

Talking Points

Introduction

- Tasks are not arranged in any specific order and can be completed at any time to suit, say, curriculum coverage within your class.
- Provide a context for tasks where possible. Some tasks are likely to be more successful when given a purpose, reason or final outcome. Linking to other areas of the curriculum is particularly effective.
- Prior discussion, or in some cases class/group preparation activities, will maximise the potential of the task and enable each child to work independently and to the best of his/her ability.
- Follow-up work will enable the teacher to assess understanding, clarify misconceptions and challenge each child's ability to explain and apply what they have learned. It will also provide children with an opportunity to show-case their learning and ask questions about anything they have not fully understood.
- Checking the children's understanding of all key vocabulary when setting the task will avoid confusion or difficulties when the children are completing the homework independently.
- When introducing the homework it may be appropriate to help children to set out their working page so that they learn how to present their work clearly.
- Providing concrete materials such as coins or counters might support children who would otherwise have difficulty with some tasks.
- Some tasks are more/less challenging than others. It may be necessary to differentiate by offering more support or additional information to some groups of children or by extending with an additional challenge for the more able members of the class.

		Talking Points		
T	Thinking about	Introduction and Prior Discussion	Organisation and Follow-up	Vocabulary
I	problem solving data collection decision making research party planning team working money management calculation	<ul style="list-style-type: none"> • What do you need to know in order to plan for this event? • Who will attend the event and which activities will they want to do? How can you find out? • How will you collate your information? • What will you need to think about when planning fund raising events? 	<ul style="list-style-type: none"> • Linking to an actual event in school such as end of year or Christmas party would provide context and purpose to this task. • Opportunities for group work and planning. • Teacher will need to source a price list from a local provider for each of the activities the children may wish to include. 	approximate estimate

Mathematics 6 and 6+ Thinking Tasks: Talking Points



Talking Points				
T	Thinking about	Introduction and Prior Discussion	Organisation and Follow-up	Vocabulary
2	Understanding numbers and place value numbers beyond a million numbers in the work place research	<ul style="list-style-type: none"> • What sort of numbers might you include? • What is meant by 'written correctly'? 	<ul style="list-style-type: none"> • Appropriate for quite early in the year. • What would you call the larger numbers? • Could you create a place value chart for numbers with up to 13 digits? • How do bar codes work? 	place value digit table
3	problem solving planning decision making research (routes and methods of travel to Mars) space travel converting units of time	<ul style="list-style-type: none"> • How will you find out the time when you were born? • How might you approach the first part of the task?? • Why should you start with years and months and finish on minutes? • What do you need to know before deciding on your departure date? 	<ul style="list-style-type: none"> • Appropriate for later in the year. Possible links to PSHE or English, thinking and writing about what they might do in the future. • On which date will you be 100 000 hours old? How would you attempt to answer this question? 	months weeks days minutes seconds
4	problem solving estimation fair testing planning data collecting respiratory system exercise and a healthy life style	<ul style="list-style-type: none"> • What constitutes a breath? Agree common understanding. • What is the difference between an estimate and an approximation? • Do you breathe at the same rate all the time? What might change this rate? • What information do you need to make a good estimate of how many breaths you take? 	<ul style="list-style-type: none"> • Either link to science or P.E. looking at the importance of exercise and its impact on lifestyle. • Why is it important to maintain a regular breathing pattern? • Does counting your breaths in one minute give an accurate approximation for an hour or a day? How could you ensure that your approximation was more accurate? 	approximate estimate compare
5	decision making research enquiry planning collection and interpretation of data team work	<ul style="list-style-type: none"> • What does the statement mean to you? Explain it in your own words. • What information do you need to answer the question? • Why is your choice of cities important? 	<ul style="list-style-type: none"> • Link to geography and/or science study. • Opportunities for team work in planning and decision making. • What evidence have you got to support your view about the statement? • What have you learned about temperatures across the world? 	hemisphere equator data line graph factors observations

