

## ***Two Little Birds***

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In this story, two plucky young birds launch into their first journey, which proves to be full of challenge, peril, and wonder.

The text is intentionally vague; it invites readers to grow, think, and journey with the little birds. The composition, color, and texture of the illustrations add meaning to the text. Each spread is a visual/textual prompt that offers readers of all ages an opportunity to wonder, question, speculate, and predict.

A simple way to begin is to ask “What is happening in this picture?” and then, “What do you see that made you say that?” allowing the words and pictures to be a gateway for discovery. (This questioning method is called *Visual Thinking Strategies*, learn more here: [www.vtshome.org](http://www.vtshome.org)). My hope is that readers of *Two Little Birds* will begin to notice and cherish birds and their habitats.

The following are examples of how to use *Two Little Birds* to encourage observation, questioning, and further research. I’ve organized this guide by subject matter, with teachers in mind. Facts and resources about songbird migration follow.

### **Pre-Reading Activities**

*Two Little Birds* addresses growth and competence as much as bird migration. With that in mind, spend time looking at artwork on the cover, back cover, endpapers, and title page spread, which introduces the characters and sets the scene for the story.

- What is going on in this picture? What do you see that makes you say that?
- Discuss bird babies, their nests, their parents.
- Talk about learning to fly; compare to learning to walk, or learning to ride a bike/fly a plane/other
- Note the close-up of the two little birds
  - Compare/contrast the thousands of teeny-tiny far away birds on the endpapers.
  - Do human beings travel in ‘flocks?’
- Ask ‘why do birds fly?’
  - Compare with readers’ movement/travel.

### **Science**

I hope to create, with words and pictures, a sympathy and interest in the two little birds so that readers will care enough to closely observe and speculate about them. Then, readers can use these observations to ask questions, formulate hypothesis, find information resources, do appropriate research, and articulate new knowledge.

As you go through the book, consider:

Nest materials, shape, and function.

Why do birds sing? How do they learn to sing?

- Listen to birdsong (Cornell Ornithology Lab website)

The two little birds grow and change.

- What are the parts of bird's bodies?
- What parts of their bodies change?
- Compare/contrast to readers' own growth and competence.

What do baby birds eat? What do growing birds eat?

The little birds join a flock of migrating birds.

- Why do birds migrate?
- How do birds know when it is time to migrate?
- Do other animals than birds migrate? Why?
- Why are they flying at night?
- Do they go alone? Where are their parents?
- Is the migrating flock all the same kind of bird?
- How long do they fly? Do they flap their wings the whole time?

Where are they going? How do they know where they are going?

- What dangers do they face?
- How do they know which direction to go?

How might weather affect their journey?

The little birds fly for hours and hours over water. How long?

- What does it feel like when you've run a long way?
- Do you think the bird feels the same?

They arrive in a new place, and rejoin the migrating flock.

- How is this place different than where they came from?
- What are they eating here?

Notice the feathers falling out in the illustration. This is called molting.

- Why do birds molt?

The little birds are shown drinking the nectar from the flower of the Coral Bean Tree.

They pollinate the plants as they go from flower to flower.

- Consider how the little birds participate in the intricate web of ecology, controlling the population of insects in their nesting grounds, and pollinating flowers in their wintering grounds.

Observe that the little birds live in mixed flocks, which all forage in the same tree.

- Investigate why/how this is a successful living arrangement.

The birds return to their first home. Why?

- Is it a long journey? What do they see along the way?
- Imagine you are a bird, where are you and what do you see?
- What do they do when they get home?

### **Science Activities:**

- Build a nest; engineer a safe and sturdy structure.
- Plan a journey; navigate with GPS/maps/sun and stars.
- Investigate insect control and plant pollination by migrating birds.
- Read weather maps; make predictions about how weather affects migration

- Make connections between birds' physical attributes and their habitats and food preferences.

