



a place of mind

FACULTY OF EDUCATION

Department of
Curriculum and Pedagogy

Mathematics

Shape and Space: Measurement (Calendar)

Science and Mathematics
Education Research Group

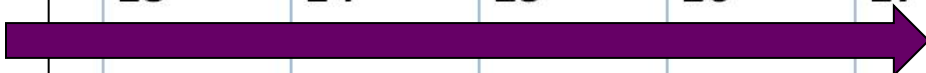
Measurement: Calendar

March 2011						
SUN	MON	TUES	WED	THURS	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Measurement: Calendar

March 2011						
SUN	MON	TUES	WED	THURS	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

**Today's
date is
March 17th,
2011**



Measurement: Calendar I

How many days are there in a week?

- A. 8
- B. 6
- C. 5
- D. 7



Solution

Answer: D

Justification: There are seven days in a week

1. Sunday
2. Monday
3. Tuesday
4. Wednesday
5. Thursday
6. Friday
7. Saturday

Measurement: Calendar II

How many months are there in a year?

- A. 10
- B. 9
- C. 12
- D. 13



Solution

Answer: C

Justification: There are 12 months in a year.

1. January

2. February

3. March

4. April

5. May

6. June

7. July

8. August

9. September

10. October

11. November

12. December

Solution

Answer: E

Justification: There are 365 days in a calendar year. This is the length of time it takes for the earth to revolve around the sun.

There are 7 days in a week, and 52 weeks in a year.

$$7 \times 52 = 364.$$

There are 4 seasons in a year. Each season is approximately 90 days long.

$$4 \times 90 = 360.$$

There are 12 months in a year. 7 months are 31 days, 4 are 30 days, and 1 is 28 days long.

$$(7 \times 31) + (4 \times 30) + 28 = 217 + 120 + 28 = 365.$$

Solution

Answer: D

Justification: Since the year is 365 days long (leap year 366) the number of weeks in a year is 365 divided by 7 days in a week, which is just over 52.

It is 52 weeks and one day for a regular year, and 52 weeks and two days for a leap year.

This explains why the day of the week that your birthday falls on changes each year.

Alternative Solution

Answer: D

Justification: There are just over four weeks in a month, but not quite four and a half. There are 12 months in a year.

$$4 \times 12 = 48$$

$$4\frac{1}{2} \times 12 = 54$$

Because there are more than four weeks in a month, but less than $4\frac{1}{2}$, we know the number of weeks must be between 48 and 54.

Extend Your Learning: Activity

The screenshot shows the Math's Fun website interface. At the top left is the logo "MATH'S FUN" with the tagline "Enjoy learning!". To the right are social media icons for Twitter, YouTube, Facebook, and a link icon, along with a Google+ button showing "+1" and "11". A search bar with a "Search" button is located below the navigation menu. The navigation menu includes links for Home, Numbers, Algebra, Geometry, Data, Measure, Puzzles, Games, Dictionary, and Worksheets. A banner advertisement for "A PASSIONATE PLACE" at Pacific Sands Beach Resort, Tofino, with a "BOOK NOW" button, is displayed. The main content area is titled "Day of the Week" and contains the following text:

Ever wonder what day you were born on? Well, you can find out with this neat little script. Simply type your date of birth in the box below, and it will tell ya'...honest!

Zeller's Algorithm can be used to determine the day of the week for any date in the past, present or future, for any dates between 1582 and 4902.

To use this algorithm, input your date of birth, press "ok" and then *boom* the day of the week in which you were born on appears.

The "Zeller's Algorithm" form includes a "Month:" dropdown menu set to "February" and a "Day:" dropdown menu set to "12".

<http://www.mathsisfun.com/games/dayofweek.html>

Measurement: Calendar V

In which list are the days of the week listed in the correct order?

A	B	C	D
Monday	Sunday	Sunday	Monday
Tuesday	Monday	Monday	Tuesday
Wednesday	Tuesday	Tuesday	Wednesday
Friday	Wednesday	Wednesday	Thursday
Thursday	Thursday	Thursday	Saturday
Saturday	Friday	Saturday	Friday
Sunday	Saturday	Friday	Sunday

Solution

Answer: B



The Days of the Week. • Les jours de la semaine.				
#	French	Pronunciation	English	Origin
1	lundi	<i>luh-dee</i>	Monday	Moon
2	mardi	<i>mahrdee</i>	Tuesday	Mars
3	mercredi	<i>maircruhdee</i>	Wednesday	Mercury
4	jeudi	<i>juhdee</i>	Thursday	Jupiter
5	vendredi	<i>vah-druhdee</i>	Friday	Venus
6	samedi	<i>sahmdee</i>	Saturday	Saturn
7	dimanche	<i>deemah-sh</i>	Sunday	Sun

Measurement: Calendar VI

What days are missing from this week?

