Name: _____ Date: _____

Why We Have Leap Years

Circle group

A year is the time it takes Earth to go once around the sun. Most people say a year has 365 days. But the real trip takes a little longer. It takes about 365 days and 6 hours. Those extra hours seem small. Yet they add up fast.

Say a calendar ignored the extra six hours. After four years, it would be about one whole day behind the sun. After a hundred years, it would be almost a month behind. In time, summer holidays would fall in winter. Farmers would plant crops at the wrong time.

To keep the calendar right, people add one extra day every four years. That day is February 29. A year with that day is called a leap year. A leap year has 366 days, not 365. The extra day makes up for the four sets of six hours that were left over.

The rule has one more part. Years that end in two zeros, like 1900, are not leap years. The exception is a year that can be divided evenly by 400. That is why 2000 was a leap year and 1900 was not. A child born on February 29 has a birthday only once every four years. Some of them call themselves leaplings.

Questions

1. What is a year?

_____

_____

2. About how long does Earth's trip around the sun really take?

_____

_____

3. How many days does a leap year have?

_____

_____

4. What would happen to the calendar if people never added a leap day?

_____

_____

5. Why does a person born on February 29 have a birthday only every four years?

_____

_____

Words to know

calendar: a chart that shows the days, weeks, and months of a year
ignored: paid no attention to
leaplings: people born on February 29

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why We Have Leap Years

Triangle group

A year is the time it takes Earth to travel once around the sun. Most people say that a year has 365 days, but the real trip takes a little longer. It takes about 365 days and 6 hours. Those extra hours may seem small, yet they add up quickly.

Imagine that a calendar ignored the extra six hours. After four years, the calendar would be about one whole day behind the sun. After a hundred years, it would be behind by almost a month. Eventually, summer holidays would fall in the middle of winter, and farmers would plant crops at the wrong time.

To keep the calendar on track, people add one extra day every four years. That day is February 29, and a year that includes it is called a leap year. Leap years have 366 days instead of 365. The extra day makes up for the four sets of six hours that were left over.

The rule has a small adjustment, too. Years that end in two zeros, like 1900, are not leap years unless they can be divided evenly by 400. That is why the year 2000 was a leap year, while 1900 was not. A child born on February 29 has a birthday only once every four years, and some of them call themselves leaplings.

Questions

1. What is a year?

_____

_____

2. About how long does Earth's trip around the sun really take?

_____

_____

3. How many days does a leap year have?

_____

_____

4. What would happen to the calendar if people never added a leap day?

_____

_____

5. Why does a person born on February 29 have a birthday only every four years?

_____

_____

Words to know

calendar: a chart that shows the days, weeks, and months of a year
ignored: paid no attention to
eventually: after a long time
adjustment: a small change that makes something work better
leaplings: people born on February 29

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why We Have Leap Years

Square group

A year is defined as the length of time it takes Earth to travel once around the sun. Most people say that a year contains 365 days, but the actual journey lasts slightly longer, approximately 365 days and 6 hours. Those additional hours may appear insignificant, yet they accumulate remarkably quickly.

Imagine that a calendar disregarded the extra six hours. After four years, the calendar would be roughly one entire day behind the sun, and after a hundred years it would be behind by nearly a month. Eventually, summer holidays would occur in the middle of winter, and farmers would be planting their crops at entirely the wrong time.

To keep the calendar synchronized, people insert one additional day every four years. That day is February 29, and any year that includes it is called a leap year. Leap years contain 366 days rather than 365, and the extra day compensates for the four sets of six hours that were left over.

The rule includes a small refinement as well. Years that end in two zeros, such as 1900, are not leap years unless they can be divided evenly by 400. That explains why the year 2000 was a leap year, while 1900 was not. A child born on February 29 celebrates a birthday on that date only once every four years, and some of these children cheerfully call themselves leaplings.

Questions

1. How is a year defined?

_____

_____

2. About how long does Earth's actual journey around the sun last?

_____

_____

3. How many days do leap years contain?

_____

_____

4. What would happen to the calendar if people never inserted a leap day?

_____

_____

5. Why does a child born on February 29 celebrate on that date only once every four years?

_____

_____

Words to know

calendar: a chart that shows the days, weeks, and months of a year
eventually: after a long time
leaplings: people born on February 29

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Why We Have Leap Years

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Why We Have Leap Years

Easier · 199 words · Flesch-Kincaid grade 2.8

1. The time it takes Earth to go once around the sun.
2. About 365 days and 6 hours.
3. 366 days.
4. It would slowly fall behind the sun, and seasons and holidays would not match.
5. February 29 only comes in leap years, which come every four years.

Triangle: Why We Have Leap Years

This passage · 209 words · Flesch-Kincaid grade 5.1

1. The time it takes Earth to travel once around the sun.
2. About 365 days and 6 hours.
3. 366 days.
4. It would slowly fall behind the sun, and holidays and seasons would stop matching.
5. February 29 appears only in leap years, which come every four years.

Square: Why We Have Leap Years

Harder · 220 words · Flesch-Kincaid grade 8.8

1. As the length of time it takes Earth to travel once around the sun.
2. Approximately 365 days and 6 hours.
3. 366 days.
4. It would gradually fall behind the sun, so seasons and holidays would stop matching.
5. February 29 occurs only in leap years, which come every four years.