GreatHearts
Northern Oaks

Supplemental Packet

April 20 - 24, 2020

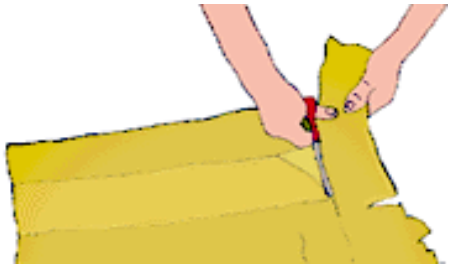
4th grade

Make a Paper Bag Book

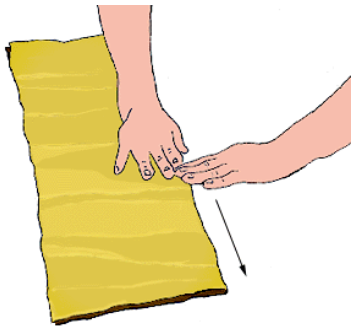
For centuries, people have made books from all sorts of materials and in all shapes and sizes. Here are instructions for making a simple book out of a paper grocery bag. All you need is a pair of scissors and a paper grocery bag. If you don't have a grocery bag, any sheet of paper will do (preferably 12 x 18 in).

STEP ONE: Carefully take the bag apart along its seam and lay it out on the table in front of you.

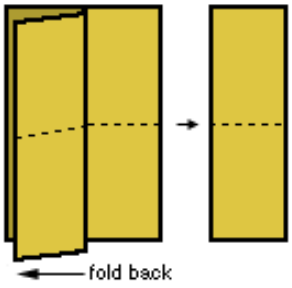
STEP TWO: Trim off the bottom so that you have a long rectangular sheet left.



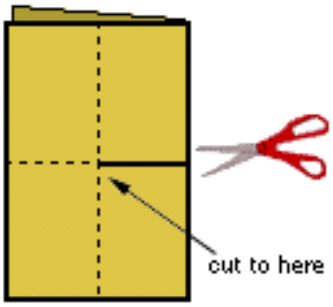
STEP THREE: the paper over long ways (hotdog style) so that the corners meet. Crease well and then unfold. Fold the paper over in the other direction (hamburger style). Place the corners together and crease well. Do not unfold.



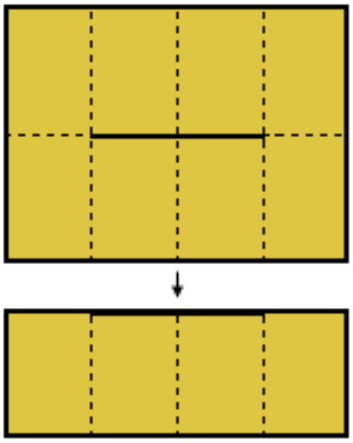
STEP FOUR: Fold back one side as shown in the figure below. Place the corners together and crease well. Repeat with the other side.



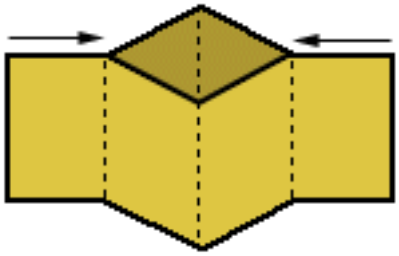
STEP FIVE: Unfold the last two folds. Holding the folded side in your hand, cut along the centerline until you reach the first vertical fold.



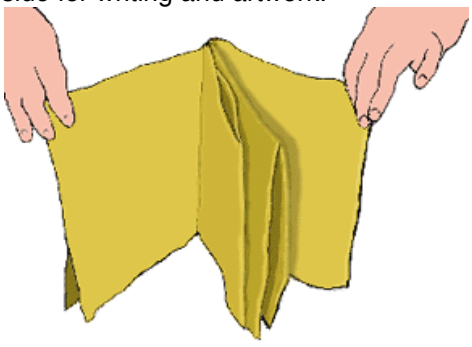
STEP SIX: Open the paper so that eight sections are showing. Fold the page over long ways. If there are pictures or words on the paper put them on the inside.



STEP SEVEN: Holding on to each side, gently push the ends together to form the pages of the book.



STEP EIGHT: Fold the front and back covers around so that the corners meet. Crease well. You should have six pages inside for writing and artwork.



Maria Sibylla Merian - *Carolina sphinx moth (Manduca sexta) sucking nectar from a peacock flower (Caesalpinia pulcherrima). 1726*

W5 Translation Answer Key

Page 1

Viridis canis est suprā. = The green dog is up/above.

Flāvus canis est īnfrā. = The yellow dog is down/below.

Caeruleus canis est intrā. = The blue dog is in/inside.

Ruber canis est extrā. = The red dog is out/outside.

Page 2

Ūnus canis est suprā domum. = One dog is upon/above/on the house

Trēs canēs sunt īnfrā in aquā. = Three dogs are down/below in the water.

