

## The King's Special Signs

One day the king heard the sound of shouting in the caves where the gnomes were working. He hurried to see what was wrong and found Plus, Minus, Times, and Divide having a terrible fight. They had bumped into each other and dropped their jewels and their hats.

You see, a gnome's hat is a very special thing, and he will never let anyone else wear his hat. The difficulty was that all of their hats were the same color, a bright orange. So when they dropped their hats, they couldn't tell which hat belonged to which gnome, and were loudly arguing, trying to straighten it out. When they saw the king, they stopped fighting and bowed very low before him, for they all loved and respected him deeply.

The king asked them what the trouble was and when they told him, he began to laugh, because he thought they were such funny, lovable little gnomes. Then he reached down and picked up the largest of the orange hats and said, "Plus, this is yours, because you have the biggest head of all the gnomes." But before he gave it to him, he did something very strange. He took his royal pen, which he always kept with him to sign important papers, and he made a mark on the hat. The mark was like this: +

"Plus," the king said, "this is your very own sign. With this on your hat you will always know that it is yours. I give you this sign because it reminds me of your big pockets bulging with the extra jewels you find." Plus put the hat on his head and gave a big smile.

The king then reached down and picked up another hat; this one was ragged and torn. "Minus, this is your hat," he said. "I can tell because it is ragged like your clothes." Then the king made a special mark on it like this: -

"Minus, this is your special sign. With this on your hat you will always know that it is yours. I give you this sign because it reminds me of the rips and holes in your sack and pockets through which you always lose your jewels." Minus came forward timidly and thanked the king, then put the hat on his head.

"And now, Times, I know this is your hat because it is so bright and clean, just like you." The king reached down and picked up the third hat. "Your special sign is this: x" As he marked the hat, he said, "This reminds me of you, because your arms are always outstretched trying to carry twice as many jewels as the others." Times proudly walked forward, bowed low, and put his hat on his head.

The king then picked up the last hat and marked it like this: ÷ "Divide," he said, "you are loved by all gnomes because you share what you have with others. To you, I give a special sign that will always remind you that sharing with others is what pleases me most." Divide walked slowly to the king and bowed, then put his hat on his head.

“Now you all have your hats and your special signs. Divide, give everyone an equal share of the dropped jewels. Work hard and I’ll see you at the end of the day.” With that, the king returned to his chamber and the gnomes returned to their work. They never forgot their special signs, though, and what each sign stands for.





# The Elf King Asks for Help

After many years of service to the king, the four gnomes grew to be old and wise. Plus still liked to stuff his pockets full, but now he did it not from greed but to please the king. Minus still lost most of his jewels, not because his pockets had holes, but because he gave his jewels away to help all the other gnomes. Times now collected five times as many jewels, but not from pride. He did it to help the king. Divide became so good at sharing with others that he was put in charge of counting and dividing all the king's jewels.

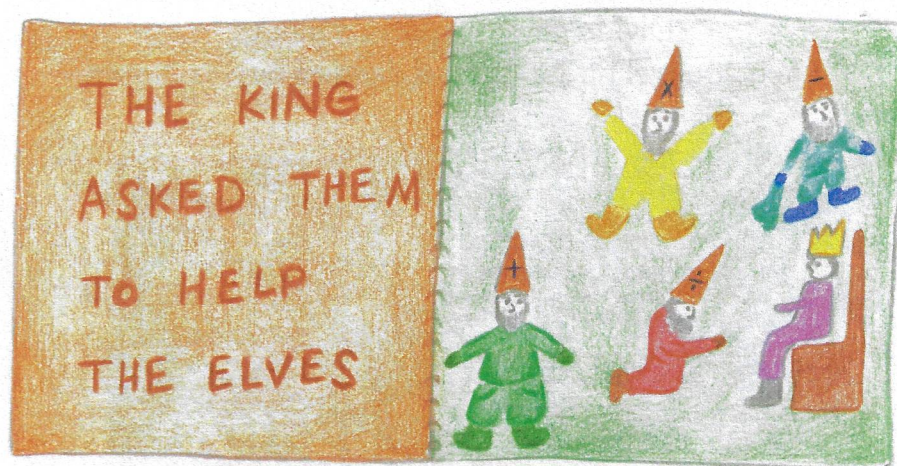
One day, the king called them all to his throne room and told them that he needed their help in an important way. The King of the Elves had sent a message to him:

Dear Gnome King,

I am writing to ask for your help. Every year my elves have to keep count of the nuts that fall so we can divide them equally among all the little animals. But this year so many nuts are falling that my elves are having trouble counting them all. Soon the nuts will spoil and the animals will not have food to eat for the winter. Do you have any gnomes who know how to count? Please send them to help us!

Your Friend,  
Elf King

The king then asked the four gnomes if they would help the elves. They all were very happy to do anything that the king asked, even if it meant leaving their beautiful underground caves and going into the bright sunlight above. So early next morning, they said good-bye to the other gnomes and went to help the elves.



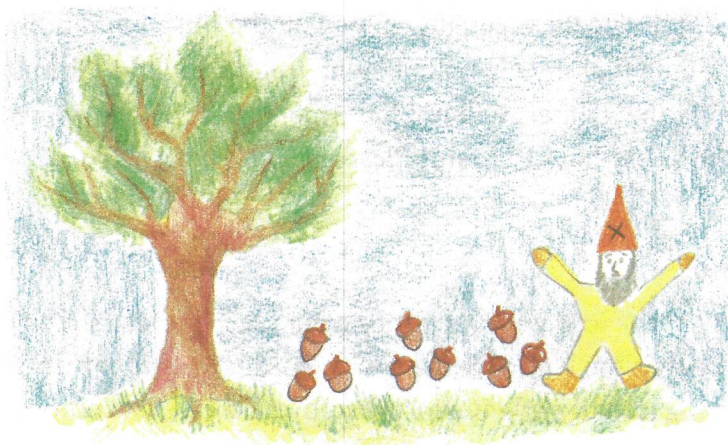
*Note: Here is an example of the type of problems you might pose about the gnomes helping the elves by counting the nuts and dividing them among the animals, and how each episode could be illustrated in the MLB. You can easily create your own story problems—this just gives you an idea of where to start.*



