

BOOK 20



Tommy and the Mew-Coo-Coo Birds



Tommy Tales

Guide for Teachers and Parents

Book 20: *Tommy and the Mew-Coo-Coo Birds*

This is the twentieth in the *Ewe Books* series of illustrated books available on the **Learning Page** Web site for downloading and printing free of charge. A new book in this series will be published regularly.

These books are written to a second- or third-grade reading level, but children in pre-kindergarten through first grade will also love having the stories read to them.

Introduction

If possible, make enough copies of the book for each member of the class or group. See pages 2 and 3 of the Teaching Notes for Book 1, *The School Lunch Room*, for directions on how to make the book. If you download and copy the pages in advance, students can assemble the pages and tape or staple them together. Before starting the reading, have students color the covers of the books in any way they choose. As students color, initiate a discussion on what the title could mean and what the next adventure might be.

Before starting to read *Tommy and the Mew-Coo-Coo Birds*, share with the class that this book is one in a series and that this story is part of a much longer one.

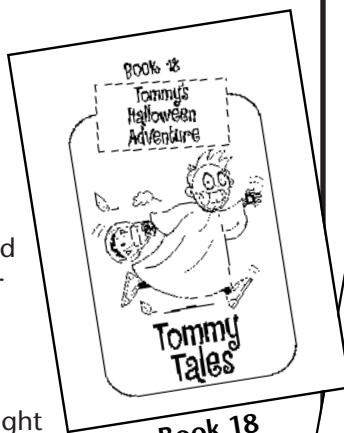
Planning with Ewe Books

As you begin your planning for the year, you can depend on **Learning Page** and this delightful serial story to add variety and fun to your reading routines. New books are added regularly, and

accompanying teachers' materials and **Fun Sheets** supplement your other classroom activities and curricula.

THE STORY SO FAR . . .

In the last **Tommy Tales** adventure, Tommy and his friends traveled to Blueland on the planet Sketty. In Blueland, everything was a shade of blue, and all the people were sad. The friends were captured and taken to His Blueness, the ruler of Big Town. His Blueness had the friends thrown into a dungeon for not being blue, and RK-5 was lost. However, Bongo escaped and brought the children the key to the dungeon. Our story begins as Tommy bravely takes off from Big Town with Bongo, hoping to find RK-5 and rescue his friends.



Book 18



Book 19

Preparing for Reading

In the last **Tommy Tales** story, Tommy and his friends traveled to Blueland on the planet Sketty. The adventure continues in *Tommy and the Mew-Coo-Coo Birds*, and will conclude in the book that follows. Ask students to imagine what the mew-coo-coo birds might be like. Then ask them to share any speculations they might have about this story based on the cover image.

Reading Guide

You may structure the reading time for this story in many ways. Here are just two ideas:

1. You can read it aloud, all the way through, with the entire class on the rug during your regular story time. Then, review the story spread by spread and begin implementing the various objectives and **Fun Sheets**.
2. After reading aloud the first two pages, you can begin questioning for comprehension and work on some of the **Fun Sheets** and activities cited in this section. Proceed to the second two pages, and so on.

Opening Lesson

Introduce the book by showing the cover and saying the title clearly: *Tommy and the Mew-Coo-Coo Birds*. You can also write the title on the board. Read the first two pages of the story.

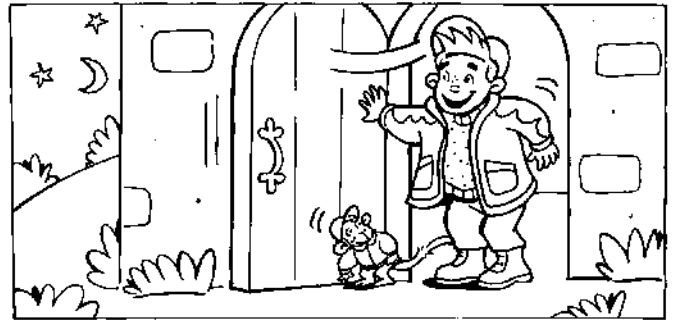
Ask students what they can predict about the story from what you have read on these first two pages. Write their ideas on the board.

2

Tommy's friends were locked in a dungeon, but Tommy had escaped, and he was going for help.

Tommy followed Bongo up the steep stone steps. Tommy was sad to be leaving his friends locked up in a cold, damp cell. But he had to find RK-5. Only RK-5 could get them back to Earth.

Bongo directed Tommy to a little door. The door squeaked as Tommy pushed it open. When Tommy looked outside, he was pleased to see that it was dark. It would be easier for them to leave Big Town in the dark.



Comprehension

Several **Fun Sheets** contain questioning strategies to aid students' understanding of *Tommy and the Mew-Coo-Coo Birds*.

Fun Sheets 001 and 002 test students' comprehension of the story. After assessing their answers, reread the story as needed to clarify anything that students don't understand.

Fun Sheet 003 asks students to use their imagination in answering questions related to the story.

Learning Page 001

Name _____

Read each question and circle the correct answer.

1. What did Tommy see when he left the dungeon?
His Blueness the horse-camel statue
a sleeping guard blue pants
2. What is the name of the town in Blueland?
London Bluetown New Blue Big
3. Why didn't the soldiers capture Tommy and Bongo?
they didn't see Tommy
Tommy and Bongo were painted blue
the soldiers couldn't run fast enough
the soldiers were in a parade
4. Why did Tommy follow the mew-coo-coo bird?
it was pretty it might lead him
he wanted to eat it he had nothing
5. What was on the other side of the river?
more of the blue world a red world
a bunch of soldiers yellow trees
6. How did Tommy cross the river?
he swam across he rode a mule
he held onto a vine he didn't cross

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Fun Sheet 001

Learning Page 002

Name _____

True or False?

Decide whether the following statements are true or false, and then circle the correct answer.

1. Tommy was glad that it was dark.
2. The soldier at the gate was not supposed to be sleeping.
3. The gate was open.
4. RK-5 was waiting for Tommy just outside of town.
5. Tommy picked the middle road.
6. The mew-coo-coo bird looked very strange to Tommy.
7. Tommy knew where he was going.
8. Tommy and Bongo were very hungry.
9. The blue mew-coo-coo bird turned yellow when it crossed the river.
10. Bongo saw a pair of eyes watching them as they ate breakfast.