### **Social Studies,**

Notice the expansion of the birds' world from the embrace of the inside of the egg > nest > tree > sky, pictured in the illustrations. What prompts or motivates each transition? How do these transitions feel? Students may make comparisons to their homes, families, neighborhoods, cities, and beyond.

Notice the relationships on the first few pages:

- Parents building a nest.
- Flocks of birds migrating.

Think of how the birds' world is expanding

- Look at maps of the Atlantic flyway, or another migratory pathway.
- Trace the path of your local birds.
- Map your home>school>neighborhood.

### **Social Studies Activities**

- Locate and depict your place in the world: use a map, a series of concentric circles, a mobile, or other visual means.
- Research bird migration paths, such as the Atlantic Flyway
- Think about how birds live differently in different places
  - Compare/contrast how people live differently because of climate and culture.
- Observe birds that migrate to your neighborhood.
  - Listen for them, make a welcoming birdfeeder, observe them.
- Invent a board game about Oriole migration, with the object to get from their nesting site to the wintering grounds. Include encounters with danger, weather, and the search for food along the way.

### **Social/Emotional**

The two little birds experience a range of emotions, including surprise, discomfort, joy, inspiration, fear, triumph, comfort, friendship, loneliness, love, and pride. They are brave, resourceful, responsible, and persistent in response. Notice how emotion is communicated in the text and illustrations. Notice the different reactions of each bird.

On the cover, the birds are taking a first flight out of the nest.

- Describe how each might be feeling, consider that there may be different reactions to making that first launch out of the nest.

On the title page, look at the birds' poses, and speculate about

- What they are doing
- How they are feeling

The first page is very dark. Why is that?

What does 'after much effort' mean?

- Do you see any evidence of effort?

What would it feel like to come out of an egg?

- Do the two birds react differently?

- Speculate about each bird's personality.

Why do the birds join the other migrating birds?

- could you compare this to starting school?

How do they get lost?

- Do the two birds react differently to being lost? What might you do?
- How do they figure out where to go?

How do they feel when they are at the beach?

- What do you see that made you say that?

Imagine what it is like to fly for a long time over water, in the dark.

- describe how the birds feel, based on what you see in the picture
- Do you think birds encourage each other? Do you and your friends encourage each other when you are trying to accomplish something difficult?

They arrive in a new place, and live in trees with various kinds of birds.

- How do the birds investigate and learn about their new home?
- How do all of the different birds get along together?
- Have you ever moved to a new place? What was that like?
- Have you gone on vacation? How was that like the Oriole's journey?

They decide to fly home.

- Are the birds looking forward to the journey ahead?
- Are they ready?

Would you like to be a bird? Why or why not?

How are you similar to, or different than, these birds?

## Math

There are many opportunities for estimation, comparison, and measurement in *Two Little Birds*. Songbirds are tiny, and their migration is long. They gain and lose weight. Students may be curious about altitude, temperature, speed and distance, or any of the other variables mentioned in the text or shown in the illustrations.

## Math Activities

Young birds are tiny. How tiny?

- Compare their length, and weight to familiar objects.
- Compare to yourself
- Calculate the percentage of weight gain/loss during their journey
- Calculate how many calories they burn during their flight

The young birds fly a long way! Measure the distance of their migration from a nesting spot in North America to their wintering spot in Central America. Then, research:

- How many hours per night they fly.
- How fast they fly.
- How far they fly each night.
- Estimate how many times they flap their wings per hour, and during the whole migration.

How high do birds fly?

Record and graph temperature variations along their migration, and difference in day and evening temperatures.

- Is there a variation in temperature on the ground and at the altitude they are flying?

Observe how many birds are migrating together! How could we estimate how many?

- Because birds are so difficult to see at night, one way scientists have done this is to count how many they see against the moon during a certain period of time, and multiply by the duration of time that birds are seen.

How many days does it take to build a nest?

How would you estimate how many blades of grass are woven in a nest?

