



Seasons Mat

Guide to Presentation

Seasons Mat

(suitable for children 3 to 9 years of age)

Contents of Seasons Mat:

- 34" round vinyl Seasons Mat
- veneer Seasons Labels
- Seasons Cards

Additional Related Products:

(sold separately)

- Celebration Sun
- Parts of a Biome Readers

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Seasons Mat Initial Presentation

You will need: Seasons Mat, veneer Seasons Labels, small globe, Celebration Sun (or some light source to stand in as the Sun), month labels, pictures of seasons (including seasonal animal adaptations and plant cycles)

Purpose: To introduce the concept of seasons and explore why we have different seasons in the course of the Earth's revolution around the Sun (a year).

Bring out the Celebration Sun and talk about how the Sun gives us light, warmth, and energy that plants use to make food. Bring out the Seasons Mat and lay it under the Celebration Sun. Remind the children of how the Earth goes around the Sun and that it takes a year to come back to the place where it started. This orbit goes in a counterclockwise direction. Place the month labels around the sun starting with January. January's label will be placed just to the right of the snowy winter mountain. Place all of the labels, moving counterclockwise, and saying each name as you go. Ask the children to raise their hand when it comes to the month of their birthday.

Let 's trace the path of the Sun now. We will start in January. That is the first month of a new year.

Place the globe on the edge of the mat in the winter section facing the January label (with the tilt of its axis making the Northern Hemisphere lean away from the mat). Place the veneer Winter season label on the mat in front of the globe.

In January, it is the season of winter. What is it like in winter? What do you see on the mat? What does the tree look like? Where are the birds?

You can introduce other pictures of winter activities and animal adaptations at this time or at another sitting.

Call out the months as you move around the mat until you come to the spring months. Place the veneer Spring label on the mat.

In April, it is spring. Tell me, what do you see on the mat? What is happening with the plants? What is happening with the animals?

Call out the months as you move around the mat until you come to the summer months. Place the veneer Summer label on the mat.

In July, it is summer. Describe what is happening. What is happening with the animals? What is happening with the plants?

Continue around the mat, lead the discussion of Fall, and come back to Winter.

And then it starts all over again with a new year!

The Reason for the Seasons

You will need: Seasons Mat, veneer Seasons Labels, small globe, Celebration Sun (or some light source to stand in as the Sun), month labels, Seasons Cards

Purpose: To demonstrate how the seasons are caused by the tilt of Earth on its axis.

This is one lesson when it is helpful to have the children gathered in the same place to see from the same perspective. Place the Seasons Mat so that winter and summer are aligned to the right and left of the group. Place the Celebration Sun in the center of the mat. Place the month labels around the sun starting with January. January's label will be placed just to the right of the snowy winter mountain. Place all of the labels, moving counterclockwise, and saying each name as you go.

Display the globe and point out that if you divided it into two halves at the Equator, you get the hemispheres. The Northern Hemisphere is above the Equator and the Southern Hemisphere is below the Equator. Point out where you are on the globe.

Now, imagine that there is a rod going through Earth at the North Pole and coming out at the South Pole. We can call that the Axis of the Earth.

Point out the axis on the globe.

The Earth spins on this axis to create night and day. It rotates counterclockwise from west to east. That is why we see the Sun rise in the east and set in the west.

Notice how the Earth tilts on its axis rather than being aligned straight up and down. This is important!

Discuss the movement of the Earth around the Sun.

Each year, the Earth makes a full revolution around the Sun.

Take the globe around the Sun in a counterclockwise direction and stop at the summer. Position the globe so that the Northern Hemisphere is leaning towards the Sun.

The axis is tilted with the North Pole **towards** the Sun.

Because the Earth tilts on its axis, the Northern Hemisphere is leaning **towards** the Sun at this time and the Southern Hemisphere is leaning **away**.

Imagine a line going from the Sun to the Northern Hemisphere. The rays of the Sun are hitting that part of the Earth directly. The rays are hitting the Southern Hemisphere at a slant. They have to travel a longer distance to reach the surface. At this time, it is summer in the Northern Hemisphere and winter in the Southern Hemisphere.

Take the globe to the autumn position, holding the tilt of the axis at the same angle as you move it.

In the autumn, the temperatures in the Northern and Southern Hemisphere aren't very different.

Take the globe to the winter position, holding the tilt of the axis at the same angle as you move it.

In the winter, the Southern Hemisphere is leaning **towards** the Sun and the Northern Hemisphere is leaning **away**. The rays of the Sun are hitting the Northern Hemisphere at

a slant and the Southern Hemisphere directly. At this time, it is winter in the Northern Hemisphere and summer in the Southern Hemisphere.

Take the globe to the spring position, holding the tilt of the axis at the same angle as you move it.

In the spring, the temperatures in the Northern and Southern Hemisphere aren't very different.

You can follow this presentation with a separate session with the Seasons cards. Have the children match each card to the correct season on the mat. Place the globe behind it with the correct tilt. Have them describe the tilt and where the longest and shortest rays of sunlight would hit the globe. They can flip over the card to learn about the days on which the solstices occur in Winter and Summer and the equinoxes occur in Spring and Fall. Use this as a starting point for research on the solstices and equinoxes.

Extensions:

- Read "The Reason for the Seasons" from the Parts of a Biome Readers: Energy series.