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Fun Sheet 002

Learning Page 003

Name _____

Read the story. Then use your knowledge and your imagination to answer these questions.

1. If you were trapped in a dungeon, would you try to escape or would you wait for someone to rescue you?

2. Do you think you would like to have a mew-coo-coo bird as a pet? Why or why not?

3. Why do you think everything on the other side of the river was yellow?

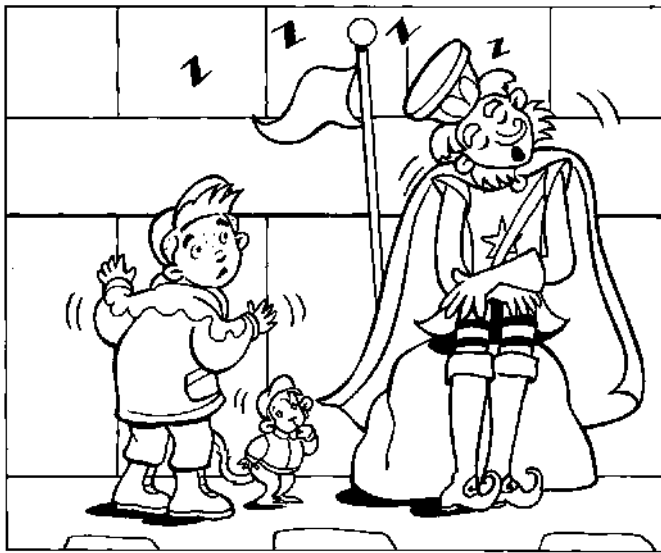
4. Tommy liked the delicious yellow fruit. What is your favorite fruit, and why?

http://www.learningpage.com

Fun Sheet 003

Nobody was in the streets. Everyone was asleep. Tommy was careful and stayed in the shadows. He made his way to the town gate.

When they reached the gate, Tommy found it was locked. A soldier sat in front of the gate. He was supposed to be guarding the gate, but he was sound asleep. He snored loudly.



Snoring

Though students probably find it humorous, snoring can be a more serious problem than most people think. Snoring happens when a person breathes through his or her mouth, causing the back part of the tongue and the soft parts of the roof of the mouth, called the soft palette, to vibrate. Students can try looking into their mouths with a mirror while they make a “snore” noise; they may be able to see the vibration occur. Most mouth-breathing, and hence, most snoring, is caused by a stuffy nose. Stuffy noses can come from colds, allergies, and irritants in the air such as cigarette smoke or dust. Perhaps the sleepy soldier simply had the sniffles.

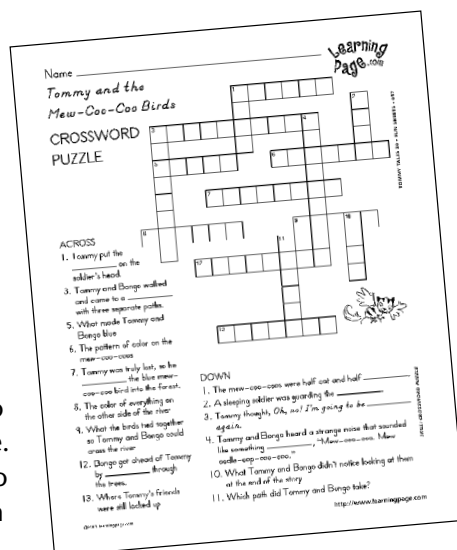
People who snore may be vulnerable to sleep apnea, a condition in which the tongue and soft palette completely block the airway. Sleep apnea can lead to chronically disrupted sleep, shortness of breath, and even death in very rare cases.

Many theories exist as to the origins of snoring. Snoring seems counter-intuitive—after all, making noise while asleep and vulnerable was dangerous in cave-man times, not to mention the social ostracism that must have come from snoring in the days when villages or families slept in a single space. One theory is that the noise frightened away animals, thereby safeguarding the sleeping person. Supporters of this theory cite the fact that the most common snorers are large men. The louder the snore, the larger the man and the more dangerous he might be to the wild animal or enemy who would approach. Another theory is that snoring acts as a warning alarm for someone who is about to slip into sleep apnea. Those who live with a snorer may disagree with that hypothesis, as snoring rarely seems to wake the snorer!

The loudest recorded snore belongs to a Canadian man, who snored at 90 decibels while sleeping in an observational sleep lab. For comparison, a jet takes off at 110 decibels. Technically, the man violated a traffic law requiring city traffic to stay under 85 decibels. A prominent snore-relief product company is still holding an open contest to find the next world’s loudest snorer.

Crossword Puzzle

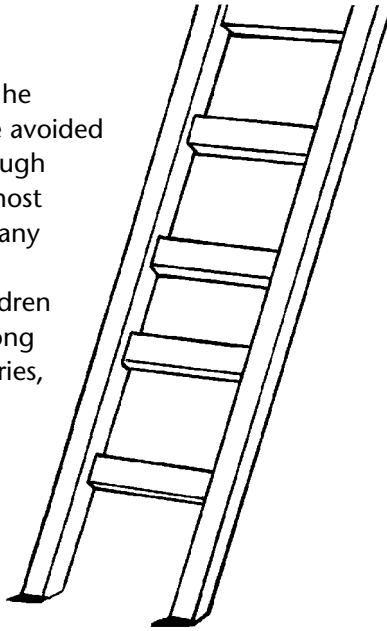
The crossword puzzle for *Tommy and the Mew-Coo-Coo Birds* (Fun Sheet 017) includes many details from this **Tommy Tales** story. Reading the puzzle clues gives students the opportunity to think verbally as well as visually, which helps to reinforce their knowledge. The crossword puzzle also reinforces comprehension of the story.



Fun Sheet 017

Superstitions

Had Tommy been a superstitious person, he probably would have avoided that ladder. Even though science has proven most superstitions false, many people still strongly believe in them. Children can be especially strong believers in these stories, even simply for the fun of it. Students might enjoy finding out the origins of some common superstitions.