Page 3

Viridis canis est suprā arborem. = The green dog is above/over the tree.

Flāvus canis est infrā arborem.= The yellow dog is below/under the tree.

Page 4

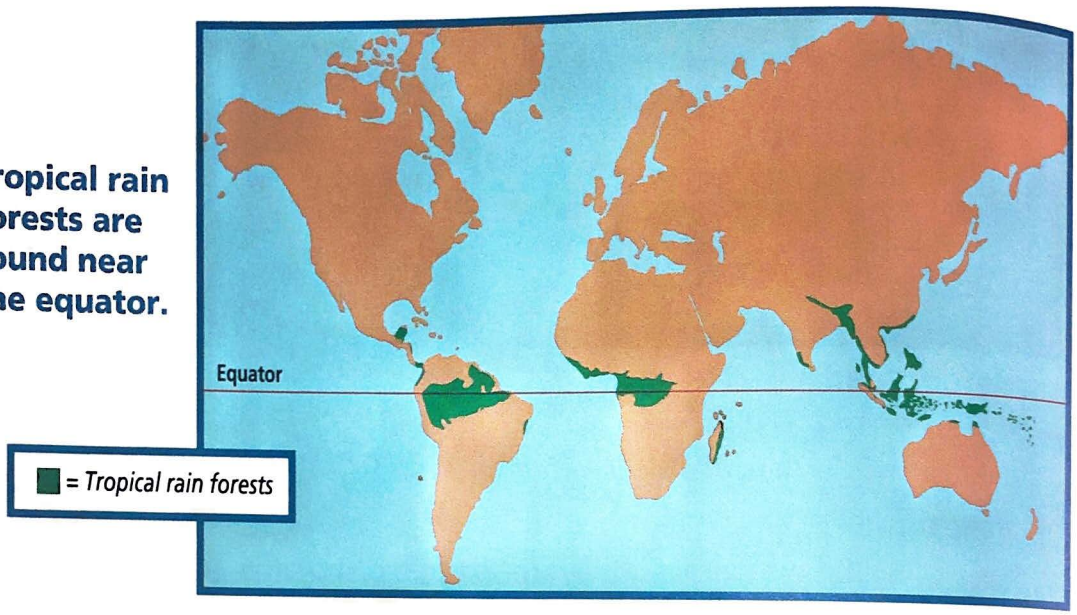
Duo canēs sunt in domū, in nave, in aquā. = Two dogs are in a house, on a boat, in the water.

Canis est suprā aquam. = The dog is over the water.

Canis est infrā aquam. = The dog is under the water.

Nonliving Factors in Rain Forests

Look at the map to see where tropical rain forests are on Earth. Can you find the ones in Australia? In Asia? In Africa? In Central America? In South America? Where else are there tropical rain forests? Find the line that shows the equator.



Tropical rain forests are found near the equator.

Tropical rain forests are wet and hot all year. The rainfall in rain forests is about 200 to 450 centimeters (cm) per year. How does that compare to where you live? Here are average rainfalls for five cities in the United States.

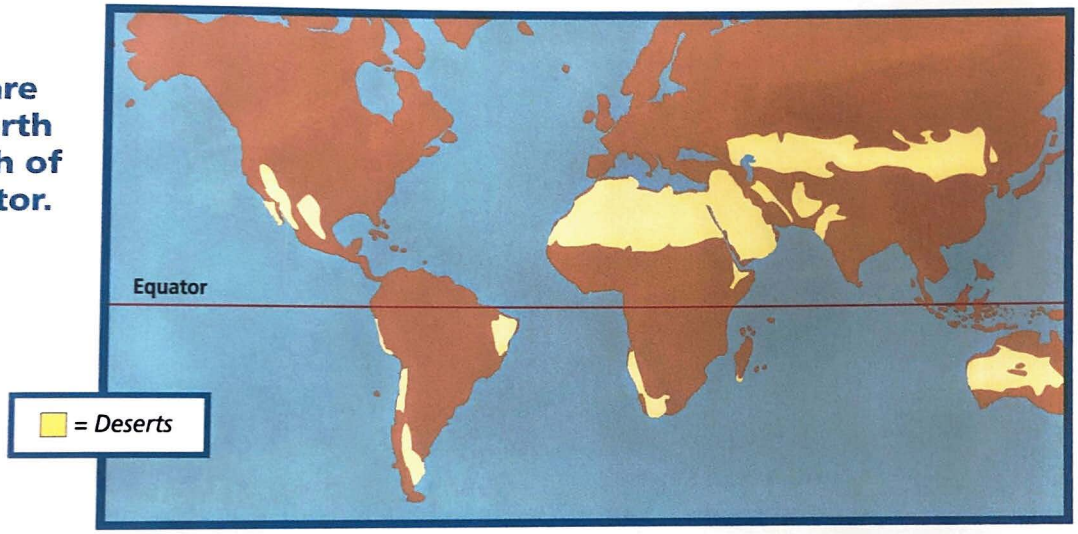
- Houston, Texas = 122 cm
- Charlotte, North Carolina = 110 cm
- Chicago, Illinois = 92 cm
- Anchorage, Alaska = 40.5 cm
- Phoenix, Arizona = 21.5 cm

The rain forest soil is shallow and not very **fertile**. Most of the nutrients that plants need to survive are in the trees. If the trees are cut down and taken away, the nutrients are lost to the rain forest environment. This is why it takes a long time for tropical rain forests to grow back once they are destroyed.

