Junior Certificate School Programme



Christmas Maths

Student Workbook





An Roinn Oideachais agus Scileanna Department of Education and Skills





Christmas Maths Workbook

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1

Fill in the dates for this year from a calendar

DECEMBER 20__

unday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Use your filled in calendar to help you answer the following questions

- 1. On which day of the week is Christmas day this year?
- 2. On which day of the week is Christmas Eve this year?_____
- 3. On which day of the week is St. Stephen's Day this year?_____
- 4. On which day of the week is New Year's Eve this year?_____
- 5. What is the day and date exactly two weeks before Christmas Day?
- What is the day and date two weeks and five days before Christmas Day?_____
- 7. What is the day and date eight days before Christmas day?
- What is the day and date one week and three days before Christmas
 Day?_____

9. On what day of the week does Dec 8th fall?______

10. What is the date of the Sunday after Christmas Day?_____

- 11. What is the day and date five days after Christmas Day?
- 12. What is the day and date one week after Christmas Day?

THE TWELVE DAYS OF **CHRISTMAS**

On the first day of Christmas my true love sent to me: A Partridge in a Pear Tree

On the second day of Christmas my true love sent to me: Two Turtle Doves and a Partridge in a Pear Tree

On the third day of Christmas my true love sent to me: Three French Hens Two Turtle Doves and a Partridge in a Pear Tree

On the fourth day of Christmas my true love sent to me: Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree



On the fifth day of Christmas my true love sent to me: **Five Golden Rings** Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree

On the sixth day of Christmas my true love sent to me:

Six Geese a Laving **Five Golden Rings** Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree On the seventh day of Christmas my true love sent to me: Seven Swans a Swimming Six Geese a Laying Five Golden Rings Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree

On the eighth day of Christmas my true love sent to me: Eight Maids a Milking Seven Swans a Swimming Six Geese a Laying **Five Golden Rings** Four Calling Birds **Three French Hens** Two Turtle Doves and a Partridge in a Pear Tree

On the ninth day of Christmas my true love sent to me: Nine Ladies Dancing Eight Maids a Milking Seven Swans a Swimming Six Geese a Laying Five Golden Rings Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree

On the tenth day of Christmas my true love sent to me: Ten Lords a Leaping Nine Ladies Dancing Eight Maids a Milking Seven Swans a Swimming Six Geese a Laying **Five Golden Rings** Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree



On the eleventh day of Christmas my true love sent to me: **Eleven Pipers Piping** Ten Lords a Leaping Nine Ladies Dancing **Eight Maids a Milking** Seven Swans a Swimming Six Geese a Laying Five Golden Rings Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree

On the twelfth day of Christmas my true love sent to me: 12 Drummers Drumming **Eleven Pipers Piping** Ten Lords a Leaping Nine Ladies Dancing **Eight Maids a Milking** Seven Swans a Swimming Six Geese a Laying Five Golden Rings Four Calling Birds Three French Hens Two Turtle Doves and a Partridge in a Pear Tree



THE TWELVE DAYS OF CHRISTMAS

Read the words of the song and answer the questions below

How many presents were given each day?

DAY	TOTAL
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

Look at the total column. Do you notice anything about the pattern of numbers?

How many of each type of present was given altogether?

PRESENT	
	TOTAL
Partridge	
Turtle doves	
French hens	
Calling birds	
Gold rings	
Geese	
Swans	
Maids	
Ladies	
Lords	
Pipers	
Drummers	

Which was the present that the true love gave the most of? _____

Which was the present that the true love gave the least of? ______

Length and Area



- 1. Estimate the area of the pot _____
- 2. Find the area of the pot ______
- 3. Estimate the area of the Christmas tree including its trunk_____
- 4. Find the area of the Christmas tree including its trunk_____
- 5. Measure the perimeter of the pot to the nearest mm_____
- 6. Measure the perimeter of the tree (without the trunk) to the nearest mm_____



Write the co-ordinates of the following:

Crib (_, _)	Walking stick (_, _)
Turkey (_, _)	Star (_,_)
Holly (_,_)	Walking Stick (_,_)
Wreath (_,_)	Santa Hat(_,_)
Reindeer Head(_, _)	Tip of Candle Flame (_, _)
Gift (_, _)	Snowman Nose (_, _)



Can you help your mam to do the Christmas shopping? Look through your Argos catalogues and find presents for all the family!

