Asia

Asia is a continent. It is the largest continent in the world. One third of land on Earth is in Asia. It has the longest coastline of any continent. The tallest mountain in the world, Mount Everest, is in Asia. The lowest point on land, the Dead Sea, is also in Asia. It has the widest variety of plant and animal life on the planet. It has seven biomes: desert, grassland, temperate forest, tropical forest, wetland, mountain, and polar.

Asia Biome Cards Elementary

Guide to Presentation

2020 edition

Asia Biome Cards - Elementary

(suitable for children 8 to 12 years of age)

Contents of Asia Biome Cards - Elementary:

There are 99 three-part cards in the Asia Biome Cards - Elementary set. The three-part cards of the Asia Biome Cards - Elementary include a picture card, a text card, and a label for each of the following:

- the continent
- 7 biomes (desert, grassland, mountain, temperate forest, tropical forest, wetland, and polar)
- a plant, invertebrate, fish, amphibian, reptile, bird, and mammal card for each biome
- 6 people cards from each biome (one card each for the people, food, clothing, shelter, transportation, and culture)

A set of paper Biomes of the Continent Labels is also included with the the Asia Biome Cards - Elementary. The blackline masters for Asia Biome Cards - Elementary can be downloaded from the Asia Materials section of the A - Z PDF library on our website (wasecabiomes.org).

Additional Related Products:

- *Introduction to the Biomes with Curriculum - Primary*
- *Introduction to the Biomes with Curriculum - Elementary*
- *Asia Biome Cards - Primary*
- *Asia Biome Puzzle*
- *Asia Biome Readers*
- *Biomes of the World Mat*
- *Asia Biome Mat*
- *Asia Stencil*
- *Asia Portfolio*
- *Biome Stamps*
- *Animals of the World Measuring Tape*
- *Complete Set of Companion Journals for the Continents*
- *Biomes of the Continent Labels (veneer)*
- *Three-Part Card Tray Cabinet - Elementary*
- *Cabinet of the Continents*

Guide to Presentation

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Introduction

Continent Biome Cards - Elementary provide a structure for the exploration of continents by biomes. They offer a unique approach to geography and continent study by inviting you and your students to learn about each continent by investigating the plants, animals, and humans that live there and how they have adapted to meet their basic needs within their biome. This approach encourages an integration of various disciplines (such as geography, botany, zoology, and cultural studies) that are traditionally isolated. The relationships and adaptations of botanical and zoological species to the conditions of their biome are emphasized. So too are the relationships and adaptations of human cultures to their biospheres. This approach departs from the traditional anthropocentric view of political geography and encourages young learners to view relationships in the world in a new way. We strongly recommend that the children have completed study of our Introduction to the Biomes before they work with these materials.

As the children study the continents and their biomes, they will develop a strong understanding of how life adapts to different conditions. This is an indirect aim of these materials. The direct aims are to develop critical thinking skills and a motivation to read, write, and communicate information. Please keep in mind that while learning the names of plants and animals (and information about them) is fun and empowering, something more lasting and momentous is in process. These materials will, hopefully, generate enthusiasm for learning. Be careful not to use them in a rote fashion by having children copy the cards or do any repetitive task in connection with it.

Continent Biome Cards - Elementary are designed for children 8 to 12 years of age who are reading on a third or fourth grade level. They serve as a structure for independent research. Only one example of a plant, an invertebrate, and each class of vertebrate are presented for each biome. After the initial presentation, children work independently to find examples of other plants and animals that live in a particular biome of the continent being studied. In addition, they might find another group of people, indigenous or otherwise, who inhabit a biome and research how they meet their needs in that biome.

This Guide to Presentation gives you some ideas of how to open up the possibilities of these materials and create a dynamic learning experience. The lesson presentations are the first period of a three-period lesson. They are short, impressionistic lessons intended to capture the children's attention and plant a seed that will flourish into a second period of self-motivated activity where the child does the real learning on their own with guidance and support from adults. The third period will be the mastery the students gain through their accumulated experience with the materials. At this point, their understanding will lead them to use the information in higher levels of learning such as application and synthesis.

Continent Biome Cards - Elementary can be read to younger children by an adult, however, we recommend that younger children work with the Continent Biome Cards - Primary so that they can work more independently. Children in a mixed age group setting of 6 to 9 year olds may need both sets of materials to meet their various needs.

Please note that the icons on the back of each of the cards serve as a control of error and help keep the materials organized. For example, the following set of icons would be found on the back of a card for a fish that lives in a desert in Asia.