Many superstitions come from religious beliefs, either from long-ago or current faiths. The myth of bad luck from a broken mirror can be traced all the way back to the Romans, who believed that mirrors held pieces of a person's soul. The broken mirror symbolized the loss of part of the soul, leading to bad luck. The seven-year time period probably comes from the lucky number seven, which can be traced back to the Bible and Christian numerology. That lucky number of years was enough to counteract the bad luck of the broken mirror.

The unlucky number 13 also has biblical origins. There were 13 attendees at the Last Supper, the thirteenth being the traitor, Judas. Due to Judas's betrayal, Jesus was crucified on a Friday—Friday the 13th. The number 13 has been associated with the sinister ever since.

Knocking on wood came from ancient Celtic and Druid worship of trees and wood spirits; knocking on wood was a way of calling the gods. The superstition about opening an umbrella indoors has unclear origins. Some say that the superstition arose because opening an umbrella under a roof was a violation of the umbrella's purpose—to shield one from the rain. Another theory is more practical; umbrellas are large and unwieldy, and opening them in a small, closed space can lead to poked eyes and knocked-over items.

4



Tommy spotted a ladder that a painter had left leaning against a wall.

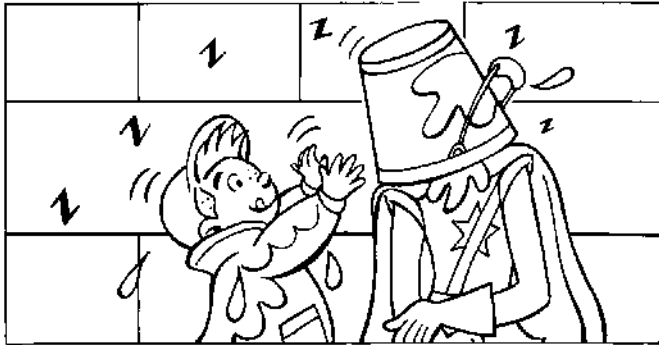
We can use that ladder to get over the gate, thought Tommy.

He carefully pulled the ladder from the wall. Unfortunately, he didn't notice the bucket of paint on top of the ladder. The bucket dropped from the ladder right on Tommy's head. Both Tommy and Bongo were covered in blue paint.

Extension A fun classroom activity is to research the origins of superstitions. Have students brainstorm superstitions. Remember that different cultures have different superstitions; China has the same feelings about the number 4 as Westerners do about the number 13 because the Chinese word "four" is pronounced nearly the same as the word "death." Students can look for superstitions from all over the world. Internet and library research can uncover some amazing facts about our beliefs.

And what about the superstition about walking under a ladder? Some say it came from the triangle shape formed by the ladder, the wall, and the ground representing the Trinity, which must not be violated. Others, probably Tommy included, would have a more practical reason. Things might fall on your head!

Tommy was afraid that the soldier would wake up. He put the bucket on top of the soldier's head so he wouldn't see them if he woke up.



Tommy and Bongo climbed the ladder. They jumped down to the other side of the gate. At last, they were outside the town walls. Now all they had to do was to go back to the place where they had been captured. RK-5 would be waiting there.

It began to get light as Tommy walked away from the town. He knew it would take them about an hour to get to RK-5. He began to walk faster.

Language Skills

The teaching materials that accompany every **Tommy Tales** story provide a wealth of opportunities to practice language skills. Some of the **Fun Sheets** associated with *Tommy and the Mew-Coo-Coo Birds* are designed to strengthen students' language skills, including:

- **Fun Sheet 004** for practice with rhyming
- **Fun Sheet 005** for practice with comparative words
- **Fun Sheet 006** for practice with past, present, and future

Fun Sheet 004

Fun Sheet 005

Fun Sheet 006

Word Find

Use **Fun Sheet 009** to give students practice with the skill of recombining letters to form new words. This task helps strengthen spelling skills and encourages an imaginative approach to problem solving.

Fun Sheet 009

Fear Responses

Tommy's heart pounded as the soldiers approached him. His hands probably began to sweat. Stress hormones such as adrenaline pumped into his bloodstream. All of these reactions are part of the human fear response.

Fear is one of the simplest, most universal emotions and one of the most intensely studied. The fear response arises when we face danger. Hormones signal immediate changes in our bodies. Our metabolism picks up, giving us a rush of energy. Our pupils dilate, letting in more light and making us extra aware of our surroundings. Our heart rate picks up and we may sweat, preparing us for sudden action. All of these responses are instinctive—they occur without thinking, and they serve one purpose: to keep us alive in dangerous situations. With these responses, we are able to run faster, think more quickly, and, sometimes, fight with superhuman strength. There are thousands of stories of people who, when faced with trouble, find themselves able to chase down a runaway vehicle, lift heavy debris that has fallen on a loved one, or swim underwater for an incredibly long time to save a drowning victim.

Scientists have also uncovered fascinating psychological effects of fear responses. When faced with danger, our brains create strong, vivid, sometimes frightening memories. These memories last much longer and are more intense than memories of normal occurrences. These memories help us avoid dangerous situations. For instance, someone who has faced a rattlesnake will be extra sensitive to a rattling sound or a coiled shape and will probably avoid rattlesnakes in the future.

But these kinds of memories can also cause problems. Some people may develop phobias, or uncontrollable fears, after a single strong incident. People who are exposed to extremely intense or prolonged danger situations, such as an assault or war, can develop post-traumatic stress disorder, or PTSD. In this case, the fear reaction has become hypersensitive. Memories come back as nightmares, and even innocent sounds or sights can bring on the full effect of an intense fear response.

6

Tommy's heart beat faster when he saw two soldiers riding toward him.

Oh, no! he thought. Here comes trouble. I'm going to be captured again.

He stopped as the soldiers came near him. But an unexpected thing happened. The soldiers just rode past Tommy and Bongo. The soldiers even waved as they went by.

Tommy looked at Bongo and then understood why the soldiers didn't bother them. "We're both blue," Tommy laughed. "It was a good thing that paint fell on us."