Make sure that you don't go over the budget of €600!!!

Dad wants an electric shaver and new watch.	Dad Page number: Item: Cost: Page number: Item: Cost:
Grandad wants a golf bag and some golf balls.	<u>Grandad</u> Page number: Item: Cost:
	Page number: Item: Cost:
Grandma would like jewellery.	<mark>Grannny</mark> Page number: Item: Cost:
	Page number: Item: Cost:



Co-ordinates: Draw the reindeer using the co-ordinates below **Nose:**

(8,11) (7,12) (7,13) (8,14) (10,14) (11,13) (11,12) (10,11) (8,11)

Eyes:

1. (5,16) (5,18) (7,18) (7,16) (5,16)

2. (11,16) (11,18) (13,18) (13,16) (11,16)

Antlers:

1. (6,20) (6,22) (5,22) (5,23) (4,23) (4,24) (3,24) (3,25) (2,25) (2,26) (0,26) (0,25) (1,25) (1,24) (2,24) (2,23) (3,23) (3,22) (4,22) (4,21) (5,21) (5,20) (6,20)

2. (13,20) (13,21) (14,21) (14,22) (15,22) (15,23) (16,23) (16,24) (17,24) (17,25) (18,25) (18,26) (16,26) (16,25) (15,25) (15,24) (14,24) (14,23) (13,23) (13,22) (12,22) (12,20) (13,20)

Chin (line):

(5,9) (5,8) (6,8) (6,7) (7,7) (7,6) (11,6) (11,7) (12,7) (12,8) (13,8) (13,9)

Mouth: (line)

(7,9) (8,8) (10,8) (11,9)





Place the digits 1-9 in each of the $\frac{1}{2}$ shapes so that each of the three sides add up to the same total. You may use each digit only once.





1. What is the difference in height in the following pairs of trees?



2. Calculate the total height of trees A,B, and C

3. Calculate the total height of the 3 tallest trees

4. Calculate the total height of the 3 smallest trees

5. Calculate the average(mean) height of the seven trees

The trees grow 3cms every month. Calculate the height of each tree after one more year

Tree	Α	В	С	D	E	F	G
Now							
Growth							
in 1 year							
In 1 years							
time							

CHOCOLATE CHRISTMAS DECORATIONS

All the decorations can be bought individually or in packs of twelve of any one type

	1.	What would be the price of a pack of twelve bells?	
	2.	What would be the price of a pack of twelve Santas?	
	3.	What would be the price of a pack of twelve snowmen?	
Tw	elve	e packs are packed into one box.	
	4	What would be the price of a box of bells?	
	5	What would be the price of a box of Santas?	
	6	What would be the price of a box of snowmen?	
On	e hu	indred boxes are packed in container.	
	7	What would be the price of a container of bells?	
	8	What would be the price of a container of Santas?	
	9	What would be the price of a container of Snowmen?	
Sup sno	oerv own	value orders 1 containers of bells, 5 containers of Santas and 2 containers.	ntainers of
	10.	What is the value of all of these chocolate decorations?	
Bec	aus	e Supervalue is buying so many decorations they are given a 25%	discount.
	11.	How much is the discount?	
	12.	How much do Supervalue have to pay?	

Toy Factory Workshop (1)

In the months leading up to Christmas, a toy factory was busy preparing for the Christmas orders.

The table below shows the number of toys made each month from June to November.

Toys	June	July	August	September	October	November
Boardgames	16	26	31	20	22	17
Bicycles	20	20	22	18	20	20
Footballs	28	18	20	25	21	14
Skateboards	25	23	27	21	22	20
Teddy Bears	10	17	15	19	12	11
TOTALS						

Use the information in the table to answer the questions below.

