

# LEAP YEAR

## CUBE CODE

...er advised  
...make significant  
...to the calendar?

...every four

A. Bicentennial  
B. Quadrennial  
C. Millennial  
D. Annual

The concept of Leap Year has its roots in the \_\_\_\_\_ calendar of Julius Caesar.

A. Roman  
B. Greek  
C. Aztec  
D. Byzantine

The original goal of the Gregorian calendar was to \_\_\_\_\_ change the date of \_\_\_\_\_

A. Christmas  
B. Halloween  
C. Thanksgiving  
D. Easter

Approximately how long does it take for the Earth to complete one orbit around the sun?

A. 356.75 days  
B. 365.25 days  
C. 385.6774 days  
D. 392.15 days

With the leap year system, adding one day to the calendar occurs how often?

A. Every year  
B. Every 2 years  
C. Every 3 years  
D. Every 4 years

A  B  C

...the day in February known as Leap Day MINUS 20.

The FIRST number of the lock is the year Caesar made significant changes to the Roman calendar MINUS 41.

The THIRD number of the lock is the year the Gregorian calendar was first introduced MINUS 1580.

**STATION 2:**

First, number ALL the paragraphs on your reading passage. Then, read each statement below and determine which paragraph NUMBER the statement can be found in. Lastly, eliminate ANY answer where the answer was found in an EVEN numbered paragraph, leaving only ODD numbers as your final code (in the order of questions). Paragraph numbers MAY be used more than one time or not at all.

4	1960	7	Calculated
5	1964	8	leaplings
6	Coordinated	9	leap frogs

...February 29th, known as "leap day" which occurs only once every four years. In non-leap years, the 29th is about 1

Individuals born on February 29th are often called "leaplings" or "leap babies" or "leaplings" and celebrate their birthday every four years. The probability of being born on February 29th is about 1 in 1,461.

**STATION 3:**

Read each statement below and determine if it is true or false. If the statement is true, color or shade the coin that corresponds to the question. If the statement is false, cross out that coin value. Once you are finished add the TOTAL of ALL TRUE coin values. A code has been provided for you. If the total is 625, a 6 in the first box, the 2 in the second box and so on.

A 75  
B 25  
C 50  
E 100  
F 75  
G 50

A. The adoption of the Gregorian calendar occurred at different times in different regions.  
B. Leap Year is connected to the Earth's orbit.  
C. Both call themselves the Leap Year Capital of the World.  
D. Without the addition of Leap Day, we would lose about eleven days every year.  
E. The Gregorian calendar was introduced by Pope John Paul VII in 1684.

**LEAP YEAR CUBE CODE**

A. The Constitution is organized into seven different parts called Articles.  
B. The Constitutional Convention was held in Boston, Massachusetts.  
C. The 3 branches include the Legislative, Executive and Parliament Branch.  
D. The first ten amendments came in 1791 and are called the Bill of Rights.  
E. Before the Constitution, a strong federal government held the states together.  
F. The opening part of the Constitution is called the Preamble.  
G. George Washington was known as the "Father of the Constitution."  
H. The U.S. Constitution is the oldest government document still in use today.

A  B  C  D  E  F  G  H

4 DIGIT CODE

A Peter Keogh was born in Ireland on February 29, 1940.

B The concept of Leap Year has its roots in the Roman calendar attributed to Julius Caesar.

C The original purpose of the leap year was to correct the calendar.

D There are two traditions behind the leap year: one is to add a day every four years and the other is to add a day every five years.

E To account for the extra 48 minutes and 46 seconds, one day is added every four years.

F Leap Year is connected to the Earth's orbit. It takes approximately 365.25 days for the Earth to complete one orbit around the sun, which poses a challenge for our standard 365-day calendar. To account for the extra 5 hours, 48 minutes and 46 seconds, one day is added every four years. This creates a more accurate alignment with the solar year. Without the addition of Leap Day, we would lose about six hours every year.

ELIMINATE

**LEAP YEAR**

Every four years, our calendars display an unusual irregularity – an extra day added to February, making it a 29-day month instead of the usual 28. This phenomenon is known as Leap Year. There are both scientific reasons and traditions behind this quadrennial (recurring every 4 years) occurrence.

Leap Year is connected to the Earth's orbit. It takes approximately 365.25 days for the Earth to complete one orbit around the sun, which poses a challenge for our standard 365-day calendar. To account for the extra 5 hours, 48 minutes and 46 seconds, one day is added every four years. This creates a more accurate alignment with the solar year. Without the addition of Leap Day, we would lose about six hours every year.

