

Unit 5

Earth and Space

Introduction

Preschool science allows young children to experience big ideas about the world. They explore these phenomena during this unit:

- shadows
- patterns of day and night
- seasonal patterns
- how their daily life routines change over time

Earth & Space #1 Shadows


Young children have likely seen their own shadows and other shadows cast on the ground, but they may not know how they are made. This center provides an opportunity to explore them.

Learning Objectives:

- The student will create a shadow
- The student will describe how the shadow was created.
- The student will ask questions and make predictions.

Recommended Supplies:

- Bright light source (a projector, spotlight, or strong flashlight)
- Screen or blank wall space
- shape cut-outs on craft sticks
- Small hand puppets
- Magnatiles (or other transparent toy)



This is a shadow in the...
What do you wear in the shadow?

Earth & Space #2 Sun and Moon


Children naturally make observations about the sun and the moon. Their daily routine is planned around them. This center helps students notice the patterns of each day.

Learning Objectives:

- The student will observe the sun and the moon
- The student will recognize the patterns of day and night
- The student will discuss routines in his/her daily life

Recommended Supplies:

- Globe
- Flashlight
- Yellow construction paper (Cut it into a sun shape. Cut a hole in the middle and attach it to a paper circle glued to a craft stick (moon))



This is the sun in the sky.
What do you wear in the night?

Earth & Space #3 Fall Season

Children notice the change of season all around them! The season and weather help them decide what to wear each day. Bring fall items into your science center and talk about the new season.

Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in Fall
- The student will discuss things that change when the new season arrives

Recommended Supplies:

Fall items

- Leaves
- Acorns
- Pumpkin
- Apple
- Gourd
- Corn
- Tree Branch
- Small Scarecrow



This is a tree in the fall.
What do you wear in fall?

Earth & Space #4 Winter Season

Depending on where you live, winter may bring many stark changes to the students' daily lives: new wardrobe, new outerwear, and maybe even no school days. Explore winter at this center!


Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in winter
- The student will discuss things that change when the new season arrives

Recommended Supplies:

Winter items

- Snow (or Insta-Snow!)
- Ice
- Mittens and a Winter hat



This is a tree in the winter.
What do you wear in winter?

Earth & Space #5 Spring Season

Spring is abundant with signs of new life! Students notice the trees blooming and flowers peeking out through the ground. Encourage a deeper understanding of spring at this center!

Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in spring
- The student will discuss things that change when the new season arrives

Recommended Supplies:

Spring items

- flowers
- watering can
- plastic eggs in a nest
- tree branch with buds
- stuffed animals: chick, lamb, caterpillar

Procedure:

1. Go outside for a spring nature walk
2. Display the spring items at the science center
3. Invite students to observe them and talk about what they notice
4. What happened to the tree branch? What will the baby animals grow into?

Book Recommendations:

- *Mouse's First Spring* by Lauren Thompson
- *Raindrop, Plop!* by Wendy Cheyette Lewison
- *Wake Up, It's Spring!* by Lisa Campbell Ernst
- *Bear Wants More* by Karina Wilson



This is a tree in the spring.
What do you wear in spring?

Earth & Space #6 Summer Season

Summer offers another exciting change. Whether they are in year-round school or off for the summer, students' daily lives will change a bit with the new season.

Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in summer
- The student will discuss things that change when the new season arrives

Recommended Supplies:

Summer items

- Sunglasses
- Swimsuit
- Sun visor
- Sunscreen (empty bottle, or use duck tape to close it)

Procedure:

1. Do not take for a summer nature walk
2. Display the summer items at the science center
3. Invite students to observe them and talk about what they notice
4. Why do we have to wear sun protection in the summer?

Book Recommendations:

- *Ice Cream Summer* by Peter Sis
- *I See Summer* by Charles Ghigna
- *Mouse's First Summer* by Lauren Thompson
- *Summer* by Aile Busby



This is a tree in the summer.
What do you wear in summer?

Earth & Space #1

Shadows

Young children have likely seen their own shadows and other shadows cast on the ground, but they may not know how they are made. This center provides an opportunity to explore them.

Recommended Supplies:

- Bright light source (a projector, spotlight, or strong flashlight)
- Screen or blank wall space
- shape cut-outs on craft sticks
- Small hand puppets
- Magnatiles (or other transparent toy)

Procedure:

1. Go outside on a sunny day and notice the students' shadows.
2. Set up the light source to project onto the blank space.
3. Encourage students to hold up the puppets to create shadows.
4. Ask students what they think will happen if they hold a transparent object up to the light source. Test the predictions.

Learning Objectives:

- The student will create a shadow.
- The student will describe how the shadow was created.
- The student will ask questions and make predictions.



Book Recommendations:

Moonbear's Shadow by Frank Asch
What makes a Shadow? by Clyde Robert Bulla
I Love my Shadow! by Hans Wilhelm
Grumpy Groundhog by Maureen Wright



The sun makes shadows on the ground.



Can you make a shadow?

Earth & Space #2

Sun and Moon

Children naturally make observations about the sun and the moon. Their daily routine is planned around them. This center helps students notice the patterns of each day.