These are all of the icons that can be found in Continent Biome Cards - Elementary:

Planning Your Continent Studies

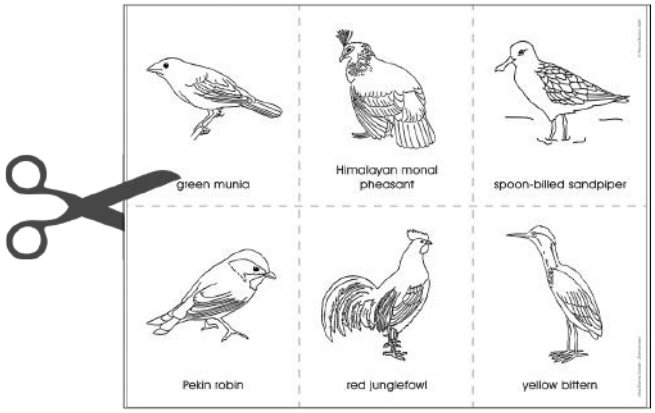
Montessori classrooms have the benefit of a mixed-age grouping with a three-year cycle. This arrangement affords a Montessori guide the luxury of not having to cover all 7 continents every year. We strongly recommend that you begin every year with your home biome in your home continent. Each year, children will use the skills they have acquired to dig deeper into the materials and further their research. They will also be able to share their knowledge base with the first year students.

After this deep dive into your home biome, you can go on to look at the other biomes. Know that your students may become interested in a particular biome and want to linger there for a while. If you give yourself three years to circle the globe by continent, you can study your home continent and two other continents each year. As you study other continents, you may plan to emphasize a particular biome of that continent. Some continents have a "most famous" biome, such as the tropical forest in South America or the grasslands of Africa. Please note that these materials are flexible enough to allow you to be creative in your presentation. Some classrooms study one biome at a time and look at each continent where it is found before introducing another biome and then exploring it on each continent where it is present. Some classrooms integrate their biome studies with the study of the Timeline of Life, following the evolution of terrestrial biomes in the order of wetland, tropical forest, grassland, desert, mountain, and polar regions. Some classrooms store all of the biomes of the continents in cabinets with drawers (or our Cabinet of the Continents) and children are given an introductory lesson and allowed to explore continents on their own.

Your home biome may or may not be in Asia, so there is a section in this Guide to Presentation called Exploring Your Home Biome that outlines our recommendations for your approach to the study of your home biome that can supplement the following lessons.

Blackline Masters

The blackline masters for Asia Biome Cards - Elementary can be downloaded from the Asia Materials section of the A - Z PDF library on our website (wasecabiomes.org). The first page is a biome map of the continent. The pages that follow are labeled blackline illustrations of each of the cards in Asia Biome Cards - Elementary. They may be printed and copied for the children to use to make their own cards and serve as an aid in their research. Each page should be cut down to card size along the dashed lines.



Exploring Your Home Biome

Following a basic principle of Montessori philosophy, we feel that it is best to start your biomes of the continents studies from the center and work outward. The first biome you explore with your students should be the most familiar, your home biome on your home continent.

It is extremely important that while you begin to work through the materials for this biome, you help develop a sense of place and an awareness of the natural world in this biome. Introduce them to the rich diversity of life in your biome. Spend time outdoors with your students to gain firsthand knowledge of your biome. Visit a state park, wildlife reserve, nature center, or botanical garden in your area. Get some field guides to identify plants, birds, insects, animal tracks, etc. With this kind of guidance, children are awakened to their natural wonder and, generally, grow more comfortable in an outdoor setting. They get excited about the plants and animals in their biome.

As you are learning about your home biome, pay attention to its conditions and how they might shift throughout the year. Set up a weather station to monitor precipitation and temperature. Make charts with the data you collect and compare it to historical data from your area. Note seasonal changes and how they affect the plant and animal life around you.

Pose questions to investigate with the children: What are the sources of water in your biome? What is the soil like? What is the most common kind of plant in your biome? Are there trees? Are there different kinds of trees? What other kinds of plants are there? How do they spread their seeds? Where do animals find shelter? What foods are available for herbivores? What carnivores live in your biome? How do they hunt? How do animals in your biome protect their young? As you are investigating these questions with the children, avoid giving answers. Point them in the right direction so that they can find the answers for themselves.

Before you introduce the people of a biome for your home biome, we suggest that you have the children make a set of cards about their own culture. They will get a sense of the diversity of their culture and how difficult it is to generalize about a culture. This will help build an appreciation for the nuances of the cultures they are introduced to throughout their continent studies.

By promoting a thorough investigation of your home biome, and providing direct experience with it, you are cultivating context and enriching the experience of continent studies by biome. When a child does a "research" on a plant or animal as you work through the lessons of your home biome, he or she will understand that animal or plant in the context of the whole. You will probably spend more time on the study of your home biome than any other biome you study throughout the year. This time is important because you are building a strong foundation for the investigation of other biomes. When it is time to move on to studying another biome, your home biome will serve as a point of comparison for the student's imaginative exploration of other biomes.

Lesson One: Introducing a Biome

You will need: the three-part continent card, the three-part biome card for the biome you will be introducing, Asia blackline master map (page 1 of the Asia Biome Cards - Primary Masters), the blackline master card for the continent and that biome, colored pencils, pictures of the biome from magazines, books, or the internet, a notebook or journal for each student's research (such as our Big Asia Companion Journal), and one of the following: an Asia Puzzle Map, Asia Biome Mat, Asia Stencil, or Biomes of the World Mat as reference

Purpose: To introduce a biome of Asia and discuss its attributes. To assess what the children already know about plant and animal life in that biome. To encourage independent research about the biome.