El Yunque National Rain Forest

Nonliving Factors in Deserts

Scientists define a desert environment as any place on Earth that receives less than 25 cm of rain per year. Soils are rocky or sandy in deserts. Water runs off the land quickly or sinks into the sand. Water **evaporates**, or dries up, quickly in the desert. Most of the small amount of water that does fall on the desert evaporates before plants and animals can get to it. Look at the map to see where deserts are on Earth.



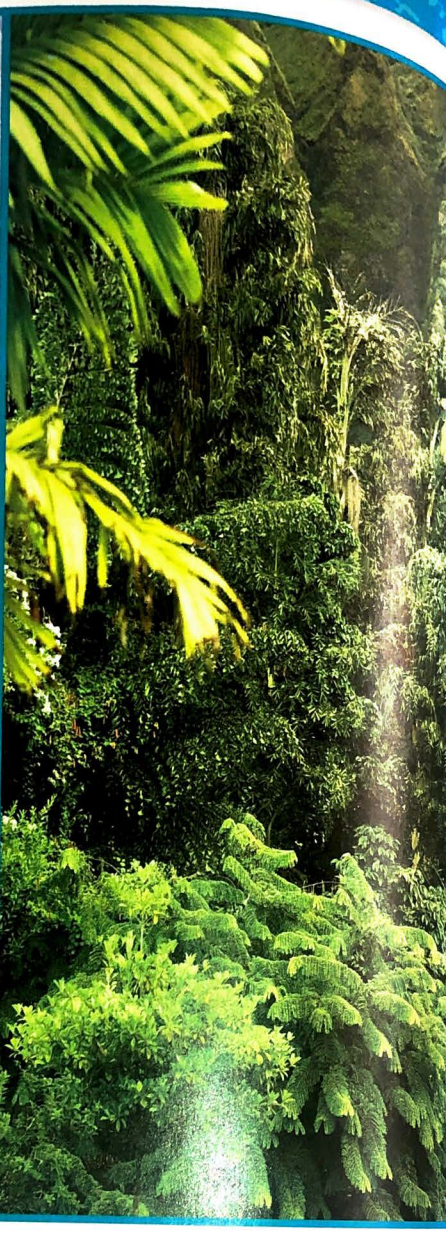
Deserts are found north and south of the equator.

Deserts are the hottest places on Earth during the summer. But during the winter, the temperatures can drop below freezing. Snow is seen regularly in parts of the deserts in southern California, China, and South America.

About 20 percent of Earth's land surface is desert. The small amount of rain, high temperatures, and large temperature changes from season to season make life challenging in the desert.

Snow on Joshua trees in the Mojave Desert

A desert environment



A tropical rain forest environment

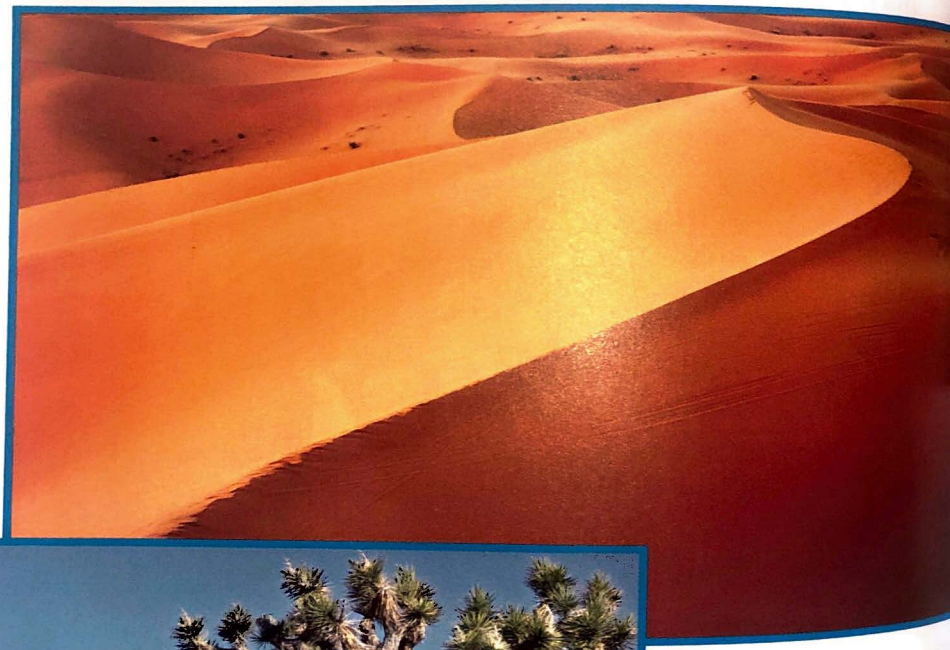
Review Questions

1. What are the environmental factors that define a desert environment?
2. What are the environmental factors that define a tropical rain forest environment?
3. Compare the environmental factor of water in deserts and rain forests.

