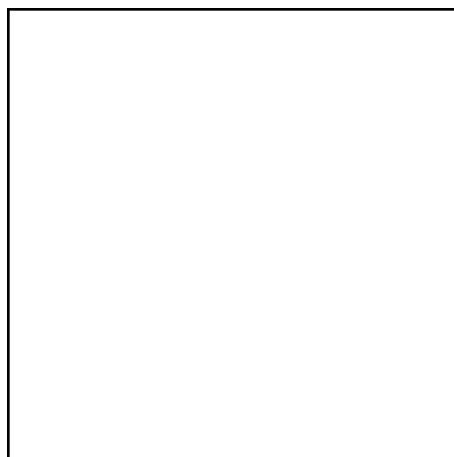
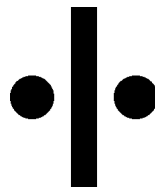
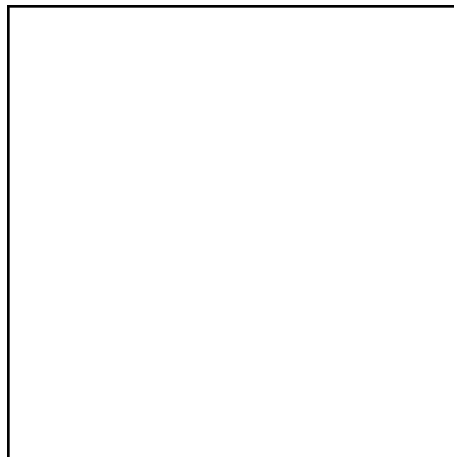
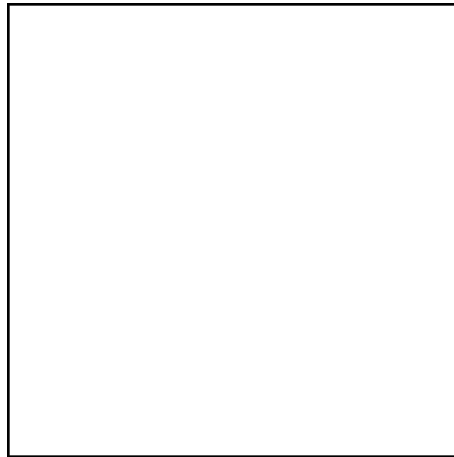


||



X







$$a + b = c$$

$$c = a + b$$

$$b + a = c$$

$$a + a$$

$$2a$$

$$a^2$$

$$a \times a$$

$$3a - a$$

$$a + 2 = c$$

$$a + 3a + a$$

$$4a + a$$

$$7a - 2a$$

$$2(a + 1)$$

$$2a + 2$$

$$2a + 1$$

$$5(a - 1)$$



$$4a + b + a + 3b$$

$$5a + 4b$$

$$5b + 5a - b$$

$$7 + 3a - 3b + 2a$$

$$5(a + 2b)$$

$$5a + 10b$$

$$3(2a - b)$$

$$6a - 3b$$



$$4a + 5b + 2(a - b)$$

$$7b + 2a + 4a - 10b$$

$$7a + b + 3(a + 3b)$$

$$a + 13b + 4a - 3b$$

$$7 - (5a - 3b)$$

$$7 - 3(a - b) - 2a$$

$$7(a - 2b) - 2(a - 9b)$$

$$2(5a - b) - 4a - b$$



$$a = 2$$

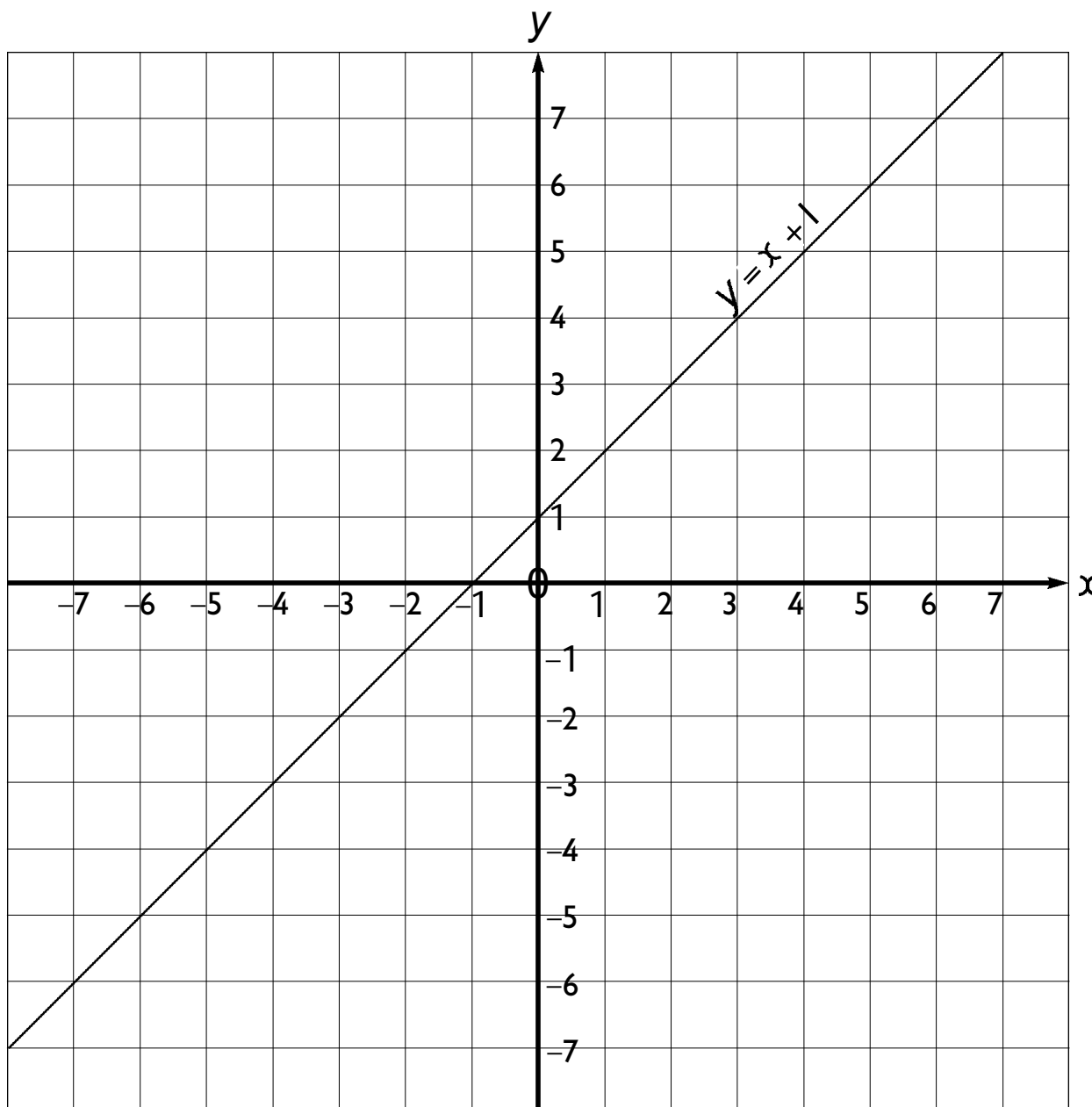
$$a = 7$$

$$b = 3$$

$$b = -2$$



x	-3	-2	-1	0	1	2	3
$y = x + 1$	-2	-1	0	1	2	3	4





Backpack
£15.99



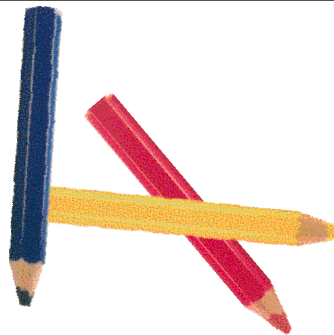
T-shirt
£5.99



Football
£4.25



Cheeseburger
£1.90



Pencils
£1.50



Dice
£1.19



How much
altogether?

How much
more?

How much
change from
£10?

How much
change from
£20?