Julius Caesar introduced the Julian calendar in 45 BC, which was a significant change to the Roman calendar. It was the first calendar to have a leap year, and it was the first calendar to have a leap year that was not a multiple of 4. The Julian calendar was used for many centuries, but it was eventually replaced by the Gregorian calendar in 1582. The Gregorian calendar is the one we use today, and it is the most accurate calendar in use today.

...ability of being born on February 29th is about 1 in 1,461.

...and its colonies, the switch to the Gregorian calendar did not happen until 1752.



### STATION 1:

Use your reading passage or deductive reasoning skills to determine the missing words in the paragraph below. Each missing word has a corresponding NUMBER. The 4-digit code will be the NUMBER of each missing word in the same order in which they appear in the paragraph.

### STATION 2:

First, number ALL the paragraphs on your reading passage. Then, read each statement below and determine which paragraph NUMBER the statement can be found in. Lastly, eliminate ANY answer where the answer was found in an ODD numbered paragraph, leaving only EVEN numbers as your final code (in the order of questions). Paragraph numbers MAY be used more than one time or not at all.

### STATION 3:

Read each statement below and determine if it is true or false. If the statement is true, color or shade the coin that corresponds with that question. If the statement is false, cross out that coin value. When you are finished add the TOTAL of ALL TRUE coin values. One digit of the code has been provided for you. If the total is 625, a 6 would go in the first box, the 2 in the second box and so on.

### STATION 4:

Use your reading passage to determine the combination to the 4-digit lock. You're going to have to use your critical thinking skills and do a tiny bit of math. Pay attention because the "clues" below are NOT in order.

### STATION 5:

Answer each multiple choice question below. Then, count the number of times you used each letter answer (ABCD) to reveal your 4 digit code. Answer options may be used more than once or not at all. If a letter option is not used, simply put a zero in the box.

### STATION 6:

Reread the passage and write the main idea in your own words. Then, add TWO supporting details that back up your main idea or topic sentence.

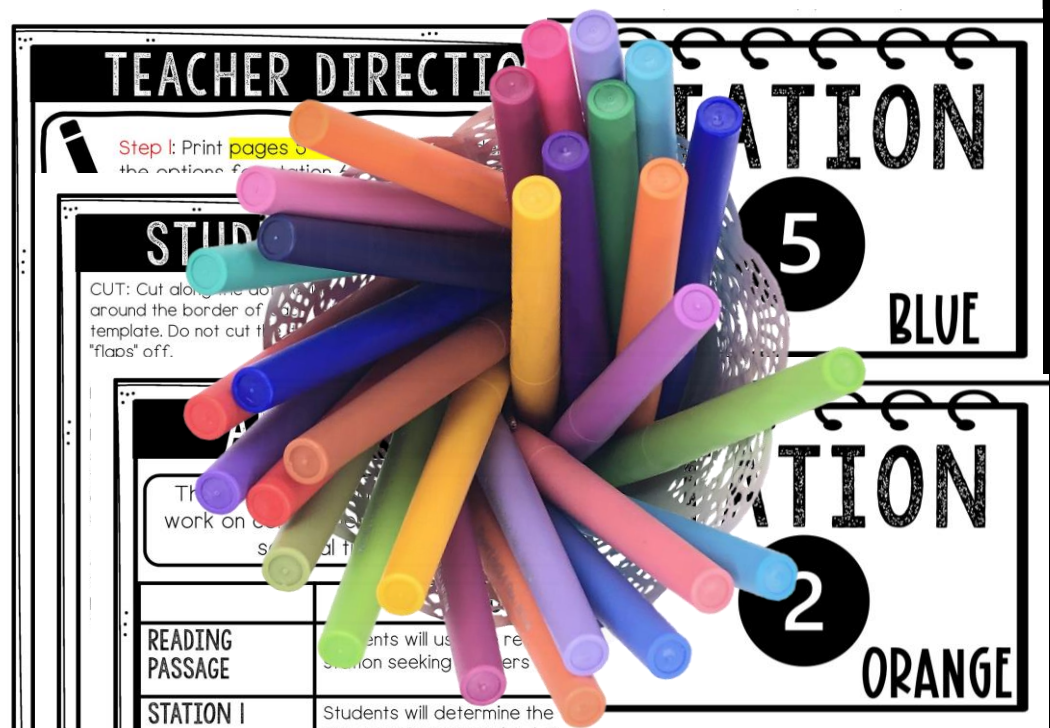
# STATION

# 1

# RED

## WHAT'S INCLUDED?

- READING PASSAGE
- 6 STATIONS
- TEACHER GUIDE
- STATION CARDS
- ANSWER KEY
- STUDENT DIRECTIONS
- TEXT MARKING OPTION
- ALTERNATE STATION
- ASSEMBLY TIPS





# 6 STATIONS

## STATION 1:

Use your reading passage or deductive reasoning to determine the missing words in the paragraph below. The missing word has a corresponding NUMBER. The 4-digit code will be the NUMBER of each missing word in the same order in which they appear in the paragraph.