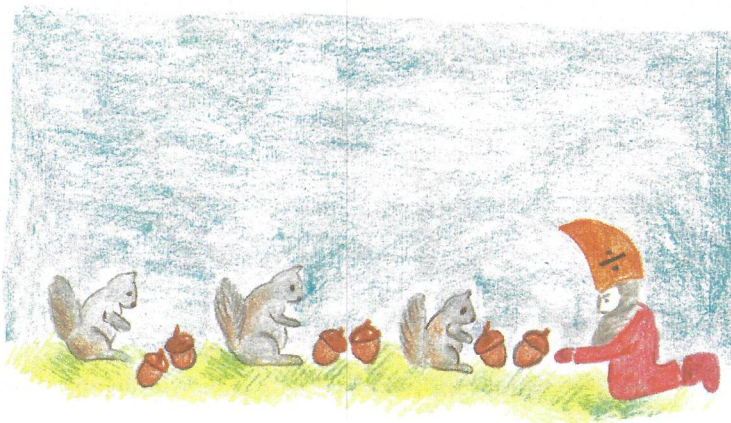
Minus helped the elves find the lost nuts.  $8 \text{ minus } 5 \text{ is } 3 \text{ nuts.}$



Times found 3 times as many lost nuts.  $3 \text{ times } 3 \text{ is } 9 \text{ nuts.}$



Divide gave 3 squirrels 6 nuts.  
Each squirrel had 2 nuts.  $6 \text{ divided by } 3 \text{ is } 2 \text{ nuts.}$





## King Equal Gets a Surprise

The four gnomes, Plus, Minus, Times, and Divide, loved their king dearly, as you know. Now we have never mentioned this before, but the king's name is King Equal. He is well known for the deep love he has for all the gnomes and also for his great strength. But the quality for which he is most respected is his wisdom. He always seems to know just the right thing to do about anything, particularly when any arguments come up about the jewels and who should have what. King Equal always sees that everyone has an equal share. That is why he's called King Equal.

One day, King Equal noticed that the gnomes were meeting together in small groups and whispering to each other. That was very unusual because they usually were singing aloud happily or else arguing and fighting. He knew there must be some big secret that the gnomes were trying to keep. The next day the four gnomes came to see the king.

"We have something special for you," said Times.

"Yes, our friends, the dwarves, helped us make it," said Plus.

"Now you must close your eyes," said Minus.

King Equal put both hands over his eyes.

"And promise not to peek!" said Divide.

"Oh, I promise!" said King Equal.

Then Divide, who had been holding the surprise behind his back all the time, stood on tiptoe and put the surprise on the king's head.

"Is it what it feels like it is?" asked the king.

"What does it feel like?" they asked.

"A crown!" exclaimed the king.

"It is!" yelled Times, who was so excited he couldn't stand still.

"May I look now?" King Equal asked.

"Oh yes, yes!" said Plus who was jumping up and down.

The king reached up slowly and took the crown off of his head. It was a beautiful golden crown, set with many precious and beautiful jewels. "This is the most wonderful crown I have ever seen!" he said. "What have I ever done to deserve such a beautiful gift?"

"You have been a strong, wise and loving king," said Divide. "We just wanted to show you how much love we have for you."



“There are so many lovely jewels in the crown,” said the king. “You must have worked very hard to find such beautiful jewels. But please tell me one thing: What is this strange shape which is on the front of the crown?” He pointed to two rows of jewels which were set very carefully in a certain pattern. The pattern looked like this: =

“That is the best part of the surprise!” squealed Plus. “Do you remember when we were fighting over our hats and you gave us each a special sign to wear on our hats?”

“Yes, of course,” said the king. “Do you mean that this is my special sign?”

“Yes, your own special sign!” they all exclaimed.

“What does it mean?” asked the king.

Times stepped forward. “Your Majesty, the gnomes all know what a wonderful king you are: strong, loving, and very wise. But the one thing that we all agreed made you so special was that you always treat everyone fairly and make certain that everyone receives an equal share. So the sign that you have on your crown reminds us all to treat each other as equals, because the two rows of jewels are equal in length and the lines that they make are straight and true.”

“Just like you!” chimed in Plus.

The king laughed gently.

“Although you may feel that I am a wonderful king, I can only feel that I am very blessed to have such wonderful gnomes to help me in my work. Thank you for the crown. I will wear it always to remind me of how kind and thoughtful you all are, and also how very wise you are all becoming. Soon you will all be wise enough to rule yourselves, and you won’t need a king to help you anymore.”

“You won’t leave us, will you?” said Minus sadly.

“No, dear Minus, I won’t leave you for a long, long time; there is still much to do. Many jewels have to be sorted and counted, so we can divide them equally. For the wonderful gift you have given me, you shall all receive an extra share of the jewels today.”

“Thank you!” they all cried at once. With laughter and singing, they returned to their work.



# Stories: Science

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## Lesson 23

### A Tomato Grows

*by Jan Ronan*

When the air is cold and crisp and the ground is frozen from the winter's chill, something very special takes place in a warm, moist building called a greenhouse. There, a gardener takes a small handful of tiny tomato seeds and places them all together in a very small pot, and buries them in the dirt. He waters them and keeps the soil moist. For a long time nothing happens.

The seeds are surrounded by darkness, each lonely and lost in its own thoughts. It is warm and moist in the soil and something magical begins to bring each seed to life. The seeds begin to grow, to reach up towards the light and up out of the soil until five or six plants are entwined together, hugging one another for joy in the light.

When they are strong enough, the gardener gently lifts the soil out of the pot, separates the baby plants, and puts each new tomato plant in a pot of its own. He continues to water it and keep it moist. The plant thrills to be alive and stretches up and branches out. When the tomato plant is strong enough and about eight inches tall, the gardener puts it out in the nursery to sell.

That's when you find it and choose the one that calls out to you. You pay the gardener and take the young plant home to your garden.

Before you place the tomato plant in the soil, you have to loosen the dirt with your trowel, dig a hole about two inches deep, and add some special growing foods. You need to make a wire cage that is about twice the size of the root ball around the bottom of the tomato plant, and lower the cage into the hole. This will protect the plant from gophers or other creatures under the earth that might like to nibble on the tomato plant's roots. Then you can gently lift the tomato plant out of the pot and place it in the cage in-





side the hole. You cover up the hole and pack the dirt against the plant's fragile stem to about the same height as the ball of dirt that the plant is already growing in. Last, you water the plant and welcome it to your garden right next to the marigolds and beans.

That little plant is so glad to have a home and people who love it and care for it! In the warm sun and with the good water and food you give it, it begins a dance that goes on for a long time. Very slowly it stretches out its branches to the sun and climbs the cage. The plant's stem becomes thicker and stronger and the plant looks so healthy!

Then one day you find some caterpillars eating your plant's leaves and some black and orange bugs attacking the stem. Your little plant is struggling to stay alive. You rush out and lift off these unwanted intruders and take them far away from your tomato plant. You clear away the weeds and grass that are crowding close to your plant and tell it everything is okay again. It breathes a sigh of relief, sways gently and continues to grow towards the sun. You water it every day until it is almost six feet tall and three feet wide. Then something even more wonderful happens.