Complete the following:

- 1. A total of ______ boardgames were made.
- 2. A total of ______ bicycles were made.
- 3. A total of ______ footballs were made.
- 4. A total of ______ skateboards were made.
- 5. A total of ______ teddy bears were made.
- 6. In June a total of ______ toys were made.
- 7. In June a total of _____ toys were made.
- 8.In June a total of ______ toys were made.
- 9. In June a total of ______ toys were made.
- 10. In June a total of ______ toys were made.
- 11.In June a total of ______ toys were made.

12. During the six months leading up to Christmas a total of ______toys were made.

Toy Factory Workshop (2)

Look at the table in worksheet 1 again

Calculate the average (mean) number of each toy made each month by adding the numbers made each month and dividing the total by the number of months. The first one is done for you.

Тоуѕ	Total made	Calculation needed	Mean
Boardgames	16 + 26 + 31 + 20 + 22 + 17 = 132	132 ÷ 6	22
Bicycles			
Footballs			
Skateboards			
Teddy Bears			

The factory has an order for 150 of each type of toy for Christmas. How many more of each type of toy must be made?

Boardgames	Workspace
Bicycles	
Footballs	
Skateboards	
Teddy bears	



The turkey in the picture weighed **5Kilos** before it was cooked.

The ham weighs **4Kilos** before it was cooked.

To cook the turkey properly it should be in the oven at 180 degrees for approximately **40mins per Kilo**.

To cook the ham properly it should be cooked approximately **60mins per Kilo**

- For how many minutes should this turkey be in the oven?
- 2. How many hours and minutes is this?_____
- 3. If the family dinner is at 1p.m. what time should the turkey be put in the oven?_____
- 4. If the family dinner is at 1p.m. what time should the ham be put on to cook?_____
- 5. If the family dinner is at 2.30p.m. what time should the turkey be put in the oven ?_____
- 6. If the family dinner is at 2.30p.m. what time should the ham be put on to cook? _____
- If the family dinner is at 5.00p.m. what time should the turkey be put in the oven ?_____
- 8. If the family dinner is at 5.00p.m. what time should the ham be put on to cook?_____

The table below shows cooking times for different sized turkeys

Some of the table has been filled in for you.

Complete the rest of the table



Weight of turkey	Cooking time(minutes)	Cooking time(hours and minutes)	Time in the oven	Time out of the oven
3.0Kg			11.00am	
3.5Kg			11.30am	
4.0Kg			10.00am	
4.5Kg			10.30am	
5.0Kg			10.00am	
5.5Kg				1.30pm
6.0Kg				2.00pm
6.5Kg				2.30pm
7.0Kg			11.15am	
7.5Kg			9.45am	
8.0Kg				2.00pm
8.5Kg			11.00am	
9.0Kg				2.30pm
9.5Kg			10.00am	
10.0Kg				3.00pm

Christmas Day – 25th DECEMBER







- 1. What is the square root of 25?
- 2. What is 25 squared?
- 3. Two square numbers add up to 25. What are they?
- 4. 25 has three factors. What are they?
- 5. Count in 25's



6. 997 - the digits add up to 25. List 4 other three digit numbers that add up to 25

7. Using only prime numbers, how many ways can you make 25?









Doubles

Double each number below in the coded message and write down what letter it represents from the charts. Each letter has three possible code numbers.

Α	22, 1	LOO, 15	54		I	150, !	58, 18	2		R	42,	76,	112	
В	48, 1	166, 18	30		J	6, 86	, 186			S	16,	40,	194	
c	46, 5	6, 92			к	44, 8	8, 192			т	152	, 80,	110	
D	2, 16	50, 176	5		L	32, 60	5, 170			U	18,	94,	108	
E	E 26, 62, 178			м	M 70, 90, 156				V 20, 54, 60					
F	F 114, 98, 188			N	N 8, 84, 136				W 24, 106, 140					
G	G 28, 68, 148			ο	72, 102, 192				X 34, 104, 138					
н	30, 6	64, 96			Р	36, 8	2, 160)		Y	12,	38,	200	
					Q	14, 7	74, 12	4		Z	10,	78,	50	
18	13	11	46	89		93	96	19		5	50	42	88	
36									_					
Р									_					
	48	77	41	80		29	68	31	20	<u>_</u>	97			
		76	51			100	36	54						