Recommended Supplies:

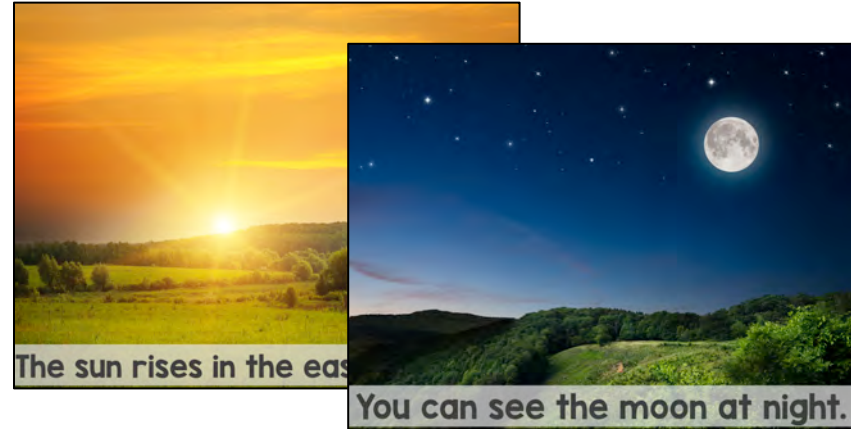
- Globe
- Flashlight
- Yellow construction paper (Cut it into a sun shape. Cut a hole in the middle and attach it to the flashlight to make a sun.)
- Gray paper circle glued to a craft stick (moon)

Procedure:

1. Go outside to observe the sun, clouds, and maybe even the moon! Talk with students about how day and night occur.
2. Place the globe in your science center with the “sun” and the “moon”. Allow students to shine the sun onto the globe. What happens to the parts that have light? What happens to the parts that don't have light.

Learning Objectives:

- The student will observe the sun and the moon.
- The student will recognize the patterns of day and night.
- The student will discuss routines in his/her daily life.



Book Recommendations:

The Sun is my Favorite Star by Frank Asch
Sun Up, Sun Down by Gail Gibbons
Papa, Please Get the Moon for Me by Eric Carle
Happy Birthday, Moon by Frank Asch



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The sun rises in the east each day.



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You can see the moon at night.

Earth & Space #3

Fall Season

Children notice the change of season all around them! The season and weather help them decide what to wear each day. Bring fall items into your science center and talk about the new season.

Recommended Supplies:

Fall items:

- Leaves
- Acorns
- Pumpkin
- Apple
- Gourd
- Corn
- Tree Branch
- Small Scarecrow

Procedure:

1. Go outside for a fall nature walk.
2. Display the fall items at the science center.
3. Invite students to observe them and talk about what they notice.
4. What happened to the leaves? Where did the acorns come from?

Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in Fall.
- The student will discuss things that change when the new season arrives.



Book Recommendations:

Mouse's First Fall by Lauren Thompson
Autumn is Here! by Heidi Pross Gray
Autumn: A Pop-Up Book by David A. Carter
It's Fall! by Linda Glaser
Fall by Roger Priddy



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This is a tree in the fall.



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What do you wear in fall?

Earth & Space #4

Winter Season

Depending on where you live, winter may bring many stark changes to the students' daily lives: new wardrobe, new outerwear, and maybe even no school days. Explore winter at this center!

Recommended Supplies:

Winter items:

- Snow (or Insta-Snow!)
- Ice
- Mittens and a Winter hat
- bare tree branch

Procedure:

1. Go outside for a winter nature walk
2. Display the winter items at the science center.
3. Invite students to observe them and talk about what they notice.
4. What happened to the tree branch? Why do we have to wear mittens when we play with snow and ice?

Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in winter.
- The student will discuss things that change when the new season arrives.



Book Recommendations:

The Mitten by Jan Brett
The First Day of Winter by Denise Fleming
Snowballs by Lois Ehlert
The Snowman by Raymond Briggs
The Snowy Day by Ezra Jack Keats



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This is a tree in the winter.



What do you wear in winter?

Earth & Space #5

Spring Season

Spring is abundant with signs of new life! Students notice the trees blooming and flowers peeking out through the ground. Encourage a deeper understanding of spring at this center.

Recommended Supplies:

Spring items:

- flowers
- watering can
- plastic eggs in a nest
- tree branch with buds
- stuffed animals: chick, lamb, caterpillar

Procedure:

1. Go outside for a spring nature walk.
2. Display the spring items at the science center.
3. Invite students to observe them and talk about what they notice.
4. What happened to the tree branch? What will the baby animals grow into?

Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in spring.
- The student will discuss things that change when the new season arrives.



Book Recommendations:

Mouse's First Spring by Lauren Thompson
Raindrop, Plop! by Wendy Cheyette Lewison
Wake Up, It's Spring! by Lisa Campbell Ernst
Bear Wants More by Karma Wilson



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This is a tree in the spring.



What do you wear in spring?

Earth & Space #6

Summer Season

Summer offers another exciting change. Whether they are in year-round school or off for the summer, students' daily lives will change a bit with the new season.

Recommended Supplies:

Summer items:

- Sunglasses
- Swimsuit
- Sun visor
- Sunscreen (empty bottle, or use duck tape to close it)

Procedure:

1. Go outside for a summer nature walk.
2. Display the summer items at the science center.
3. Invite students to observe them and talk about what they notice.
4. Why do we have to wear sun protection in the summer?

Learning Objectives:

- The student will observe changes in plants, animals, and weather that occur in summer.
- The student will discuss things that change when the new season arrives.



Book Recommendations:

Ice Cream Summer by Peter Sis

I See Summer by Charles Ghigna

Mouse's First Summer by Lauren Thompson

Summer by Ailie Busby



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This is a tree in the summer.



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What do you wear in summer?