All over this green tomato plant, little yellow blossoms appear until the plant is dressed in flowers all over. A few days later you notice the petals have begun to drop off. You discover just behind each petal is a little green bud. Each day as you watch, the round, green balls get bigger and bigger and bigger, until one day they are as big as your fist!

Then you notice a few dark spots and worm holes on some of the fruit. Another attack! You quickly go to work defending your tomato plant. You spray the plant with a mixture of garlic and water and the bugs disappear! After that, you watch every day to keep your plant free from danger, because it depends on you to help it produce its lovely fruit.

One day a large green tomato starts to ripen; it turns yellow, then orange, then red and brighter red. When it is the brightest red, you give the tomato a gentle twist and it falls off the plant into your hand. You slice it and put it on your sandwich.

Soon, lots of tomatoes are ripe. You pick them and wash them. Some you eat, some you share with friends, some you put up in jars and some you freeze for spaghetti sauce.

As you pick your last tomato you are grateful for the gifts your plant has given you and sad at its going. But now the plant's work is over; it is ready to help prepare the soil for next year's crop. You let the plant die down into the earth. It withers away and turns brown, then you dig it under the soil. The plant is dead. Yet even then it works a deep magic! Tiny insects and worms crawl all over the decayed plant and mix it with the soil, making it rich and warm and lovely. You let it stay that way all fall and winter. Then one warm spring day, you start all over again! You toss the soil and turn it, mixing up the remains of last year's glorious plant. Then you are ready to plant another little tomato and begin again the magnificent cycle of a tomato.





## Lesson 26

# Beaver Pond

by Shari Mueller

Mike and his sister, Diane, lived in the country. Their house was nestled in an area of natural beauty, surrounded by trees, with a creek running through the gentle,

rolling hills. They spent many hours roaming the hills and playing hide-and-seek amongst the trees. They learned about the animals who lived in their area, but none were as fascinating as the family of beavers who moved in one spring.

They first noticed the beavers when they came across trees that had been cut down with strange markings. They learned that the beaver uses his strong teeth to cut right through the wood! One day they decided to hide near the creek to watch the beavers at work.

"There's one!" said Diane excitedly as she spotted the first beaver. "He's getting ready to cut down that tree, I think."

"Shhhh!" cautioned Mike. "We don't want to scare them away. Dad said that beavers build dams across streams that back up the water enough to make little ponds. Then they build their houses underneath the water in the pond! It would be so neat if this family of beavers made us a pond! Then we could ice-skate on it in winter and fish in it in summer." Mike dreamed of all the fun things they could do with a pond. It did seem as if this was what the beavers had in mind.

Soon the children saw several more beavers approach. They cut down a tree and dragged it into place across the creek. All day the busy beavers worked at their home-building project. They collected all shapes and sizes of sticks and twigs, even stones and mud were used. The children noticed that as the dam was taking shape, leaves or other debris that floated downstream collected in the dam, slowly forming a blockade that the water could not run through so easily. They also noticed that the water just above the dam was beginning to widen. The beavers really were building a pond! The children decided to call it Beaver Pond.

As the summer drew near, many changes started to take place. Plants grew in and around the pond, providing food for a family of ducks that decided to take up residence. Then Mike noticed there were bugs he had not noticed before, such as mosquitoes, dragonflies, water striders and others he didn't know the names for. When school was



out for the summer, he went to the library and checked out a book about pond life and started to learn all about the many plants and animals that were new to him. He even kept a journal and drew pictures of the new things he saw at the pond.

As the summer wore on, life in the pond continued to expand. Snakes moved in near the edge, where the water is not very deep. They liked to eat tadpoles and frogs, salamanders, fish and worms, all of which were plentiful there.

A red-winged blackbird built its nest in the cattails that grew out of the water. It laid four eggs in the nest and Diane and Mike kept their eye on it so the eggs would come to no harm. In two short weeks, the children watched as the eggs hatched, and a new family was welcomed at Beaver Pond.

Diane especially liked the salamanders. There were black ones with yellow spots, brown ones with blue spots, and bright red ones with black spots! "Mike, did you know what I learned about salamanders?" asked Diane one afternoon as they sat, observing. "Some of them don't have lungs like we do. They breathe through their skin! But they must keep their skin wet to be able to breathe and stay alive."

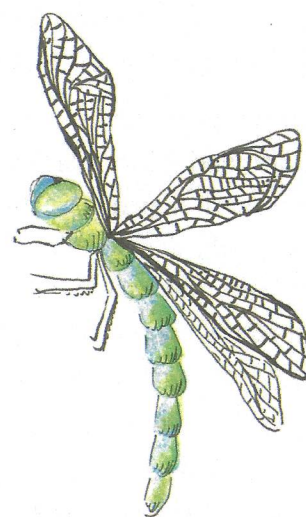
"What do they eat?" Mike asked his sister. "They eat worms, insects and snails," replied Diane, who had become quite an expert on salamanders.

"Frogs eat insects, too," said Mike. "Did you know they start out as eggs in a slimy string and hatch into tadpoles in a few days? Then it takes two full years for a tadpole to grow into a bullfrog!" Mike thought out loud, "That means it will be two more years before these little guys start singing their bullfrog song!"

Summer was over and there was a hint of fall in the air. Diane was thinking ahead. "Where do all these animals go during the winter, Mike? Will they all die?"

"No, the frogs and the snakes will find a warm, dark place underneath the ground or deep in the pond, and sleep until spring. The fish go as deep as they can where the water doesn't freeze, and swim slowly all winter, and the birds will fly away to warmer places," Mike informed her. He had learned a lot about pond life from books as well as from observing.

As winter arrived, the water in the pond froze and they enjoyed skating across the hard surface. It was so wonderful to have a skating rink near their home! Both children looked forward to next spring when the pond would come alive again and provide them with new adventures and experiences.





**Lesson 16****Big Brown Bear Goes Fishing***by Rebecca Ide Lowe*

The days were getting shorter. Big Brown Bear lumbered along through the woods. His tummy was full and fat, as he had eaten his fill day after day in preparation for his long nap. Now he was looking for a good place to spend the winter. It needed to be warm and protected from danger, but easy to get in and out of in case he woke up hungry during a warm spell and went out for a snack.

"I want just the right sort of place," Big Brown Bear said to himself, "and I'll keep looking until I find it." His big flat feet carried him along and his little eyes searched carefully in the bushes and shrubs that grew along the rocks and mountainsides of the forest. He sniffed the air. "Winter is coming quickly and I must find a good den today," he thought. "Luckily, my coat has grown thick and shaggy and I'll be able to keep myself warm."

As he loped around a corner, Big Brown Bear spotted an opening in the rocks. A big bush spread across it and made it difficult to see in. "That looks promising," thought the big bruin, and he drew closer to have a peek inside. "The entrance looks a little tight," he muttered. "My, I've really put on a lot of weight recently!"