## **Art**

Quite a bit of the story is told visually. What do you see in the pictures that is not expressed in the text? What do you see that clarifies an ambiguous text? Encourage readers to think about what the choices of medium, color, texture, and composition contribute to the narrative. For example, notice the size of the birds in relation to their environment in each illustration.

As you go through the book, consider these questions:

Why do you think I chose to use collage to illustrate the nest?

- What might you use instead?

Where do you notice texture in the illustrations?

- How would you describe this texture in words?

Where have I used darkness to communicate something?

- What meaning do you think the darkness adds to the story? Describe this in words.

How might it have been different if I had used very realistic illustrations?

How did I show the passage of time and/or distance in my illustrations?

Compare and contrast the birds on the cover with the birds at the water's edge.

- Notice their size in relation to the picture.

How do you know these are the same birds throughout the story, even though they look very different as the story progresses?

What do you notice about color?

- How does color contribute to mood?
- Does color describe location? Do you have any personal experience with this?
- What do you notice about the color of the birds themselves?

Look at the type. The size varies from page to page. How does this affect your understanding of the text?

## **Art Activities**

There is an amazing variety of color, shape, texture, and pattern in birds. Look at birds! John James Audubon made a famous book called *Birds of America*, and the illustrations were used to increase scientific knowledge.

- Learn about/make a scientific illustration.
- How does scientific illustration differ from other illustration?

Construct 3 dimensional models of birds.

- What materials might convey the characteristics of particular birds?
- What means might you use to make your 3D bird appear to be flying?

Many cultures have bird masks/costumes. Research and consider what materials you would use to make a wearable bird costume.

Re-imagine the book as a graphic novel or comic strip

Re-imagine the book as an animation

Re-imagine the book illustrated with simple graphic shapes and color

## **Music**

The two little birds are songbirds; music is their language. How they learn to sing and when they sing, is a key detail in the book. Read with an awareness of sound, in the language and the illustrations.

### **Music Activities:**

Find out: Why do birds sing?

- How do they learn to sing?

Explore the wide variety of birdsong:

- Listen to the songs of orioles and other birds here: [www.allaboutbirds.org](http://www.allaboutbirds.org)
- Think about the different kinds of birdsong that the two little birds hear as they travel to new places.
- Have you heard many birds chirping together in a tree or a hedge?

Imitate birdsong; whistle or sing.

Imagine a soundtrack for each page of the book. What are the sounds you hear?

- What instruments might you use to imitate these sounds?

Write/perform bird music.

- Write parts for one bird alone, and birds together.
- Plan rhythm, volume, pitch, melody, and beat to communicate the changes in mood and action in the book.

## **Drama-Movement**

The illustrations show how these little birds use movement and gesture to communicate information and feelings as well as to travel through the air and on land. Birds move as individuals and as a group. Use what you see and read about their movement to speculate on the birds' mood, speed, rhythm, and energy level.

### **Drama-Movement Activities:**

Observe the shape and movement of particular birds.

Think about how birds move singly, and in groups:

- migration, murmuration, v formation, fallout

Brainstorm kinds of bird movement: startled, exploratory, long distance travel, etc.

Imitate the rhythm and movement of wings--gliding, flapping, etc.

Choreograph a dance about learning to fly.

Choreograph a dance about flying in a group.

Choreograph a dance or act out a play about the book; mime learning to fly, foraging for food, migrating, encountering bad weather, signaling danger, enduring a long distance flight over water, and exploring a new place with new birds.

## **English/Language Arts**

I chose to write this as a very brief text, featuring repetition, alliteration, understatement, and the comments of the little birds. I imply much more than I say. A reader should stop

and thoughtfully consider, for example, what ‘after much effort’ *means*. Students could write a paragraph about a particular page and then compare to my text and picture to evaluate whether or not the style I’ve chosen is effective, and why.

Notice the rhythm and rhyme of the text when read out loud.

