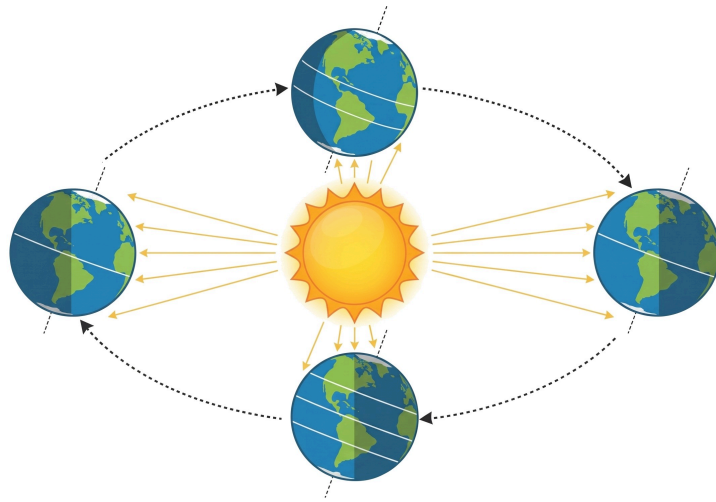


The Seasons

How Earth's tilt gives us spring, summer, fall and winter



7

printable sheets

17

pages

All

answer keys included

The Seasons Teaching Pack

How Earth's tilt gives us spring, summer, fall and winter

How to use this pack. The sheets are in a suggested teaching order: show the labeled diagram, have students label the blank one, then work through the practice sheets and finish with the quiz. Use them all over a week or pick the ones you need. The answer keys are together at the back.