Big Brown Bear carefully squeezed himself through the crack, sucking in his stomach and inching himself bit by bit through the small part of the entrance. Inside there was a spacious cave with a soft dirt floor. It was not too big and not too small, and the ceiling was not too high and not too low. It was just the right size for Big Brown Bear to curl up in.

"This looks perfect!" he exclaimed. "It's a tight fit, but I can manage it. I'll be a lot smaller after a few months of not eating, so if I need to get in and out in a hurry it should be a simple matter." He yawned and stretched. "I'm really quite tired but I think I'll have one more feast and a good long drink before I settle down."

There were many things that Big Brown Bear liked to eat. He liked acorns, ants, bark, berries, birds, bugs, crayfish, eggs, fish, frogs, fruits, grasses, grubs, guts, honey and bees, leaves, mice, marmots, mushrooms, nuts, roots, seeds, squirrels, and lots of other delicious things. He especially loved salmon and honey and the little white grubs of flies, moths, and beetles. Today he went in search of squirrels, because he knew these little creatures were busy gathering their winter supplies and should be easy to find, along with their hoarded acorns. When he had eaten his fill of them, he dug his long sharp claws into the earth and finished his feast with some sweet, crunchy roots.



"Ah," sighed Big Brown Bear with contentment. "My tummy is full, my coat is thick and warm, and I am ready for my nap." He lumbered off to his new den, and with some difficulty, squeezed himself through the opening. He tucked himself into the farthest corner by a rock, and curled himself up tightly. His big mouth opened in a huge yawn. His small round ears listened carefully to be sure no enemy was approaching, and he closed his eyes sleepily. In a few moments, Big Brown Bear began to snore.

Outside his den, the little animals celebrated. The birds twittered and flitted from tree to tree. The squirrels chattered and chattered and waved their bushy tails. The mice and the marmots ran here and there feeling quite safe, not worrying about keeping an eye out for a quick hiding place.

"Let us make a plan," said the oldest squirrel, "so that when Big Brown Bear wakes up when the weather turns, he will go straight to the river to fish, and will move downstream and away from our part of the forest. He has eaten enough of us—let him go somewhere else to live for awhile!"

"Hear hear!" cried all the little animals.

So it was that all through the cold winter, when the snow was falling and the icicles hung from trees, the little animals worked. They found frozen honeycombs and the squirrels and other gatherers shared their piles of nuts that had been carefully stored away in the fall. They dug into the hard ground for the roots they knew the big bear loved. They gathered a huge pile of food for Big Brown Bear, because they knew he would be starving when he awoke at the end of winter. They knew he would come roaring out of his cave with a raging hunger that was dangerous to them all. Day after day they labored to make a pathway of food all the way from Big Brown Bear's den to the banks of the river some distance away.

Finally the trail of food was finished. Every little animal in the woods had given something from their own winter stores and every little animal had worked hard to make the path that would lead Big Brown Bear away from their forest home. The trail was finished just in time, because the next day the sun shone brightly and the snow began to melt. A warm wind began to blow. Spring was on its way!

"Hurry!" cried all the little animals to one another, their voices echoing off the rocks. "Hurry and hide! This is just the sort of day when Big Brown Bear will wake up!" They rushed to their homes high in the treetops, inside stumps, deep in holes below the ground, and underneath bushes. They waited quietly, listening. Inside the warm den, Big Brown Bear stirred. He uncurled his body and stretched, yawning and blinking his little eyes. "I have had a long and relaxing sleep," he thought. "But now I feel like getting up. I feel awfully hungry!" He patted his stomach. "How flat and small my tummy is!" he exclaimed to himself. "It has been a long time since I filled it. And I am dreadfully thirsty, too! I wonder what delicious treats are waiting for me outside."



And with that, Big Brown Bear lumbered to his feet. He easily passed through the opening of the den, having lost all his winter fat during his long nap. Standing outside the cave, he sniffed the air. “I smell food!” he muttered. Then, “Food!” he roared, “I need food!”

The huge bear placed one flat foot in front of the other, sniffing the ground. The first food he found was a crunchy pile of acorns. “Heavenly!” he moaned, gobbling them down, “but this is just an appetizer.”

He continued along, following his nose. “Mushrooms, I smell mushrooms,” he drooled, and soon he found a heap of wild mushrooms. He nibbled them in no time, and eagerly looked for more. His nose wiggled, as he smelled something even more delicious. As he came close he recognized the scent of grubs—a lovely little mountain of grubs tucked inside a rotten log. “Delicious!” said Big Brown Bear, “but still, just a start. I am starving!”

The little animals had planned their path well. They were careful not to put the food too close together or too far apart. They didn’t want Big Brown Bear to be suspicious, but they wanted to make sure he didn’t wander off their path. As he followed his busily sniffing nose, Big Brown Bear was led from one treat to another. He ate acorns, ants, bark, berries, bugs, eggs, fruits, grasses, grubs, guts, honey, leaves, mushrooms, nuts, roots, seeds, and lots of other delicious things. He didn’t even notice that there were no bees, birds, frogs, mice, marmots or squirrels. He ate all the things the little animals had left for him, but when he finally arrived at the river he wanted more.

Big Brown Bear clambered into the water and began to drink. He drank and drank, for he had had nothing to drink all winter, and he was terribly dry. After his drink his beady little eyes looked around for fish. As he stared into the water, he saw a flash of silver. He swatted at it with his big paw, but came up with nothing. He followed it downstream a little way and swatted again. This time his sharp claws caught a salmon. He gulped it down and looked for more. In his eagerness he never saw that he was wandering far downstream, far from the forest where he had spent the winter. Soon he was miles away, hungrily gobbling one fish after another.

The little forest creatures gathered by the river to see Big Brown Bear vanish from sight. “Safe!” they sang. “Big Brown Bear has gone to a new hunting ground and we are safe at last!” And they happily went about their business in the warm spring breeze.



## Lesson 17

# Bobbie's Big Adventure

by Shari Mueller

It was cold and dark where Bobbie lived. He lived deep in the Earth in an underground cavern. He liked his home, but lately he was yearning to see something new. He asked around and found out there was a group getting ready to depart for the surface in a few minutes. He asked if he could go along, and they agreed.

As they all moved into place, a sudden bubbling action started up underneath them and instantly they were being carried upward at a fast pace! Bobbie thought this was the ride of a lifetime! He was so excited to finally be going somewhere!

It seemed like they bubbled upwards for a long time, but Bobbie didn't mind. It was a new experience, and he enjoyed it. He spotted a tiny speck of light in the distance, and it seemed they were heading right for it, because the speck kept getting bigger and bigger. Suddenly, Bobbie found himself surrounded by light and rushing water all headed in a downward direction! It was exhilarating! "What happened?" Bobbie shouted.

