

SEASONS OF THE YEAR

A) Title: _____

B) Title: _____

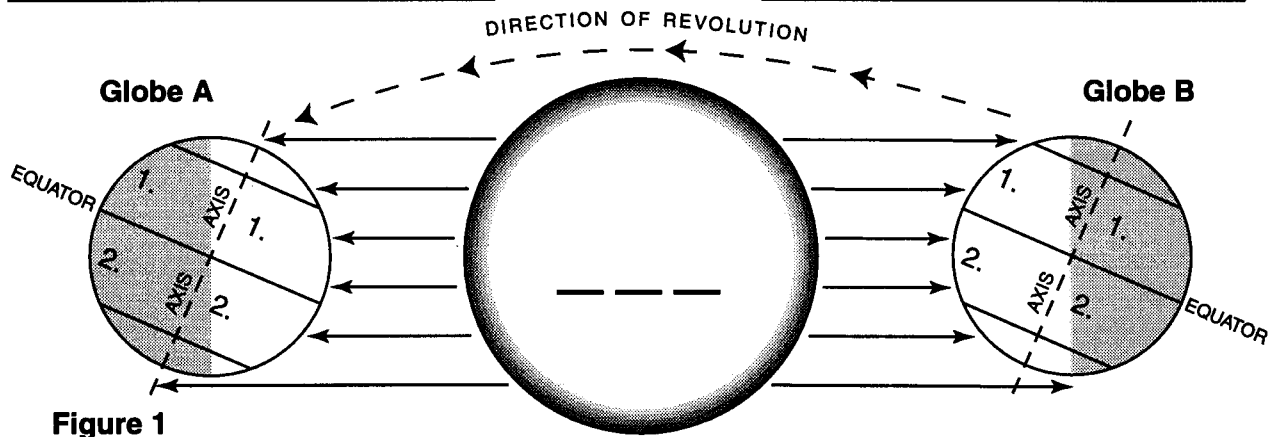


Figure 1

Figure 2 shows the positions of the earth's hemispheres in relation to the sun as the earth makes its year-long revolution around the sun.

When a hemisphere is tilted toward the sun it experiences summer; when a hemisphere is tilted away from the sun it experiences winter.

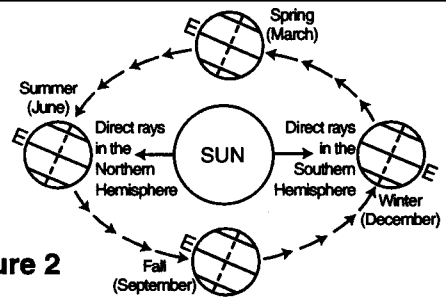


Figure 2

To the Instructor

It is suggested that students receive photocopies of the upper part of this page. They can annotate their diagrams as you explain and annotate a transparency.

1. Print SUN in the circle in the center of Figure 1. Print SUN RAYS on all the lines extending from the sun.
2. On globe A print NH for northern hemisphere at number 1. On globe B print SH for southern hemisphere at number 2.
3. On both globes label the north pole as NP and the south pole as SP.
4. Title Globe A: Summer in the Northern Hemisphere
5. Title Globe B: Summer in the Southern Hemisphere

Explanation

The axis in each globe is tilted at $23\frac{1}{2}^\circ$. As the earth revolves around the sun the tilt of its axis remains the same.

In Globe A the northern hemisphere is experiencing summer because the sun's rays are striking it directly. However, the southern hemisphere is experiencing winter because the sun's rays are striking it indirectly, that is, at a slant.

In Globe B the globe has revolved halfway around the sun. Notice, however, that the tilt of the axis has remained the same. Thus, the northern hemisphere is not receiving the direct rays of the sun; it is winter. On the other hand, direct sun rays are striking the southern hemisphere; it is summer.

Also, as the diagram reveals, when it is winter in the northern hemisphere, the polar regions do not see the sun for six months. Of course, the same is true of the southern hemisphere's polar regions in the winter.

Figure 2 shows a more complete revolution of our globe around the sun. Again, notice the constant tilt of the globe's axis as it revolves. In the spring and fall of the year in both hemispheres the sun's rays are neither direct nor indirect; these are times of transition.

In summary, the tilt of the earth in relation to the sun causes the seasons of the year. If there were no tilt, there would be no seasons.