



Teacher's Notes: Bats are Pollinators

Science Standard:

Learning Objectives:

The students will be able to match picture to picture.

The students will be able to complete a graphic organizer.

The students will use a graphic organizer to write sentences.

The students will be able to identify what sunset and sunrise looks like.

The students will be able to identify where the Earth is in relationship to the Sun during sunrise, day, sunset, night.

The students will be able to distinguish between day and night.

The students will utilize technology to find pictures of sunset, sunrise, day, night.

Activities

1. Students do image searches. Have the students save pictures of their favorite ones. Those are then inserted onto a Word document or a PowerPoint. Students write a sentence about each bird characteristic. **See Technology printable in the materials.**
2. On a globe, place a sticker on the location of where you live. Darken the room and use a flashlight to represent the sun. Turn the globe slowly. The children can observe what causes day and night.
3. Get a collection of magazines. Have students look for pictures of day and night to cut out. Depending on group you could use the pictures for different things:
 - Divide a large poster board in half. Everyone glues pictures of day on one side and night on the other.
 - Students make their own collage of day and night
 - Students write a sentence describing day and night.

General Tips: The goal is to build background knowledge while leading an engaging discussion on any and all information that can be talked about on a given page. The items that you choose to bring up or focus on can be modified for the students you are working with. For example, if you have a student who can point to something in the picture, answer yes/no questions be sure to incorporate a lot more of that as you go through the book. On the same token, be sure to ask a lot of comprehension questions and critical thinking questions at the level appropriate for students. There is something for everyone.

Page 1: Fruit bats are nocturnal. They sleep during the day and are awake at night. They eat at night. At night, they fly around looking for fruit and flowers. Have the students view the following video about

bats hunting for food at night. Pause at certain points and have students point/talk about what they see. <https://www.youtube.com/watch?v=o6rYJMddEzg>

Point: moon, sky, bats, sky, bat, wings, feet, ears

WH Questions: When do fruit bats fly? What do fruit bats look for at night?

Yes/No: Do fruit bats sleep at night? Do fruit bats fly around at night? Do fruit bats look for fruit and flowers during the day? Do fruit bats look for fruit at night?

Opinion/Experiences: What do you do at night?

Peer to Peer Interaction: After you read Page 1, ask students, “When do fruit bats fly?” The answer is the main idea card “night.” Students will find the main idea card and read it to their partner. Teacher will prompt them to ask their partner some of the questions talked about above.

Page 2: Pollen is powdery stuff that is on flowers. Nectar is a sweet liquid that is on flowers. Fruit bats like to drink the nectar on the flowers. When they drink the nectar, the powdery pollen gets on their faces. Have the students view the following video of a bat drinking the nectar from a flower.

<https://www.youtube.com/watch?v=jifEmFtc7RI>

Point: bat, flower, eyes, tongue

WH Questions: What do bats drink? What is the powdery stuff that is on flowers called? What gets on the bats’ faces?

Yes/No: Do bats drink nectar? Is nectar in flowers? Does pollen get on the bats’ faces?

Opinion/Experiences: The powdery pollen get on the bats faces when they drink the nectar. What gets on your face when you eat or drink?

Peer to Peer Interaction: After you read Page 2, ask students, “What do fruit bats drink? The answer is the main idea card “nectar.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk to each other about the sun.

Page 3: When a fruit bat is done drinking nectar from one flower, it flies to a new flower. The pollen that is on the bat’s face gets on the new flower.

Point: leaves, flower, bat, wings, feet

WH Questions: Where does a bat fly to after it drinks nectar from one flower? What is on the bat’s face? What gets in the new flower?

Yes/No: Do fruit bats fly from flower to flower? Do the fruit bats have pollen on their faces? Does pollen from their face fall to the ground? Does the pollen get on the new flower?

Peer to Peer Interaction: After you read Page 3, ask students, “What gets on the new flower?” The answer is the main idea card “pollen.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk to each other about the sun.

Page 4: The pollen gets on the faces of the fruit bats. When the fruit bats fly to another flower, the pollen on their faces gets on the new flower. That pollinates the flower. A pollinated fruit flower can turn into a fruit.

Point: Have students point to one flower. Have them move their finger to the next flower.

Questions: What happens when pollen from one flower gets on another flower?

Yes/No: Do bats fly from one flower to another flower? Does the pollen on the bats’ faces get onto a new flower? Do pollinated fruit flowers turn into fruit?

Peer to Peer Interaction: After you read Page 4, ask students, “What happens when pollen from one flower gets on another flower?” The answer is the main idea card “pollinates.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk to each other about the day.