Monday, Tuesday, Wednesday, Thursday, Friday

- A. Saturday, Sunday, Monday
- B. Saturday, Sunday
- C. Friday, Saturday
- D. Sunday, Monday, Tuesday
- E. None

Solution

Answer: B

Justification: Only the weekdays are listed, so we must add in the weekend! Saturday and Sunday make up the weekend.

In North America, the week begins with Sunday, not Monday.



Measurement: Calendar VII

Which day of the week comes after Saturday?

- A. Monday
- B. Friday
- C. Sunday
- D. Thursday

January 2013						
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Solution

Answer: C

Justification: Saturday is the last day of the week. Sunday is the first day of the week.

January 2013						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Measurement: Calendar VIII

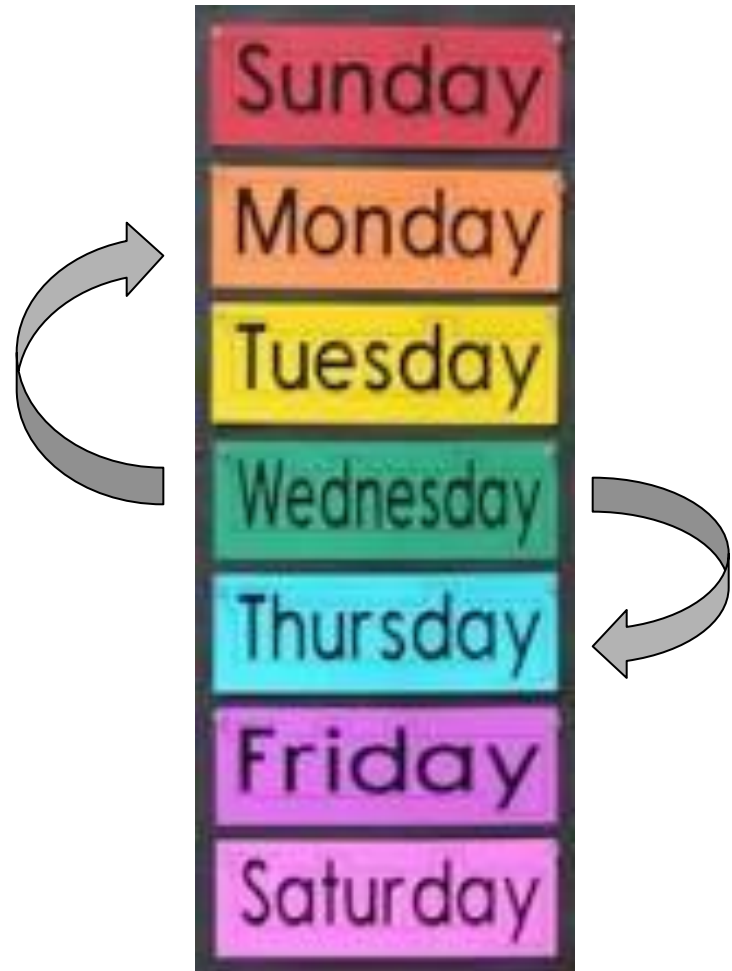
Two days ago was Monday, tomorrow will be _____

- A. Sunday
- B. Wednesday
- C. Thursday
- D. Tuesday

Solution

Answer: C

Justification: If two days ago was Monday, that makes today Wednesday. Therefore, tomorrow will be Thursday.



Measurement: Calendar IX

Identify which months of the year are in the correct order:

A	B	C	D
January	September	September	January
February	October	October	February
March	November	November	March
April	December	January	April
June	January	December	May
May	March	February	June
July	April	March	July
August	May	May	August
October	June	April	September
November	July	June	October
December	August	July	November
September	February	August	December

Solution

Answer: D

Justification:

January	July
February	August
March	September
April	October
May	November
June	December

Measurement: Calendar X

What months are missing to complete the year?

January, March, April, May, July, August,
September, December

- A. February, June, November
- B. October, February, June
- C. February, June, October, November
- D. February, May, June, October, November
- E. None

Solution

Answer: C

January	July
February	August
March	September
April	October
May	November
June	December

Measurement: Calendar XI

It is currently **June**. The month **before** is _____, the month **after** is _____.

- A. March and August
- B. July and August
- C. May and August
- D. May and July



Solution

Answer: D

Justification: MONTHS OF THE YEAR



Measurement: Calendar XII

What is the date, **today**? (green box on calendar)

A. June 11th, 2013

B. June 12th, 2013

C. July 12th, 2013

D. June 13th, 2013

June 2013						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Solution

Answer: B

Justification: At the top of the calendar, we can see that it is labeled as “June 2013.”

Looking at the coloured date, we know the date is the 12th.

Putting it all together, we get June 12th, 2013.