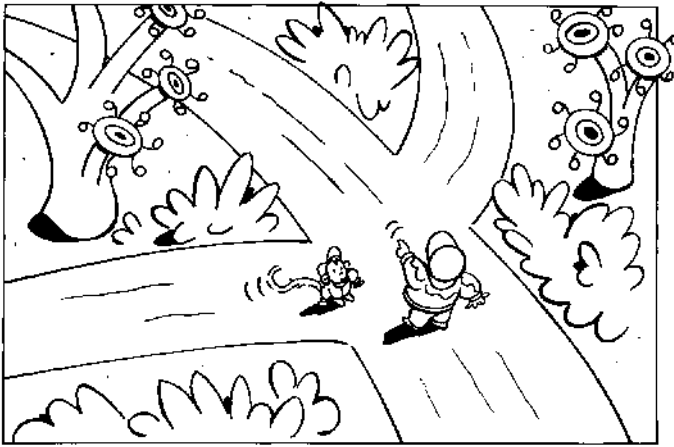
Extension While fear of danger is healthy, many people suffer from disproportionate fears of common things such as animals, thunderstorms, or public speaking. You can help your students learn to overcome their fears by providing a safe environment for them to encounter the things they are afraid of. Let students know that it is okay to have fears, and that even the toughest people have a "silly" fear or two. Have students write down their fears on pieces of paper. Allow them to keep their fears to themselves or share them with just you if they want to. Then, provide a safe way to expose students to some of their fears. For instance, you may find an audio recording of a thunderstorm or a video about spiders. Introduce the feared thing very slowly, and be sure to keep a calm and reassuring manner. Expose students to the fear for longer periods as they become comfortable. Encourage them to practice at home with their families. Eventually, anyone can learn to overcome a fear.

They continued walking and soon came to a crossroads. The road was divided into three separate paths.

I can't remember which path we should take,
thought Tommy.

Bongo looked puzzled, too. Tommy scratched his head and finally said, "Eenie-meanie-minee-mo, down which path must we go?"

The middle path was the one. Tommy hoped it was the correct one.



Rhyming Games (1)

When choosing a path to take, Tommy uses the old familiar rhyme, "eenie-meanie-minee-mo." This series of rhyming nonsense words is familiar to almost all English-speaking people. But where did this phrase, and other similar games, such as "one-potato, two-potato" come from?

These folk poems are extremely difficult to trace for several reasons. First, unlike many nursery rhymes, these schoolyard games have no inherent meaning outside picking who will be "it" or making some other choice, so they are rarely written down or recorded. Second, the rhymes are used almost exclusively by children, and unfortunately, folklore scholars often consider children's games to be simple and meaningless when compared to adult myths and oral histories. Third, the rhymes are often improvised, changed from region to region, and modified, as Tommy's rhyme is, to suit a particular situation. "Eenie-meanie-minee-mo" is simply the most common modern configuration of nonsense words. Scottish, Irish, English, and North American children have used different variations through the years. One U.S. version, now rarely heard, contained a racial slur that could only exist in pre-Civil Rights America. Although the offending word has been replaced in most versions, children may often not recognize the meaning within their rhymes. The rhymes exist as ritual, and they are separate from the normal speech we use to communicate.

Those who have taken a close look at children's choosing rhymes have discovered one universal: all the rhymes, no matter what the words, follow a rhythmic pattern of eight "choices." Children often use pointing or hand-tapping to indicate the passing choice as it comes around to each person or object. If you observe your students playing this kind of game on the playground, you will notice that they point or hand-tap eight times or a multiple of eight times. ("Eenie-meanie-minee-mo, down which path must we go?") This means that, even if children are unaware, the choice has been determined from the very first word—the chosen person or object will inevitably be the eighth one around. Tommy's choice, for instance, will always be the second path he points to. Ironically, if the chooser

Rhyming Games (2)

violates the eight rule by adding extra syllables, skipping people, or continuing to rhyme, children will consider it "unfair," even though violating the rhyme will actually vary the choices. Like many children's rituals, the origins and meanings of these rhymes might be unclear, but the purpose and rules always hold fast.

The *Oxford Dictionary of Nursery Rhymes* contains some of these children's choosing games. You may wish to find a copy in your school or public library to use in class. Have children list the choosing games they use on the playground. Then, look up the rhyme and see if the authors were able to locate its origin.

Cuckoos

Cuckoos are some of the strangest animals in nature. While they may look much like ordinary birds, their behavior is truly extraordinary. There are many species of cuckoo, and they all perform the same unusual, and some would say reprehensible, act. Rather than take the time to build and maintain a nest herself, the female cuckoo simply lays an egg in the nest of another species of bird. Many cuckoos have cleverly colored eggs that closely match the eggs of their "host" bird. After laying these eggs, cuckoos leave, never to see their offspring again. A cuckoo can lay as many as 25 eggs, each in a different nest. Unaware, the host bird sits on the eggs, including the stranger's egg. Cuckoo eggs are carefully timed to hatch before the host bird's. The cuckoo chick's first instinct is to shove any other eggs or chicks out of the nest, leaving itself as the only remaining chick. The host birds will continue to feed the impostor, even after the chick becomes larger than the warbler or robin that has become its foster parent. Cuckoo chicks have even been known to imitate the calls of still other birds, to entice strangers besides its foster-parents to come to the nest and feed it.

But the host birds are not entirely defenseless when it comes to cuckoos. The cuckoo's victim species have learned to become increasingly aware of strange eggs in their nests. Many birds, once they see a cuckoo egg, will toss it out of the nest.

Cuckoo clocks, which feature the likeness and unmistakable call of the cuckoo bird, originated in the Black Forest of southern Germany. Cuckoos probably came to inhabit these ornate wooden clocks because of their distinctive, clear call, which sounds just like the bird's name. It was the cuckoo's "crazy" behavior that led to the association of its name and call with insanity.

8

They went only about 50 paces down the middle path when they heard a strange noise. It sounded like something shrieking, "Mew-coo-coo. Mew oodle-oop-coo-coo."

Tommy stopped and tried to find out where the noise was coming from. Before he could discover the source of the noise, a bird-like creature flew down from a tree. It landed right on top of his head.