1	8,641	4	1960	7	Calcula
2	4,683	5	1964	8	leapling
3	1,461	6	Coordinated	9	leap fr

Individuals born on February 29th, known as "leap babies" or "leaplings," are born only once every four years. They choose to celebrate their birthday on a non-leap year. The probability of being born on February 29th is about 1 in 1,461.

STATION

1

RED

According to the Guinness Book of World Records, there is one family that has a child born every day of the year. The family is from Ireland. The first child was born on February 29, 1996, and his granddaughter was born on February 29, 1996. Leap Year isn't the only adjustment made to our calendar.

## STATION 6:

Reread the passage and write the main idea in your own words. Then, add TWO supporting details that back up your main idea or topic sentence.

MAIN IDEA

STATION

6



SUPPORTING DETAIL #2

## STATION 4:

Use your reading passage to determine the combination to the 4-digit lock. You're going to have to use your critical thinking skills and do a tiny bit of math. Pay attention because the "clues" below are NOT in order.

The LAST number of the lock is the year in the United States the Uniform Time Act was established MINUS 1960.

The SECOND number of the lock is

STATION

4

GREEN

4 DIGIT CODE

## STATION 5:

Answer each multiple choice question below. Then, count the number of times you used each letter answer (ABCD) to reveal your 4 digit code. Answer options may be used more than once or not at all. If a letter option is not used, put a zero in the box.

What astronomer advised Caesar to make significant changes to the calendar?

- A. Galileo
- B. Sosigenes
- C. Plato
- D. Socrates

What word means recurring every four years?

- A. Bicentennial
- B. Quadrennial

STATION

5

BLUE

Approximately how long does it take Earth to orbit around the sun?

- A. 356.75 days
- B. 365.25 days
- C. 385.67 days
- D. 392.15 days

With the addition of the leap day to the calendar, how often does the date of what holiday change the date of what holiday?

- A. Every year
- B. Every 2 years
- C. Every 3 years
- D. Every 4 years
- A. Christmas
- B. Halloween
- C. Thanksgiving
- D. Easter

A  B  C  D

## STATION 3:

Read each statement below and determine if it is true or false. If the statement is true, color or shade the coin that corresponds to the statement. If the statement is false, do not color or shade the coin. One coin has been colored to show the first box of the code.

STATION

3

YELLOW

A  
75

B  
25

C  
50

D  
100

4 DIGIT CODE

## STATION 2:

First, number ALL the paragraphs on your reading passage. Then, read each statement below and determine which paragraph NUMBER the statement can be found in. Lastly, eliminate ANY answer where the answer was found in an EVEN numbered paragraph, leaving only ODD numbers as your final answer. The final answer is the 4-digit code.

STATION

2

ORANGE

Paragraph 1: The Roman calendar was created by Romulus in 753 BCE. It was a lunar calendar with 10 months and 304 days. The original goal of the Gregorian calendar was to change the date of Easter.

Paragraph 2: There are both scientific reasons and religious reasons behind the quadrennial (recurring every 4 years) occurrence.

Paragraph 3: According to the extra 5 hours, 48 minutes and 46 seconds, one day is added every four years.

Paragraph 4: Catholic countries, including Italy and Spain, implemented the Gregorian calendar in October 1582.

Paragraph 5: The probability of being born on February 29th is about 1 in 1,461.

Paragraph 6: In England and its colonies, the switch to the Gregorian calendar did not happen until 1752.

Paragraph 7: Eliminate ALL EVEN NUMBERS TO DETERMINE THE FINAL CODE.

4 DIGIT CODE





# SAMPLE CUBE





# STATIONS

STATION 1	Students will determine the missing words in the paragraph to reveal a 4 digit code.
STATION 2	Students will number the paragraphs and browse the passage to determine where the answers can be found (paragraph number). After eliminating EVEN numbers, a 4 digit code will be revealed.
STATION 3	Students will read each statement and determine if it is true or false. They will then ADD all TRUE values to find the 4 digit code.
STATION 4	Students will do some basic math here, read the passage to find the answers and then determine the 4 digit code.
STATION 5	Students will answer 6 multiple choice questions which lead them to a 4 digit code based on the number of times they used each "answer".
STATION 6	Option 1: Main idea writing activity Option 2: Color and add topic
TEXT MARKING	OPTIONAL: A color code chart is included in case you want students to mark the text citing evidence of where they found their answers.