Lá Nollag Christmas Day



RTÉ Two 3rd and Bird 34397564 6.30 A 6.10 Child's Christmas 94541212 7.00 The Little Reindeer 89276293 FILM: Den Movie Barbie in a 7.25 Christmas Carol (2008, Animation) Children's movie. **** 81349477 **Fluffy Gardens Christmas** 8.40 79317564 9.05 T.O.A.S.T. Christmas Special 60918274 9.50 Test the Teachers (S) 64185090 FILM: TMNT (P) (2007, Action) 10.20 Computer animated revival of the E cult film series about four martialarts-trained turtles. The righteous reptiles reunite to repel an industrialist who plans to take over New York. (S) ***** 38006903 Lost and Found 87658106 12.05 11.40 Merry Madagascar (S) 37946922 12.30 On the Block (S) 12231835 12.55 The Simpsons (S) 82578038 1.20 The Riordans: Tea, Taboos and Tractors 56410545 FILM: The Searchers (1956) Epic 2.15 western about the search for an abducted girl. Starring John Wayne. (S) (Followed by Cinnlínte Nuachta) **** 76073274 FILM: Butch Cassidy and the 4.10 Sundance Kid (1969) Oscar-E winning western about a couple of train robbers who are forced to go on the run when the Union Pacific Railroad tires of being targeted and sets a posse on their trail. Starring Paul Newman. (S) (Followed by Cinnlínte Nuachta) ***** 90960800 The Simpsons Bart, Lisa and 6.25 their classmates fight for survival when they become stranded on a remote island. (S) 54964670 The Big Big Movie: Toy Story 6.45 (1995, Animation) Computer-animation in which a child's toys come alive whenever he leaves the room. Leader of the pack Woody finds his authority usurped by the arrival of an impressive astronaut figure who goes by the name of Buzz Lightyear. With the voice of Tom Hanks. (S) ***** 90965583 Vincent O'Brien: The Master A 8.05 profile of the late Irish horse trainer Vincent O'Brien, regarded by many as an important influential sportsman. (S) 67442274 FILM: Once (P) (2006, Drama) 9.00 Low-key musical romance about E a shy Dublin busker who falls for a Czech immigrant. Starring Glen Hansard and Markéta Irglóva. (S)

***** 15609922 FILM: The Commitments (1991, 10.25 Comedy) Spirited musical tale of an entrepreneurial young Dubliner who assembles a raw band to perform '60s soul. Starring Robert Arkins. (S) ********* 46331699 FILM: My Left Foot (1989, Drama) 12.20 Moving and humorous adaptation of Christy Brown's best-selling autobiography. Starring Daniel Day-Lewis. (S) ***** 29532572 FILM: Jean de Florette (1986, 2.00 Drama) Starring Yves Montand,

Gerard Depardieu and Daniel Auteuil. With English subtitles. **** 75544299 EuroNews 65293775 3.55

22



TG4

na nÓg 83353583 7.01 Dora agus na Finscéalta (OS) 41461125 FILM: The Little Polar Bear (OS) (2002, Animation) Children's animation in which a polar bear cub and a seal pup team up to stop their frozen home from being destroyed by a ship. ***** 24871545 Ben 10 59476767 9.40 Eliot Kid 64182903 10.10 Michael Jackson – Na Videos 33542212 FILM: The Lizzie McGuire Movie (2003, Adventure) With Hilary Duff and Adam Lamberg. Family comedy that sees Lizzie flying to Italy and impersonating a teen pop idol. ********* 57310922 **Pop 4** 32491748 **1.35** FILM: Jack Frost (1998, Comedy) A musician who neglects his family and is killed in a car accident is reincarnated as a snowman. Starring Michael Keaton and Kelly Preston. ***** 75713729 An Aimsir Láithreach 20018496 3.50 Siar Um Nollaig 79556545 4.20 Nuacht TG4 (Followed by An Aimsir Láaithreach) 88983583 4.30 Ceol Daniel (OS) 51632800 Highlights from this year's GAA 2009 - Na Cúil (OS) A rundown of the best 15 hurling and football goals. 14925106 Anam an Amhráin (OS) Singer larla Ó Lionaird travels Ireland to reinterpret music. (Followed by An Aimsir Láithreach) 67263361 FILM: Into the West (1992, Fantasy) The tale of a white horse that takes two young brothers on a fantastic adventure. Starring Gabriel Byrne, Ellen Barkin. Geantraí (OS) Matt Molloy's in Westport celebrates its 20th EuroMillions Draw 72609816 Geantraí (Continued) 61086583 Diabhal ag an Damhsa (OS) Exploring the night of June 6th 1958 when the devil was said to have appeared. 83469835 **Ballroom of Romance William** Trevor's observation of love and life in 1950s Ireland. 51027670 11.40 Top 50 GAA lomáint 15441477 FILM: Fear and Loathing in Las Vegas (1998, Drama) Starring Johnny Depp, Benicio Del Toro. ***** 71408065