What is inside

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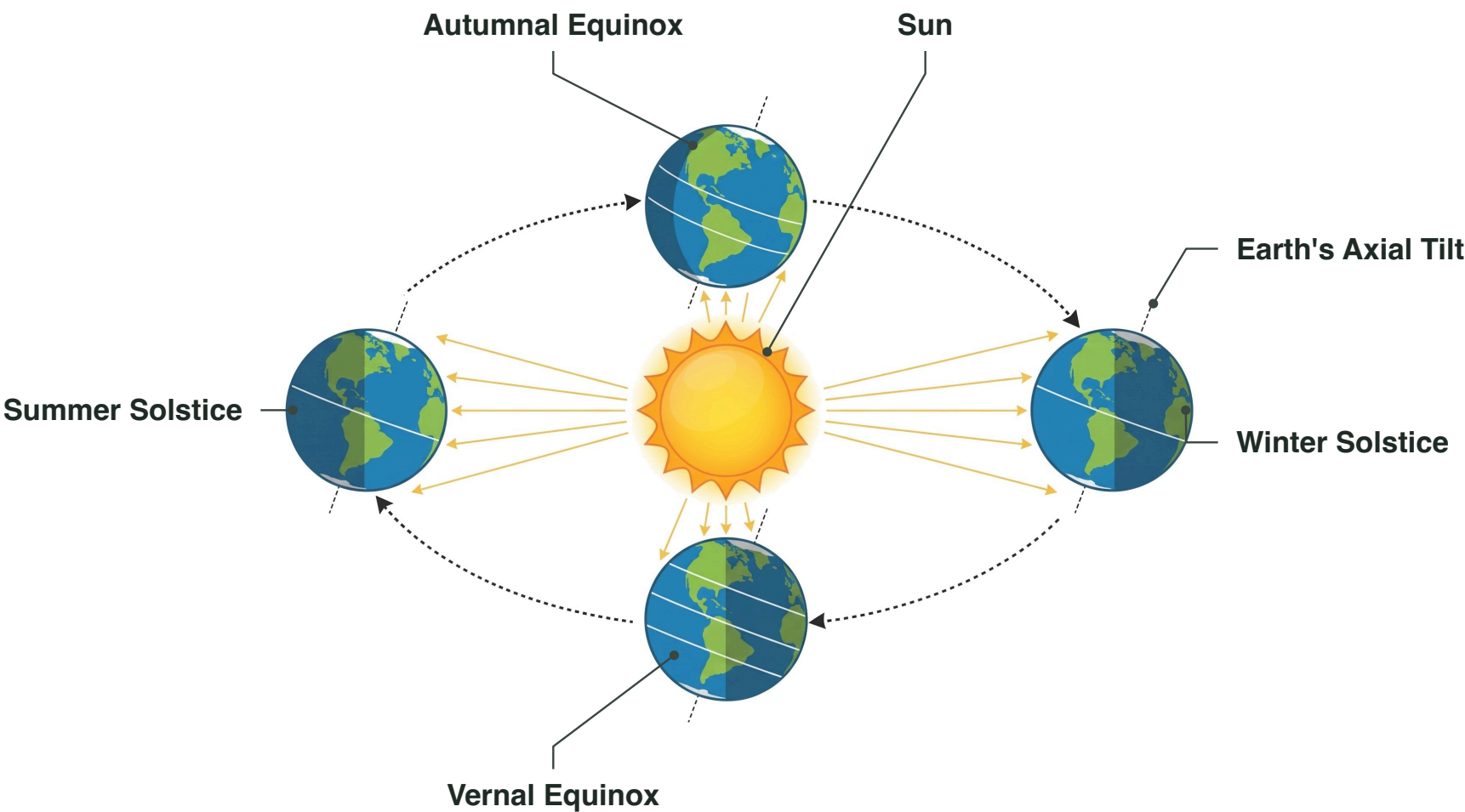
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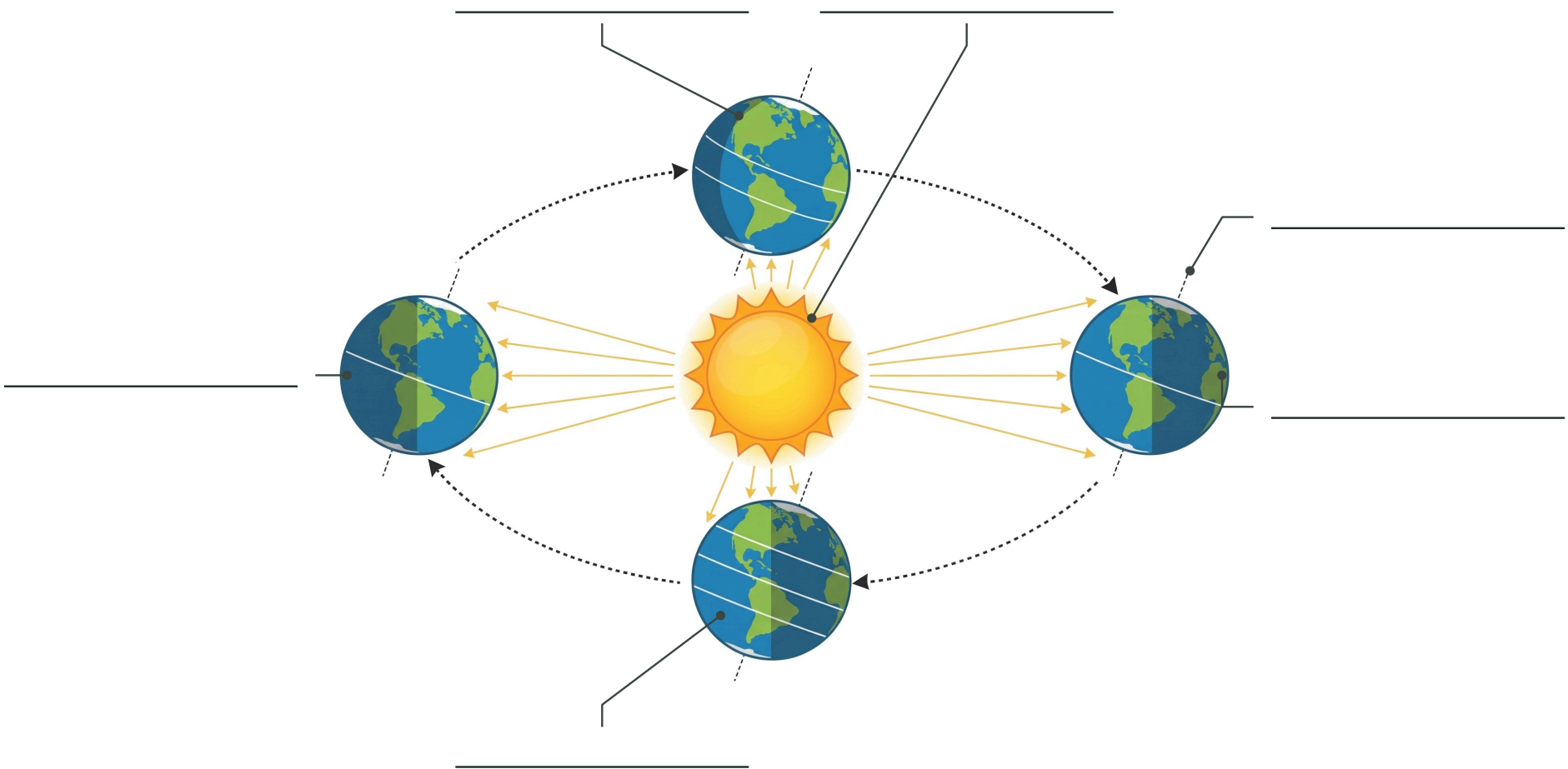
The Seasons



The Seasons

Name: _____

Write the name of each part on its line. Use the word bank.