Note how repetition is used in *Two Little Birds*. What does it communicate?

What do you know about the personalities of each bird, based on their statements?

Consider how I use these phrases:

- “After much effort...”
- “They flew and flew and flew. They flew beyond all they knew.”
- “The little birds did what little birds do...”
- “flutter and chatter”
- “emerged from their eggs”

### **ELA Activities**

Re-write part of the book using only words and no pictures.

Write a story about a mixed flock of birds living in a tree in Central or South America.

- This could be a conversation among the birds, like a play.
- It could be from the point of view of one of the birds, who describes the others.
- It could be from the point of view of a person who observes the activity in the tree.

Write a story about birds comparing notes about their migrations.

- Choose personalities for the birds--for example, pessimistic or adventurous
- communicate personality through their description of the journey.

Brainstorm words that describe birds: movement, bodies, sounds

- look up these words in a thesaurus and make interesting bird descriptions or poems.

The study of birds is called ornithology. There are many interesting-sounding technical words related to bird migration. Just for fun, say these out loud to see how they sound.

Look them up, use them in a sentence, and locate a part of *Two Little Birds* where they might apply.

- barometer, fallout, fledge, flock, migration, molt, murmuration, navigation, neotropical, nesting, orientation, photoperiod, wingspan, zugruhe

### **Facts about Orchard Orioles:**

Orchard Orioles are small songbirds, about 6 or 7 inches in length. They weigh 1-1.5 ounces. Orchard orioles leave South and Central America in March, and arrive in the Northern part of their journey (as far north as Southern Ontario) in May, when trees are leafing and flowering. Males sing and bow to attract the females. The pair finds a tree in which to make a nest.

They build a nest together, although the female does most of the weaving.

Orioles make a hanging ‘bag’ nest out of twigs and grasses at a fork at the very end of a branch, where leaves will hide it. It is an oval pouch about 5” deep. It takes 2 or 3 days work to do the first half and then they select the other twig and work on the other half to connect to it. So it takes 5-8 days, total, to build the nest. Soft material is used at the bottom of the nest, such as milkweed, dandelion seed pappi, or wool. In the past, they

used horsehair to line the bottom of the nest, but that is not so readily available now. Orioles are very good nest 'weavers' because of the way they poke the grasses in and out to build the nest. Their beak shape enables them to do this. Then one of the birds fits into the nest to shape it to their body.

They are known to return to the same nesting ground in North America many years in a row. They lay 4-6 eggs which are quite small, a bit less than an inch in length and a bit more than 1/2" wide. The eggs take about 12 days to hatch.

The young birds take about two weeks to become independent and leave the nest. They feed mostly on caterpillars and insects while in their northern habitat; in their southern habitat, nectar and fruit are a large part of their diet. Orchard orioles have a tongue that is like a brush, which helps them lap up nectar.

They eat and build up stores of fat to use as energy and insulation for their migration. It appears that the photoperiod, or length of days, is what triggers migration.

In July, they leave for their migration south. The families do not travel together; often a group of males will leave first and female and young birds will follow. They join groups of other kinds of songbirds also traveling southward, on what is known as a neotropical migration. They travel between July and October, flying at night because it is cooler and they are less visible to predators.

Birds use the stars, the magnetic field of the earth, and the position of the sun to orient themselves when they travel. They sense air pressure to adjust their travel for weather conditions. They want to fly with tailwinds and avoid headwinds.

When there is a storm they land in groups, (this is called a 'fallout'), and wait. Sometimes they are blown off course.

Even though they fly about 2,000 feet or higher over water, songbirds can be distracted by lights on TV/cell towers and city lights and lose their way or become disoriented.

We don't know much about individual birds' journeys, as they are too tiny to wear tracking devices. We just know when birds appear in various locations. Groups of neotropical songbirds are tracked by radar, are counted by looking at them against a full moon and counting/estimating. Tens of thousands of birds have been counted per mile, per hour. There are a staggering amount of birds, millions, migrating.