Measurement: Calendar XIII

If today is coloured in green, What is the date **tomorrow**?

A. June 24th, 2013

B. June 23rd, 2013

C. June 25th, 2013

D. July 25th, 2013

June 2013						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

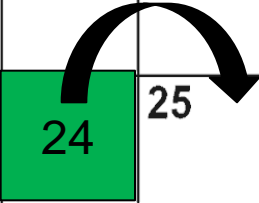
Solution

Answer: C

Justification: Today is June 24th, 2013. The next day will be one higher, in the same month and year.

June 25th, 2013

June 2013						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29



Measurement: Calendar XIV

Today is highlighted in green. What was the date, **yesterday**?

A. June 20th, 2013

B. July 19th, 2013

C. June 21st, 2013

D. June 19th, 2013

June 2013						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Solution

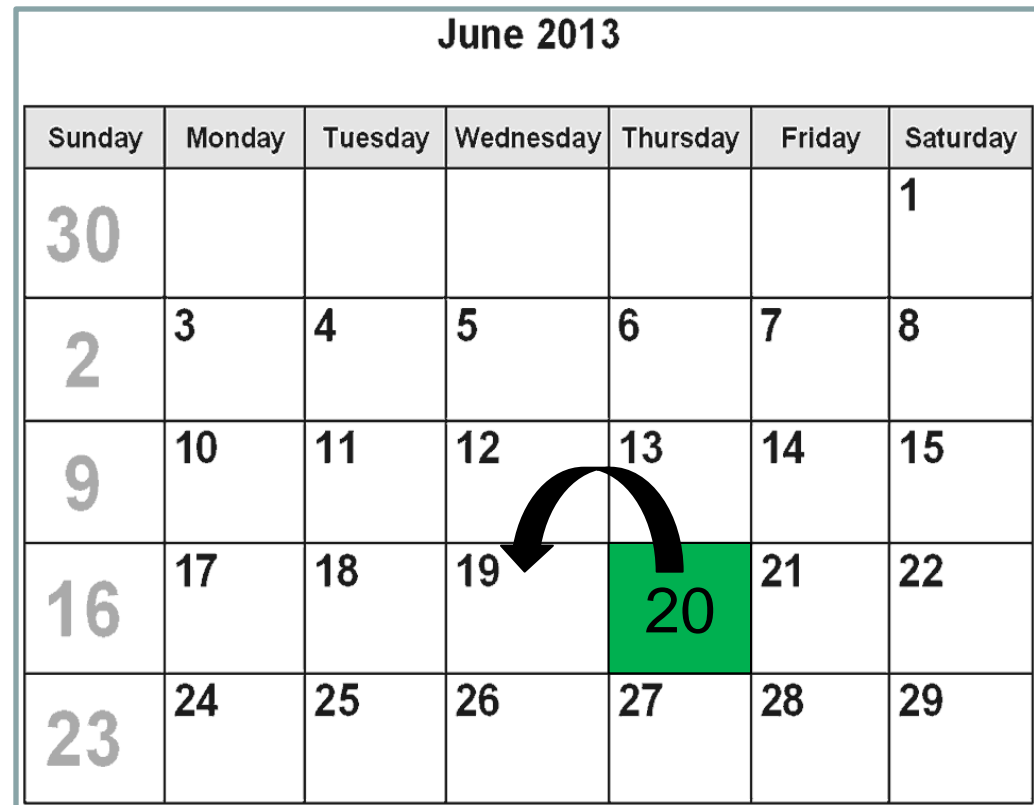
Answer: D

Justification: Today is June 20th, 2013.

Yesterday's date will be one less, but in the same month and year.

June 19th, 2013

June 2013						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29



Measurement: Calendar XV

Today is June 12th, 2013

Two days from now will be.....

- A. June 10th, 2013
- B. July 11th, 2013
- C. June 12th, 2013
- D. June 13th, 2013
- E. June 14th, 2013



Solution

Answer: E

Justification: Today is June 12th, 2013. To get the date two days from now, we must add 2 to today's date.

$$12 + 2 = 14$$

Since it is still the same month and year, we get June 14th, 2013

Measurement: Calendar XVI

Yesterday was June 11th, 2013

Tomorrow will be.....

- A. June 10th, 2013
- B. July 12th, 2013
- C. June 12th, 2013
- D. July 13th, 2013
- E. June 13th, 2013



Solution

Answer: E

Justification: Yesterday was June 11th, which makes today June 12th, therefore, tomorrow will be June 13th.

Measurement: Calendar XVII

Today is Wednesday, June 12th, 2013

In one week it will be _____.

- A. June 18th, 2013
- B. July 19th, 2013
- C. June 21st, 2013
- D. June 19th, 2013



Solution

Answer: D


Justification: There are seven days in a week.

Adding $12 + 7 = 19$.