TV3

8.00

10.45

11.45

6.20 **Christmas Movie: Hansel an** Gretel (1988, Children's) With Cloris Leachmanand Hugh Poll Family musical based on the fa tale by the Brothers Grimm. **** 47443941 Christmas Movie: Anna and the King (1999, Romance) V Yun-Fat Chow and Jodie Fost Period drama based on a true story. ******** *52578941* Emmerdale *18815583* **11.15** Coronation Street 1881249 **Christmas Movie: Muppets** from Space (1999, Comedy) With F Murray Abraham and Je Tambor. Gonzo must decide whether to jet off into space to his new-found alien family or s with his furry friends on Earth. ***** 91817212 **Christmas Movie: Beethove** 1.25 (1992, Comedy) About a family adopt a large, loveable St Bern dog who wreaks havoc. Starrin Charles Grodin. ***** 8338 Christmas Movie: Richie Ri 3.05 (1994, Comedy) Richie Rich is wealthiest boy in the world, wi everything except companions Starring Macaulay Culkin and Larroquette. *** ** 419347 Some Mothers Do 4.55 'Ave 'Em 86556274 Emmerdale Cain and Char 6.00 remain at odds. Mark is torn about leaving Natasha. 7781 **Coronation Street Will Mo** 7.00 and Kevin stick to their plan reveal all? Tina is suspicious Nick's intentions. 10869564 8.00 **Deal or No Deal: Christma** Special Game show hosted illusionist Keith Barry. 10878 Christmas Movie: Ocean's 9.00 Thirteen (P) (2007, Action) Sequel. The remaining mem of the gang regroup to jeopa the plans of a businessman double-crossed one of Dann old friends. Starring George Clooney and Al Pacino. ** 14436534 11.25 **Christmas Movie: Quick** Change (1990, Comedy) (comedy about a man whose ingenious plans go awry. St Bill Murray, Geena Davis an Randy Quaid. ***** 5411 1.05 FILM: The Clearing (2004 Drama) Measrued Thriiler. Starring Robert Redford, H Mirren. ***** 11060794 3.40 FILM: Suspect Zero (2003 Thriller) About a serial killer targeting anyone. Starring A Eckhart. ***** 33434688 5.20 **Restaurant Makeover 549**

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TV viewing on Christmas Day

Look at the page from the RTE Guide and answer the following questions:

1. Which of the four TV stations starts the earliest? 2. What length of time do the following films run for: (i) The Devil Wears Prada (RTÉ One) hrs and mins Once (RTÉ Two) (ii) ____hrs and ____ mins The Commitments (RTÉ Two) (iii) hrs and mins Some Mothers Do 'Ave 'Em ____hrs and ____ mins (iv) Into The West (TG4) hrs and mins (v) Ocean's Thirteen (TV3) hrs and mins (vi) 3. Your mother wants to watch fair City and you want to see Butch Cassidy and the

Sundance Kid followed by The Simpsons. You have to record these on a 3hour DVD When both of these are recorded, how many recording minutes are left on the DVD?

- 4. Which station has the latest start time for its final programme on Christmas Day?
- Choose six films from the Christmas Day list and do a survey of your classmates favourite films. Use a table like this:

Film	Number of students

6. Draw a bar chart to represent this information: