

# Lesson Plan: The Dance of the Seasons

## Materials Needed:

- A chair (this will be our "Sun")
- A belt, sash, or long ribbon to tie around the waist (the "Equinox Belt")
- Two different colored stickers or small pieces of colored tape
- A large, open space for movement
- (Optional) A flashlight
- (Optional) Paper and colored pencils/crayons for the wrap-up activity

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**Subject: Science**

**Topic: Earth's Cycles (Seasons, Solstices, and Equinoxes)**

**Designed For: River, Age 9**

## 1. Learning Objectives

By the end of this lesson, River will be able to:

- Physically demonstrate how the Earth revolves around the Sun.
- Explain, using her own body and words, how the Earth's constant tilt is the cause of the seasons.
- Identify the four key positions in Earth's orbit: the winter solstice, the vernal equinox, the summer solstice, and the autumnal equinox.
- Define the terms "revolution," "axis/tilt," "solstice," and "equinox" through movement and recitation.

## 2. The Set-Up: Becoming Planet Earth (5 minutes)

Let's get you ready to be the Earth! This is our costume and our stage.

1. **The Sun:** Place the chair in the center of your open space. This chair is now the Sun! It is the center of our solar system.
2. **The Equator:** Tie the belt or ribbon around your waist. This is the **Equator**, the imaginary line that divides the Earth into two halves.
3. **The Hemispheres:** We'll place a sticker on your right shoulder. This is the **Northern Hemisphere** (where we live!). We'll place the other colored sticker on your left hip. This is the **Southern Hemisphere**.
4. **The Tilt:** This is the most important part! The Earth is tilted. Stand up straight, then lean your whole upper body slightly to one side. Hold your arms out. This lean is your **axis**, and you must **keep this exact same tilt pointed toward the same wall in the room for the entire dance**. Your tilt doesn't change, no matter where you are in your orbit!

## 3. The Main Activity: Choreographing the Dance of the Seasons (20 minutes)

Now that you are the Earth, you are going to dance one full year. Your path around the Sun (the chair) is called your **orbit**. One full dance, or one full trip around the sun, is called a **revolution**. Let's begin!

## Position 1: Summer Solstice

- **Movement:** Stand at a spot where your tilted upper body (your Northern Hemisphere shoulder sticker) is leaning *most directly toward* the Sun chair. Feel the "sunlight" on your shoulder!
- **What to Say While You Move:**

*"My northern half is tilted TO the sun.  
The days are long, the summer fun has come!  
This is the **SUMMER SOLSTICE**."*

## Position 2: Autumnal Equinox

- **Movement:** Walk a quarter of the way around your orbit, keeping your tilt pointed to the same wall. Now, you should be sideways to the Sun. The Sun is shining most directly on your Equinox Belt.
- **What to Say While You Move:**

*"I travel on, the air is cool and bold.  
The Sun shines right on my equator belt of gold.  
Day and night are balanced now, it's the **AUTUMNAL EQUINOX**."*

## Position 3: Winter Solstice

- **Movement:** Walk another quarter of the way around the orbit. Remember to keep that tilt steady! Now, your Northern Hemisphere shoulder sticker is tilted *farthest away* from the Sun chair.
- **What to Say While You Move:**

*"My northern half is tilted FAR AWAY.  
It's cold and dark, the shortest winter day.  
This is the **WINTER SOLSTICE**."*

## Position 4: Vernal (Spring) Equinox

- **Movement:** Walk the final quarter of your orbit to get back to where you started. Again, you will be sideways to the sun, with the sunlight hitting your Equinox Belt directly.
- **What to Say While You Move:**

*"The world wakes up, the sky is bright.  
My belt is lit by the Sun's warm light.  
Day and night are equal here, it's the **VERNAL EQUINOX**, spring is near!"*

**Practice:** Do the full dance (the revolution) two or three times, reciting the lines at each of the four stops. Feel how your body's tilt relative to the "Sun" changes the seasons!

## 4. Deepening the Learning (10 minutes)

- **Perspective Shift:** Let's do the dance one more time, but this time, pay attention to your Southern Hemisphere sticker (on your hip). When your shoulder is having summer, what season is your hip having? (Winter!) When it's the Vernal Equinox on your belt, it's the Autumnal Equinox for the Southern Hemisphere. They are always opposite!
- **Flashlight Demo (Optional):** If you have a flashlight, have an adult turn off the lights. They can be the sun and shine the light on you. Stand in the "Summer Solstice" position. See how

the light shines directly on your Northern Hemisphere shoulder? Now move to the "Winter Solstice" position. See how the light hits that same shoulder at a low angle and is much less direct? That's why it's colder!

## 5. Lesson Wrap-Up & Assessment (5 minutes)

Let's check what we learned!

- **Show Me:** "River, can you move your body to the position of the Winter Solstice?" "Show me what happens at an equinox."
- **Tell Me:** "What is the one thing you (as the Earth) must always do with your tilt?" (Keep it pointed in the same direction). "What is the real reason for the seasons?" (The Earth's tilt!).
- **Draw It:** On a piece of paper, draw the "Sun" chair in the middle. Then draw yourself as the Earth in your favorite position from the dance (like the Summer Solstice). Label the Sun, the Earth, and which season you are showing. This will be a great reminder of your amazing dance!