"Mew-coo-coo!" it called, right into his ear.



Cats

Tommy and the Mew-Coo-Coo Birds introduces a rare, mythical creature that is half bird and half cat. Use **Fun Sheet 015** to help students research the answers to some fascinating mysteries about cats. Why do they have whiskers? Why can't big cats purr (e.g., lions, tigers) purr? Students will know the answers to these and other questions after completing this fun sheet.

Name _____

A mew-coo-coo bird is half cat and half bird. **Learning Page 109**

Answer the questions below about cats. If you do not know the answer, use a library book or the Internet.

1. What is the purpose of a cat's whiskers? _____
2. Can cats really see in the dark? _____
3. How do cats make their fur stand up on end? _____
4. What is the name of the kind of cat that does not have a tail? _____
5. Name three kinds of big cats. _____
6. Why can't big cats purr? _____
7. Do cats always land on their feet if they fall? _____
8. Is milk really good for cats? _____

Fun Sheet 015

This was a strange-looking bird indeed. It had wings and a tail like a bird, but it had the face of a cat. It didn't have feathers. It had light blue fur with dark blue stripes.

The mew-coo-coo bird flew off Tommy's head and landed about 20 paces in front of him.

I think it wants us to follow, thought Tommy. Maybe it knows where RK-5 is.

They kept following the mew-coo-coo bird. Eventually, they came to a forest. There were blue trees as far as the eye could see.



Composite Animals

Many of the animals on Sketty seem both strange and oddly familiar—they have the combined features of the animals we know on Earth. Combining animals into fantastic beasts is an ancient mythic tradition. Greek myths tell of Minotaurs, harpies, and centaurs, which are bulls, eagles, and horses, respectively, with human features. Also famous are the griffin, a beast with an eagle's head, wings, and talons, and a lion's body, and the basilisk, a demonic beast with a chicken's head, eagle's or dragon's wings, and a serpent's tail.

Some "mythic" creatures arose from the sketchy descriptions early European explorers made of animals in the New World, Australia, Asia, and Africa. Panthers, pelicans, and hippos were all painted as mythical, often man-eating beasts. Other times, already-existing mythic creatures were claimed to have been found in these far-off lands. Komodo dragons still bear a name from this fantasy-creature fever. Marco Polo believed rhinoceroses to be especially ugly unicorns. Other non-European creatures, such as flying fish, were believed to be simple hoaxes. When the first duck-billed platypus skin was brought to Europe from Australia, most scientists believed it to be nothing more than a beaver pelt with a duck's bill attached.

Even today, people perpetuate hoax animals by patching together familiar creatures. Many people have proclaimed to display stuffed mermaids, most of which proved to be monkey or ape torsos sewn to fish bodies. A "sea serpent" fossil, displayed in New York in 1845, was really a patchwork collection of whale bones, both fossilized and modern. And who hasn't seen a postcard or a mounted head of the mischievous jackalope, a jackrabbit with antlers? Believers and skeptics still argue about the "evidence" witnesses have seen of sasquatches, Yetis, and lake monsters.

Have students invent a composite animal of their own. Have them brainstorm the combination of features they would like to use. They can use **Fun Sheet 014** to draw their animal. Or, using magazines or the Internet, students can find photos of various animals and create a collage of their composite animal. Have students describe the animal in a few sentences. They can take the pictures of their mythical beasts home and see how many people are fooled by the hoax.

Midway Comprehension Check

Pages 8–9

- Do you remember from *Tommy goes to Blueland* why Tommy escaped but the other friends were still locked up?
- How did Tommy get outside the town gate?
- Why didn't the two soldiers outside the gate stop Tommy or lock him up?
- How did Tommy decide which path to take?
- When Tommy and Bongo went down the middle path, they heard a strange noise. Where was the noise coming from?
- Describe the creature that was making the noise.

Safety Tips: Lost in the Woods (1)

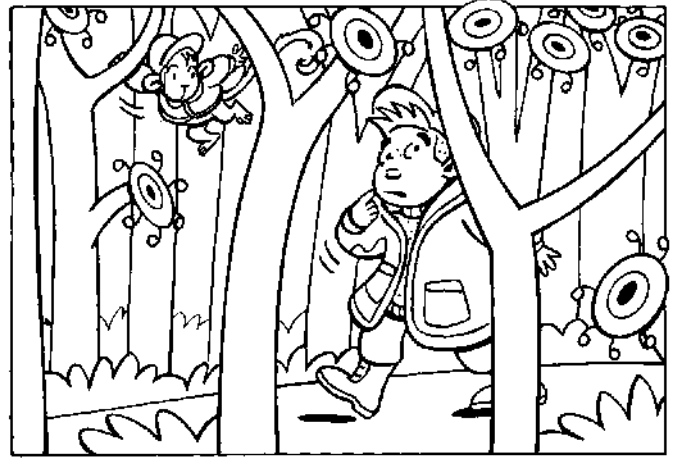
If students get lost in the woods or wilderness, they will most likely not have a helpful mew-coo-coo bird to guide them. Inform students of the following important safety tips if they ever go into the woods or wilderness.

- Never go into the wilderness alone. If you do go into the wilderness, make sure someone knows where you will be, who you are with, and when you can be expected back.
- Always carry extra layers of warm clothes, extra food, water, and a first-aid kit when traveling in the wilderness. You should also carry a whistle. If you get lost, blow the whistle. Screaming will wear out your voice, and it isn't as loud as a whistle.

If students do get lost, make sure they know to do the following things.

- If you are with someone else, stay together. It is much easier to find a group than it is to find one person.
- Stay in one place. Do not try to find your way out of the wilderness; you may get more lost, stuck, or injured. The people looking for you will be looking near the place where you were last seen, and they are much more likely to find you if you haven't gone far.
- If you see human structures, such as roads, trails, or cabins, stay close to them, but do not wander around or try to follow roads or trails. Even if you see signs saying that a place is private property, you can stay there—the owners will understand that you are lost.
- Find a cozy place that is not too hidden where you can keep warm. If you do find a place behind or under something, tie a bright object to a nearby tree, rock, or bush where it can be easily seen.
- Make noise. If you hear noises around you, they will be either animals, which will be scared away, or people, who will try to come find you.
- Stay warm. Keep all of your warm clothes on. Be especially careful to keep a hat on, since you lose a lot of heat through your head. If you have to sleep or lie down, make yourself a mattress from leaves and twigs—it will keep you much warmer than lying on the bare ground.