G - Solving problems involving money
Amount labels

£2

£1

50p

20p

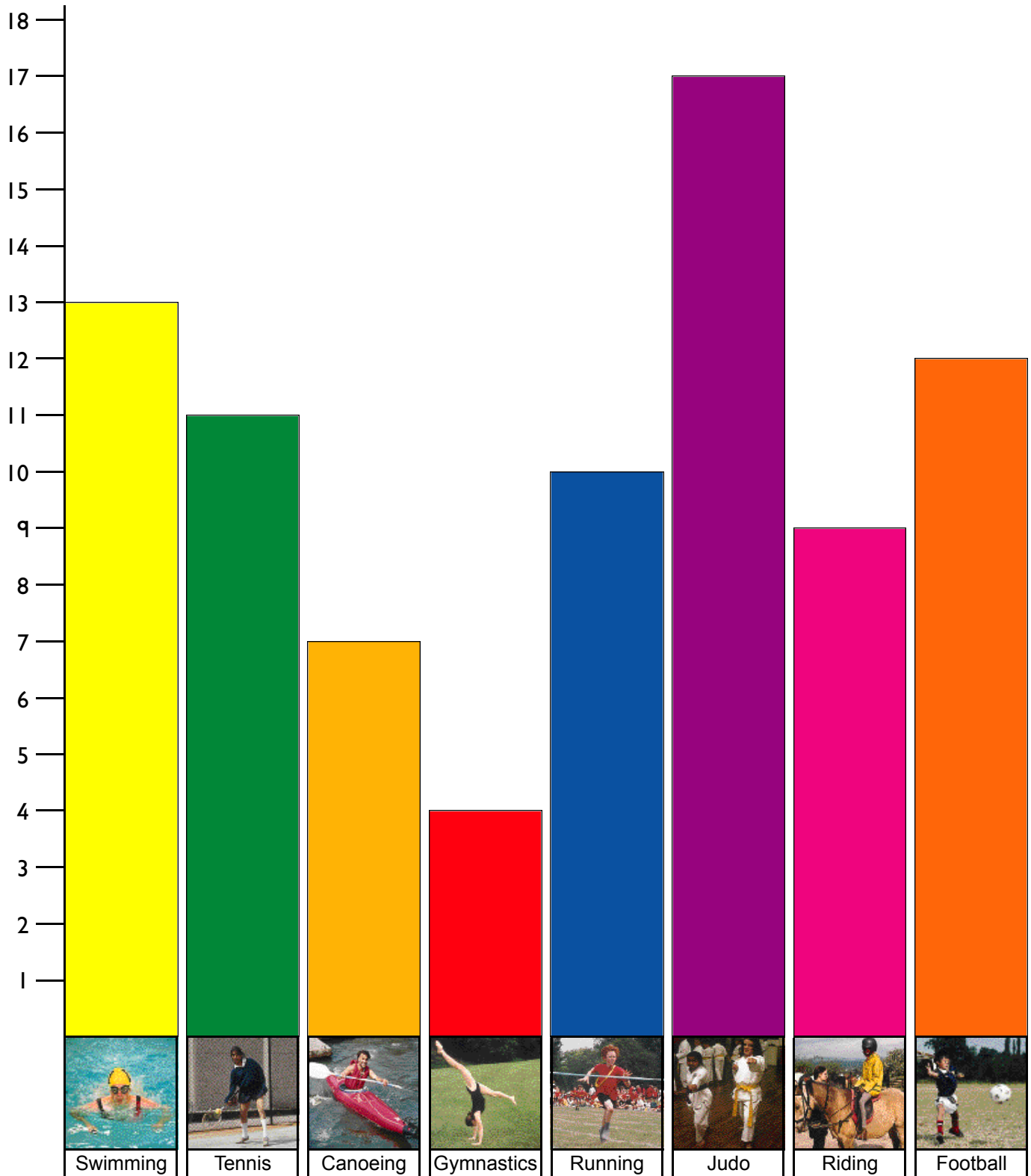
10p

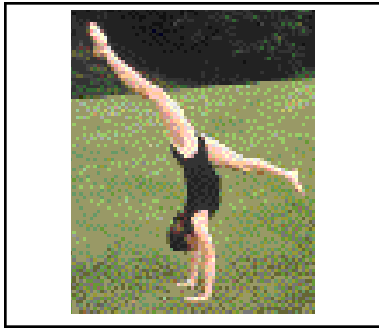
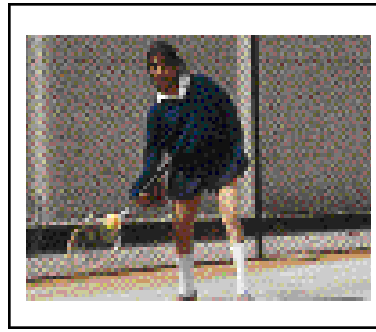
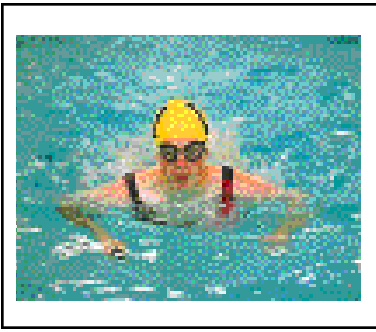
5p

2p

1p

This graph shows the most popular sports in our year group.





0

H - Data handling
0 to 18 number cards

1

2

3

4

5

6

7

8

9

10

11

12

13

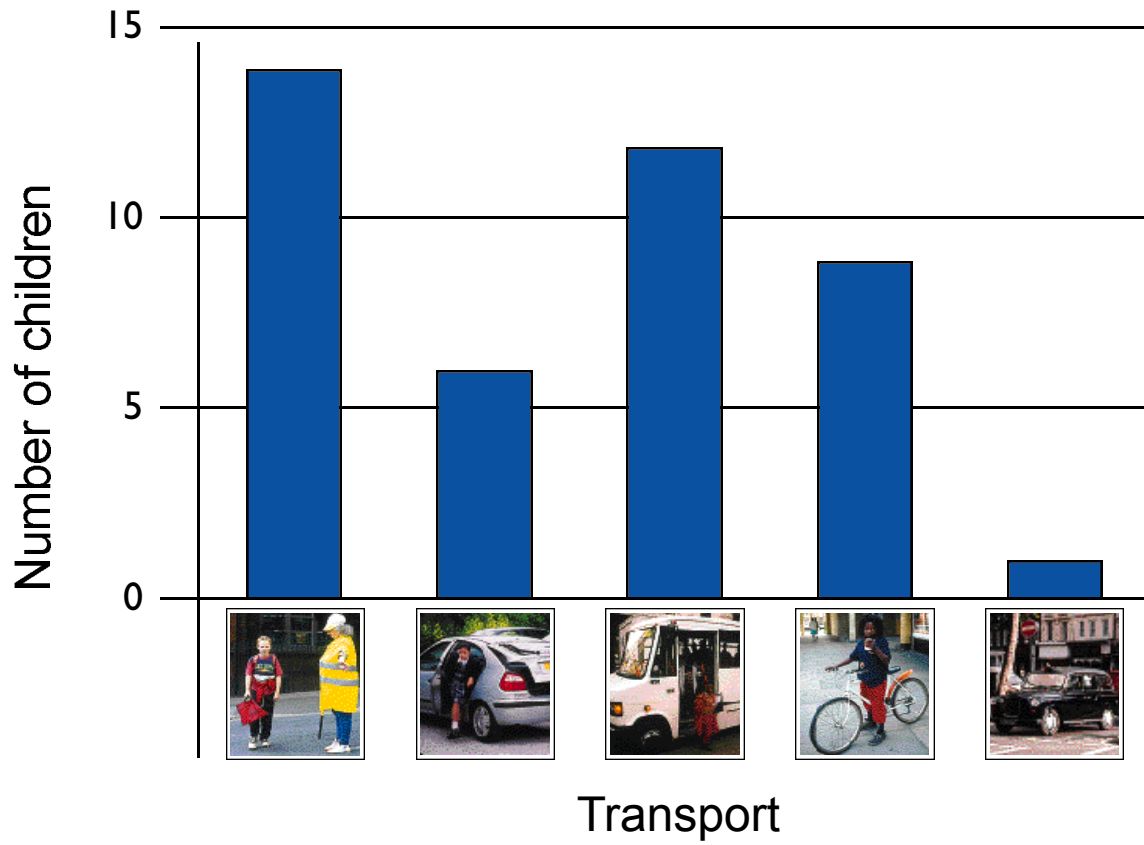
14

15

16

17

18

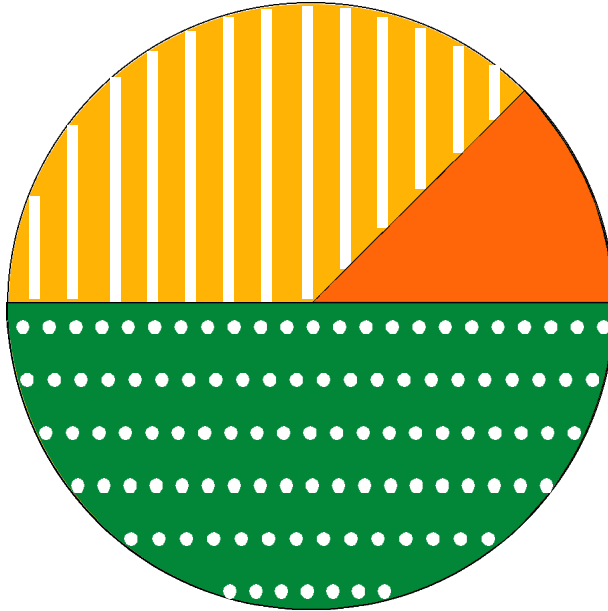





H - Data handling
Transport picture labels



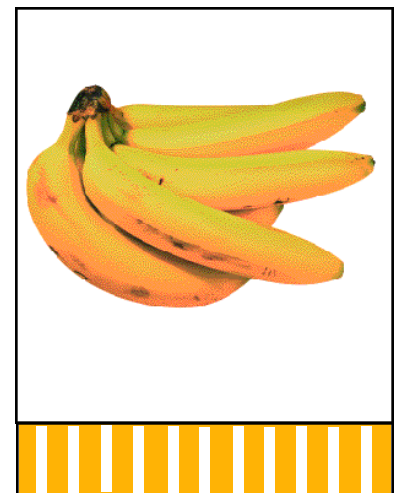
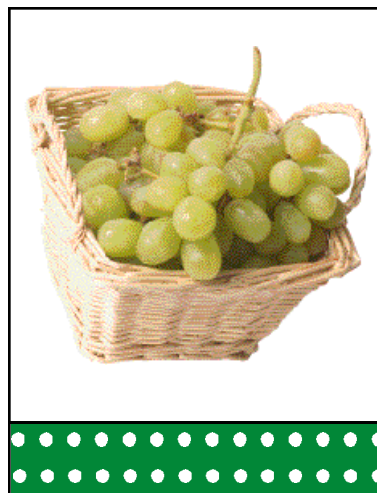
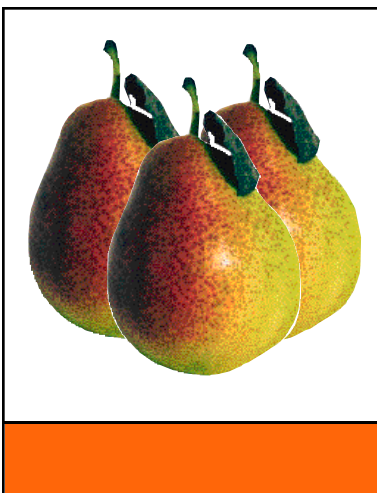


24 children took part in a fruit survey to find out which fruits they ate the most.



-  Pears
-  Grapes
-  Bananas

H - Data handling
Fruit pictures





1 child

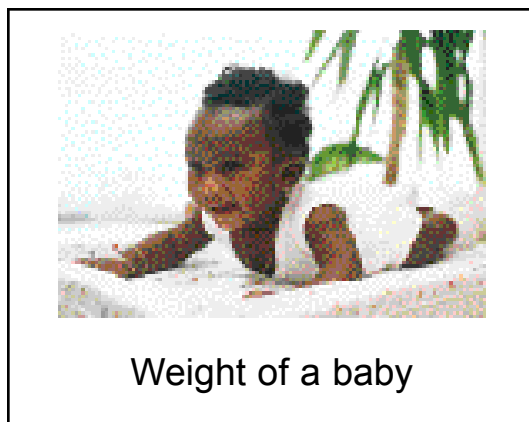
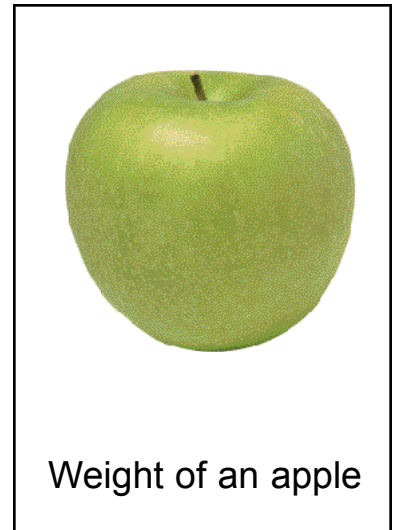
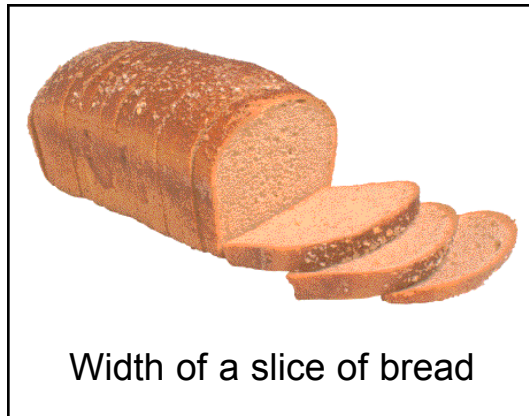
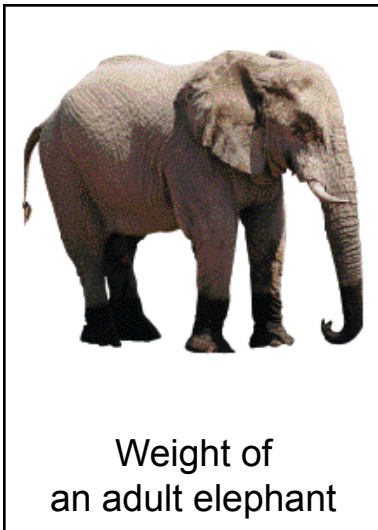
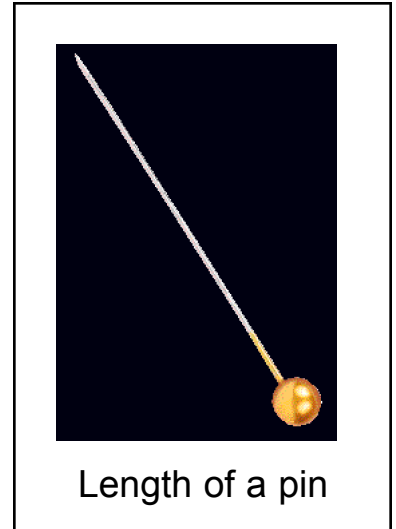
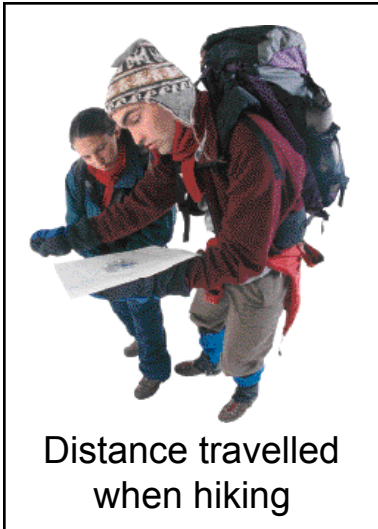
2 children

4 children

5 children

8 children

How many?





millimetre

mm

centimetre

cm

metre

m

kilometre

km

gram

g

kilogram

kg

tonne

t

litre

l

centilitre

cl

millilitre

ml



1 km

1000 m

1 m

100 cm

1 cm

10 mm

1 tonne

1000 kg



1 kg

1000 g

1 litre

100 cl

1 cl

10 ml



3.6 km

3600 m

360 000 cm

360 mm

36 cm

0.36 m

75 kg

75 000 g



750 g

0.75 kg

0.075 kg

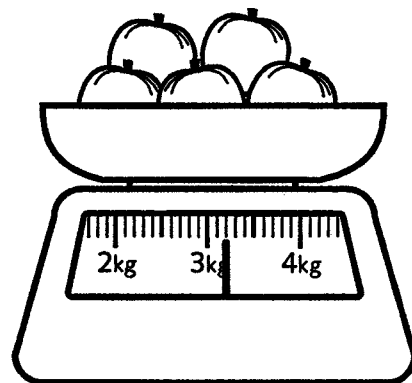
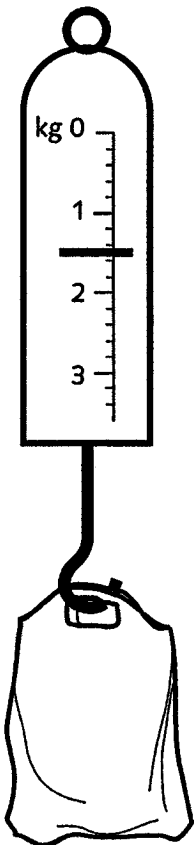
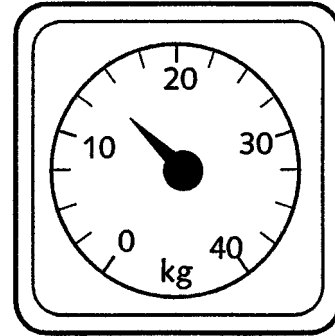
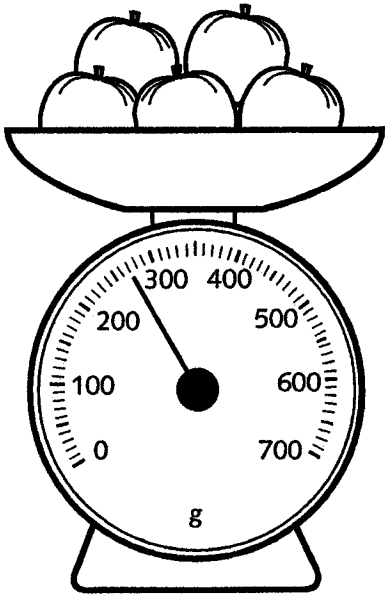
75 g

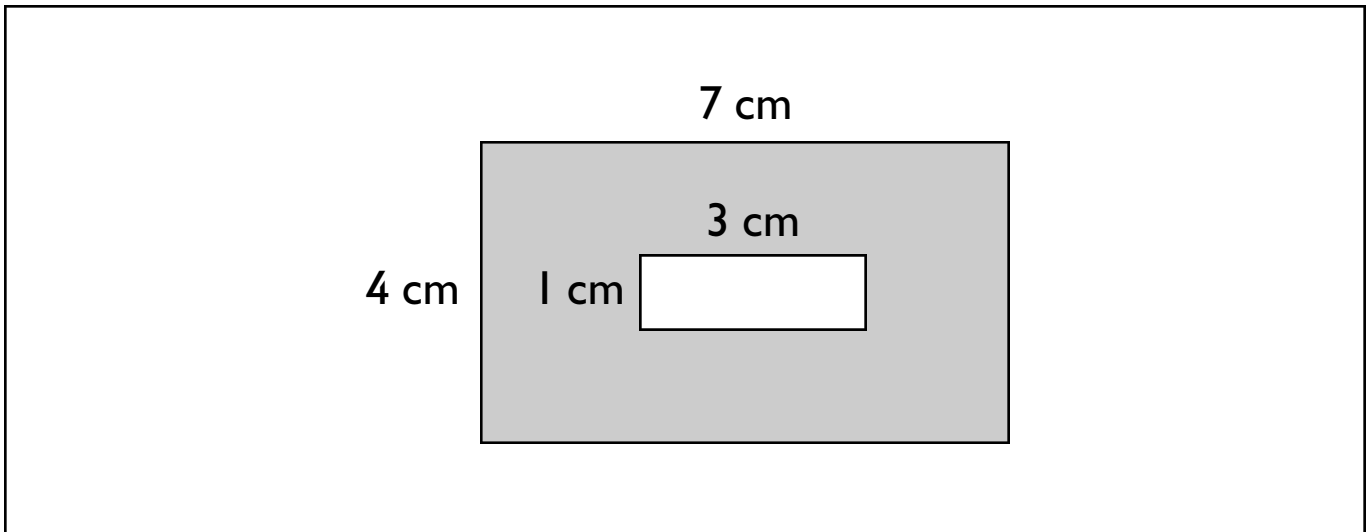
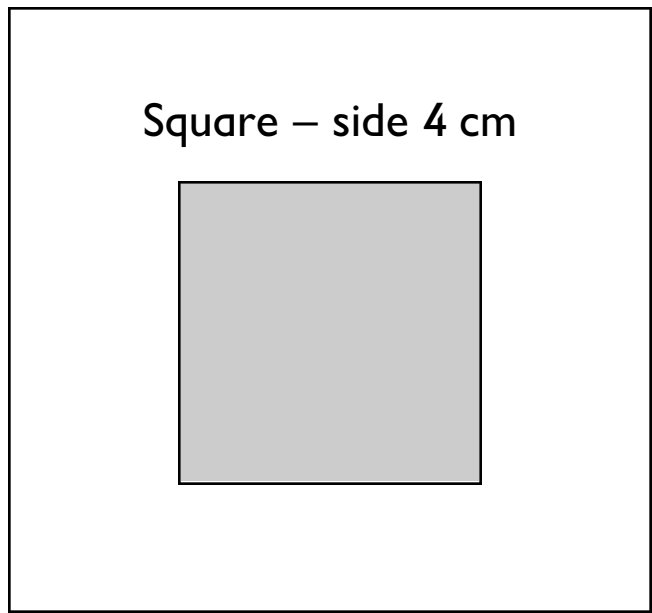
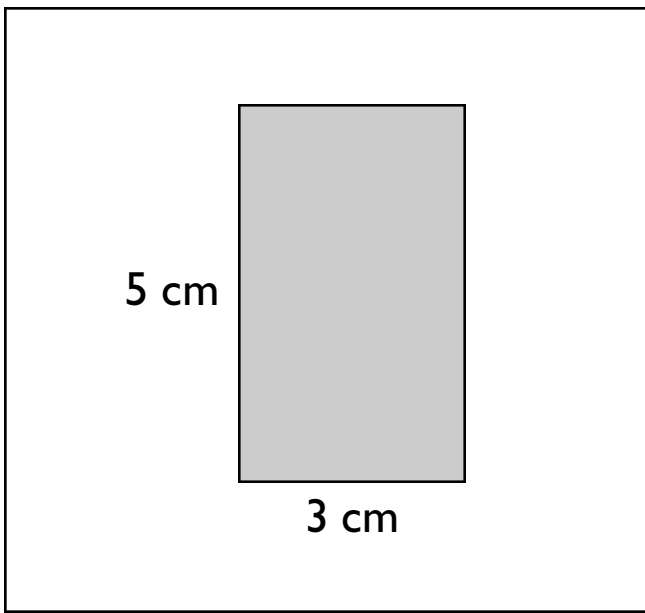
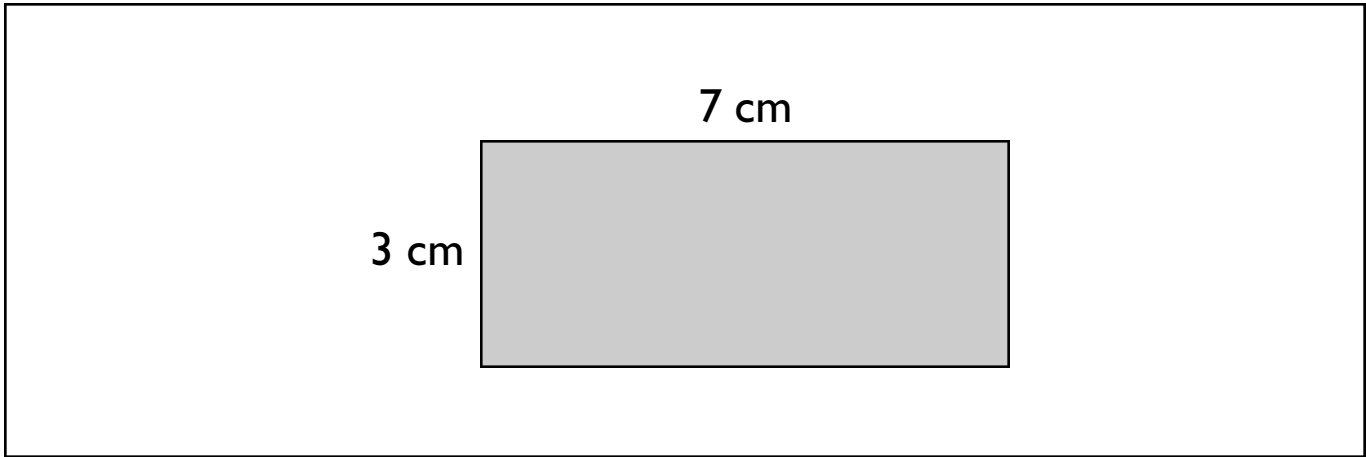
250 ml