Page 7: Fruit starts as a flower. When they are pollinated, they turn into fruit. Strawberry plants start as a flower. When the strawberry flower is pollinated, it grows into a strawberry. Grape plants start as a flower. When the flower is pollinated, it grows into a grape. Mangos start as a flower. When the flower is pollinated, it grows into a mango. Fruit bats love to eat mangos! Have students view the following video showing the time lapse of a berry plant go from a flower to a fruit.

<https://www.youtube.com/watch?v=l3-PAhaO1Vl>

Point: mango flower, leaves, mangos

WH Questions: What grows fruit? What does a fruit flower turn into? What is the fruit before it becomes a fruit?

Yes/No: Do the leaves turn into a fruit? Does the flower turn into a fruit? Does a pollinated flower turn into a fruit?

Sharing Opinion/Experiences: Fruits are flowers first. What is your favorite fruit?

Peer to Peer Interaction: After you read Page 7, ask students, “What part of a plant turns into a fruit?” The answer is the main idea card “flower.” Students will find the main idea card and read it to their partner. Teacher will prompt them to ask their partner some of the questions talked about above.

Page 8: Fruit bats love to eat fruit. They eat bananas. They eat mangos. They eat avocados. Show students the following video of a bat eating a banana. <https://www.youtube.com/watch?v=kp2NBEIH41I>

Point: bat, mouth, teeth, fruit, seeds

WH Questions: What do fruit bats like to eat?

Yes/No: Do fruit bats like to eat bugs? Do fruit bats like to eat fruit? Do fruit bats eat the seeds of the fruit?

Opinion/Experiences: Fruit bats like to eat fruit? Do you like to eat fruit?

Peer to Peer Interaction: After you read Page 8, ask students, “What do fruit bats like to eat?” The answer is the main idea card “fruit.” Students will find the main idea card and read it to their partner. Teacher will prompt them to ask their partner some of the questions talked about above.

Page 7: There are seeds in fruit bat poop. The bat poop gets on the ground. Have the students view the following video of a bat pooping. <https://www.youtube.com/watch?v=0AzBll5ihi0>

Point: bat, tree, bat poop

WH Questions: Where does the fruit seeds go after a bat eats them? What is inside bat poop?

Yes/No: Are seeds in fruit bat poop? Does bat poop land on the ground?

Opinion/Experiences: All animals poop. All people poop. Babies poop. What the body does not need, comes out in your poop. It is good and healthy to poop. We should poop at least one time a day. It is important for people to wipe themselves after they poop. It is important to wash your hands after you poop. Do you poop every day.

Peer to Peer Interaction: After you read Page 7, ask students, “Where does the fruit seeds go after a bat eats them?” The answer is the main idea card “poop.” Students will find the main idea card and read it to their partner. Teacher will prompt them to talk to each other about bat poop.

Page 8: Seeds can make new plants. There are seeds in bat poop. When bat poop gets on the ground, a plant can grow.

Point: bat poop, plant

WH Questions: What do the seeds in the bat poop grow into?

Yes/No: Are there seeds in bat poop? Do the seeds grow into new plants?

Opinion/Experiences: Have you ever seed a new plant?

Peer to Peer Interaction: After you read Page 8, ask students, “What do seeds in bat poop grow into?” The answer is the main idea card “plants.” Students will find the main idea card and read it to their partner. Teacher will prompt them to ask their partner some of the questions talked about above.

Page 9: When two different types of living things help each other, it is called mutualism. A bat helps plants to pollinate. That helps the plant to grow fruit. Bats drink the nectar from plants. That helps the bats. Bats eat fruit and seeds from plants. That helps the bats. When bats poop, seeds are in their poop. The bat poop lands on the ground and the seeds in the poop can grow a new plant. Have the students view the following video showing how bats and saguaro cacti help each other.

<https://www.youtube.com/watch?v=5pyVY5tbQQ8>

Another example of mutualism is rhinos and birds. Rhinos have some bugs on their bodies called ticks. The ticks irritate the rhinos. They are itchy! One type of bird likes to eat the ticks. The bird helps the rhino because the bird eats the ticks on their bodies that are bothering them. The rhino helps the bird because the bird gets to eat the ticks. Have the students show the following video of a rhino and a bird.

https://www.youtube.com/results?search_query=mutualism+

Point: bat, eyes, ears, leaves, plant

WH Questions: What is it called when bats and plants help each other? How do bats help plants? How do plants help bats?

Yes/No: Do bats hurt plants? Do bats help plants? Do plants help bats?

Opinion/Experiences: Mutualism is when two different types of living things help each other. How do people help plants? How do plants help people? How do dogs help people? How do people help dogs? These are different types of mutualism.

Peer to Peer Interaction: After you read Page 9, ask students, “What is it called when bats and plants help each other?” The answer is the main idea card “mutualism.” Students will find the main idea card and read it to their partner. Teacher will prompt them to ask their partner some of the questions talked about above.