It is still June, 2013

Therefore, next week, it will be June 19th, 2013.

JUNE 2013						
SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						



Measurement: Calendar XVIII

Today is Wednesday, June 12th, 2013

In nine days it will be _____.

- A. Wednesday, June 19th, 2013
- B. Tuesday, June 18th, 2013
- C. Friday, June 21st, 2013
- D. Thursday, June 20th, 2013
- E. Thursday, June 21st, 2013



Solution


Answer: C

Justification: 9 days is one week and 2 days.

We know that one week from today is June 19th, 2013.

Adding 2 days, we get June 21st, 2013.

JUNE 2013						
SUN	MON	TUE	WED	THU	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						



Measurement: Calendar XIX

The days of the week are listed in the correct order.

Which of the following sets is **shorter** than a week?

- A. Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, Monday
- B. Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
- C. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
- D. Sunday, Monday, Tuesday, Wednesday, Thursday, Friday

Solution

Answer: D

Justification: A week has seven days. A and B each have more than seven days. C has exactly seven days listed. D is the only one with fewer than seven days.

Measurement: Calendar XX

Which time span is **longer** than a week?

- A. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
- B. Wednesday, Thursday, Friday, Saturday, Sunday, Monday, Tuesday, Wednesday
- C. Thursday, Friday, Saturday, Sunday, Monday, Tuesday, Wednesday
- D. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday

Solution

Answer: B

Justification: There are 7 days in a week.

Group A and C have exactly 7 days.

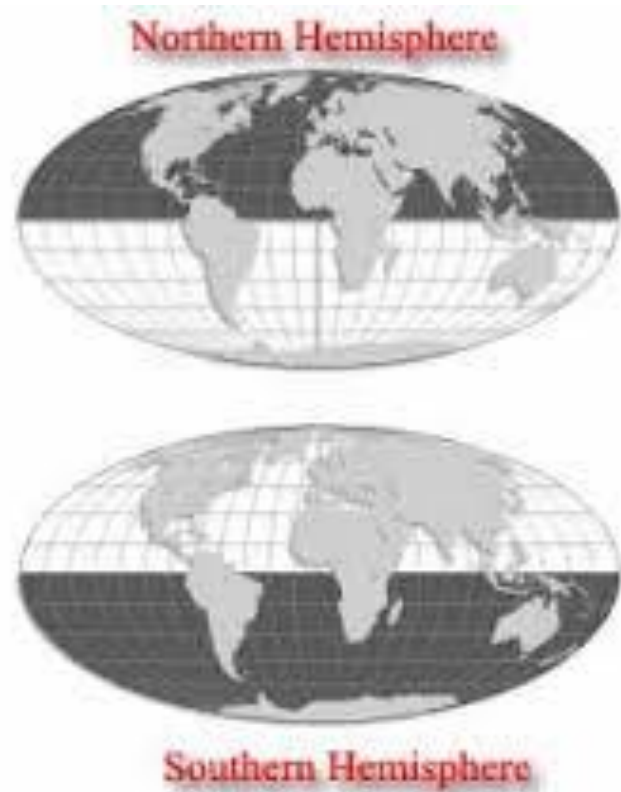
Group D has 6 days.

Group B has 8 days, which is longer than a week.

Measurement: Calendar XXI

In the northern hemisphere what season includes the longest day of the year?

- A. Spring
- B. Fall
- C. Winter
- D. Summer



Solution

Answer: D

Justification: For the northern hemisphere the longest day of the year comes during the summer solstice, typically near June 21/22 for the northern hemisphere. This is the first day of Summer.

After this day daylight decreases, leading up to the winter solstice, around December 21, at which point the days begin to get longer again. This is the first day of Winter.

Measurement: Calendar XXII

In the southern hemisphere what season includes the shortest day of the year?

- A. Spring
- B. Fall
- C. Winter
- D. Summer



Solution

Answer: D

Justification: In the southern hemisphere the shortest day of the year is during the winter season. This takes place near June 21st.

In the southern hemisphere, the seasons are opposite from those in the northern hemisphere.

See this [Link](#) for more information.

Measurement: Calendar XXV

In a leap year, what month of the year includes the leap day?

- A. December
- B. January
- C. September
- D. February

[Redacted]						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

Solution

Answer: D

Justification: February is the month of the year which includes a leap day.

FEBRUARY 2012						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

Measurement: Calendar XXVI

Kwame was born on February 29th, 2004.

If today's date is March 1, 2013, how many times has Kwame celebrated his birthday on February 29th?

- A.9
- B.3
- C.1
- D.2

FEB
29
2004

Solution

Answer: D

Justification: Kwame would have had 2 'actual' birthdays on February 29th. Leap years occur every four years.

2004, 2008, and 2012 were leap years. Since Kwame was born in 2004 he has celebrated twice on February 29th.