"We have emerged from underground through what's called a 'spring'," answered someone near him. "And now we are at the mouth of a river... we ARE the river, flowing from this high mountain down to join with other water from other sources," said the new friend. "You will see many wonderful things as we flow along, sometimes fast and sometimes slow, over rocks, around islands, merging and getting bigger until we end up in the ocean! It is the most exciting adventure I have ever taken, and this is my third trip!" said the friend excitedly. "By the way, my name is Jason."

"I'm Bobbie, and this is my first time in a river above ground. I've been part of an underground river all my life." Bobbie marveled at the mountains rising tall along the path the river was taking. Since it was still winter, the snow that covered the mountain sides was not melting yet. But as soon as the seasons changed and the sun started to heat up the snow, it would melt and join the water that was bubbling along in this gentle mountain stream.

"When the melted snow joins us," said Jason, reading Bobbie's mind, "we will no longer be a gentle mountain stream. I have been here in spring before and it is really a wild ride! We swell to four times our current size and rush down the mountain with such force, that sometimes we can't control where we go and end up destroying a house or a bridge. Then people call us a flash flood. But at this time of year, we will remain small until we get farther down and join up with other streams that are heading down too."



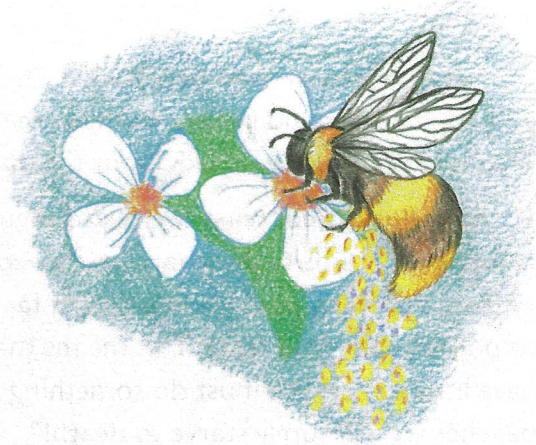
Bobbie was grateful for Jason's company, and enjoyed hearing him talk about what was happening to them. He explained to Bobbie that the water usually travels between 1 and 5 miles an hour, and over time, it wears away the ground under it and on both sides of it. Over many years, a river wears away miles and miles of land. Jason said the people call it erosion. He also said that when a river erodes the land, it makes a groove in the ground that is shaped like the letter "V." This V-shape is called a river valley. Over thousands of years, the river smooths out the valley into more of a U-shape and the land becomes flat. "Where we are headed, the land is very flat," explained Jason. "People build houses along the river and ride in boats, big and small, up and down the water. They fish and swim in the river for fun!"

Bobbie had learned so much from listening to Jason and he knew that his experience as a river would be a rich one. He was so glad he had the courage to leave his safe underground river cavern and join the adventurous ride to the ocean. Even though this was his first ride, he knew it wouldn't be his last!

## Lesson 34

# The Busy Bees

by Shari Mueller



There was once an orchard growing wild and natural at the edge of a forgotten farm somewhere in West Virginia. This orchard had once been carefully tended by a loving gardener, but he had died and because he had no children, Honeysuckle Farm had been abandoned. Often, abandoned trees will continue to flourish and bear fruit. However, something was terribly wrong at Honeysuckle Farm.

One beautiful spring day, Polly Peach was speaking to Annie Apple. "Hi, Annie! How are you today?" asked Polly, who was always cheerful. "I'm somewhat worried, actually," replied Annie. "I haven't seen the Bee family in a very long time. You remember that big storm we had last month?"

"You mean the one that blew over a lot of trees?" asked Polly.

"Yes! That's the one! Mrs. Robin Redbreast told me it blew over that ancient oak tree at the edge of the forest where the entire Bee family lived," explained Annie. "Their honeycomb was destroyed and they were forced to find another home. I haven't heard from any of them since then, and I am afraid they moved to another area, far away."



Polly was a very young peach tree, while Annie was a mature apple tree who had seen many years and was very wise. Polly couldn't understand why the disappearance of the bees made Annie so concerned. She remembered the times a bee landed on her: it felt kind of tickly as the bee walked around in the sticky pollen in the center of her blossoms, drinking nectar and leaving with some of her pollen stuck to his fuzzy legs and head. She rather liked those visits, even though the bees were seldom in a mood to linger and chat. They were always so busy, buzzing from blossom to blossom and tree to tree. They seemed so serious! Polly was sure that if they would just stop for a moment, they would have wonderful stories to tell. After all, they had wings and could travel far and wide, exploring the entire countryside. What sights they must have seen! But she had never met even one bee who would take the time for a friendly visit, for they were always working. Polly wasn't exactly sure what their work was, but every spring there they were, sipping and buzzing and getting pollen stuck on their legs! Shortly after that, her blossoms fell off and her peaches started to grow. Polly asked Annie if the bees had anything to do with that.

"Why, of course," Annie replied. "The bees travel from one peach tree to another, gathering nectar and pollen. Without the bees, we would not be able to grow any fruit! That is why I am so worried about the disappearance of the bees."

Mrs. Robin Redbreast overheard them and knew that something must be done. She called all the birds together and explained the situation. "Friends, it seems the Bee family from the fallen oak tree has moved far away and there are no bees here in our area to pollinate the fruit trees. This means that there will be no fruit this year, and we will have little to eat! We must do something to help the trees, for without their apples and peaches we will surely starve to death!"

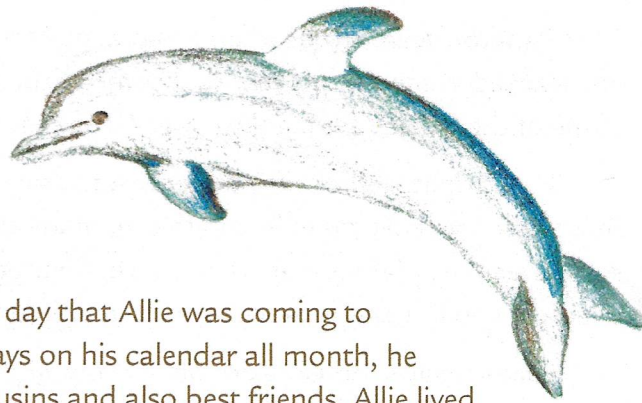
The birds could see the seriousness of this situation and decided to look for a solution immediately. They took to the air and flew far and wide, finally coming to a valley where they rested in the branches of a stately maple tree. They noticed that the bees there were all a-buzz. Someone was getting ready to cut down an orchard and they would no longer have fruit blossoms to provide them with nectar and pollen. Mrs. Robin Redbreast approached the Queen Bee and told her about the problem at Honeysuckle Farm. "Will you come with us and make a new home at Honeysuckle Farm?"