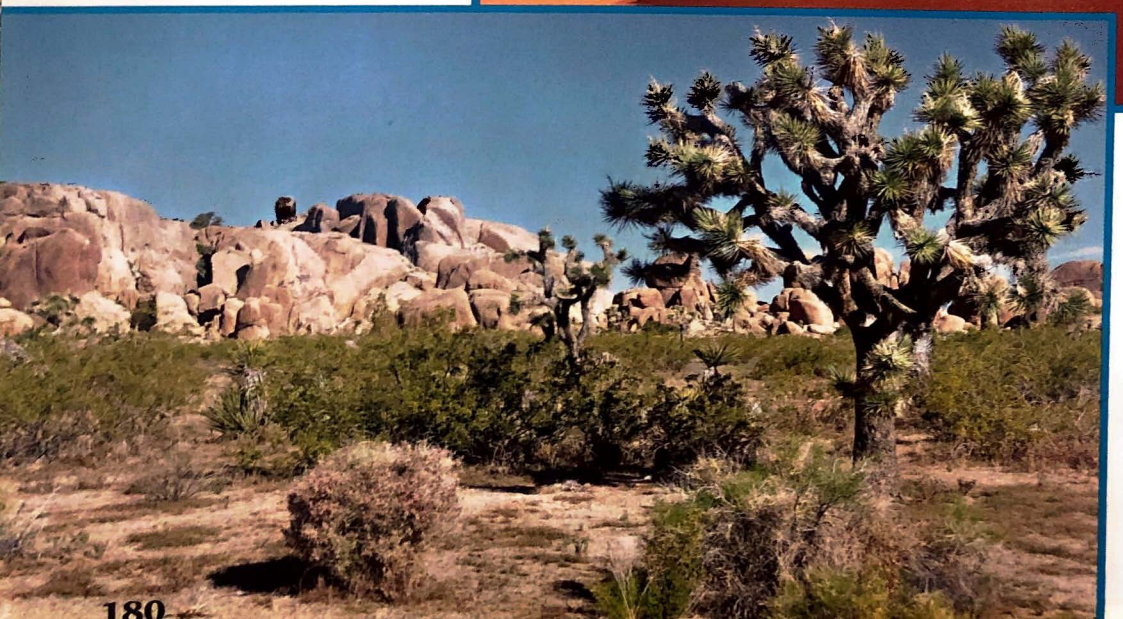
Living Factors in Deserts

Some people think of deserts as hot, dry wastelands. That can be true, sometimes. In areas of shifting sand where it never rains and strong winds blow, such as parts of the Sahara Desert in Africa, plants and animals are rare. But deserts have areas that get some water, and those areas are full of life.

Fewer kinds of plants and animals live in deserts than in wetter environments. Desert plants and animals have **structures** and **behaviors** that help them survive in a dry environment. You can see plants and animals with these **adaptations** in parts of the deserts found in the southwestern United States.



Sand dunes in the Sahara Desert in northern Africa

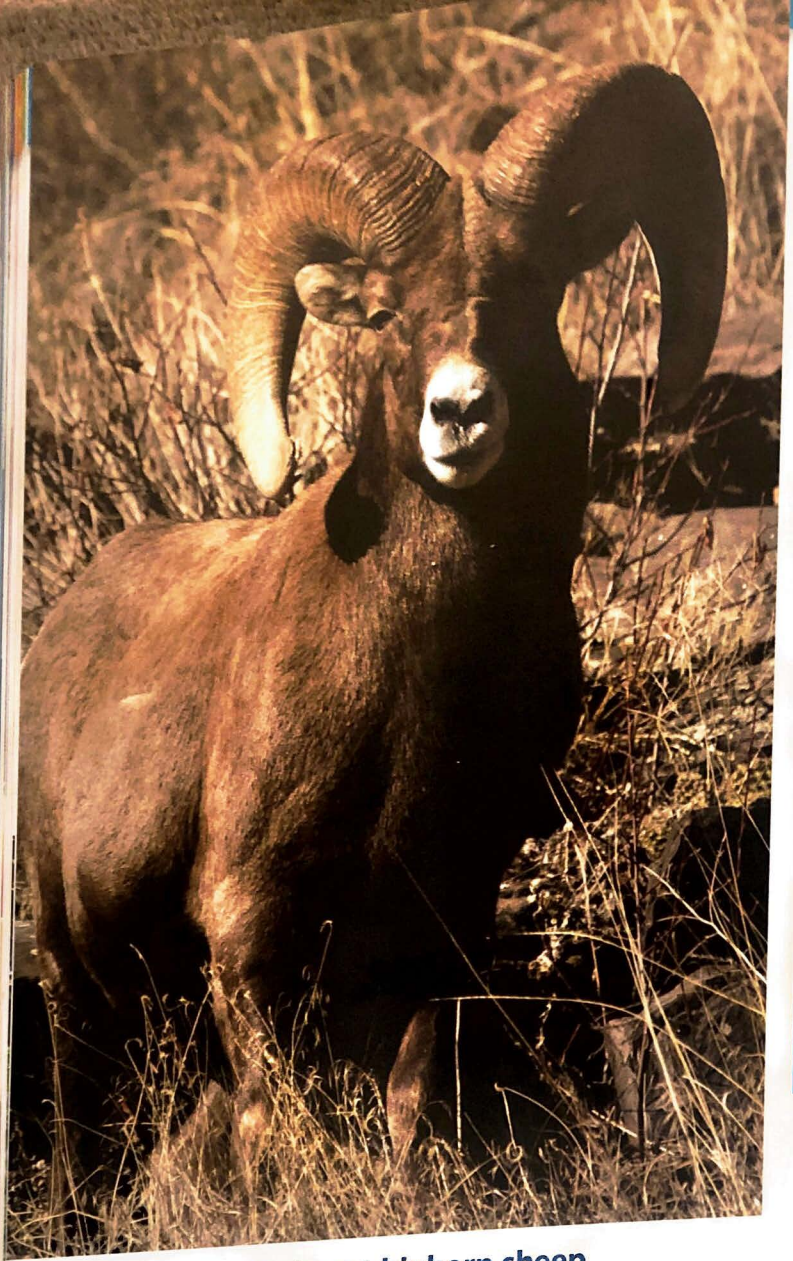


The Mojave Desert in the American southwest

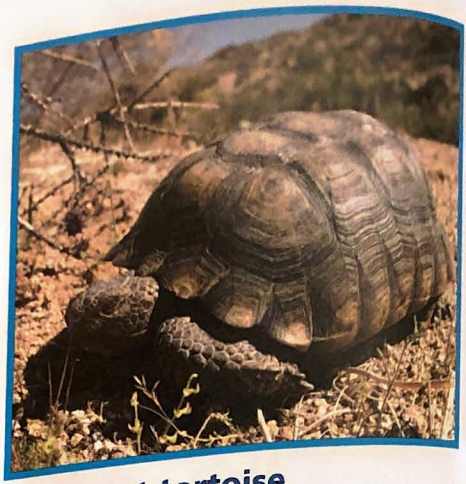
In deserts, some plants grow far apart. Their root systems spread over a large area. This distance lets them get water and nutrients without competition from other plants. Some desert plants, such as the mesquite tree, send their roots deep into the desert soil. Mesquite tree roots might go down 81 m to reach water.

Cacti store water in their broad, fleshy blades or columns, which are actually stems. They use the stored water during long dry periods. Cacti don't have leaves but they do have spines. The seeds of some desert plants can lie in the soil for years until it rains enough for them to sprout.

A saguaro cactus



A desert bighorn sheep



A desert tortoise

A desert iguana

Animals survive well in the southwest deserts. Insects, spiders, reptiles, birds, and mammals, such as bighorn sheep, live in deserts. Many desert animals are **nocturnal**. Nocturnal animals avoid the heat by coming out only at night.

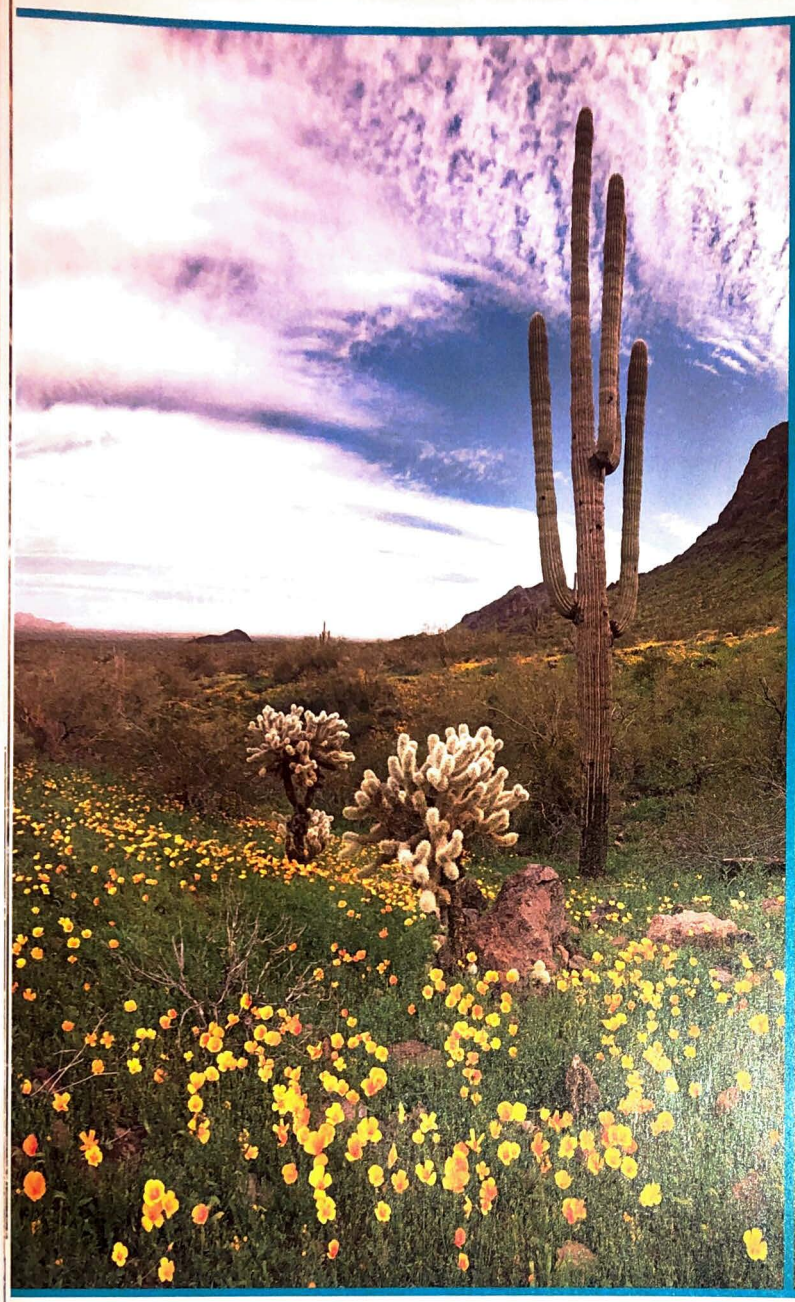
Desert tortoises are comfortable in the desert. They dig deep **burrows**. When it is too hot or too cold, they have a safe place to stay. Tortoises eat many kinds of plants, especially flowers and fruits. Sometimes they will even eat the moist pads of cactus plants. Tortoises drink a lot of water when they can and store it in their bladders.

A spadefoot toad

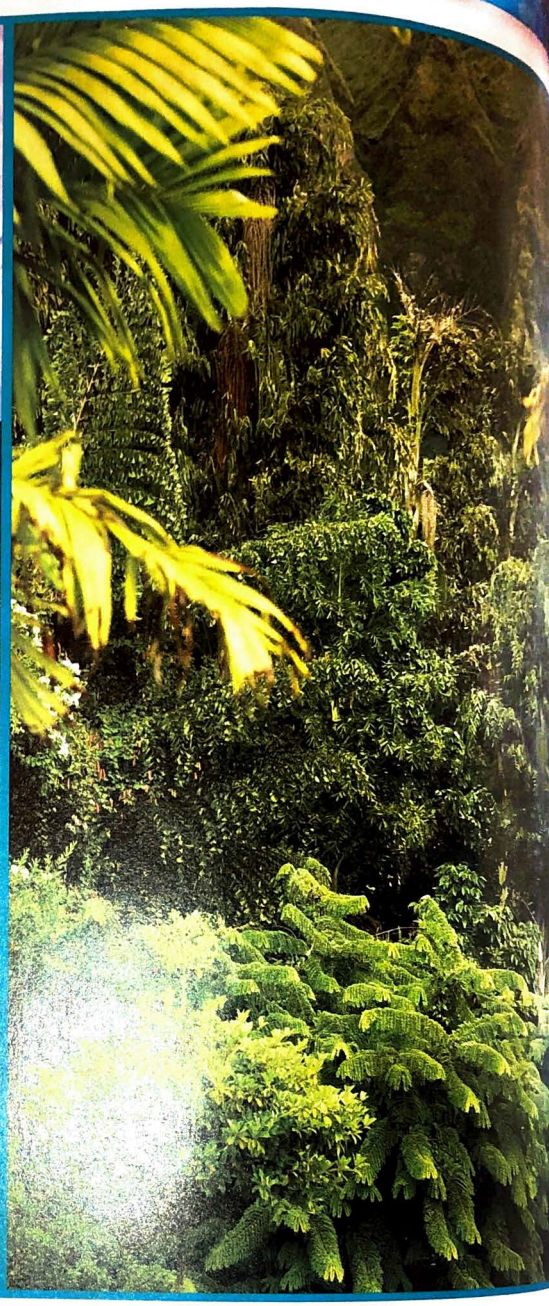
Spadefoot toads are **amphibians**. That means they have to **reproduce** in water. Is the desert a good place for them to live? Yes, because they have a behavior to help them survive. When the weather is hot and dry, the toads burrow about a meter underground. They can stay there for up to 9 months. They become **dormant** and live on the fat stored in their bodies. When it rains, spadefoot toads leave their burrows and find mates. The females lay **eggs** in rain puddles. The eggs soon hatch into tadpoles. The tadpoles grow into young toads. The young toads have to become adults before the puddles dry up or they will die. In a couple of months, the adult toads burrow down into the ground and wait for next year's rain.

