Name: _____ Date: _____

The Quarter Day Left Over Every Year

Circle group

One trip around the sun takes Earth a bit more than 365 days. It takes about 365 and a quarter days. But our calendar has only 365 days in most years. So each year the calendar falls about a quarter of a day behind the sun.

A quarter of a day is not much. But look at what happens as years go by. After one year, the calendar is one quarter day behind. After two years, it is half a day behind. After three years, it is three quarters of a day behind. After four years, the pieces make one whole day. 4 times one quarter is 1.

To fix this, we add an extra day to the calendar every four years. That day is February 29. A year with that day is a leap year. Most years you can divide evenly by four are leap years. There are a few more small rules, but dividing by four is the main idea.

Without leap years, the calendar and the seasons would drift apart. After a few hundred years, summer weather would come in months we call spring. People born on February 29 are called leap day babies. Most years they celebrate on February 28 or March 1. They get the real date once every four years.

Questions

1. About how long does Earth take to go around the sun?

_____

_____

2. How many days do most years have?

_____

_____

3. What extra day is added in a leap year?

_____

_____

4. How often does a leap year usually come?

_____

_____

5. Why do four quarter days make one extra day?

_____

_____

6. What would happen to the seasons without leap years?

_____

_____

Words to know

calendar: a chart that shows the days, weeks, and months of a year
leap year: a year with one extra day added
drift: to move slowly away from where something should be
evenly: with nothing left over

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: _____

The Quarter Day Left Over Every Year

Triangle group

One trip around the sun takes Earth a little more than 365 days. It takes about 365 and a quarter days. Our calendar, though, has only 365 days in most years. So every year the calendar falls about a quarter of a day behind the sun.

A quarter of a day does not seem like much. But think about what happens as years pass. After one year, the calendar is one quarter day behind. After two years, it is half a day behind. After three years, three quarters. After four years, the extra pieces add up to one whole day. 4 times one quarter equals 1.

To fix the problem, we add an extra day to the calendar once every four years. That day is February 29, and the year that has it is called a leap year. Most years that you can divide evenly by four are leap years. The rule has a few extra fine-tuning steps, but dividing by four is the main idea.

Without leap years, the calendar and the seasons would slowly drift apart. After a few hundred years, summer weather would show up in months we now call spring. People born on February 29 are sometimes called leap day babies. In most years they celebrate their birthday on February 28 or on March 1, and they get the real date only once every four years.

Questions

1. About how long does Earth take to go around the sun?

_____

_____

2. How many days do most calendar years have?

_____

_____

3. What extra day is added in a leap year?

_____

_____

4. How often does a leap year usually come?

_____

_____

5. Why do four quarter days make a whole extra day?

_____

_____

6. What would happen to the seasons without leap years?

_____

_____

Words to know

calendar: a chart that shows the days, weeks, and months of a year
leap year: a year with one extra day added
drift: to move slowly away from where something should be
evenly: with nothing left over

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: _____

The Quarter Day Left Over Every Year

Square group

A single journey around the sun takes Earth slightly longer than 365 days, or about 365 and a quarter days. Our calendar, however, contains only 365 days in most years. As a result, the calendar slips roughly a quarter of a day behind the sun every year.

A quarter of a day may not seem significant. But consider what happens as the years accumulate. After one year, the calendar lags by a quarter day. After two years, it lags by half a day, and after three years, by three quarters of a day. By the end of four years, the leftover pieces add up to one entire day, since 4 times one quarter equals 1.

To correct the problem, we insert an extra day into the calendar once every four years. That extra day is February 29, and a year that contains it is called a leap year. Most years that can be divided evenly by four are leap years. The rule includes a few additional fine-tuning steps, but dividing by four is the central idea.

Without leap years, the calendar and the seasons would gradually drift apart. After a few hundred years, summer weather would begin to arrive in months we currently call spring. People who are born on February 29 are sometimes called leap day babies. In most years they celebrate their birthday on February 28 or on March 1, and they enjoy the genuine date only once every four years.

Questions

1. About how long does Earth take to travel once around the sun?

_____

_____

2. How many days does the calendar contain in most years?

_____

_____

3. Which extra day is inserted in a leap year?

_____

_____

4. How frequently does a leap year usually occur?

_____

_____

5. Why do four quarter days add up to a whole extra day?

_____

_____

6. What would happen to the seasons if there were no leap years?

_____

_____

Words to know

calendar: a chart that shows the days, weeks, and months of a year
leap year: a year with one extra day added
drift: to move slowly away from where something should be
evenly: with nothing left over

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: The Quarter Day Left Over Every Year

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

Circle: The Quarter Day Left Over Every Year

Easier · 207 words · Flesch-Kincaid grade 4.2

1. About 365 and a quarter days.
2. 365 days.
3. February 29.
4. Every four years.
5. Four quarters of a day make one whole day.
6. They would drift apart from the calendar, and summer weather would come in the wrong months.

Triangle: The Quarter Day Left Over Every Year

This passage · 222 words · Flesch-Kincaid grade 5.4

1. About 365 and a quarter days.
2. 365 days.
3. February 29.
4. Once every four years.
5. Four quarters of a day add up to one whole day, since 4 times one quarter is 1.
6. The calendar and seasons would drift apart, and summer weather would arrive in the wrong months.

Square: The Quarter Day Left Over Every Year

Harder · 235 words · Flesch-Kincaid grade 7.6

1. About 365 and a quarter days.
2. 365 days.
3. February 29.
4. Once every four years.
5. Four quarters of a day make one entire day, since 4 times one quarter equals 1.
6. The calendar and the seasons would gradually drift apart, and summer weather would arrive in the wrong months.