10



When the mew-coo-coo bird flew into the forest, Tommy wasn't sure if they should follow. What else could he do? He was truly lost, so he followed the bird into the dark forest.

The blue-striped bird led them deeper and deeper into the forest. The forest got darker and thicker.

After about half an hour of walking, Tommy heard water running. Bongo got ahead by swinging through the trees. He excitedly motioned to Tommy to join him.

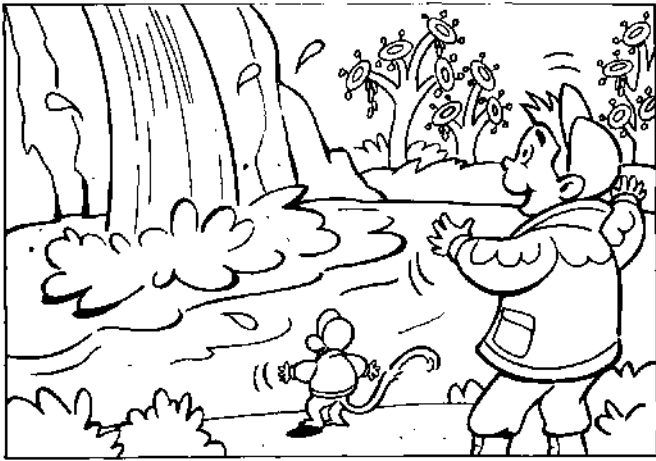
Safety Tips (2)

- If you hear an airplane or helicopter overhead, lie down on the ground and wave your arms and legs. This will make it easier for the aircraft to see you.
- Never eat anything in the wilderness unless you are absolutely sure of what it is. Avoid eating mushrooms, since they can be hard to identify and deadly.
- Drink from small streams, or drink dew droplets off plants. You shouldn't drink from standing water, such as ponds or lakes, or from large rivers, since that water might make you sick.

When Tommy caught up, he saw a beautiful waterfall. It was flowing down into the wide river in front of them.

"Wow, this is cool!" said Tommy. "I wish the others could see this."

Then he noticed something was strange. The water closest to him was blue. But the water near the opposite bank was yellow. He looked over to the forest on the other side of the river. The trees weren't blue there—they were all different shades of yellow.



Colorful Water

Students don't have to travel to Sketty to find beautifully colored pools, streams, and lakes. Bacteria, minerals, and tiny animals can tint water on Earth every color of the rainbow. One of the most fantastic places to view colorful water is Yellowstone National Park. Features such as Opal Pool, Azure Pool, Beauty Pool, and Chromatic Spring display bright blue, red, yellow, orange, and green bacteria and algae.

Under normal conditions, fresh water yields bacteria and algae only in the familiar pond-water colors of green and brown. This is because most bacteria are photosynthetic; like land plants, they use green chlorophyll to trap the sun's energy and convert it into food. But volcanic activity close to the surface underneath Yellowstone heats up and increases the mineral content of the water. The bacteria in Yellowstone are able to live directly off these minerals using the geothermal, or volcanic, heat for energy. Since they need no green chlorophyll, their bright colors can show through, much the way the colors of autumn leaves blaze brightly once summer's chlorophyll is gone.

Volcanic minerals can also directly tint water. Volcanoes often spew sulfur, coloring volcanic lakes a smelly yellow. Iron oxidizes in water, creating a rusty red.

Most students know that the popular pink flamingo gets its color from the food it eats—pink brine shrimp. These shrimp flourish in soda lakes, or lakes with an extremely high salt content. The water in these lakes is so caustic that most creatures cannot survive there. But the brine shrimp are so plentiful, the water itself may turn pink to match the flamingos.

In the Canadian Rockies, glaciers feed many stunning, turquoise-blue lakes. As glaciers grind over the mountains, they crush the rocks and pick up the resulting talc-like powder. When the glaciers melt, this powder remains suspended in the water, giving it a white color and the appropriate name "glacial milk." As the glacial milk collects into lakes, it creates an amazing blue-green color that stands out beautifully against the stark, black-and-white peaks.

Geography

Tommy notices something very peculiar—the river is blue on the near shore and yellow on the far shore. Use **Fun Sheets 018 and 019** to help students learn what's on different sides of various bodies of water. **Fun Sheet 018** asks them to locate various bodies of water and learn what is on each side. **Fun Sheet 019** asks them to learn about what's on each side of either the Atlantic or Pacific Ocean.

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Name _____

Look at a map of the world. First, choose either the Atlantic or Pacific Ocean.

Write what you see on each side of the ocean you chose.

EAST SIDE		WEST SIDE	
Name two continents on each side.			
1. _____	1. _____	1. _____	1. _____
2. _____	2. _____	2. _____	2. _____
Name three countries on each side.			
1. _____	1. _____	1. _____	1. _____
2. _____	2. _____	2. _____	2. _____
3. _____	3. _____	3. _____	3. _____
Name three big cities on each side.			
1. _____	1. _____	1. _____	1. _____
2. _____	2. _____	2. _____	2. _____
3. _____	3. _____	3. _____	3. _____
Name two mountain ranges on each side.			
1. _____	1. _____	1. _____	1. _____
2. _____	2. _____	2. _____	2. _____

Fun Sheet 019

Parallel Adaptation

We can see that many animals fall into “families” of related species. A good example of this would be blue and yellow mew-coo-coo birds.