It sounded good to the Queen, so she rounded up all her workers and drones and they all followed the birds back to Honeysuckle Farm where they found a new home and enough fruit tree blossoms to keep them busy for many years!



## Lesson 22

## The Dolphins Ask

*by Shari Mueller*

It was Friday, and tomorrow was the day that Allie was coming to visit. Johnny had been marking off the days on his calendar all month, he was so excited! Allie and Johnny were cousins and also best friends. Allie lived in Kansas and her whole family looked forward to their yearly visit to California. Most of all, Allie loved the ocean. She told her parents, "One day I will be a marine biologist."

Johnny's family lived near the ocean and Johnny knew of his cousin's love of all things from the sea. As he waited for their car to drive up, he played with a shell he had found last week on the beach. He couldn't wait to give it to Allie.

"Here they come, here they come!" shouted Johnny to his parents as he saw a taxi coming down the driveway. Happy greetings were exchanged and without waiting to unpack, Allie and Johnny dashed down to where the sand met the water. They sat and talked for a long time. She held the beautiful shell Johnny gave her. "I wonder whose home this used to be?" Allie said, examining the shell.

"What?" Johnny asked. "You mean, something used to live inside this shell?"

"Sure! When a sea animal is born it has a soft body," explained Allie. "It starts to eat plankton, which are tiny plants and animals that live in the sea, and which contain a mineral called lime. The animal uses the lime to build its shell."

"What kinds of animals do that?" asked Johnny.

"Oh, let's see," Allie had to think. "Snails, clams, mussels and oysters, are some of the most well-known ones because people eat them."

"Why do animals grow shells, Allie?" Johnny asked.

"They need to protect their bodies from the harsh sand and rocks," Allie explained. "And sometimes the shell offers protection from other animals who might want to eat them."

"How do the animals with shells eat?" asked Johnny.

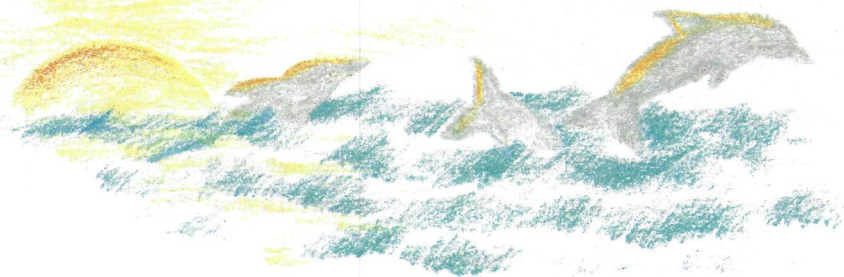
"Some sea animals, like the snail, walk around on their one foot to get food. Other shell animals, like the mussel, attach their foot to a rock and let food come to them. They eat plankton by opening their shells and letting the sea water, which contains millions of plankton, wash through."



“Plankton seems to be a food that a lot of the sea animals eat,” said Johnny. “We just learned in school this year that some of the largest animals on Earth live in the sea. Some of the whales eat plankton, too! They eat tons and tons of it every day!”

“That’s right,” Allie said, suddenly standing up. “You know, I read something recently that made me really mad! It said that humans are polluting the oceans so much that in some areas the plankton are dying. If that happens, many of the sea animals that depend on it to live and grow will die. That would be really sad.”

“That’s really serious!” said Johnny, jumping up and standing next to Allie, looking out over the wide expanse of water that lay before them. “We have to do something before it’s too late!” Just then, as if in response to Johnny’s words, a pod of dolphins started jumping out of the water, just beyond where the waves were breaking. The sun was setting, turning the sky a beautiful apricot color, and the dolphins seemed to be asking the children to help save the ocean for all life.





## Lesson 29

## Drums and Fireworks

*by Rebecca Ide Lowe*

In the sky, the clouds were having a party. They had gotten all decked out in big puffy clothing in many different shades of white and gray, and had carefully laid down a layer of dark mist below themselves as a floor, so nobody on Earth could see what they were doing. Just to be sure, they arranged for a heavy rain to fall.

"If everyone down below is being rained on, they won't even notice that we are having so much fun up here!" said Puffy Cloud. "Crash!" went the cymbals. "Dance time!" called the announcer. "The first one is a march!" "Bang!" went the drums. "Ooh, how I love a noisy party!" laughed Spiky Cloud. "My favorite are the marches," said Feather Cloud. "Some clouds think I'm kind of silly because I look so flimsy, but I love to march around to the beat of the bass drums, with the trumpets and cymbals blasting away." "When will we have the fireworks?" asked Fluffy Cloud. Puffy answered, "A little later, I think. Let's just enjoy the noise for now!"

Down on Earth, far below, little Malcolm was frightened. He peeked through the living room curtains and saw the rain pouring down. Puddles were forming in the yard, a stream was racing down the driveway, and the rain just kept coming. Every few minutes he heard a huge CRASH of thunder that made him jump.

"Mom!" he cried, "It's so loud! It scares me." "Come sit on my lap, and we'll listen together," said his mother.

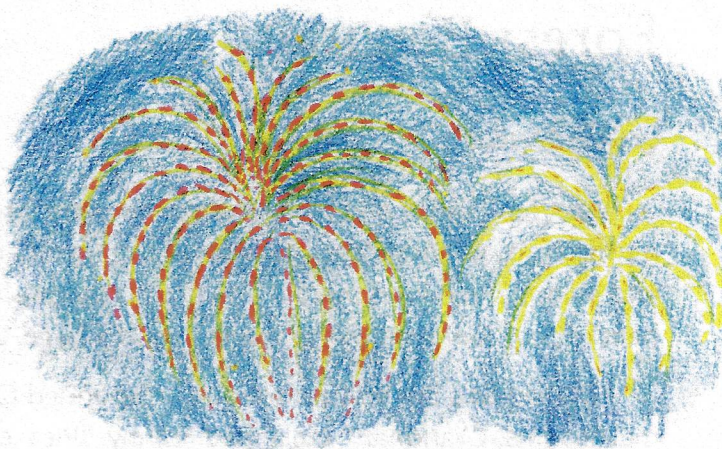
BANG! BOOM! Peals of thunder rolled over the house. The pitter-patter of the rain became almost a pounding on the roof. "Sometimes when it rains this hard, people say it's raining cats and dogs," said Malcolm's mother.

"You mean cats and dogs are falling out of the sky in the rain?" asked Malcolm.

"Well, they aren't really," said his mother. "But it certainly sounds like it, doesn't it?"