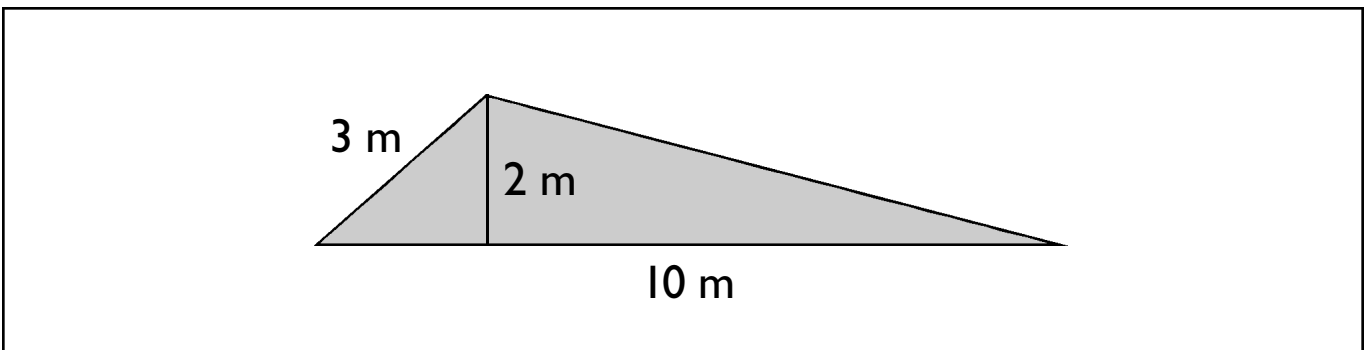
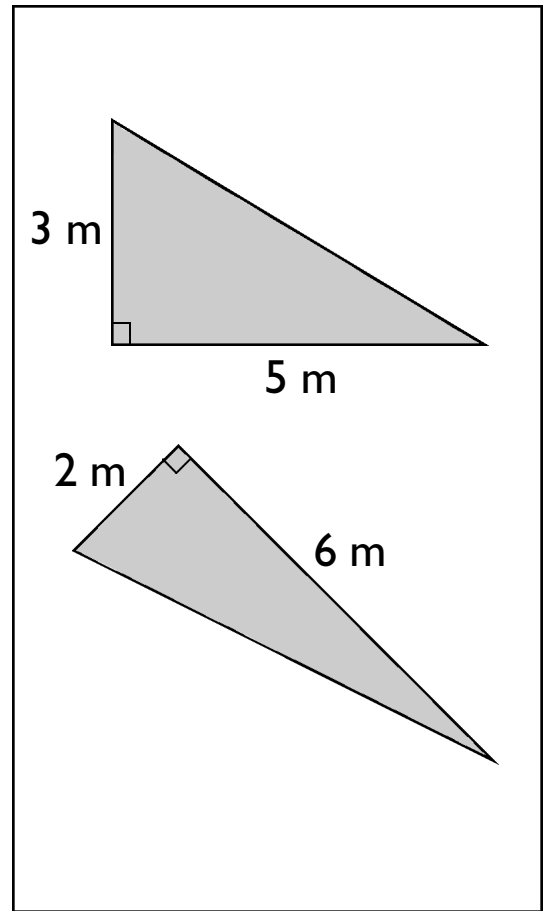
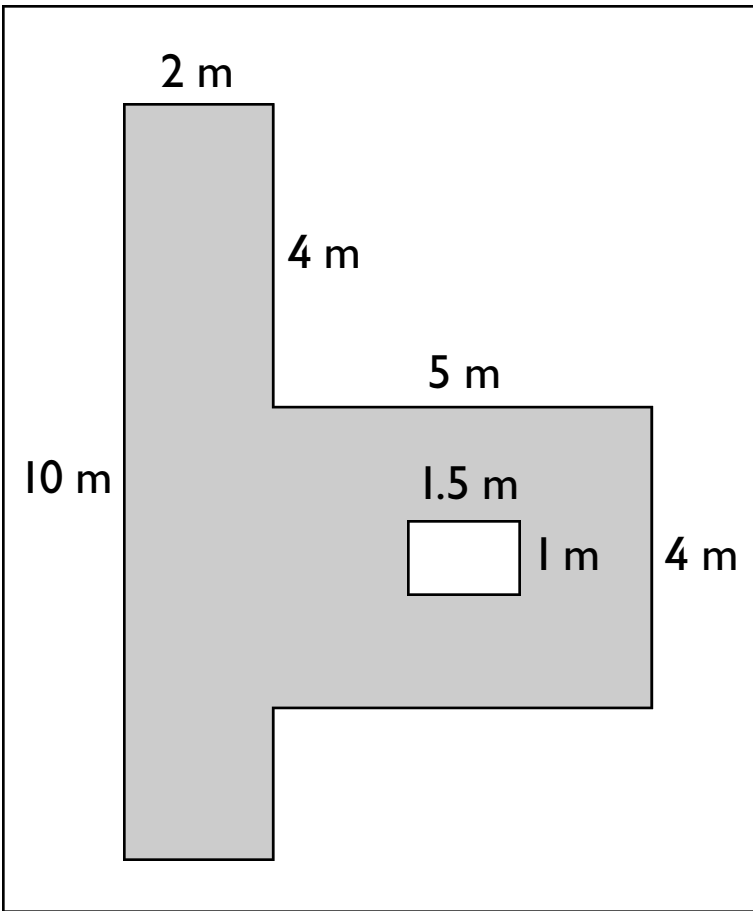
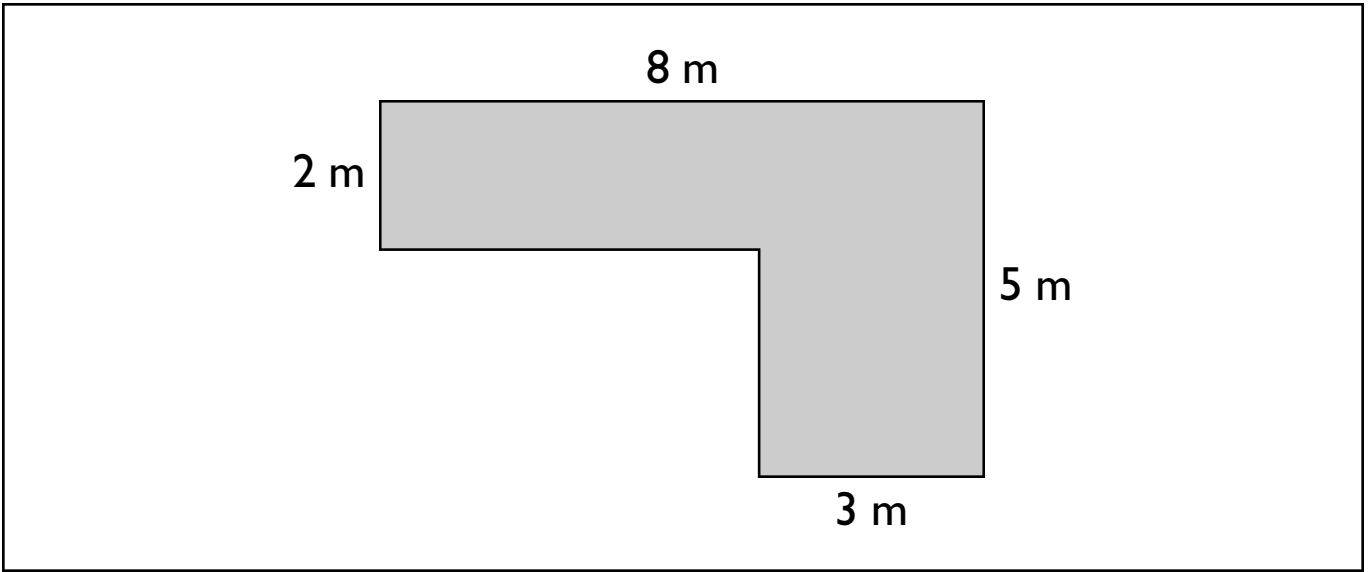
0.25 litres