Every desert plant and animal has structures and behaviors, or adaptations, that allow it to survive and thrive in the hot, dry desert.

The stem of a barrel cactus is round with ribs that are covered with spines.



A desert environment



A tropical rain forest environment

Review Questions

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MATH W5-D1,2,3

ANSWER KEY

4. A bottle holds 1 ℓ 500 ml of water. A bucket holds 3 times as much water as the bottle. How much water does the bucket hold?

The bucket will hold 4ℓ 500ml of water.

5. A washing machine takes 1 hour 40 minutes to wash one load of laundry. How long does it take to wash 4 loads of laundry?

Four loads would take 6 hours and 40 minutes.

6. A fruit seller packed all his oranges into 6 boxes. Each box of oranges weighed 12 lb 12 oz. What was the total weight of the oranges?

The total weight is 76 pounds and 8 ounces.

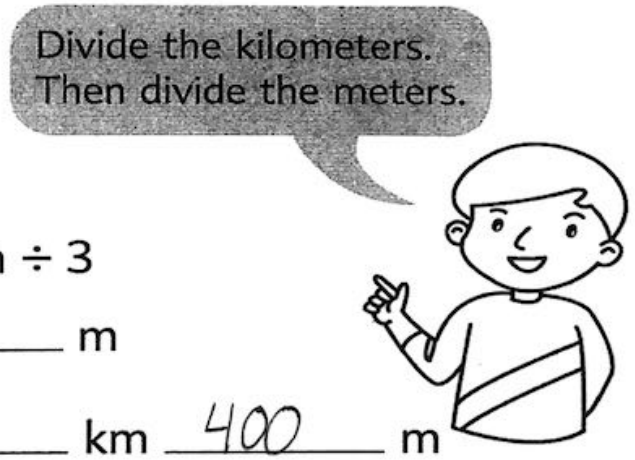
MATH W5-D1,2,3

ANSWER KEY

Fill in the blanks.

1. (a) 4 km 250 m ÷ 2 = 2 km 125 m

4 km 250 m



(b) 1 km 200 m ÷ 3 = 1200 m ÷ 3

= 400 m

(c) 4 km 200 m ÷ 3 = 1 km 400 m

3 km 1 km 200 m (1200 m)

2. (a) 6 h 45 min ÷ 3 = 2 h 15 min

6 h 45 min

(b) 1 h 20 min ÷ 4 = 80 min ÷ 4

= 20 min

(c) 5 h 20 min ÷ 4 = 1 h 20 min

4 h 1 h 20 min (80 min)

MATH W5-D1,2,3

ANSWER KEY

3. Meredith had 6 lb 12 oz of mushrooms. She packed them equally into 9 boxes. What was the weight of the mushrooms in each box?

Each box held 12 ounces of mushrooms.

4. Johnny had 4 m 50 cm of wire. He cut the wire equally into 3 pieces. He used 2 pieces of the wire to repair his toy.

(a) How long was each piece of wire?
(b) What length of wire did he use to repair his toy?

ⓐ Each piece was 1 meter and 50 centimeters in length.

ⓑ Johnny used 3 meters of wire to repair his toy.

5. A box containing 5 identical books weighs 6 kg 850 g. If the weight of the box is 600 g, what is the weight of each book?

Each book weighs 1 Kilogram and 200 grams.

Living Factors in Tropical Rain Forests

Tropical rain forests are home to more kinds of life than any other terrestrial environment. At least half of all the different kinds of plants and animals in the world live in tropical rain forests. Tropical rain forests are also the winter homes for many birds that live in other places the rest of the year.