Just then a huge streak of lightning flashed across the sky. Malcolm hid his face in his mother's sweater.

In the sky, the party announcer was saying, "Make sure not to miss the fireworks, everybody! We have big ones and little ones—something





for everyone! Listen for the big drum roll and then you'll see them flash—in brilliant whites and yellows that light up the whole sky.”

“Oooh! Ahhh!” cried all the clouds. “These are the best yet!”

Down on Earth, Malcolm’s mother was comforting her son. “Don’t worry, honey. The lightning is far away. It does make a big sound, but it won’t hurt us. It almost sounds like somebody is having a party or a noisy parade far away in the sky, don’t you think? I’ve always loved big bass drums and marching around to their beat. Would you like to try that now?”

“Okay,” said Malcolm. “Maybe we could pretend that the clouds are having a party and they’re beating a drum.”

“What a great idea!” said his mother. “What do you think the lightning could be?”

“Well,” said Malcolm thoughtfully, “I’ve always loved fireworks. They light up the sky just like lightning. Maybe the clouds like fireworks too, but theirs are just yellow and white.”

“Maybe so,” said his mother. “Let’s march!”

Down on Earth, Malcolm and his mother marched around the living room, clapping and enjoying the sound of the rain and thunder and the firework flashes of lightning.

Way up in the sky, the clouds marched around, enjoying the big bass drum, the cymbals, and their beautiful yellow and white fireworks. And who do you think had the best time?

## Lesson 27

# Forest Beauties

*by Shari Mueller*

One day, Franny and her grandmother were strolling through the forest, looking for mushrooms. Grandmother grew up in this forest and knew a great deal about the plants and animals who lived there. “This is a pretty mushroom, Grandma,” said Franny as she bent over to look at it more closely. It had a large, bright red top with white spots.

“It’s too bad it is very poisonous,” responded Grandmother. “You know a lot about mushrooms, Grandma!” exclaimed Franny. “Please tell me about them.”





“Well,” Grandmother began, “Most of the fungi that grow in the forest are not safe for people to eat, although many of the forest creatures can eat them without getting sick or dying. There are thousands of different fungi in our forest. This one here,” Grandmother exclaimed as she reached down to touch it, “looks like a seashell growing on that log! It’s beautiful! Can you guess what this one is called?”

“Well, it looks like a tiny pipe to me,” suggested Franny.

“That’s exactly what the Indians thought, and they named it Indian pipe. It is a waxy, white plant with tiny fungi growing on its roots. The fungi help it to get food from the soil. All fungi help turn rotting plants into rich soil, where new plants will take root and grow.” Franny was amazed at how much her Grandmother knew, and she was grateful for their time together so she could learn as much as she could about nature.

“Ah ha!” exclaimed Grandmother, delighted by what she saw growing on the ground. “This is one mushroom we will collect and take home. I know it is safe to eat and it is delicious! It is called a morel. There is one more I am looking for, but we must go where there are leaves covering the forest floor.”

They walked along for awhile in silence, observing nature and enjoying the peaceful feeling. Squirrels were playing tag high overhead in the forest canopy. Birds were busy building their new nests for winter in the forest’s understory. Here they are protected from wind and sun and from the eyes of hungry hawks and owls. Just then they spotted some blueberry bushes. “Oh, boy! I’d love to pick some of these. Maybe we could make a blueberry cobbler later!” Franny said excitedly. Grandmother nodded her approval and sat to watch the small forest animals hunting for food in this shrub layer where the blueberry bushes, mountain laurel, and other shrubs grew. She was scanning the forest floor for a damp, moist spot, covered with rotting leaves. Here she saw only ferns, moss, skunk cabbage, wildflowers, and the same type of mushrooms they had already seen earlier.

After Franny had picked enough blueberries for her cobbler, they continued on, eyes darting this way and that, looking for that special place where the golden mushroom



grew, buried under the leaves. “There’s the spot!” said Grandmother, as they rounded a corner and saw the thick layer of fallen leaves that were bound to be hiding some of the wonderful chanterelle mushrooms. They got a stick and started carefully lifting up piles of leaves until they came across one of the golden colored treasures. Grandmother showed one to Franny. It had a flat top and a ruffled edge. “We must be very careful with these,” cautioned Grandmother, “because they are easily confused with two poisonous mushrooms called jack-o-lanterns and false chanterelles. Make sure you never pick any mushrooms without me there to check them for you.”

After they collected as many real chanterelles as they needed, they headed back to the house to cook up all the wonderful things they had collected that morning in the forest.

## Lesson 19

# Harpo Is Almost Grown Up

*by Rebecca Ide Lowe*

In the bitter cold of an Arctic spring day, a baby was born on a bed of ice—a beautiful pale yellow harp seal pup. His silvery brown mother was warm and soft against him and he nestled close, happily sipping her sweet milk. It was very rich and satisfying and soon he fell into a contented sleep.

When he awoke, the little seal’s big black eyes eagerly began to look around. Everywhere were other mother seals and their pups cuddled together on the hard cold floating island of ice that was their temporary home. The pups eyed each other curiously, looking forward to the day when they were big enough to romp and play together.

In a few days the baby seal’s thick yellow fur began to change color. Soon he was pure white—an adorable ball of white fluff with big black eyes. Just like the other harp seal pups on the ice, he blended right into his surroundings, and when his mother left him alone to go fishing he was almost invisible. But not completely.

One day when he was about two weeks old, the baby seal was dozing on the ice with some of the other “whitecoats” while their mothers were swimming, fishing, and visiting with each other. Suddenly a cry went up among the seals.

“A polar bear!” screamed a mother seal. “A hungry polar bear is after our babies!” The harp seal pups hid their faces in fear, trying to blend in with the ice. Mother seals



flung themselves out of the water and raced awkwardly across the frozen distance to protect their babies. Graceful in the water, they were clumsy and slow on land.

The polar bear's stomach growled. He was hungry, and baby harp seal was one of his favorite treats! He saw dozens of tasty white seal pups lying on the ice. He also saw dozens of terrified seal mothers hurriedly dragging themselves toward their babies. "Hmm," he thought to himself. "I can move faster on land than they can. I think I can snatch two or three of those pups and be gone before those seal mothers know what has happened!" And he rushed toward the closest pup.

But suddenly a huge bull seal roared from behind a mound of ice. Instantly the polar bear stopped in his tracks. He was not in the mood to tangle with this large, angry creature. "Perhaps I'll just go fishing," he muttered, and turning around, he lumbered away. The gray bull seal glared after the polar bear. Then he sank back down on the ice, satisfied that he had done his job.