Mathematics 6 and 6+ Thinking Tasks: Talking Points

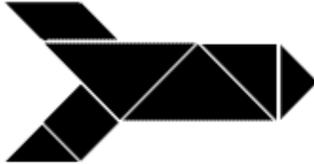


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6	investigating decision making reasoning land management design creativity area fractions	<ul style="list-style-type: none"> • What do you know and what do you need to find out? • How could you approach this task systematically? • How will you set out your work? 	<ul style="list-style-type: none"> • Link to work on area. • Possible link to DT or art through garden designs incorporating equal areas of man-made and natural surfaces. • Children should plan first and decide which page orientation best suits their work. 	divide share equally investigate diagonally
7	decision making planning organising timetabling research teamwork news reporting	<ul style="list-style-type: none"> • What could you do to prepare yourself for this task? • What do you know and what do you need to decide? • How will you present your work? • What might be the best page orientation to suit this task? 	<ul style="list-style-type: none"> • Two coloured writing pages will be needed for this task. It would be preferable to use two facing pages. • Appropriate for the end of the summer term. Possible link to class event or assembly. The homework task could become the final part of a class-based activity. • Opportunities for teamwork at planning stage. • Possible links to English, writing reports, scripts etc. 	transmission running schedule
8	problem solving reasoning systematic approaches understanding numbers	<ul style="list-style-type: none"> • What do you know that might help you with this task? • What mathematical knowledge will you need to use? • How might you approach the task? 	<ul style="list-style-type: none"> • What patterns or relationships helped you to solve the problem? 	total rectangle
9	problem solving reasoning numerical understanding calculating systematic thinking	<ul style="list-style-type: none"> • What is meant by 'in order'? • What does 'reverse order' mean? • You know that the position of each digit is constant. How might this information help you? • What role do brackets have in a calculation? 	<ul style="list-style-type: none"> • How did using brackets help you? 	digits century reverse solution brackets

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10	problem solving reasoning investigating numerical understanding exploring sequences systematic thinking identifying patterns	<ul style="list-style-type: none"> • What is meant by 'digit total'? (the sum of the digits within a number) • What do you know about digit totals in the nine times table? • Would a 4-digit multiple of nine follow the same pattern? 	<ul style="list-style-type: none"> • How would you explain the pattern of nine? • Why do you think the number nine has special characteristics? 	digit total pattern sequence rule
11	problem solving exploring sequences systematic thinking identifying patterns	<ul style="list-style-type: none"> • What do you know about this pattern? • What do you need to find out? 	<ul style="list-style-type: none"> • How many letters would there be in the nth row? 	pattern row rule
12	problem solving investigating understanding numbers exploring sequences systematic thinking identifying patterns	<ul style="list-style-type: none"> • What do you know about 18 that might help you to find a method of working out the table? 	<ul style="list-style-type: none"> • Which teen numbers are harder to find methods for? 	total double odds and evens multiple
13	problem solving place value calculating systematic thinking identifying patterns	<ul style="list-style-type: none"> • How will you set out your work? • What maths skills will you need to use for this task? • What is the key point of the task? 	<ul style="list-style-type: none"> • What can you find out about 'Kaprekar's Constant' by researching? • Can you discover anything about the mathematics behind this puzzle? 	digit largest smallest subtract
14	problem solving research investigation exploring sequences systematic thinking identifying patterns	<ul style="list-style-type: none"> • What is meant by a rule? • How do you express a rule so that it can apply to any number? 	<ul style="list-style-type: none"> • Possible links to science and art. • How did the rabbits lead Fibonacci to his sequence? • Where in nature might you find examples of this sequence? 	rule table sequence

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15	data collection interpreting data organising information research nutritional values healthy lifestyle choices	<ul style="list-style-type: none"> Looking at this range of packaged items, what information can you find on the packages? Is it all helpful? Do all packages have the same information? Is information always presented in the same way? Where else might you look for this information? 	<ul style="list-style-type: none"> Possible links to science or English report writing. Why should the consumer look for this information? Why is it not always easy to find the information we want? Why might the food companies prefer to keep the information hidden? 	calorie protein salt fibre sugar organise table
16	problem solving investigation spatial awareness systematic thinking geometry area design and creativity	<ul style="list-style-type: none"> <u>Key ideas:</u> <ul style="list-style-type: none"> - all pieces must touch; - all pieces must be flat; - no pieces may overlap; - pieces may be rotated and/or flipped. What do you know about the Tangram? How might you approach this task systematically? What will happen if you flip any of the shapes? 	<ul style="list-style-type: none"> Link to work on area or geometry. Which polygons could you make? Were there any that you could not make? 	tessellation Tangram square triangle rectangle parallelogram polygon
17	problem solving decision making spatial awareness position and direction giving instructions design	<ul style="list-style-type: none"> What is meant by 'a maze'? What makes a good maze? What strategies could you use to make your maze challenging? 	<ul style="list-style-type: none"> Possible links to history or English if reading myths. What strategies did you use to get through the maze example? 	maze command direction shade
18	problem solving investigation spatial awareness systematic thinking geometry area creativity and design	<ul style="list-style-type: none"> <u>Key ideas:</u> <ul style="list-style-type: none"> - all pieces must sit edge to edge.; - there can be no gaps; - no pieces may overlap; - pieces may be rotated and/or flipped. How might you approach this task? How will you lay out your work? Why should each tile be a different colour? 	<ul style="list-style-type: none"> Two coloured writing pages will be needed for this task. It would be preferable to use two facing pages. Children should plan first and decide which page orientation best suits their work. For the benefit of teachers this task is based on Pentominoes. 	Cinq tiles edge to edge jigsaw pieces T-shape