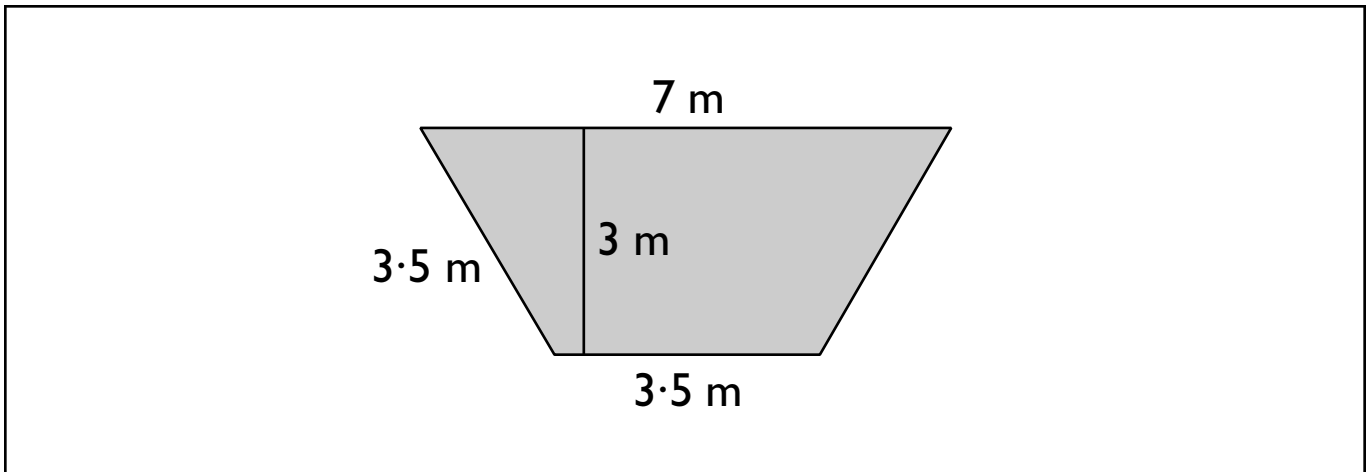
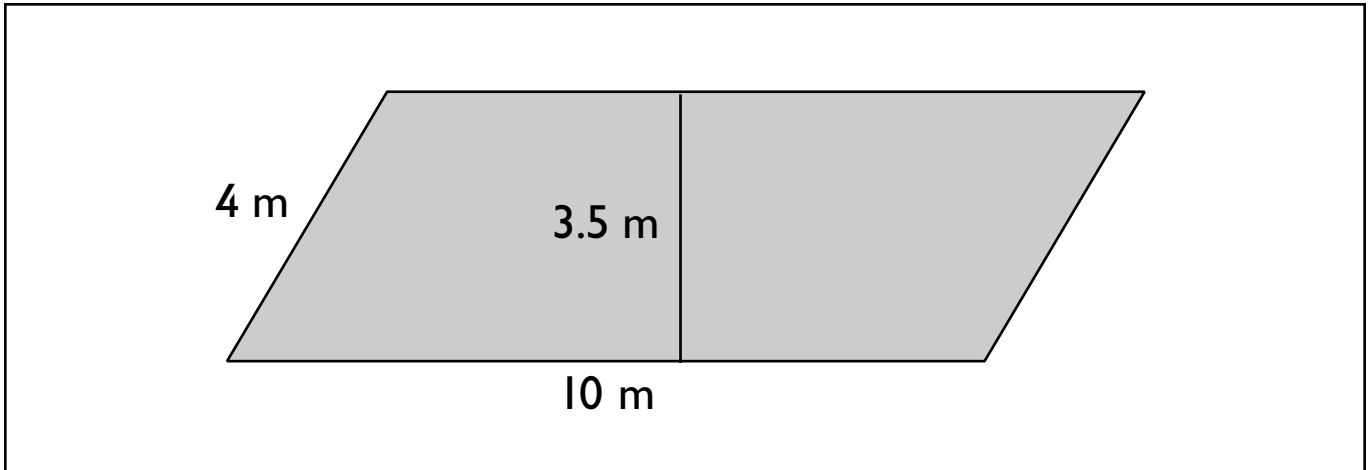
2.5 litres

2500 ml





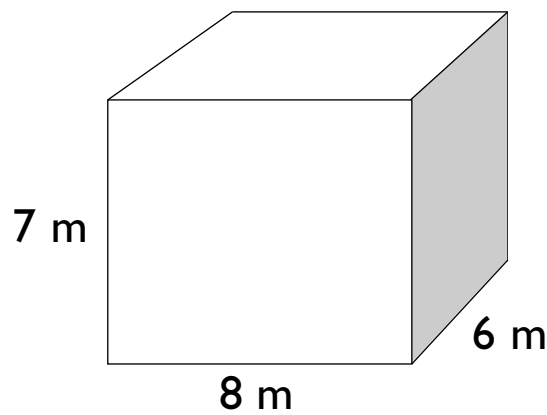
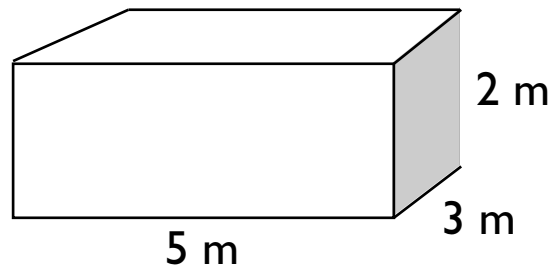




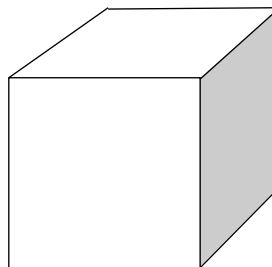
cm^2

m^2

km^2



Cube – all edges 5 cm



cm^3

m^3

km^3



half past 5

half past 12

half past 8

half past 10

half past 1

4 o'clock

7 o'clock

11 o'clock

3 o'clock

9 o'clock



quarter past 5

quarter past 3

quarter past 1

quarter past 12

quarter past 10

quarter to 4

quarter to 11

quarter to 6



11 minutes past 5

7 minutes to 6

17 minutes past 9

28 minutes to 12

25 minutes past 4

5 minutes to 10

5 minutes past 8

10 minutes to 11



5:11

5:53

9:17

11:32

4:25

10:50

9:55

8:05



8:30

10:30

1:30

4:00

7:00

11:00

3:00

9:00

5:15

3:15



1:15

12:15

10:15

3:45

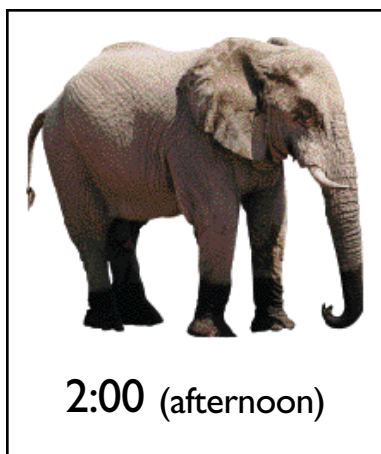
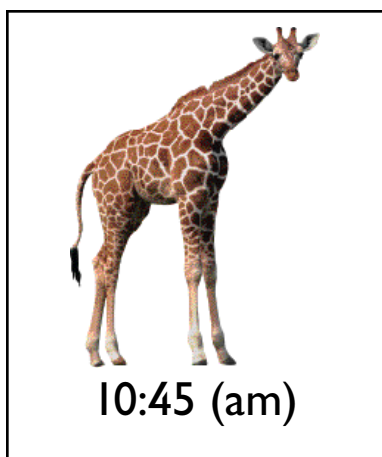
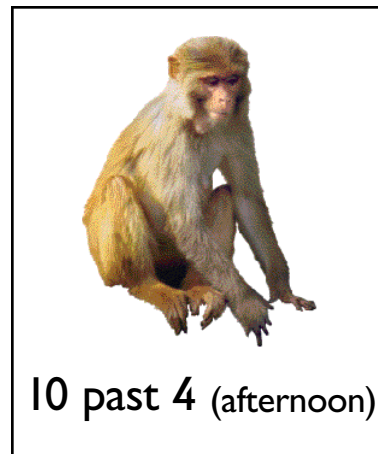
10:45