1. Introduce the continent by laying out its picture card. Place its label beneath it. Then, read, or have a child read, the continent text card and lay it below the label.
2. Bring out the appropriate puzzle map, stencil, or mat. Note the compass rose for orientation. Discuss the map legend to highlight what color or texture identifies each biome. Ask the children to identify which biomes are on the continent and point to where they are.
3. Show the children the picture card for the biome you are introducing and place it next to the continent card. Place its label below the picture card. Read, or have a child read, the text card for that biome and place it below the label.

4. Have the children point out all the places that biome can be found on the puzzle map, stencil, or mat.
5. Initiate a discussion to discover what the children already know about the biome:
    - What climate zone is this biome found in?
    - What is the temperature like?
    - Are there seasons?
    - How much rain falls in this biome?
    - What is the soil like?
    - What is the most common kind of plant?
    - How do plants adapt to this biome?
    - What kind of animals live in this biome?
    - How do the animals that live in this biome adapt?

    You can use pictures of the biome from magazines, books, or the internet to help stimulate the discussion.
6. Have the children color in the biome on the blackline master map. They may want to use texture to indicate grass or treetops. Mountain ranges can be drawn in as well.

7. The children can also color the blackline master cards for the continent and biome. They may want to write a brief description from their extension research on the back of the card. If you are using the Biome Stamps in your classroom, the child can stamp their work with the continent and biome on the back. There are also templates for cards that can be downloaded from the Biome Stamps section of our A - Z PDF library that the children can use to illustrate, label, and write their own cards.
8. As the children work through the extensions for this lesson, you may want to read them, or have them read, any relevant pieces of literature you have gathered that describe the biome and create a sense of place. If there are stories that are set in this biome, read them aloud making sure to emphasize the setting.

Extensions and ideas for student exploration:

- The children can, as a small group or individually, research a specific place mentioned in the biome text card to write a travel guide for the location that describes the place and how to get there.
- The children can research rainfall and temperature for the biome and create charts or graphs.
- Does this biome have seasons? The children can do research to compare the conditions of the seasons to make charts or graphs.
- Discuss the land: What kind of soil does this biome have? How do they think that soil may affect plant life there?
- Create a poster board chart where the children can list adjectives that describe the biome.
- The children can, as a small group or individually, create a presentation about the biome for the class by cutting pictures from magazines and making a poster or finding pictures on the web to create a digital slide show.
- *If this is not your home biome, discuss how this biome compares to your home biome. You can create a chart with the children to compare your home biome to this one. You can create your own categories or use the ones from the Biomes Questions & Answers cards in the Introduction to the Biomes Curriculum - Elementary:*
    - *Moisture*
    - *Temperature*
    - *Soil*
    - *Plants*
    - *Animals*
    - *Human Impact*

Lesson Two: Plant Life in a Biome

You will need: the three-part biome card for the biome you are studying, the three-part plant card for that biome, the plant label from the Biomes of the Continent labels, the blackline masters card for that plant, colored pencils, a notebook or journal for each student's research (such as our Big Asia Companion Journal)

Purpose: To introduce the plant life of a biome of Asia. To learn to differentiate plants. To discuss a plant's adaptations to its biome. To research and write about plants of a biome.

1. Explain to the children that they will be studying the plants of a biome before they study the animals of a biome. Why? Because the animals of a biome depend upon the plants of a biome for food: Animals either eat plants or eat animals that eat plants.
2. Present the picture card for the biome that you are studying and lay it on a mat. Name it as you place the label beneath the picture card. Have a child read the text card and place it below the label.
3. Place the plant label from the Biomes of the Continent Labels to the right and above the biome card. Place the picture card for the plant below the plant label. Name the plant as you place the label beneath the picture card. Have a child read the description card and place that under the label.

4. Discuss whether or not they think the plant is an example of the predominant type of plant in the biome. If so, can they name other plants like it? If not, what plants do they think are more common?
5. How do the conditions in this biome affect plant life? Ask questions about how temperature, rainfall, soil, and the seasons might affect plant life in this biome. What kind of adaptations do they think would be helpful for plants in this biome?
6. The children may color in the blackline master for this plant card and write a description on the back or illustrate, label, and write about the plant in their notebook or journal. Encourage them to color "like scientists," paying close attention to the colorings and markings on the plant.

Please note that student research can be guided to find the diversity in the predominant plant life of a biome or to find different kinds of plants in different layers of a biome.

Extensions and ideas for student exploration:

- Print multiple copies of the blackline master card for the plant so that students can create nomenclature cards for the parts of the plant. On the first copy, they color the whole plant and write about it in their own words on the back. Then, they use the other copies to color in the

isolated parts (a card with just the leaves colored, a card with just the stems colored, etc.) and write a description on each card of that part and how it is adapted to the biome on the back.

- The child can research another plant from that biome. They can illustrate, label, and write about the plant on a blank card from the blackline master (or the Biome Stamps template) or in their journal. They may make nomenclature cards for the parts of the plant they have researched.
- Depending on the biome, the child can do further research:
    - If the biome is a grassland, how many different grasses can be found there?
    - If the biome is a tropical forest, what kind of plants can be found in each of the forest's layers (the canopy, the understory, and the ground level)?
    - If the biome is a temperate forest, what kind of trees are most commonly found there?
    - If the biome is a wetland: Is it swamp with trees? A marsh with grasses? Or a bog with lots of peat?
    - Why might mountains and polar regions have small, densely rooted perennial flowering plants?
    - Cacti are only found in new world deserts. Palms can be found in the oases of other deserts. Why might that be the case?
- The child can update their travel guide about the biome to include information about the plants that grow there.
- *If this is not your home biome, discuss how this biome's plant life compares to your home biome's plant life. Are the biomes similar? Do they have similar plant life? Is climate, elevation, or geography a key factor behind these differences?*

Lesson Three: Animal Life in a Biome

The animal cards for a biome should be introduced after the plants of a biome have been explored.

You will need: the Biomes of the Continents Labels for the plant and all of the classes of animals, the three-part biome card for the biome you are studying, the three-part cards for the plant and all of the classes of animals for the biome you are studying, the blackline masters cards for the animals from the biome, colored pencils, a notebook or journal for each student's research (such as our Big Asia Companion Journal)

Purpose: To introduce the animal life of a biome of Asia. To learn to differentiate animals. To discuss an animal's adaptations to its biome. To explore the interdependence of plants and animals in a biome. To research and write about animals of a biome.

1. Reintroduce the three-part cards for the biome. Lay them down on the left side of a mat with the picture card at the top, the label beneath the picture card, and the description underneath the label.
2. Place the labels for plant, invertebrate, fish, amphibian, reptile, bird, and mammal across the mat above and to the right of the biome cards.
3. Lay the picture card for the plant beneath the plant label. Name it as you place the label beneath the picture card. Read, or have a child, read the text card and place it below the label.
4. Discuss whether the plant may provide food, shelter, or both for animal life in the biome.
5. Look at the different animal picture cards and have the children sort them by class and place them under the appropriate label on the mat.
6. Look at the labels for the animals and have the children guess which animal each label names. (They can use the icons on the back of the labels to self-check before they place the label under the appropriate picture card.)
7. Have the students take turns reading the text cards. After a card is read, have the students guess which animal it describes. (They can use the icons on the back of the text card to self-check before they place the text card under the appropriate label.)

8. Discuss any interdependence that might occur between the animals and the plant. Is there any interdependence between the animals?
9. The children may color in the blackline masters for these animal cards and write descriptions on the back or illustrate, label, and write about them in their notebook or journal or on cards from the Biome Stamps templates. Encourage them to color "like scientists," paying close attention to

the colorings and markings of the animals. If you are using the Biome Stamps, they can stamp their work with the continent, biome, and class.

Extensions and ideas for student exploration:

- The child can find another animal that lives in the biome to research:
    - Is it a vertebrate or invertebrate? If it is a vertebrate, what class does it belong to?
    - What does it eat? Where does it live in the biome? What special adaptations does it have?
    - What size is it? After finding its dimensions, have them draw a life-size picture. Older students may want to create a grid on a small picture of the animal and a grid on the larger paper they are using for their drawing to transfer the image one square at a time.
- The child can update their travel guide about the biome to include information about the animals that live there.
- As a class, create a large chart with six columns. Use the Biome Stamps, or draw the icons, to label invertebrate, fish, amphibian, reptile, bird, and mammal at the top of the columns. Find different examples of each type of animal and list them in the columns. Have the students choose an animal to do a "research" about.
- The children can use the picture cards or pictures from their research to create a food chain for the biome.
- The children can write a play about the food chain. Guide them to focus on how the energy can be traced through the food chain back to the plant that got its energy from the Sun. Once complete, put on a performance of the play at circle.
- Print multiple copies of the blackline masters card for one of the animals so that students can create nomenclature cards for the parts of that animal. On the first copy, they color the whole animal and write about it in their own words on the back. Then, they use the other copies to color in the isolated parts (a card with just the eyes colored, a card with just the limbs colored, etc.) and write a description on the back of each card for that part and how it is adapted to the biome.
- As a class or individually, the children can create a chart to show the complete classification of one of the animals in the biome. They start with its scientific name and, then, expand it to include all the levels of classification: kingdom, phylum, class, order, family, genus, and species. Expand the chart to include other animals from the cards or student research.
- With a fine black marker, make a large drawing of the biome featuring plants and animals. Make seven copies per student so that they can create nomenclature for the parts of the biome. Have the students color in a copy for each part of the biome: the whole biome, the air, the water, the soil, the plants, and the animals. They can write descriptions on the back for each part of the biome. On the seventh copy, the students can track the transfer of energy through the biome with arrows and write about these energy transfers on the back.
- As a class project, create a mural of the biome highlighting its plant and animal life.
- *If this is not your home biome, discuss how this biome's life compares to your home biome's life. Are the biomes similar? Do they have similar plant life? Do they have similar animal life? Is climate, elevation, or geography a key factor behind these differences?*

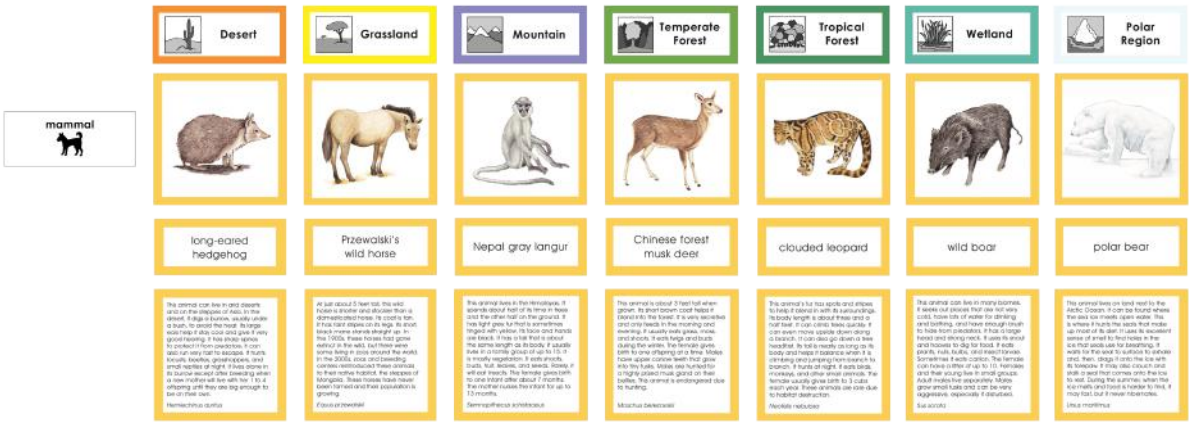
Lesson Four: Comparison of Plant and Animal Life in the Biomes

This lesson is designed for presentation after all of the biomes of the continents have been introduced and their plant and the animal life have been explored.

You will need: the Biomes of the Continents Labels for all of the biomes of the continent, a complete set of the three-part cards for the plants, invertebrates, or a class of vertebrates (for example, all of the mammals of Asia), the Biomes of the Continent Label for the three-part card set you chose, a notebook or journal for each student's research (such as our Big Asia Companion Journal)

Purpose: To discuss and compare the characteristics and adaptations of plants or animals in different biomes of the continent. To research and write about the similarities and differences of plants or animals across biomes.

1. Place the labels for each biome of the continent across the top of a mat.
2. Introduce the group you will be comparing by laying its label a few inches down and to the left of the biome labels.
3. Have the children sort and lay out the the picture cards under the appropriate biome label.
4. Name each plant or animal as you lay the label under the picture card. Then, have a child read the description card before laying it beneath the plant or animal it describes. (They can use the icons on the back of the text card to self-check before they place the text card under the appropriate label.)



5. Discuss how the characteristics and adaptations of each compare across the biomes.

Extensions and ideas for student exploration:

- The children can research similar animals that exist in each biome, such as a carnivore or small burrowing herbivore. Make a chart with the biome stamps across the top and the category chosen on the left. Put each animal found in the column under its biome. Compare their seasonal habits and food sources. How has each species adapted to a different biome?
- The children can research an animal that lives in more than one biome. What biome(s) does it not live in? Why?
- The children can research small, flowering plants from each biome and compare their growth habits, how they are pollinated, and how they spread their seeds.
- The children can research a plant that lives in more than one biome. What biome(s) does it not live in? Why?

- Students may also enjoy the big work of laying out all of the plant and animal life cards across all of the biomes. There will be as many rows as there are biomes on the continent. Depending on how big they want to go, they may lay out all of the three-part cards or just the picture cards (see the following illustration of the set-up with just the picture cards). Stand back to make observations.

Lesson Five: People of a Biome

The three-part people cards for each continent of the Continent Biome Cards - Elementary explore a group of people from each biome on a continent. They are intended to provide brief introductions to support further research. In order to give a realistic view of the inhabitants of a continent, we always try to include urban, rural, and indigenous groups. The cards introduce the people and their food, clothing, shelter, transportation, and culture with an emphasis on adaptation and sustainability. Spiritual needs may be included in the cultural expression cards (it is impossible to fully represent the richness of a culture's customs, arts, and religions in such a small space). We do not include defense because we feel that traditional history, and even cultural geography, places a lot of emphasis on war and conflict. We would like to introduce the people keeping a more peaceful perspective in mind. This is not to deny the existence of war, but to leave it to your discretion to guide those conversations in the classroom.

You will need: the three-part biome card for the biome of the people you will be studying, the three-part people cards for that biome, the Biomes of the Continents Labels for the people, food, clothing, shelter, transportation, and culture; the blackline masters cards for the people from the biome, colored pencils, a notebook or journal for each student's research (such as our Big Asia Companion Journal)

Purpose: To learn about the people of a continent. To explore different cultures of a continent. To examine how people's basic needs are met and how this is affected by their biome.

1. Present the picture card for the biome that you are studying and lay it on the left side of the mat. Name the biome as you place the label beneath the picture card. Have a child read the text card and place it below the label.
2. Place the labels to the right and above the biome card in this order: the people, food, clothing, shelter, transportation, and culture.
3. Have the children sort through the picture cards to match them to the appropriate categories. (The icons on the back of the cards can be used for self-check at any point while laying these cards out.)
4. Have the children sort through the people card labels to match them to the appropriate picture card. Note that the native language is used whenever possible.
5. Have the children take turns reading the text cards aloud. After one is read, have them place it in the appropriate column under the corresponding label.

6. Discuss the ways the biome influences each of the fundamental needs of the people. Do the conditions in their biome influence their customs and lifestyle?
7. Discuss how these people have adapted to their biome or modified it to suit their needs:
    - Do these people live in harmony with the natural world?

- Are their practices sustainable?

Note that the indigenous communities are, often, the most interesting in terms of adaptation and sustainability. They tend to meet their basic needs in ways that show great respect for their environment.

8. Discuss the influence of modern culture on ways of life:
    - Does modern, western culture influence their lifestyle and culture?
    - What are some of the things in their daily lives that have changed over the course of their history or with the influence of other cultures?
    - How do these people work to keep their traditions alive?
    - Do they utilize all of the modern conveniences that we think of as necessary? If not, why do we think of them as necessary?
    - How do they manage compromises between their traditions and modern technologies, conveniences, and cultures?
9. The children may color in the blackline masters for the people cards and write descriptions in their own words on the back or illustrate, label, and write about them in their notebook or journal.

Extensions and ideas for student exploration:

- The children can research another group of people who live in that biome and make a set of cards for them. (The card templates from the Biome Stamps or copies of the blank cards from the blackline masters can be used to make these cards.)
- The children can research an indigenous group of people who lived in that biome and how they lived before the introduction of western culture. They can make a set of cards for these people that reflects their research.
- Are there people living in this biome now in a sustainable way? Have the children research these people and make a set of cards emphasizing how they live in harmony with nature.
- As a class, do some more research on the food of the people of a biome. Make a meal together. Try to come as close as possible to the authentic cuisine of that culture. Eat the meal following the customs of that culture.
- Do these people gather food from the wild? Go foraging for foods with someone knowledgable and, if possible, look for things that are similar to what they would gather.
- The child can design a home for the biome that uses locally available materials and provides shelter in a sustainable way.
- The child can build a scale model of a shelter out of natural materials. Bring all of the models together to make a model village. As a group, make some structures that can be used for group gatherings.
- As a group, build a shelter out in nature.
- Design a craft project for the children that can be done using materials from that biome.
- Sing songs and perform dances of the culture.
- The children can play games that children of that culture play.
- The children can research the clothing of a people. Do men, women, or children dress differently? Is their clothing considered traditional? Are there national costumes? If available, bring in samples of clothing from that culture or bring in appropriate samples of fabric and materials to simulate the clothing. Have a fashion show and discuss how the clothing choices suit the biome.

- As a class, you can use the "Storyline Scotland" approach (written about at length in the Waseca Biomes Curriculum Guide) to research the people of the biome and develop the storyline of a day to act out in the classroom.
- *If this is not your home biome, discuss how this biome's people compare to the people of your home biome or the people cards the children made for their culture while studying their home biome. Are the cultures similar? What are some of the differences? What factors influence the similarities and differences? (See Lesson Six for more details on the comparison of peoples of the biomes.)*

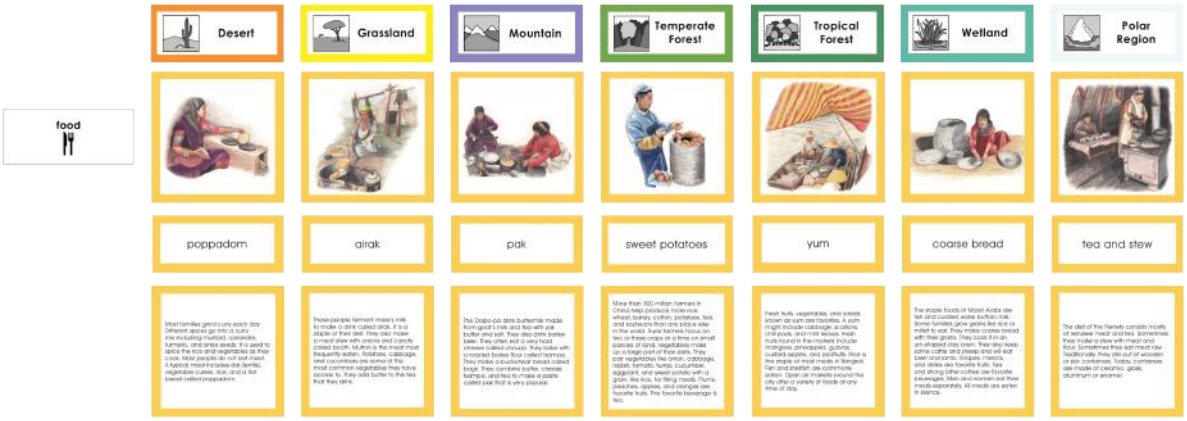
Lesson Six: Comparison of People of the Biomes

This lesson is designed for presentation after all of the biomes of the continent have been introduced and all of the peoples of the biomes have been explored.

You will need: the Biomes of the Continents Labels for all of the biomes of the continent, a complete set of the three-part cards for a people, the Biomes of the Continent Label for the fundamental need you will be comparing (food, clothing, shelter, transportation, or culture), a notebook or journal for each student's research (such as our Big Asia Companion Journal)

Purpose: To compare how the people who live in different biomes of a continent meet their basic needs. To compare how the conditions of a biome affects a people's lifestyle, culture, and customs.

1. Place the labels for each biome of the continent across the top of a mat.
2. Introduce the fundamental need you will be comparing by laying its label a few inches down and to the left of the biome labels.
3. Have the children sort and lay out the the picture cards under the appropriate biome label. (The icons on the back of the cards can be used for self-check at any point while laying these cards out.)
4. Name each picture card as you lay the label under it. Then, have the children take turns reading the text cards and laying each beneath the label it describes.

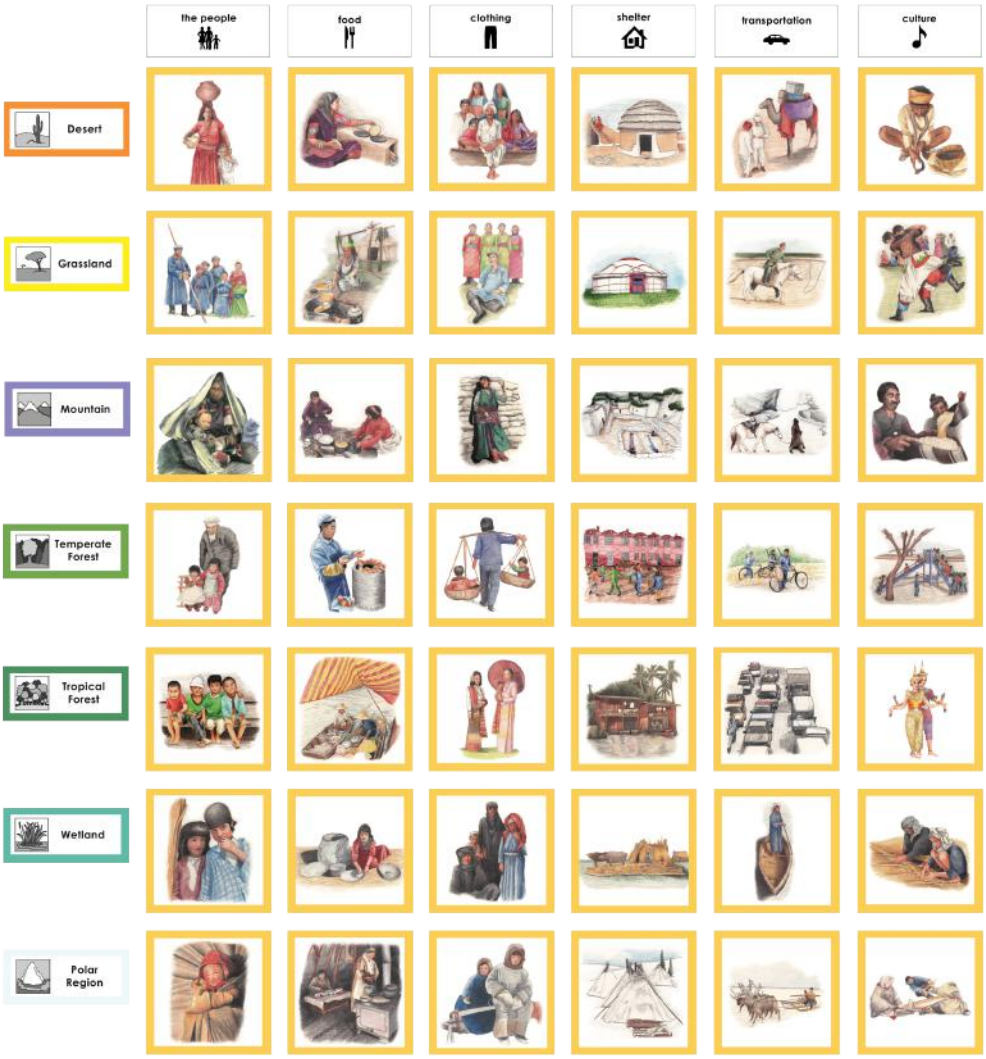


5. Discuss how we, as humans, all have the same basic needs.
6. Discuss how the conditions of a biome can affect how basic needs are met. Depending on the need being compared, some of the following questions might stimulate the discussion:
    - Does temperature, rainfall, weather, or season affect the food that can be grown or gathered in a biome? How does that influence the way people eat?
    - Does temperature, rainfall, weather, or season affect the animals that people use for food in a biome? If the people there eat meat, do they eat wild or domesticated animals? How are domesticated animals adapted to that biome?
    - How does a biome influence the way a people dress? Are there other factors that affect the way a people clothe themselves? Are there similarities or differences across the continent in clothing styles and preferences?
    - Does the weather or climate affect the way shelters are constructed? What are other things that influence the construction of shelters? Are the shelters temporary or permanent?
    - How do the conditions of a biome affect the transportation of a people? Are modern technologies big influences in the way these people move from place to place?

- Is the biome reflected in the culture? Is the natural world important to these people?
- Are there more similarities or differences between cultures on this continent?

Extensions and ideas for student exploration:

- Students may also enjoy the big work of laying out all of the people cards across all of the biomes. There will be as many rows as there are biomes on the continent. Depending on how big they want to go, they may lay out all of the three-part cards or just the picture cards (see the following illustration of the set-up with just the picture cards). Stand back to make observations.



- The children can research indigenous peoples living on the continent that are not featured in our cards to make a set of their own cards. Then, they can compare the indigenous people they researched to the people from that biome featured in our cards.
- The children can research modern or urban cultures living in different biomes on the continent to make a set of their own cards. How do these people compare? How do people living in rural areas compare to those in urban areas? How does transportation affect urban or rural cultures?

- The children can research an urban culture on the continent. Where is the closest agriculture region? Where is most of the food grown for these people? Is it in the same biome or a different biome? What is the predominant food source? How is the food transported to the city?
- The children can pick an early explorer of the continent to research. What biomes did the explorer travel through? What was that explorer's purpose? What did the explorer "discover?" What were his perceptions of the people(s) he encountered?

Lesson Seven: Comparison of the Biomes of the Continents

This lesson is designed for presentation after all of the biomes of at least two continents have been explored.

You will need: the Biomes of the Continents Labels for the continents you will be comparing and the biome, plant, animal, or people category you will be comparing, the three-part cards for the plants, animals, or people you will be comparing, a notebook or journal for each student's research

Purpose: To compare life in different biomes across continents. To look for similarities and differences in life in biomes across continents. To look for patterns in characteristics or adaptations in life in biomes across continents. To discuss why such patterns might exist.

Similarities between the plants and animals that live in a particular biome will become apparent as you work your way through the study of biomes across the continents. Most wetlands around the world have a reptile in the Crocodylidae family. Their variations reflect differences between the wetlands of the Amazon, the Everglades, and the Nile Delta. Most grasslands have a small, burrowing creature that lives in a group. There are biome "cousins" around the world like the ostrich, emu, and rhea. Most forests have samples of parasitic plants, such as mistletoe, that grow on their trees.

The comparison of plants and animals across the continents by biome makes for a rich field of study to employ critical thinking skills and observation. Children can reflect on their knowledge and make generalizations they can test by comparing the card material and their own research. The study of evolution and the natural history of the Earth will come into play. An exploration of the theory of Pangaea can give clues to help trace the common ancestors of plants and animals and illuminate their evolutionary history and their adaptations to their biomes.

With critical thinking skills and observation in mind, examining the differences between plant and animal species across the continents can be equally interesting. What plants or animals are unique to a particular continent? Do they have a family or order found on no other continent? Were they ever present on another continent?

Similarly, you might compare the people of a biome across continents. How do they meet their fundamental needs? Are their strategies for meeting these needs similar or different? How do they interact with or respond to their environment? Are their interactions and responses similar or different? What are their resources? Are they similar? How do they make use of their resources? What are their strategies for living sustainably? How do their strategies compare?

1. Place the labels for each continent you are comparing across the top of the mat. Place the labels for the biome and the category you will be comparing to the right and a few inches below the continent labels.
2. Introduce the picture cards and have the children sort them and place them below the appropriate label. (The icons on the back of the cards can be used for self-check at any point while laying these cards out.)
3. Have the children read the labels and place them below the corresponding picture card.
4. Have the children take turns reading the text cards aloud. After each text card is read, have the children place it under the appropriate label.
5. Discuss how the characteristics and adaptations of each compare across the continents.

Extensions and ideas for student exploration:

- The children can create comparison charts using their own categories or the ones from the Biomes Questions & Answers cards in the Introduction to the Biomes Curriculum - Elementary:
    - Moisture
    - Temperature
    - Soil
    - Plants
    - Animals
    - Human Impact
- The children can research members of the same family across continents to compare, such as Felidae from the tropical forests or Crocodylidae from the wetlands.
- The children can research and compare small, burrowing animals that live in grasslands around the world. Are their burrows similar? Are their diets similar? Do they live alone or in groups? What are their social structures like?
- The children can research large, flightless birds on different continents. Do they live in the same biome? Are they related?
- The children can research large, herbivorous mammals that live in the grasslands of different continents. How do they protect themselves from predators? Are their behaviors similar or different? Do they live in herds?
- The children can do research on the grasses found in each continent's grasslands to compare the species.
- The children can choose an animal from the tropical forest of any continent to research its niche or specialization. Then, the child can research other tropical forests to find other animals who have filled the same niche or have the same specializations.
- The child can choose any card for a plant or animal of a continent. Then, the child can do research to find similar species that live in the same biome on different continents. Scientific classification will aid the search.
- The child can use the Animals of the World Measuring Tape to compare the size of some of the different animals featured in the card materials. They can find the dimensions of other animals they have studied to compare to the animals featured on the tape. (Please note that the animals on this tape are pulled from both the Continent Biome Cards - Primary and Continent Biome Cards - Elementary.)