- Word bank
- Autumnal Equinox
- Earth's Axial Tilt
- Summer Solstice
- Sun
- Vernal Equinox
- Winter Solstice

Words of the Seasons

Use the labeled seasons diagram to help you. The names of the solstices and equinoxes are the ones used in the Northern Hemisphere.

Part A. Write the word that fits each description.

Word bank

Autumnal Equinox

axis

Earth's Axial Tilt

equator

hemisphere

orbit

Summer Solstice

Sun

Vernal Equinox

Winter Solstice

1. The path Earth follows around the Sun. _____

2. Around December 21. The Northern Hemisphere is tilted away from the Sun and has its shortest day. _____

3. The imaginary line through the North Pole and the South Pole that Earth spins on. _____

4. Around March 20. Day and night are nearly equal, and spring starts in the Northern Hemisphere. _____

5. The star that Earth travels around. It gives Earth light and heat. _____

6. One half of Earth, such as the northern half or the southern half. _____

7. Around June 21. The Northern Hemisphere is tilted toward the Sun and has its longest day. _____

8. The lean of the line that Earth spins on. It is the cause of the seasons. _____

9. The imaginary line around the middle of Earth, halfway between the poles. _____

10. Around September 22. Day and night are nearly equal, and fall starts in the Northern Hemisphere. _____

Part B. Answer the questions.

1. Name the two solstices. Which one is the longest day of the year in the Northern Hemisphere?

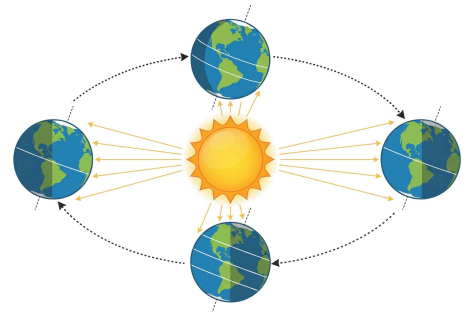
2. On which two days of the year are day and night nearly equal?

3. When it is summer in the Northern Hemisphere, what season is it in the Southern Hemisphere?

Why We Have Seasons

Read the text. Then answer the questions on the next page.

- 1 Many people think summer comes when Earth is closer to the Sun. That is not true. Earth is closest to the Sun in early January, when it is winter in the Northern Hemisphere. Distance does not cause the seasons. The tilt of Earth's axis does.
- 2 Earth's **axis** is an imaginary line that runs through the planet from the North Pole to the South Pole. Earth spins on its axis once a day. This spin is called **rotation**, and it gives us day and night. Earth also travels around the Sun. This trip is called **revolution**. One trip along its path, or **orbit**, takes one year. The axis does not stand straight up. It is tilted about 23.5 degrees, and it leans the same way all year.
- 3 The **equator** divides Earth into two halves, the Northern **Hemisphere** and the Southern Hemisphere. For part of the year, the Northern Hemisphere is tilted toward the Sun. Sunlight strikes it more directly, and the days are longer. Both things make it warmer, so it is summer there. At the same time, the Southern Hemisphere is tilted away, so it has winter. Six months later, it is the other way around.
- 4 Four days mark the change of seasons. Their names are from the Northern Hemisphere's point of view. The **summer solstice** comes around June 21. The Northern Hemisphere is tilted most toward the Sun and has its longest day of the year. The **winter solstice** comes around December 21. It is the shortest day of the year there.
- 5 Halfway between the solstices are the two **equinoxes**. On these days neither hemisphere is tilted toward the Sun, and day and night are nearly equal everywhere. The **vernal equinox** comes around March 20, when spring starts in the Northern Hemisphere. The **autumnal equinox** comes around September 22, when fall starts there.



Earth at four points in its orbit around the Sun. The axis always tilts the same way.

Why We Have Seasons: Questions

Go back to the text to find each answer. The paragraphs are numbered to help you.

1. What causes the seasons?

- ☐ Earth's distance from the Sun
- ☐ The tilt of Earth's axis
- ☐ The speed of Earth's spin
- ☐ The size of the Sun

2. What fact in paragraph 1 shows that distance from the Sun does not cause the seasons?

3. What does Earth's rotation give us?

- ☐ The four seasons
- ☐ A year
- ☐ Day and night
- ☐ The equator

4. How long does one trip around the Sun take?

- ☐ One day
- ☐ One month
- ☐ Six months
- ☐ One year

5. Give two reasons it is warmer in a hemisphere that is tilted toward the Sun.

6. It is summer in the Northern Hemisphere. What season is it in the Southern Hemisphere?

- ☐ Spring
- ☐ Summer
- ☐ Fall
- ☐ Winter

7. Number these days 1, 2 and 3 in the order they come during a year, starting in January.

- ☐ Summer solstice
- ☐ Autumnal equinox
- ☐ Vernal equinox

8. What is special about day and night at an equinox?

Which Season Is It?

Read the month and the place. Write the season. Remember that the seasons in the Southern Hemisphere are the reverse of the seasons in the Northern Hemisphere.

MONTH	PLACE	SEASON
1. July	Canada, in the Northern Hemisphere	_____
2. July	Australia, in the Southern Hemisphere	_____
3. January	Japan, in the Northern Hemisphere	_____
4. January	Argentina, in the Southern Hemisphere	_____
5. April	France, in the Northern Hemisphere	_____
6. April	New Zealand, in the Southern Hemisphere	_____
7. October	The United States, in the Northern Hemisphere	_____
8. October	South Africa, in the Southern Hemisphere	_____

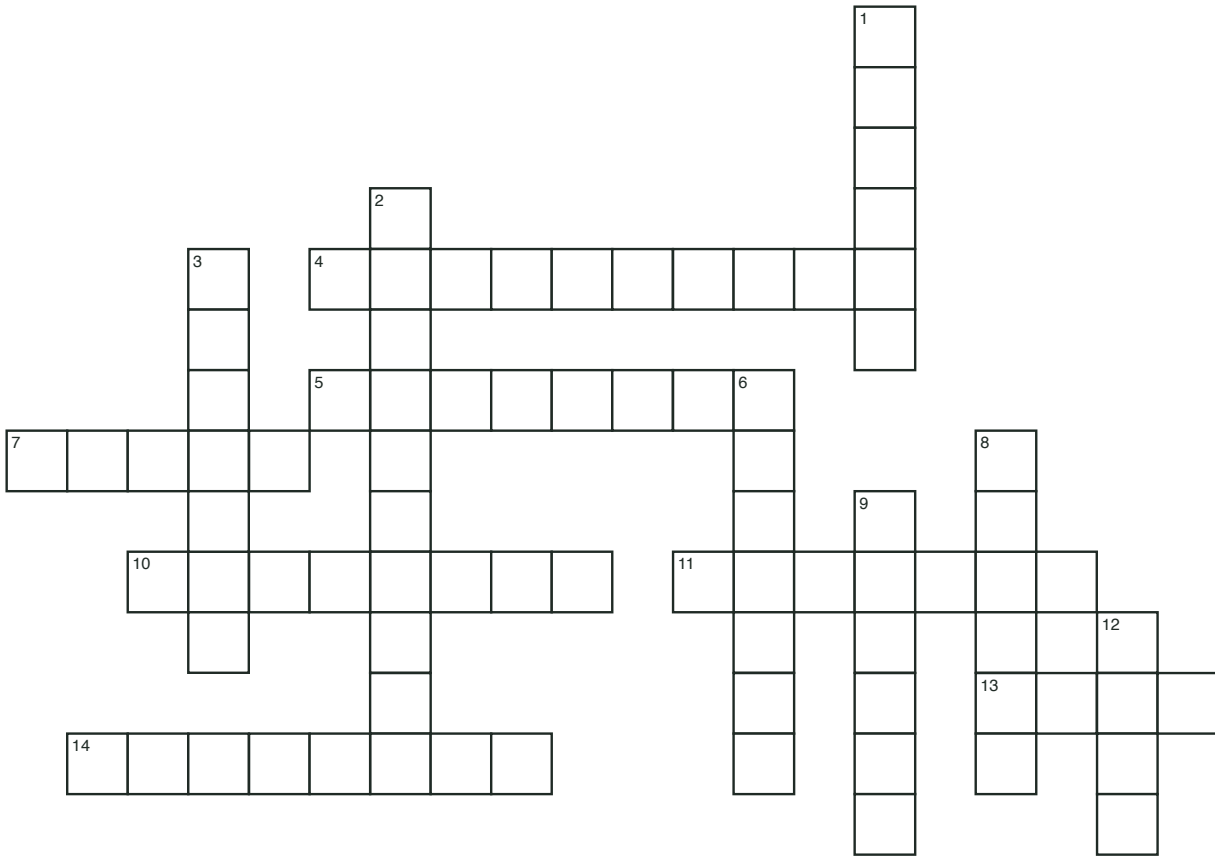
Word bank Fall Spring Summer Winter

Think about it

In Australia, many people spend the December holidays at the beach. Explain why December is a summer month there.

The Seasons Crossword

Read each clue. Write the answer in the puzzle, one letter in each box. Use the word bank if you get stuck.



ACROSS

4. One half of Earth.
5. The longest or the shortest day of the year.
7. The path Earth follows around the Sun.
10. The spin of Earth that gives us day and night.
11. The month when Earth is closest to the Sun.
13. The imaginary line that Earth spins on.
14. The ____ equinox comes around September 22.

DOWN

1. The season a hemisphere has when it is tilted away from the Sun.
2. Earth's yearly trip around the Sun.
3. A day when day and night are nearly equal.
6. The imaginary line around the middle of Earth.
8. The ____ equinox comes around March 20.
9. The season a hemisphere has when it is tilted toward the Sun.
12. A lean to one side. Earth's is the cause of the seasons.

Word bank

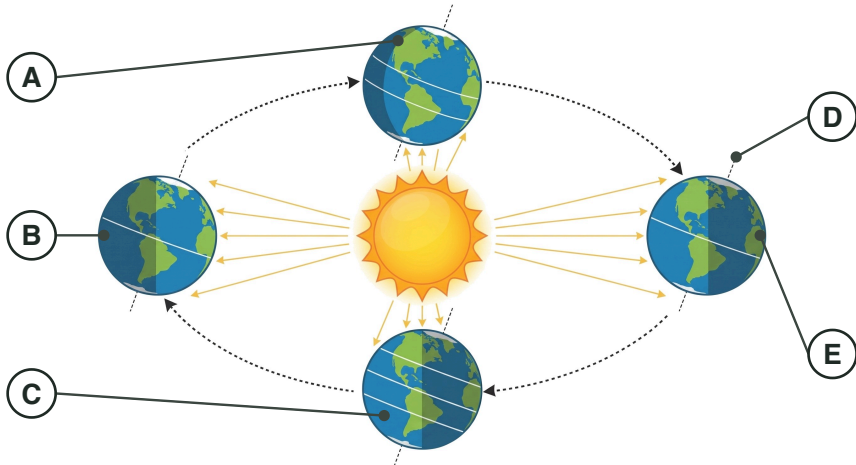
autumnal axis equator equinox hemisphere January orbit revolution
rotation solstice summer tilt vernal winter

The Seasons Quiz

Score _____ / 13

Use the names for the Northern Hemisphere. The dotted arrows show the way Earth moves. One pointer ends on the dashed line through Earth, not on Earth itself.

Part A. This is Earth at four points in its orbit. Write the name of each part.



- A _____
B _____
C _____
D _____
E _____

Autumnal Equinox · Earth's Axial Tilt ·
Summer Solstice · Vernal Equinox · Winter
Solstice

Part B. Choose the best answer.

- What causes the seasons?**
 - ☐ Earth's distance from the Sun
 - ☐ The Moon's orbit
 - ☐ The tilt of Earth's axis
 - ☐ Clouds blocking the Sun
- In which month is Earth closest to the Sun?**
 - ☐ January
 - ☐ April
 - ☐ July
 - ☐ October
- Around what date is the summer solstice in the Northern Hemisphere?**
 - ☐ March 20
 - ☐ June 21
 - ☐ September 22
 - ☐ December 21
- What is Earth's trip around the Sun called?**
 - ☐ Rotation
 - ☐ Revolution
 - ☐ Equinox
 - ☐ Tilt
- It is winter in the Northern Hemisphere. What season is it in the Southern Hemisphere?**
 - ☐ Winter
 - ☐ Spring
 - ☐ Summer
 - ☐ Fall
- On which day are day and night nearly equal?**
 - ☐ The summer solstice
 - ☐ The winter solstice
 - ☐ The first day of the year
 - ☐ The vernal equinox

Part C. Write your answer.

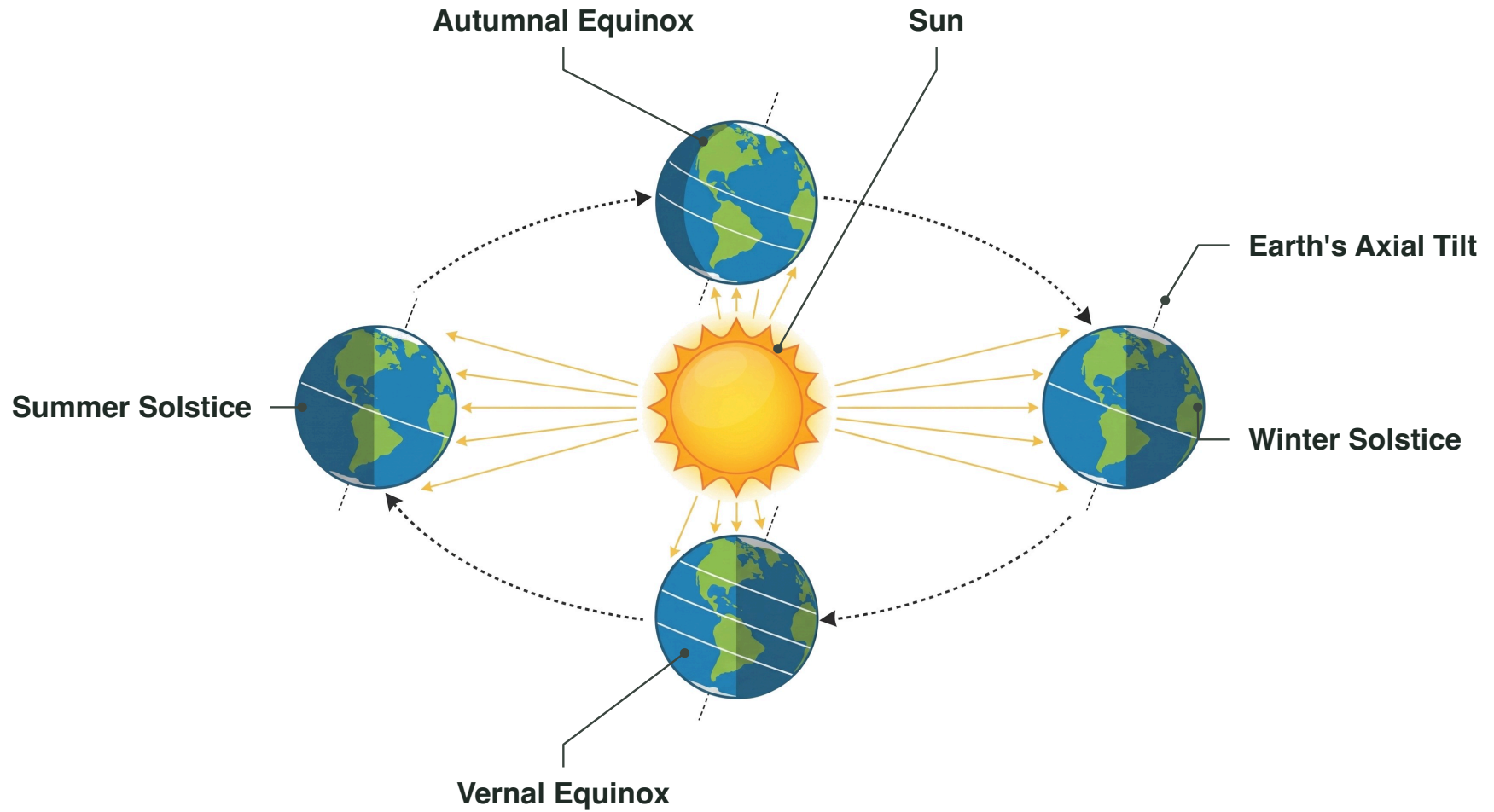
7. What is the difference between Earth's rotation and its revolution?

8. Why is it warmer in a hemisphere that is tilted toward the Sun?

Answer Keys

In the same order as the sheets.

The Seasons: Answer Key



Words of the Seasons: Answer Key

Answers are in green. Written answers will vary; these are examples.

Part A. Write the word that fits each description.

Word bank

Autumnal Equinox

axis

Earth's Axial Tilt

equator

hemisphere

orbit

Summer Solstice

Sun

Vernal Equinox

Winter Solstice

1. The path Earth follows around the Sun.

orbit

2. Around December 21. The Northern Hemisphere is tilted away from the Sun and has its shortest day.

Winter Solstice

3. The imaginary line through the North Pole and the South Pole that Earth spins on.

axis

4. Around March 20. Day and night are nearly equal, and spring starts in the Northern Hemisphere.

Vernal Equinox

5. The star that Earth travels around. It gives Earth light and heat.

Sun

6. One half of Earth, such as the northern half or the southern half.

hemisphere

7. Around June 21. The Northern Hemisphere is tilted toward the Sun and has its longest day.

Summer Solstice

8. The lean of the line that Earth spins on. It is the cause of the seasons.

Earth's Axial Tilt

9. The imaginary line around the middle of Earth, halfway between the poles.

equator

10. Around September 22. Day and night are nearly equal, and fall starts in the Northern Hemisphere.

Autumnal Equinox

Part B. Answer the questions.

1. Name the two solstices. Which one is the longest day of the year in the Northern Hemisphere?

The summer solstice and the winter solstice. The summer solstice is the longest day.

2. On which two days of the year are day and night nearly equal?

The vernal equinox and the autumnal equinox.

3. When it is summer in the Northern Hemisphere, what season is it in the Southern Hemisphere?

Winter.

Why We Have Seasons: Answer Key

Answers are in green. Written answers will vary; these are examples.

1. What causes the seasons?

- ☐ Earth's distance from the Sun
- ☒ **The tilt of Earth's axis**
- ☐ The speed of Earth's spin
- ☐ The size of the Sun

2. What fact in paragraph 1 shows that distance from the Sun does not cause the seasons?

Earth is closest to the Sun in early January, when it is winter in the Northern Hemisphere.

3. What does Earth's rotation give us?

- ☐ The four seasons
- ☐ A year
- ☒ **Day and night**
- ☐ The equator

4. How long does one trip around the Sun take?

- ☐ One day
- ☐ One month
- ☐ Six months
- ☒ **One year**

5. Give two reasons it is warmer in a hemisphere that is tilted toward the Sun.

Sunlight strikes it more directly, and the days are longer.

6. It is summer in the Northern Hemisphere. What season is it in the Southern Hemisphere?

- ☐ Spring
- ☐ Summer
- ☐ Fall
- ☒ **Winter**

7. Number these days 1, 2 and 3 in the order they come during a year, starting in January.

- 2** Summer solstice
- 3** Autumnal equinox
- 1** Vernal equinox

8. What is special about day and night at an equinox?

They are nearly equal everywhere on Earth.

Which Season Is It?: Answer Key

Answers are in green. The last answer will vary; one example is given.

MONTH	PLACE	SEASON
1. July	Canada, in the Northern Hemisphere	Summer
2. July	Australia, in the Southern Hemisphere	Winter
3. January	Japan, in the Northern Hemisphere	Winter
4. January	Argentina, in the Southern Hemisphere	Summer
5. April	France, in the Northern Hemisphere	Spring
6. April	New Zealand, in the Southern Hemisphere	Fall
7. October	The United States, in the Northern Hemisphere	Fall
8. October	South Africa, in the Southern Hemisphere	Spring
Word bank Fall Spring Summer Winter		

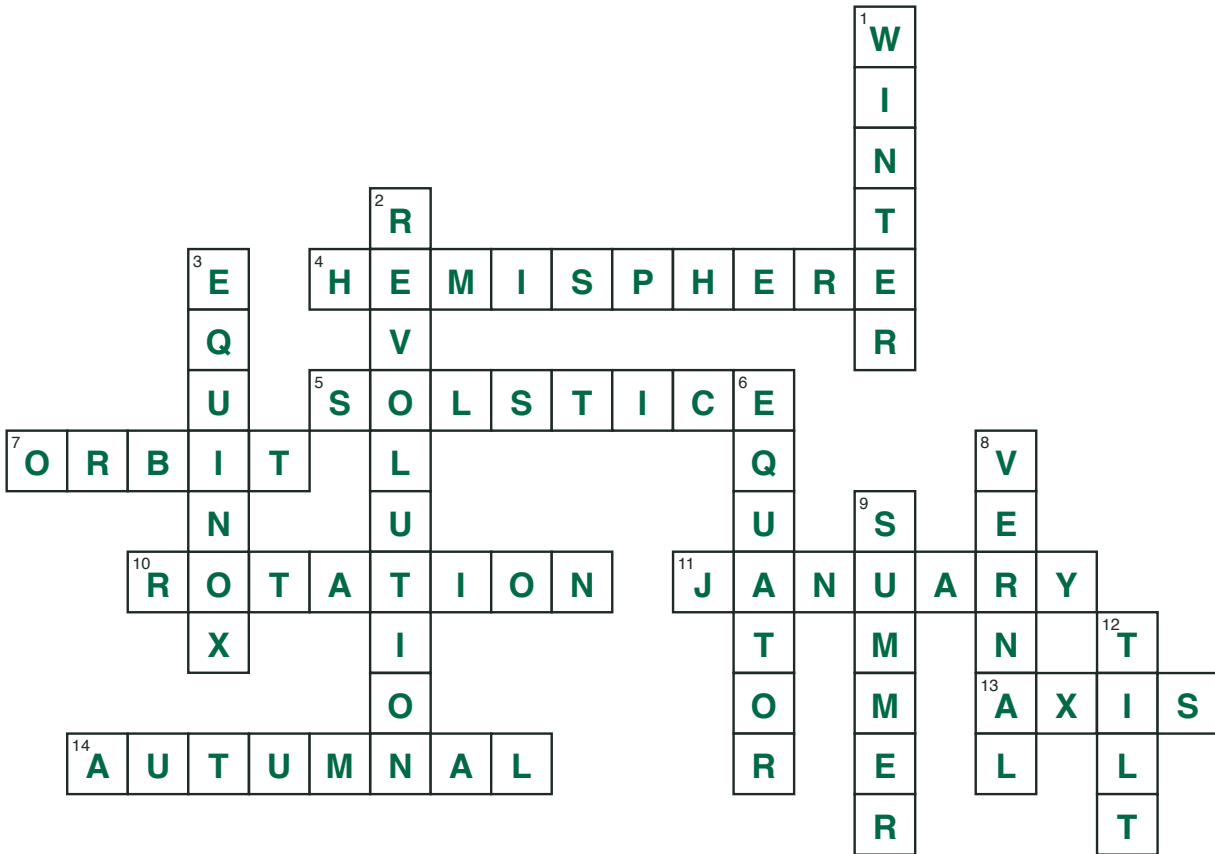
Think about it

In Australia, many people spend the December holidays at the beach. Explain why December is a summer month there.