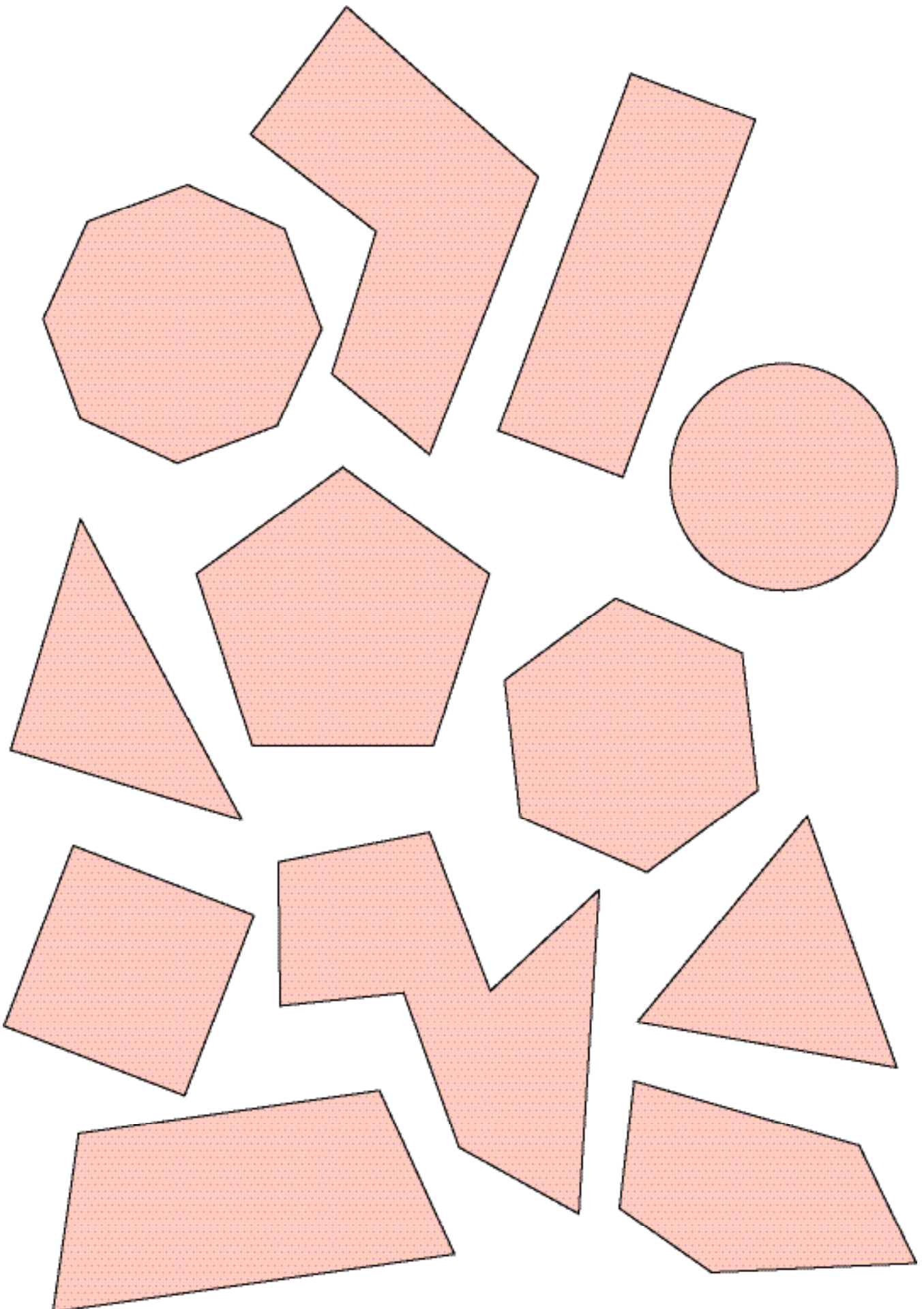
5:45

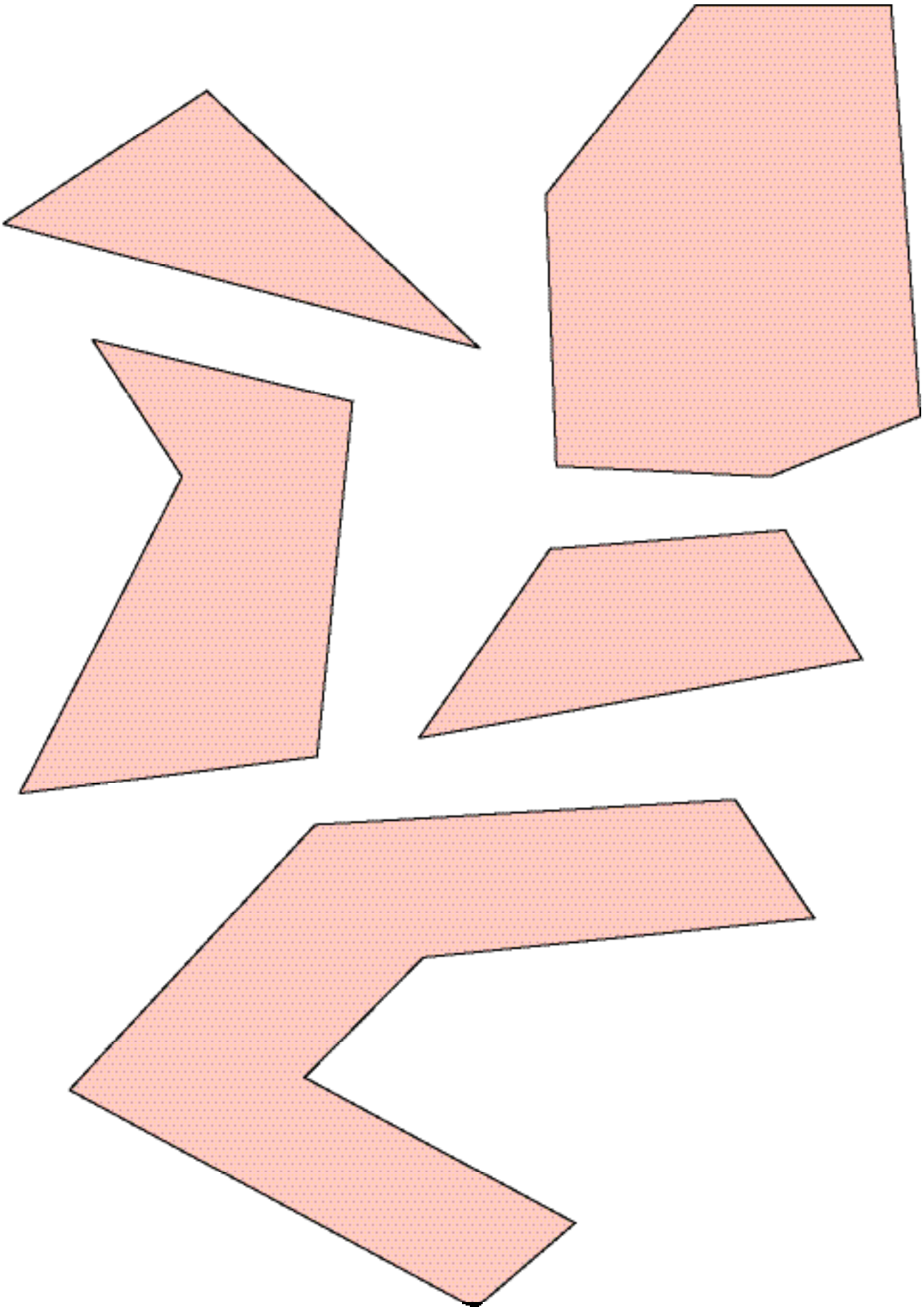
5:30

12:30

We went to the zoo and watched the animals being fed.
Put these pictures in order of time to show the sequence in which
the animals were fed. Start with those fed first.









rectangle

square

trapezium

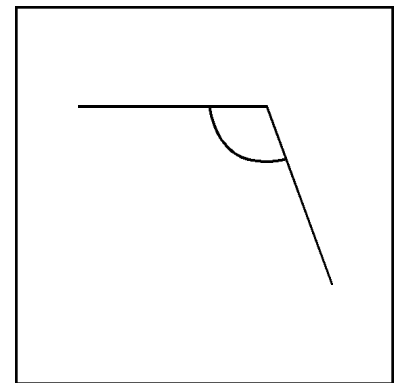
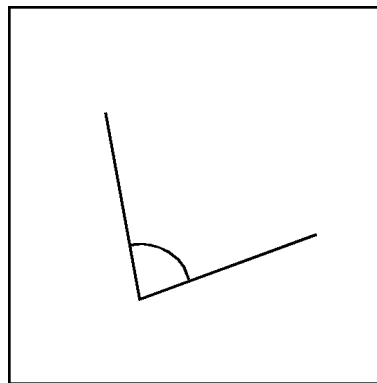
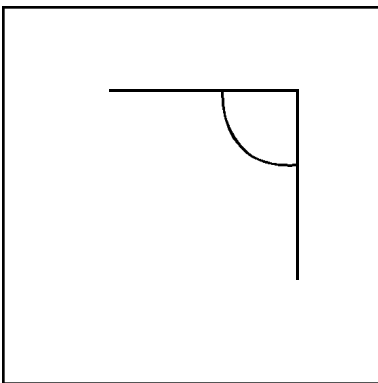
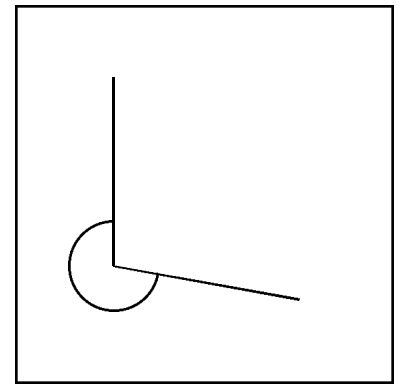
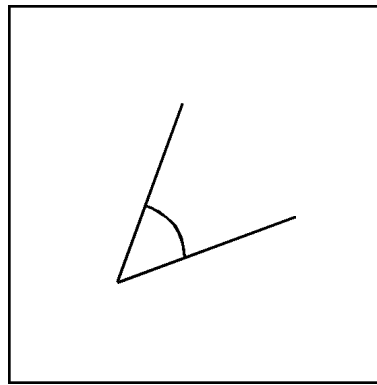
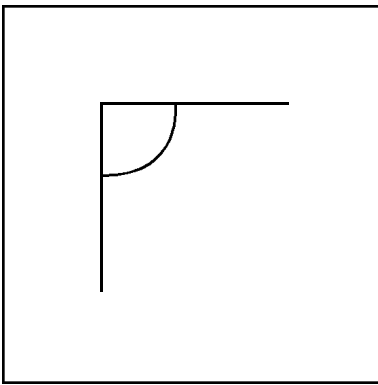
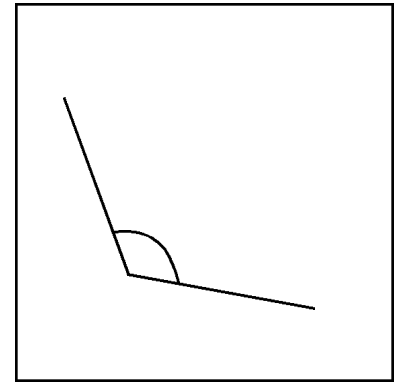
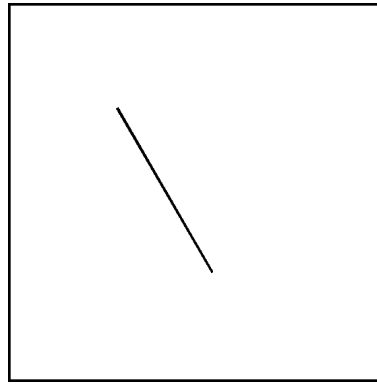
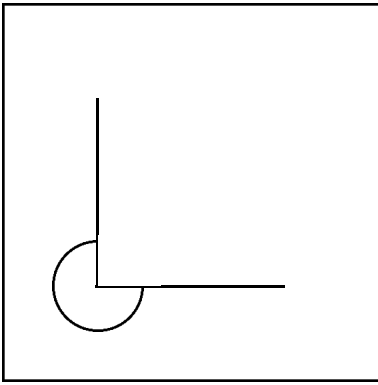
triangle