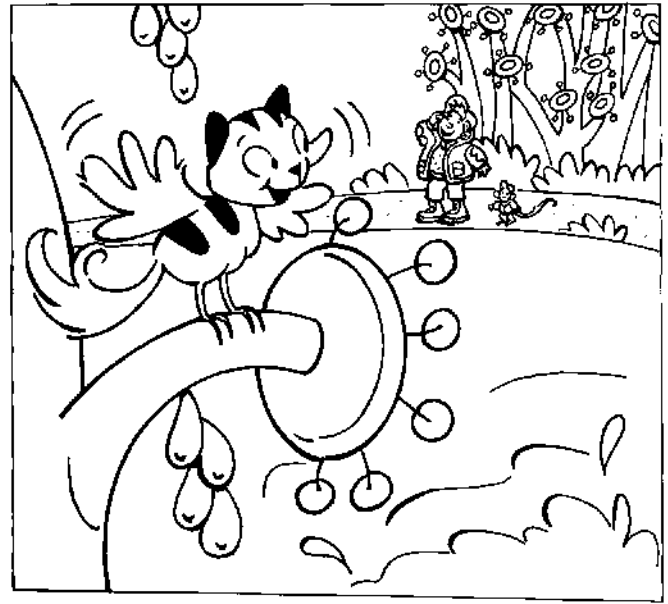
A real-life example is the squirrel family, which contains gray squirrels, red squirrels, ground squirrels, and flying squirrels. All squirrels share these traits:

- They are small, so they can fit in hiding places.
- They are fast runners, so they can escape from predators in open spaces.
- They have sharp, ever-growing rodent teeth that enable them to open tough nuts and seeds.

Biologists also know that the various squirrel species are closely related by comparing the internal anatomy and DNA of various squirrels. Like human families, animal families look and act a lot alike.

But sometimes, species that look and act the same come from entirely different continents. For instance, the Australian sugar glider looks and behaves almost exactly like a North American flying squirrel. They both live in trees, they both have gray fur and fluffy squirrel tails, they are both nocturnal (meaning they are active at night—a relatively unusual feature among squirrels), and they both have unique skin flaps and gliding abilities. Anyone looking at these two strange animals would say that they are closely related. But like many Australian mammals, the Australian sugar glider is a marsupial. Internally, sugar gliders and flying squirrels are very different and are not related at all. This phenomenon is almost like going to a far-away continent where you and your family have never been, only to find a person there who looks just like you, likes the same kinds of things you like, and even speaks your language! How could this happen?

The answer lies in the way that animals interact with their ecosystems—all the plant and animal life around them. Different animals occupy different biological “niches,” or roles in the ecosystem, interacting with the environment in distinct ways. In many parts of North America, there are partially vegetated areas with small places to hide and lots of



From one of the tallest yellow trees,
Tommy heard the familiar song.

“Mew-coo-coo. Mew-oodle-oop-coo-coo.”

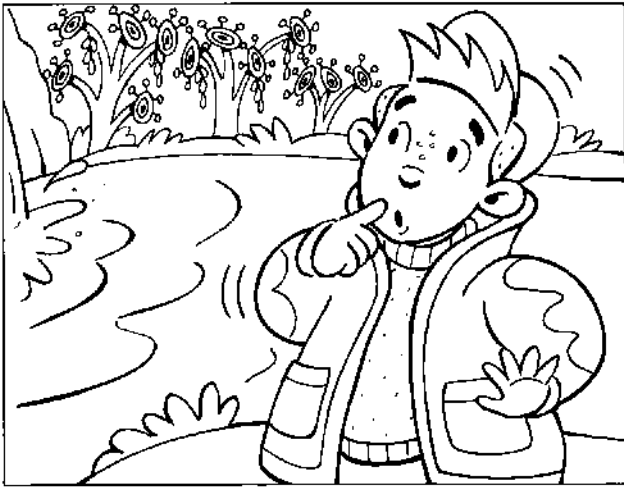
Tommy looked up. He expected to see the blue bird that had guided them. Instead, he saw a bird that was almost exactly the same. But this one was pale yellow with bright yellow stripes.

nuts, seeds, and other plant foods. Squirrels are perfectly suited to fill this particular biological niche. Australia also happens to have similar ecosystems, but since there are no rodents or squirrels there, some other kind of creature had to fill that niche. A marsupial, the sugar glider, fills the same niche in Australia that the flying squirrel fills in North America. Like the flying squirrel’s body, the sugar glider’s body is perfectly suited to exploit its biological niche. Only by looking at internal anatomy and DNA can we see that the two creatures are not closely related.

Extension Have your students research similar-looking animals at the library or on the Internet. They can look for two species that look and behave alike. Then have your students determine whether those species are related or not. Are the animals from the same family, or do they simply happen to fill the same biological niche?

Tommy and Bongo were very hungry. They had done a lot of walking, and they hadn't eaten breakfast. Tommy saw the masses of yellow fruit on the trees beyond the river.

"We must cross this river," said Tommy.
"But how?"



Just then, the blue mew-coo-coo bird landed on Tommy's head. It let out a few mew-coo-coos and flew into a tree near the river. Tommy watched as the bird grabbed a couple of vines from the tree.

Animals with No Fear of Humans (1)

Anyone who walks through a wild area can sense that most animals do not want to be seen by human eyes. Deer flee, rabbits freeze or hide, and even animals that we fear, such as wolves or bears, would rather run from us than confront us. But in some cases, animals can be as comfortable around humans as the mew-coo-coo bird is around Tommy.

Perhaps the most famous instance of fearless animals is on the Galápagos Islands. When European sailors first visited these islands (off the coast of Ecuador) in 1535, they were astonished that seals, albatross, tortoises, and other animals did not flee. Another famous example of a fearless animal is the unfortunate dodo bird, which also lived on a remote island. It was flightless and, because it had no natural predators, was not afraid of humans. Sailors killed dodo birds for food and called them "dodos," thinking they were stupid. Sadly, the dodo's trusting nature quickly led to its extinction. Arctic and Antarctic explorers regularly report that animals in these environments are not frightened of people. Ocean animals also do not fear humans; manta rays are known to be approachable and friendly, schools of fish will surround divers without worry, and we have all heard of the playfulness and curiosity of wild dolphins.

The common factor in all of these fearless animals is a lack of exposure to human beings. Animals that have existed alongside humans on the major continents of the Americas, Eurasia, Africa, and Australia are frightened of humans for the simple reason that humans have always been a danger. Even animals we do not eat, such as large predators, fear us because of our habits of sport hunting, killing "pests," and habitat destruction. Only in extremely remote and uninhabited areas do animals dare to approach us.