Some of these birds fly over the Gulf of Mexico to Central America and northwestern South America, which is a nonstop flight of 18 hours, or up to 24 hours in bad weather. It is estimated that they fly 150 miles per night, flying 20 miles per hour, so it takes 2-3 weeks for their migration.

In Panama, the orchard orioles arrive just in time to open up the flower of the coral bean tree (*Erythrina fusca*) to drink its nectar, which is the same color as the adult male orchard oriole! In Costa Rica, they have been seen sleeping in orange trees, where their



color blends in with the fruit. They do not make nests in the southern habitat, as that is not their breeding ground.

Birds eat the caterpillars that eat coffee plants, so songbirds are often found on coffee plantations. (I show the birds near a red ginger flower, a flower I saw in photos of coffee plantations in Costa Rica) As they are not fighting to establish individual nesting territories, often birds are seen in flocks in their southern habitats.

Many different kinds of birds flock together in one tree in the wintering grounds. This is known as a 'mixed flock.' This is possible because they have different food niches: one might forage in the bark, another on the ends of twigs, another along branches.

The birds molt and acquire adult plumage while in their southern home. It takes 2 years to get full adult plumage, but they do molt and acquire more mature feathers and coloring their first year. Songbirds are colorful, like tropical birds, so they stand out in their North American habitat, but blend in with birds like parrots and toucans in their Central and South American wintering grounds.

Orchard Orioles spend up to six months in their winter habitat, and then make the journey north to nest and breed.

## **Resources**

### **Birds:**

<http://www.birds.cornell.edu/Page.aspx?pid=1478>

<http://travisaudubon.org/home/wp-content/uploads/2011/07/Migration-and-The-Migratory-Birds-of-Texas-TPWD-publication.pdf>

[www.allaboutbirds.org](http://www.allaboutbirds.org)

<http://www.learner.org/jnorth/search/Oriole.html>

<http://birds.audubon.org/>

[http://www.enature.com/fieldguides/detail\\_migration.asp?recnum=BD0526&viewType=migration](http://www.enature.com/fieldguides/detail_migration.asp?recnum=BD0526&viewType=migration)

<http://appvoices.org/2013/02/14/safe-passage/>

[http://www.massaudubon.org/Nature\\_Connection/wildlife/index.php?id=65](http://www.massaudubon.org/Nature_Connection/wildlife/index.php?id=65)

### **Connection to Coral Bean Tree:**

[http://www.bayjournal.com/article/fates\\_of\\_orchard\\_oriole\\_coral\\_bean\\_tree\\_intertwined](http://www.bayjournal.com/article/fates_of_orchard_oriole_coral_bean_tree_intertwined)

### **Weather:**

<http://www.learner.org/jnorth/weather/AbornWeather.html>

<http://www.npwrc.usgs.gov/resource/birds/migratio/weather.htm>

### **Migration**

<http://travisaudubon.org/home/wp-content/uploads/2011/07/Migration-and-The-Migratory-Birds-of-Texas-TPWD-publication.pdf>

<http://www.nps.gov/akso/parkwise/students/referencelibrary/general/migrationbasics.htm>

<http://ebird.org/content/ebird/about/occurrence-maps/orchard-oriole>

<http://birdnote.org/show/trans-gulf-migration-ii>

**Birdsong:**

<http://www.birds.cornell.edu/allaboutbirds/studying/birdsongs/vocaldev>

<http://esciencecommons.blogspot.com/2012/12/doing-math-for-how-songbirds-learn-to.html>

<http://news.psu.edu/story/141326/2007/10/15/research/probing-question-how-do-songbirds-learn-sing>

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<http://birdsbybent.netfirms.com/ch41-50/oriole.html> web. 14 April 2013.

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Weidensaul, Scott. *Living on the Wind, Across the Hemisphere with Migratory Birds*. New York: North Point Press, 1999.