pentagon

hexagon

octagon

circle



right angle

acute angle

obtuse angle

reflex angle



3 sides

3 angles

4 sides

4 angles

5 sides

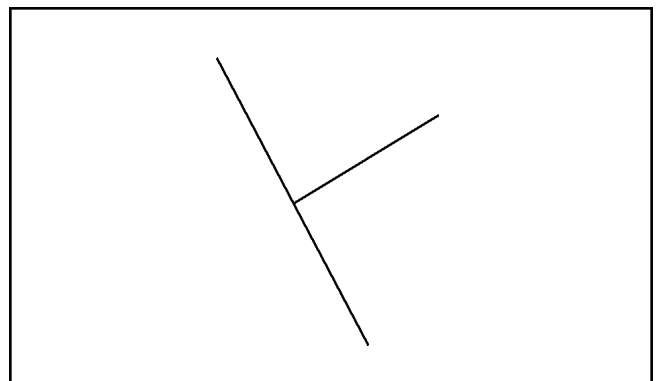
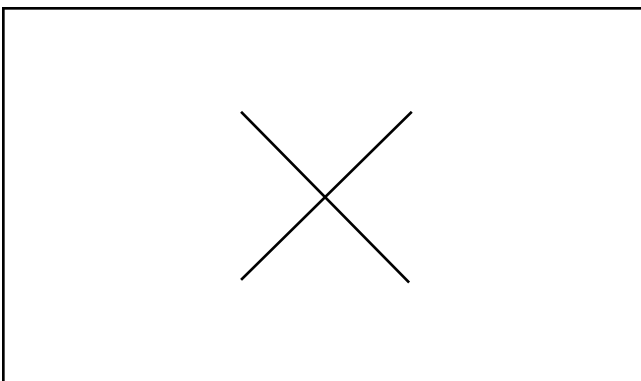
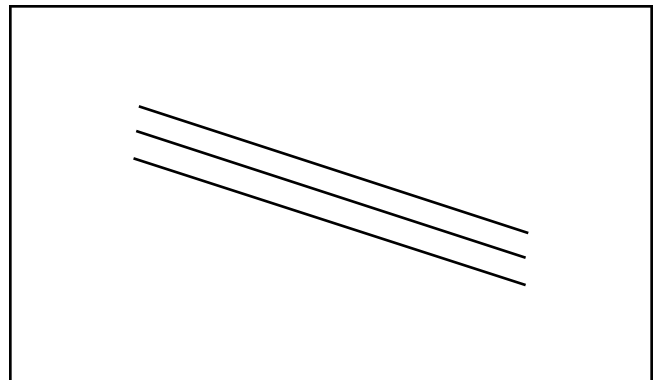
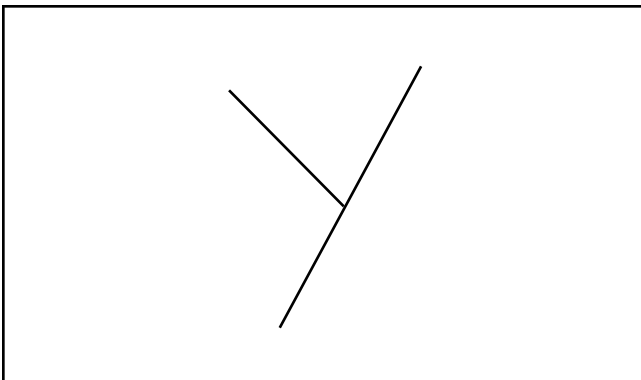
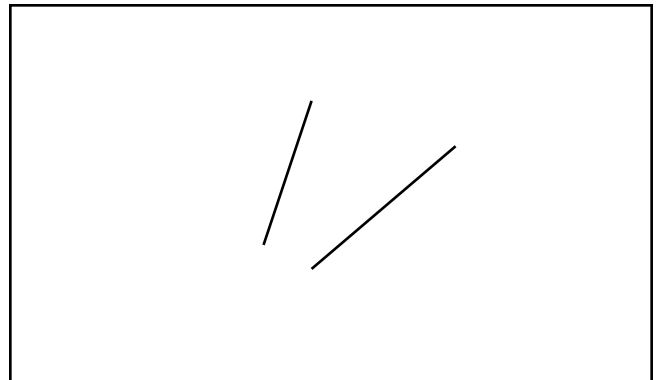
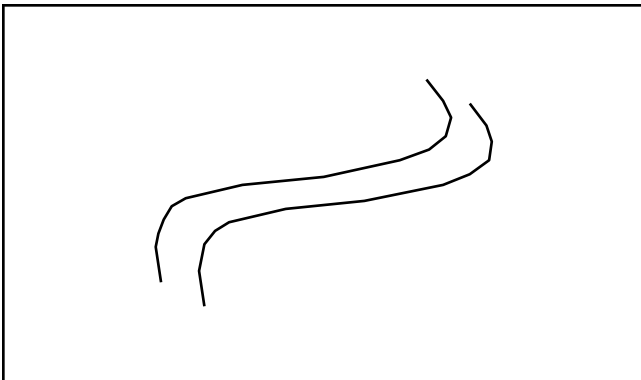
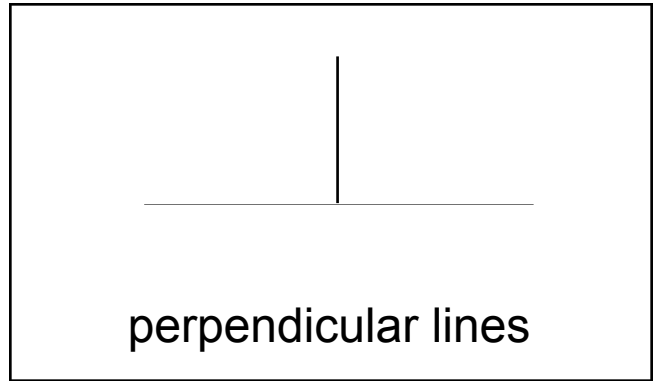
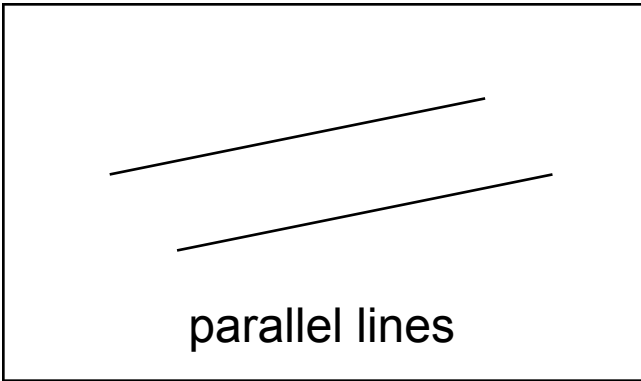
5 angles

6 sides

6 angles

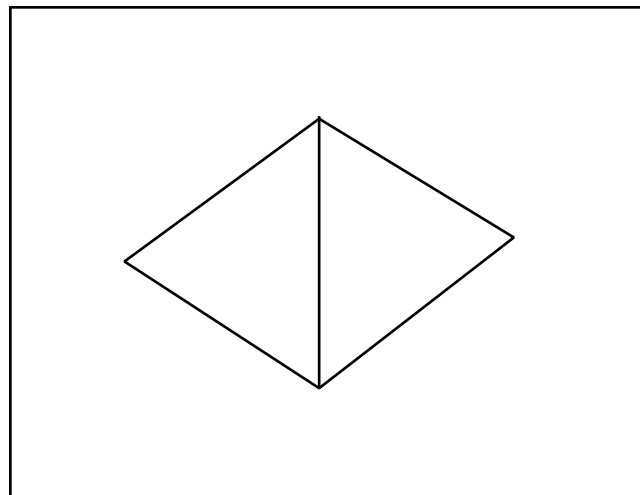
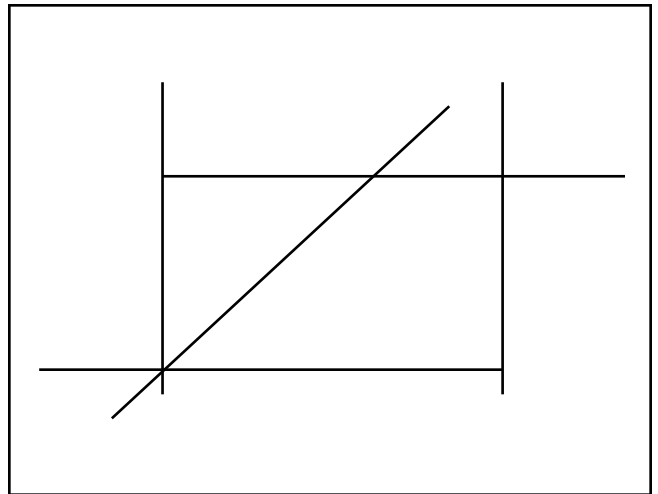
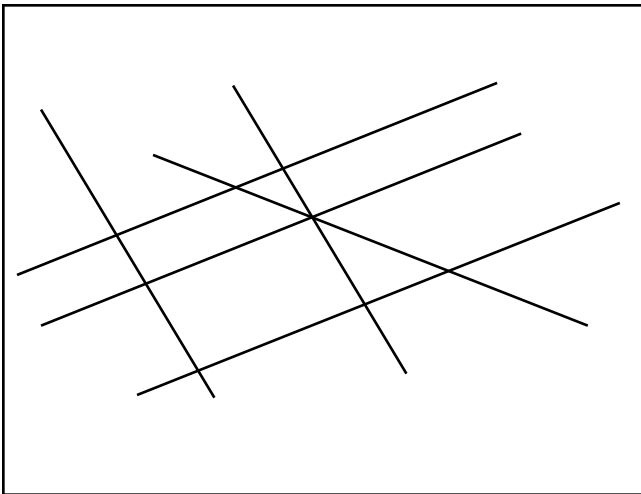
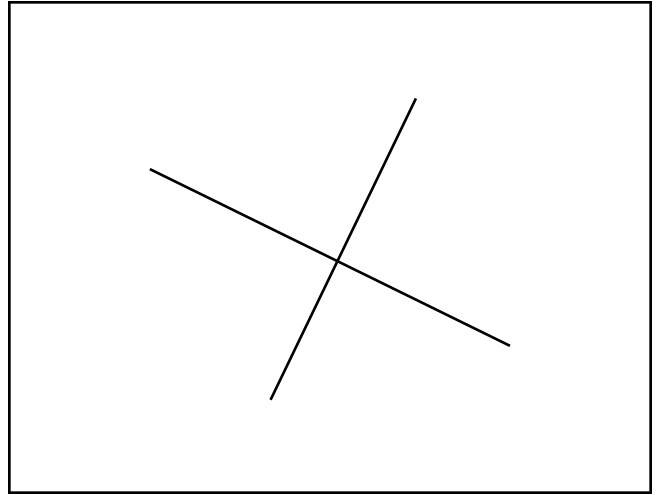
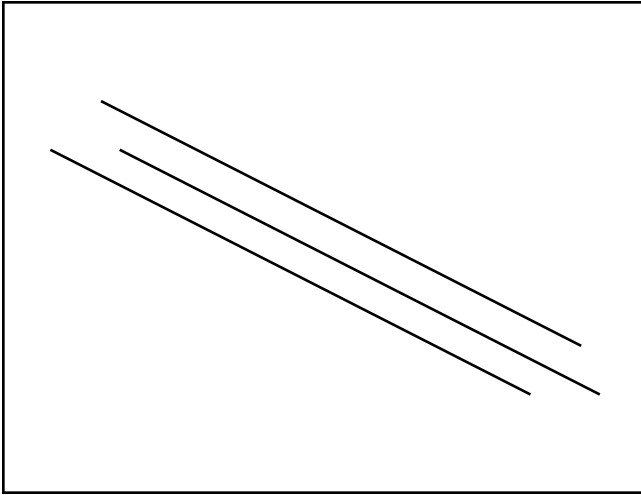
8 sides