**STUDENTS WILL  
USE THE SAME  
READING  
PASSAGE AT  
EACH STATION  
SEEKING  
ANSWERS AND  
TEXT EVIDENCE.**



# HOW IT WORKS



## ENGAGING READING COMPREHENSION PRACTICE!

1

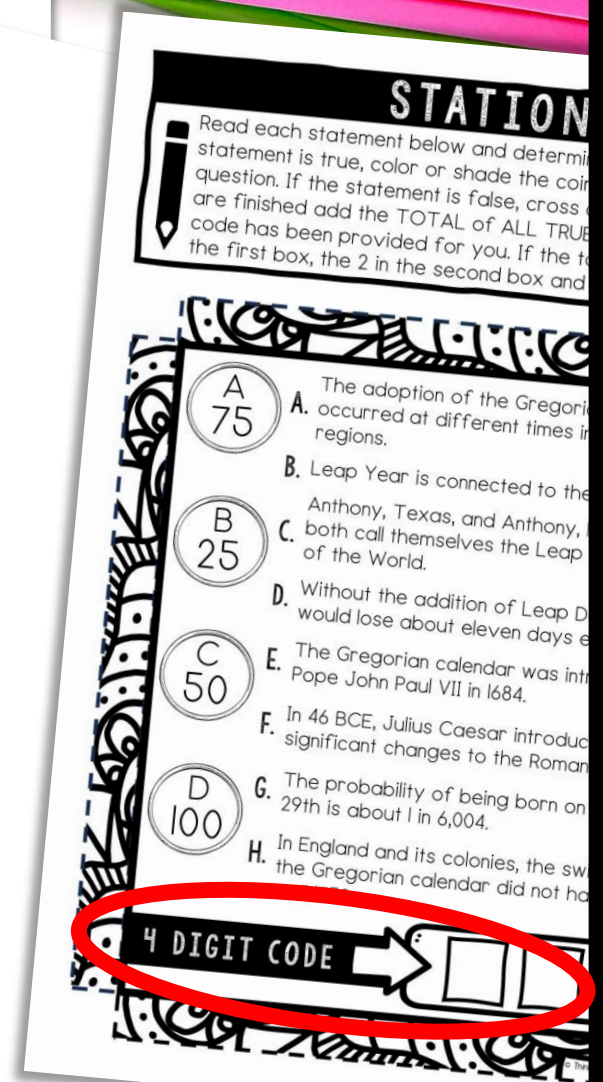
Students work individually (or in pairs) and visit 6 stations, grabbing one side of their cube at each station.

2

Students will answer the questions (found directly in the passage) on their cube sheet before assembly. Students will revisit their reading passage at EACH station!

3

Students will reveal 4-digit codes to move on to the next station. When they finish all stations, they can color and assemble their cube.



**STATION**

Read each statement below and determine if the statement is true, color or shade the corresponding question. If the statement is false, cross it out. When all questions are finished add the TOTAL of ALL TRUE statements. A 4-digit code has been provided for you. If the total is 75, the first box of the code is 7, the 2 in the second box and so on.

A. The adoption of the Gregorian calendar occurred at different times in different regions.

B. Leap Year is connected to the names of the Pope John Paul VII in 1684.

C. Both Anthony, Texas, and Anthony, Texas, call themselves the Leap of the World.

D. Without the addition of Leap Day, the calendar would lose about eleven days every year.

E. The Gregorian calendar was introduced by Pope John Paul VII in 1684.

F. In 46 BCE, Julius Caesar introduced significant changes to the Roman calendar.

G. The probability of being born on a specific day of the year is about 1 in 365.

H. In England and its colonies, the switch to the Gregorian calendar did not happen until 1752.

**4 DIGIT CODE** →



# COMBINATION



**Each Cube Code is a winning combination of:**

- stations and movement
- close reading
- comprehension skills
- coloring and stress relief
- secret codes
- cut and paste
- citing evidence
- critical thinking


**Everything a teacher dreams of wrapped up into one FUN and engaging activity!**



# BENEFITS



THINK OUTSIDE THE BOX!

-  ANTICIPATORY SETS
-  UNIT REVIEW
-  EARLY FINISHERS
-  STATIONS
-  SUB PLANS
-  PARTNER WORK
-  ENRICHMENT

-  HANDS-ON
-  CROSS-CURRICULAR
-  HIGHLY ENGAGING