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19	problem solving systematic thinking reasoning numerical awareness calculation	<ul style="list-style-type: none"> • Which Key Facts might help you with this task? • Which mathematical skills will you need to use? • How will you select your numbers? • How might using brackets help you? 	<ul style="list-style-type: none"> • Emphasise the fact that each number can only be used once as part of an operation. • Choice of the 3-digit number must be random. Children might ask another person to choose it or use three dice to generate the number. 	digit operation
20	decision making spatial awareness systematic thinking geometry creativity and design	<ul style="list-style-type: none"> • What do you expect to find once you have completed your pattern? Why? • How might you approach this task? • What do you need to decide first? • Should you make the initial pattern complicated? 	<ul style="list-style-type: none"> • What do you notice about your final design? • Is there anything you would change? 	line of symmetry vertical line quadrant reflect pattern
21	problem solving investigating reasoning decision making systematic thinking numerical awareness calculation	<ul style="list-style-type: none"> • What do you know about division that might help you to solve this puzzle? • What do you notice about any of the numbers in the puzzle? • How might you approach this task? 	<ul style="list-style-type: none"> • The children are not expected to give a detailed explanation of how this works. • FYI: you may choose to share some of this with your class: • Multiplying by 7, 11 and 13 is the same as multiplying by 1001. • Multiplying a 3-digit number by 1001 produces a 6-digit repeated number, for example: • $123 \times 1001 = 123123$ • As division is the inverse of multiplication it reverses this process for example: • $123123 \div 1001 = 123$ • So: $123 \times 7 \times 11 \times 13 = 123123$ • $123123 \div 7 \div 11 \div 13 = 123$ • $123123 \div 123 = 1001$ • $123123 \div 1001 = 123$ • Challenge children to investigate and discover links to 2- digit and 4- digit numbers, such as: $2424 \div 24 = 101$ $24682468 \div 2468 = 10001$. 	digit divide multiply repeat

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22	decision making systematic thinking planning organising research team work map reading	<ul style="list-style-type: none"> • Which places would you like to visit? • Which bus could you use to get from Victoria to Hyde Park? • Would you visit Madame Tussaud's and the London Eye on the same day? Why? Why not? etc etc! • How would you travel from The Houses of Parliament to Westminster Abbey? • What other information do you need in order to plan your itinerary? • Where would you look for more information about London? 	<ul style="list-style-type: none"> • The tear-out London Bus Map is at the rear of the Workbook. • Two coloured writing pages will be needed for this task. It would be preferable to use two facing pages. • Children should plan first and decide which page orientation best suits their work. • Possible links to Geography or History. Possible link to English through non-fiction genre. • Possible links to group work for planning. 	timetable programme route
23	decision making research enquiry planning collection and interpretation of data exploration	<ul style="list-style-type: none"> • What do you think you will discover? • What evidence have you got to support your view? • What information do you need to answer the question? • How will you keep a record of the data you collect? • Why is it important to take readings at the same time each day? 	<ul style="list-style-type: none"> • November-January or June-July should result in some interesting temperatures... • Link to geography and/or science. • How could this information be presented in graph form? • How might you calculate averages? • What evidence have you got to support your conclusions? • Has your view changed? • What have you learned about temperatures in these areas the world? 	temperature information average observations conclusions
24	decision making research enquiry planning map reading	<ul style="list-style-type: none"> • What knowledge or experience have you had of cycle races? • What is meant by 'points of interest'? What is meant by 'terrain'? • What information do you need to have to plan an event like this one? • How could you present your work? 	<ul style="list-style-type: none"> • Two facing coloured writing pages will be needed for this task. • Children should plan first and decide which page orientation best suits their work. • Possible links to Geography or English through non-fiction genre. • Possible opportunities for group work in planning. 	terrain schedule