8 angles



parallel

perpendicular



**alternate
angles**

**corresponding
angles**



J - Properties of shape
Four quadrants

PRINT

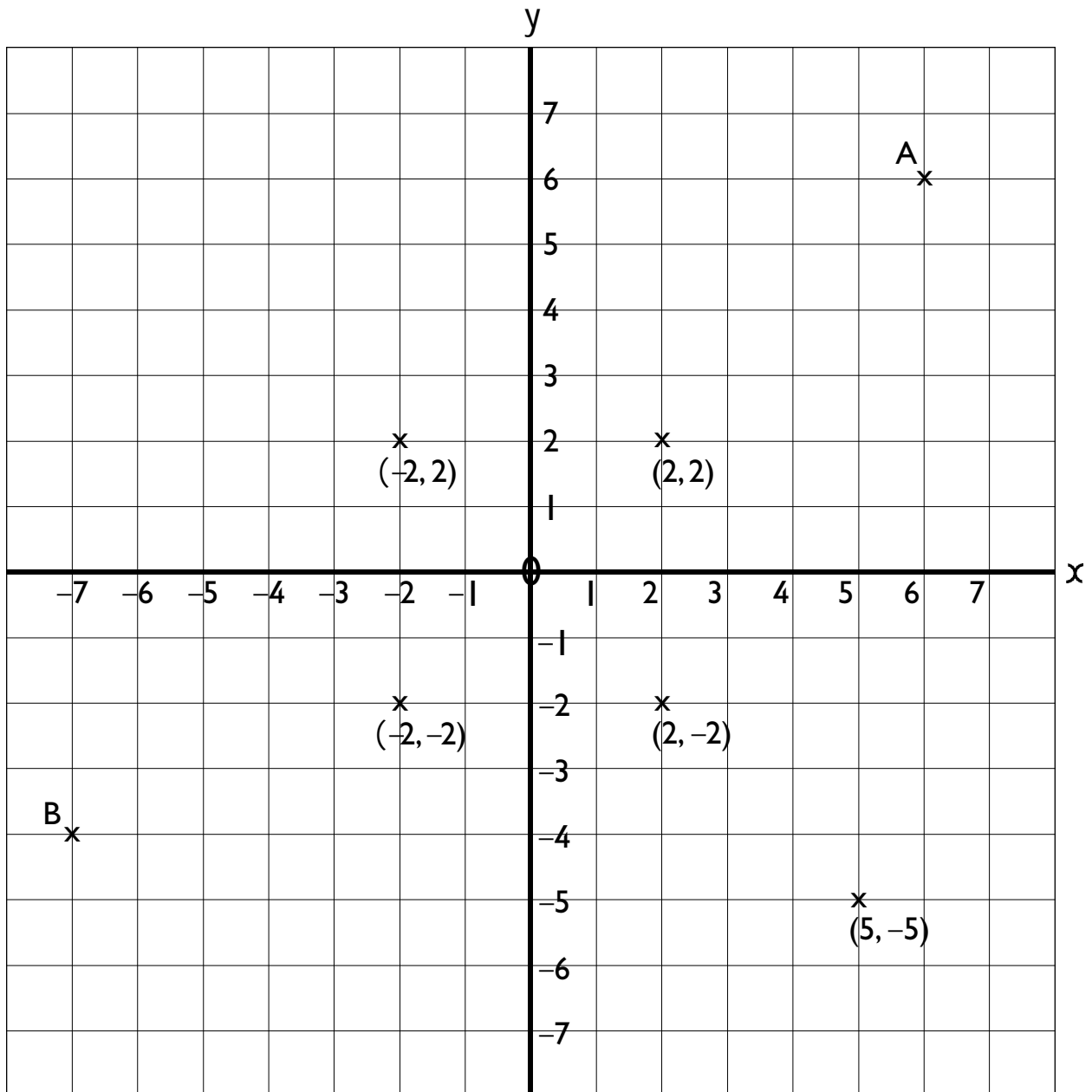


MENU



EXIT

J8





J - Properties of shape
Missing angle cards

PRINT

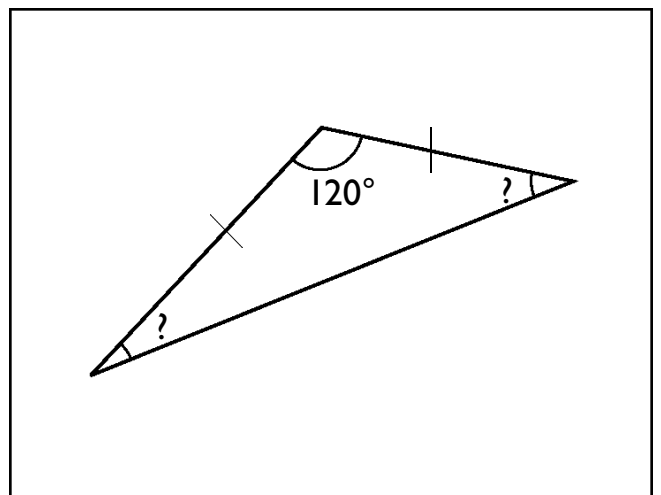
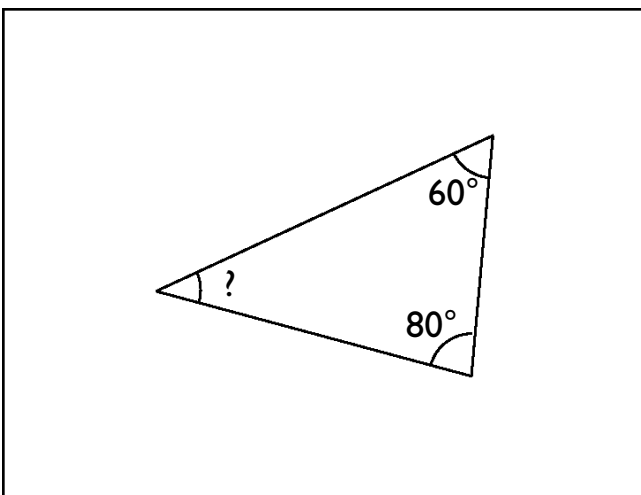
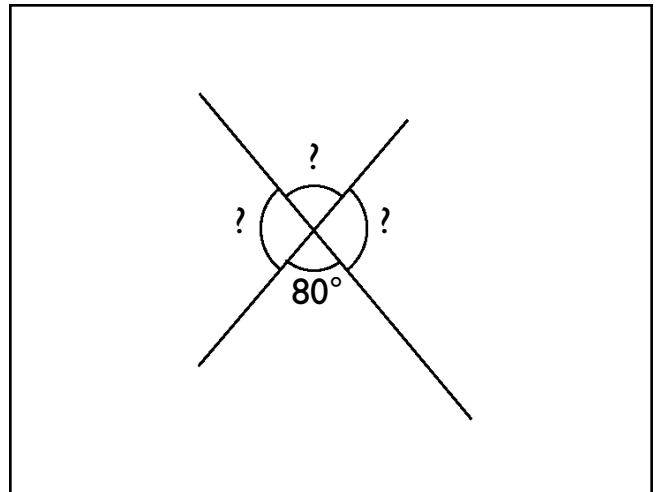
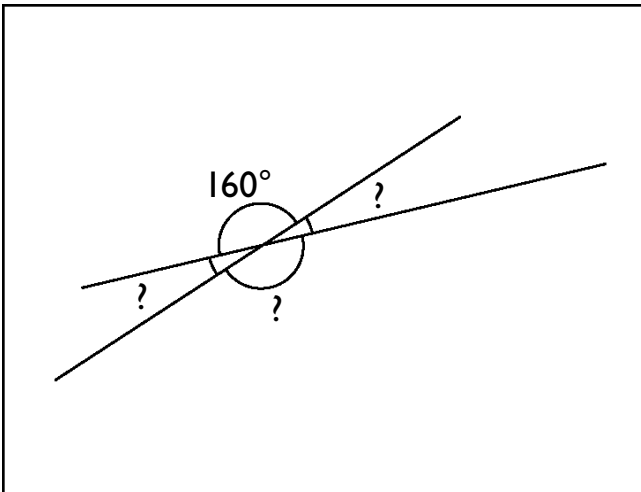
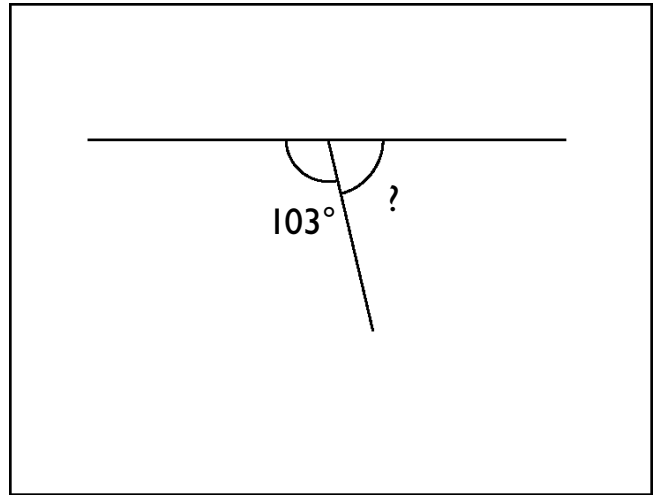
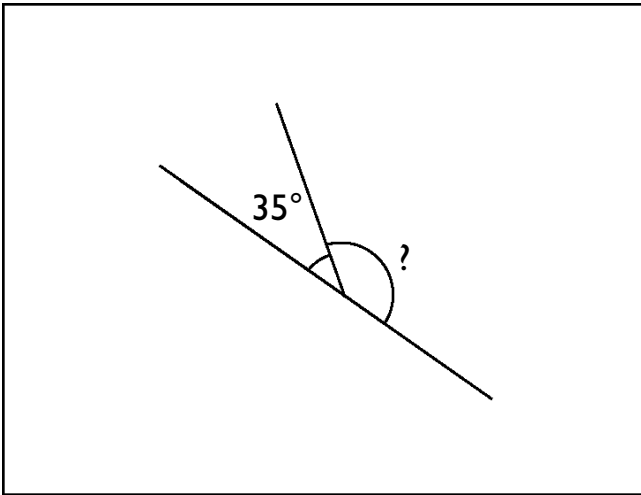


MENU



EXIT

J9





Name of pupil:

Class/Year group:

Comment

Can the pupil access the proposed unit of work in mathematics? Comment on any additional support needed.	
Does the pupil make use of visual support?	
Can the pupil read and understand some or all of the following: <ul style="list-style-type: none"> • important mathematical words in English? • short sentences in English? • longer sentences in English? 	
Is the pupil appropriately placed in the group/set/class for mathematics?	
Further comments	

Has a copy of your findings been passed to another member of staff or parent? If so, to whom?

.....

.....

Has a copy of this information been placed with other information on this pupil?

Yes/No
(delete as appropriate)

Date:	Signature:	Date of next review:
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