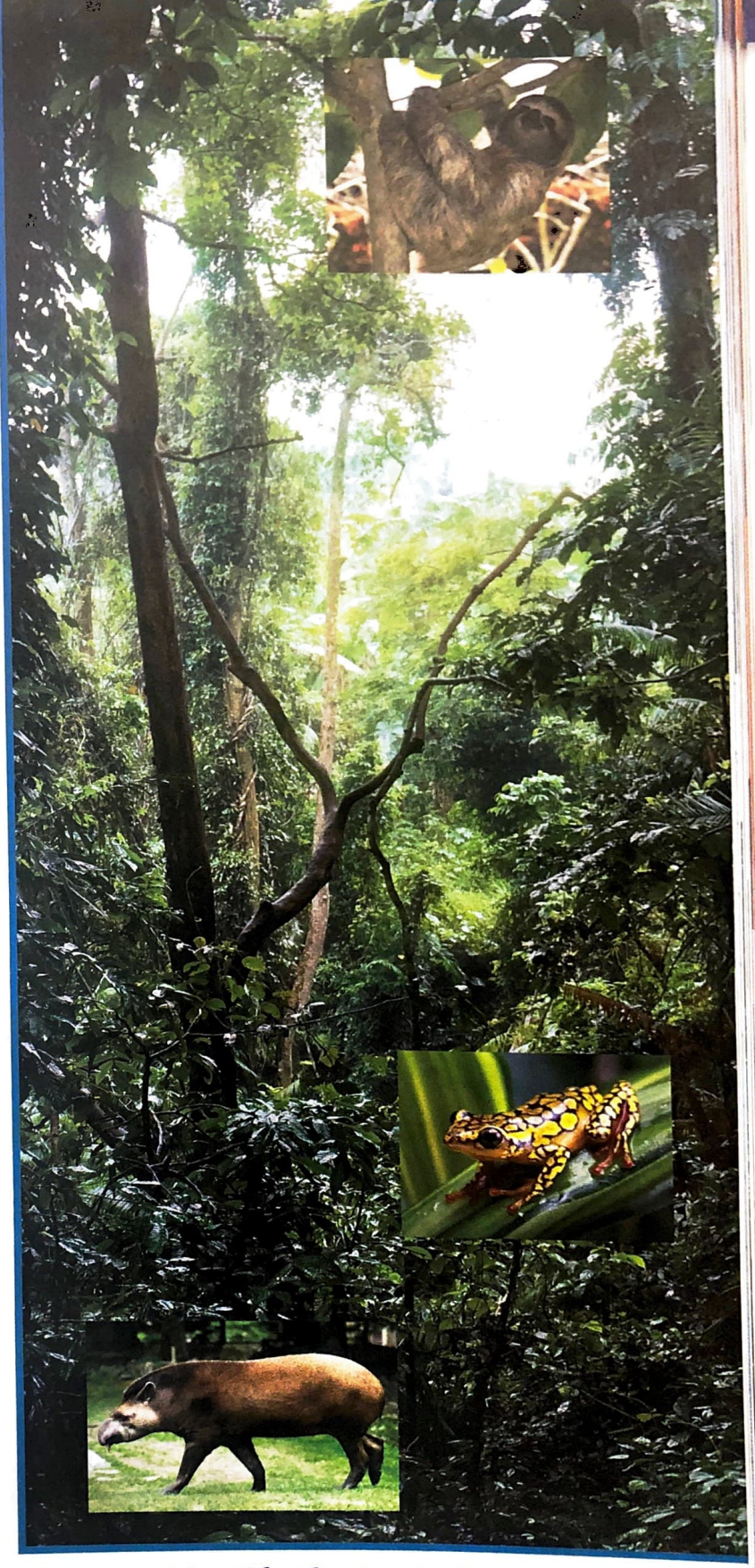
Life in the rain forest can be divided into layers. Each layer has different plants and animals. Most of the tropical rain forest plants are trees. They grow to heights of 20 to 30 meters (m). Because the trees grow very close to one another, their tops grow together. This forms a broad **canopy**, or roof, above the rain forest.

A tropical rain forest canopy

The highest layer in the rain forest is the canopy. There is a lot of sunlight in the canopy layer. This is where most of the rain forest animals live. Monkeys, sloths, and bats spend most of their time here. Tree frogs and snakes live in the treetops along with toucans, hummingbirds, ants, and beetles. These are just a few of the millions of different kinds of animals that live in the canopy. Orchids, ferns, and other "air plants" grow on the branches of the canopy trees. Air plants use the trees for support and get **water** from the falling rain.

The layer below the canopy is the **understory**. Very little sunlight makes it through the canopy to the understory. It is a dark place full of tree trunks, young thin trees, and broad-leafed plants that thrive in shady conditions. A number of these plants are popular house plants in the United States. The animals living in this layer include jaguars, leopards, frogs, snakes, parakeets, and many kinds of **insects**.

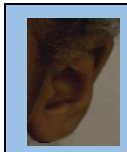
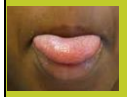
The bottom layer is the forest floor. The forest floor is often covered with moss and wet leaves. Almost no sunlight makes it to the floor. This is where centipedes and scorpions live. Many insects, such as termites, ants, cockroaches, and beetles, also live here. Earthworms and **fungi** use the dead leaves as **food**. Larger animals, such as tapirs, dig up roots in the forest floor.



Can you identify the tapir, frog, and sloth?

SENSORY WORDS

Words that tell how something sounds, tastes, smells, looks, and feels.

 hear	 taste	 smell	 see	 feel
bubbling	sweet	fishy	big	prickly
whining	sour	fresh	small	greasy
crashing	salty	rotten	brown	sticky
splashing	spicy	stinky	orange	slimy
buzzing	bitter	burning	colorful	wet
humming	buttery	pungent	round	warm
sawing	cheesy	flowery	spotted	cold
rumbling	fresh	earthy	striped	smooth
pounding	delicious	strong	thick	rough
crying	bland	smoky	thin	squishy