Australia is in the Southern Hemisphere. In December the Southern Hemisphere is tilted toward the Sun, so it gets more direct sunlight and longer days.

The Seasons Crossword: Answer Key

Answers are in green.



ACROSS

4. One half of Earth.
5. The longest or the shortest day of the year.
7. The path Earth follows around the Sun.
10. The spin of Earth that gives us day and night.
11. The month when Earth is closest to the Sun.
13. The imaginary line that Earth spins on.
14. The ____ equinox comes around September 22.

DOWN

1. The season a hemisphere has when it is tilted away from the Sun.
2. Earth's yearly trip around the Sun.
3. A day when day and night are nearly equal.
6. The imaginary line around the middle of Earth.
8. The ____ equinox comes around March 20.
9. The season a hemisphere has when it is tilted toward the Sun.
12. A lean to one side. Earth's is the cause of the seasons.

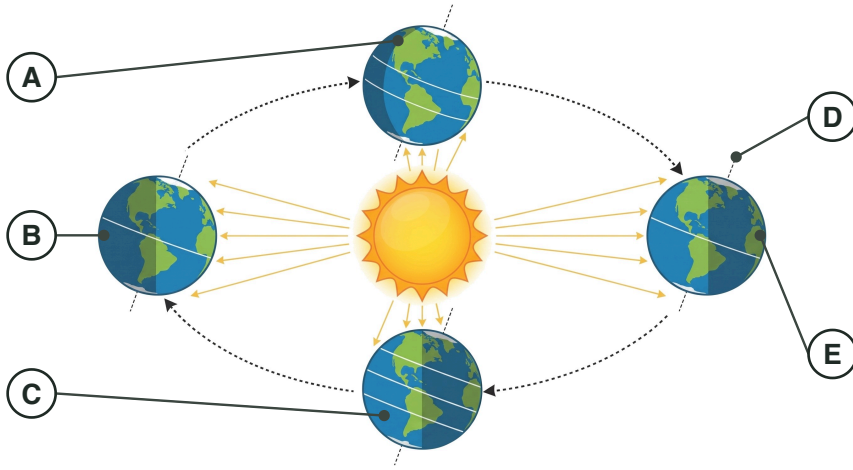
Word bank

autumnal axis equator equinox hemisphere January orbit revolution
rotation solstice summer tilt vernal winter

The Seasons Quiz: Answer Key

Answers are in green. Written answers will vary; these are examples.

Part A. This is Earth at four points in its orbit. Write the name of each part.



A Autumnal Equinox

B Summer Solstice

C Vernal Equinox

D Earth's Axial Tilt

E Winter Solstice

Autumnal Equinox · Earth's Axial Tilt ·
Summer Solstice · Vernal Equinox · Winter
Solstice

Part B. Choose the best answer.

1. What causes the seasons?

- ☐ Earth's distance from the Sun
- ☐ The Moon's orbit
- ☒ The tilt of Earth's axis
- ☐ Clouds blocking the Sun

2. In which month is Earth closest to the Sun?

- ☒ January
- ☐ April
- ☐ July
- ☐ October

3. Around what date is the summer solstice in the Northern Hemisphere?

- ☐ March 20
- ☒ June 21
- ☐ September 22
- ☐ December 21

4. What is Earth's trip around the Sun called?

- ☐ Rotation
- ☒ Revolution
- ☐ Equinox
- ☐ Tilt

5. It is winter in the Northern Hemisphere. What season is it in the Southern Hemisphere?

- ☐ Winter
- ☐ Spring
- ☒ Summer
- ☐ Fall

6. On which day are day and night nearly equal?

- ☐ The summer solstice
- ☐ The winter solstice
- ☐ The first day of the year
- ☒ The vernal equinox

Part C. Write your answer.

7. What is the difference between Earth's rotation and its revolution?

Rotation is Earth spinning on its axis once a day. Revolution is Earth traveling around the Sun once a year.

8. Why is it warmer in a hemisphere that is tilted toward the Sun?

Sunlight strikes it more directly, and the days are longer.