However, there is another way that animals can come to be comfortable around humans: when we feed them. The most frequent example is the black bear. Bears will eat almost anything—plant, animal, or garbage—and they quickly learn to visit garbage dumps, camp sites, pet food bowls, and even homes if they find food there. Once bears lose their fear of humans, they are vulnerable to poachers and hunters, as well as being hit by cars.

Animals with No Fear of Humans (2)

Sometimes, bears so closely associate humans with food that they may attack. Like bears, raccoons are clever, mischievous opportunists who have learned that humans often mean food. In South America, tourists and nature photographers are so eager to see piranhas in their vicious feeding frenzy that local fishermen have taken to feeding them, thereby attracting them to docks, boatsides, and other human areas. And when American alligators accidentally find themselves on Florida's golf courses or in suburbs, they are as likely to get a few cold cuts thrown to them as they are to get a visit from wildlife control.

Tell your students that it is important to never feed wild animals. Feeding animals makes them vulnerable to hunters and cars, and it also creates a dangerous association in the animal's mind between humans and food.

Color-Changing Animals

The blue and yellow birds on Sketty blend in well with their respective surroundings. But if the yellow bird were to try to fly into Blueland, it would stick out like a canary in a cobalt mine. An ideal form of camouflage is the ability to change color to match different surroundings.

The most famous color changer is the chameleon, one of several lizards that can change color. Contrary to popular belief, chameleons usually do not change color for camouflage. Many chameleons have a limited color range of greens, browns, and grays, which happen to blend in with their environment. But most often, chameleons change color to regulate their temperature (dark colors to warm up, light to cool off) and to communicate with other chameleons. Some of the brightest colors and patterns can be spotted on tropical chameleons, which turn red, yellow, bright green, and blue during fights and courtship.

Many ocean creatures best their land counterparts when it comes to color change. Sea horses have an amazing range of camouflage colors. They can quickly adopt the color of any background. Since these little creatures live in colorful coral reefs, the results can be a bright rainbow. Octopuses are also champion color changers. They can change not only the color, but also the pattern, of their skin to match the background. Amazingly, octopuses can also change the texture of their skin, raising bumps, nodules, and wrinkles to match any kind of surface.

But the most remarkable color-changing animal is a little-known relative of octopuses and squid called the cuttlefish. These highly intelligent animals can match any color and pattern of their background. Unlike chameleons and sea horses, they can change color in a matter of milliseconds, rather than seconds or minutes. This gives the cuttlefish the ability to create moving, dancing patterns along its body. Mating or fighting cuttlefish send waves of color and pattern down their bodies. Scientists believe that these neon-like displays are part of a complex communication system. When a male cuttlefish courts a female, he will flash soothing, beckoning

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The blue bird flew over the river carrying the long vines. When it reached the center of the river, it was met by the yellow mew-coo-coo bird.

The yellow bird was carrying a similar vine in its mouth. They flew around each other in circles until the two vines were tied together.

Tommy then understood what the birds had done. They had created a way for him to cross the river.

Tommy grasped the strong vine and jumped into the river. Bongo followed close behind.



patterns at her. If a competing male happens to approach, the cuttlefish will display an aggressive pattern on the half of its body that faces the male, while continuing to flash the come-hither pattern on the half facing the female! Anyone interested in color change or sea animals deserves to see color film footage of these unbelievable moving displays.

The mechanism controlling all animal color change is special pigment-containing cells called chromatophores. These cells expand and contract individually. When an animal wishes to change from green to red, it expands the red chromatophores while contracting the green. In chameleons and sea horses, this change is controlled through hormones, so a change takes several seconds to minutes. In octopuses and cuttlefish, the chromatophores are directly linked to the nervous system and the brain, so color changes are instantaneous.

It was quite a struggle, but they were soon on the other side of the river. They were wet but happy. They were also clean again. The blue paint had completely washed off.

Tommy and Bongo rushed to the fruit trees. They were soon eating the most delicious fruit they had ever tasted.

They didn't notice a pair of eyes looking at them from a yellow bush just behind them.



Color Changing: A Classroom Activity

You and your students can create a model of a color-changing animal to show how the chromatophores in its skin change the animal's color. You'll need:

- A large piece or several large pieces of poster paper or other heavy paper
- Scissors
- Colored tissue paper in three or four colors
- Glue

With the poster paper, cut out the shape of your class's favorite color-changing animal. Students can make chromatophores by creating tissue-paper "flowers." They can cut the tissue paper into circles, pinch the center of each circle, and crinkle the rest of each circle together to make the flower. Then, students can glue the pinched ends of their "flowers" to the animal shape, making sure the flowers are very close together so that the circles overlap when opened. The colors should be evenly scattered throughout the shape. Once your animal shape is covered, students can "change" the color by opening up the desired chromatophores with their hands. If students want a green chameleon, they can open up all the green tissue paper circles so that they cover the other colors. If they want a red chameleon, they can close the green chromatophores and open the red ones. The color change may not end up looking pure or complete, but similarly, a close-up photo of a color-changing animal will reveal that you can still see other colored cells on the real animal's skin.

Relationships

This story, like the other stories in the **Tommy Tales** series, continues to reveal aspects of the children's relationships with each other. Each adventure teaches the importance of friends and family, teamwork, and helping each other on adventures. These stories also encourage readers to think about right and wrong and to make wise choices in their lives. As a way of wrapping up this story, ask students to share something they have learned from this **Tommy Tales** adventure that they can use in their everyday life.

Conclusion

Ask students for their feelings and thoughts about this story. Students will naturally be curious and enthusiastic to see what happens in the next **Tommy Tales** adventure. As RK-5 continues to transport Tommy and his friends to new places, readers' knowledge and understanding of the world around them continues to grow.

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Write a Letter to a Tommy Tales Character

After reading *Tommy and the Mew-Coo-Coo Birds*, have students write a letter to one of the characters in the story. Leave the content up to them. Be sure to have students follow a traditional letter-writing form, with the date, salutation line, body, closing, and a signature.