"Oh, my own sweet baby," said the seal pup's mother, snuggling her little one. "That was a close call! I think it is time for you to stop drinking my milk and learn to eat fish. Then I will not have to leave you alone on the ice. Also, it is time for you to have a name. Until now I knew you were not moving around, and I could always smell you and find you among all the other whitecoats, but when you learn to swim I may sometimes have to call to you underwater. Because you are a baby harp seal and will one day have a beautiful harp design on your back just like the big bull that just saved you, your name will be Harpo."

"Harpo," breathed the seal pup. "Harpo. I like it! When will I have my first fishing lesson?" "In about two weeks," said his mother. "First you need to learn to eat fish. I will get you some right now."

Harpo eagerly waited for his mother to return. Soon she appeared with a small fish held in her sharp teeth. She laid it down in front of her son, who stared at the silvery creature. "How do I eat it?" he asked.

"You can just grab it with your teeth and swallow it," said his mother. "Don't bother with chewing. Your teeth are for catching, not for chewing! And when you have eaten this one I will catch you another. Before you can learn to swim you must get used to eating only fish, krill, crabs, and other





foods from the ocean, so you can take care of yourself without my help. The ocean is full of food for hungry seals, and soon you will learn to catch it on your own!”

During the past few weeks Harpo had gotten very fat from drinking his mother’s rich milk. He was no longer the tiny pup he had been two weeks ago, but had already more than tripled his size. He was covered with a thick layer of blubber that kept him warm no matter how cold the Arctic weather became, and he could even sleep very comfortably right on the frozen ground. He was sad not to drink his mother’s milk anymore, but he thoroughly enjoyed his meal of fish and was excited about all the adventures that were to come. He knew it was time to start growing up.

One day his mother showed him how to drag himself along the ice with his front flippers. “This is hard work!” said Harpo. “I don’t feel very graceful.”

“I know it is awkward,” said his mother, “but you will love swimming. You will be able to slip and slide through the water, to leap and play and dance. Would you like to start learning today?”

“Oh, yes!” cried Harpo. “Now!”

When they reached the edge of the ice floe that was their home, Harpo peeked into the frigid water. He was nervous about what was going to happen next, but as he hesitated, his mother pushed him in. He landed with a splash, and in an instant was beating the water with his flippers and swimming around noisily.

“Yippee! This is fun!” laughed the little seal. “This is what I was born to do!”

“Yes, it is,” smiled his mother, swimming right beside him, “and soon you will be much better at it. But now it is time for you to catch a fish all by yourself.”

Harpo looked around and noticed small silvery figures darting about in the water. “So this is what fish look like when they are swimming?” he asked. “How am I supposed to catch one when they are wiggling about so much?”

“Just give it a try,” said his mother encouragingly. “Use your speed and your teeth. If you are hungry enough, I’m sure you will be successful.”

Harpo swam happily through the water in search of his lunch. He practiced diving and turning, sometimes beating the water as he learned to use his flippers properly. Just as he thought he couldn’t stand the growling of his stomach any longer, he caught a big fish and gulped it down. By the end of the day Harpo was exhausted but content—full of fish and ready to collapse after a vigorous day of swimming.

Little by little Harpo and the other young seals began to shed their soft white fur, which was replaced by a silvery-gray coat with dark spots. For awhile they all looked like they were wearing raggedy jackets of fur, because their baby fur hung in tufts while the new fur was growing in. Eventually their spots would form the design of a harp, but not for a few years.



The young seals were having fishing and swimming lessons from their mothers, and were kept busy every day as they worked hard at these important lessons. They no longer beat the water with their flippers, but moved gracefully through it like big fish, slipping and sliding through the water as gracefully as birds soaring through the sky—just as Harpo’s mother had predicted. Soon Harpo and the other “raggedy-jacket” seals spent many happy hours playing and fishing together while their mothers watched them from a distance instead of hovering nearby to help.

One May day after his fur had finished its transformation, Harpo was swimming a little farther from his mother than usual. Suddenly he heard her calling through the water. Her grunts and whistles came through loud and clear—“Hurry, Harpo,” she cried, “Come to shore! You are in danger! Hurry, hurry!”

Harpo looked around in panic, and saw a large black and white figure looming in the dark of the water. An orca looking for a snack! His heart pounded with fear, and he swam as fast as he could toward his mother’s voice. Looking back, he saw the big killer whale coming closer. Harpo sped toward the island of ice, waiting to feel the big creature’s sharp teeth any second. Just in time, he threw himself onto the ice and slid to safety. The orca leapt up out of the water in frustration, and realizing it had lost its meal, swam away.

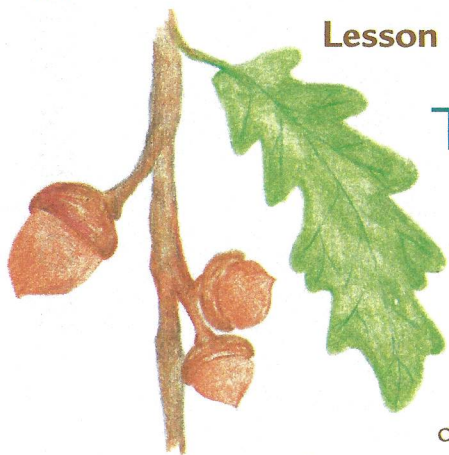
Exhausted, Harpo lay on the ice without moving. The other seals gathered around, glad that he was safe. Harpo’s mother said proudly, “You are well on your way to being grown up. You have learned how to fish and swim, and have survived meeting both a polar bear and a killer whale—two of a harp seal’s most dangerous enemies. Before long I will be migrating south with some of the other older seals. You will stay here with those that don’t migrate, but you can make the journey next year when you are bigger and stronger. Now I can relax because I know you will be able to take care of yourself!”

As tired as he was from his close escape, Harpo was proud and happy. “I’m almost grown up!” he whispered, and smiled to himself as he fell asleep.



## Lesson 4

## The Life Cycle of a Seed

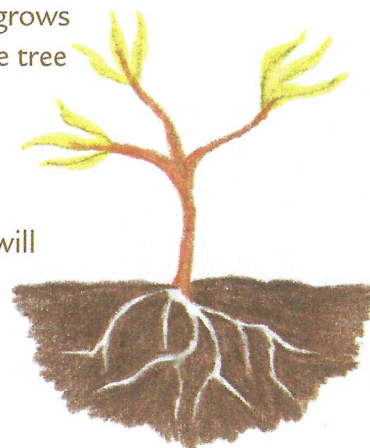
*by Meredith Childress*

Have you ever wondered how trees are born? Can you believe that every new tree begins in a flower? It is the flowers that appear on trees in the spring that make tree seeds. Not all of these flowers look like flowers. Some of these flowers are very small and have no petals. Others are very beautiful flowers, and some of them look like tassels dangling from trees. But no matter what kind of flowers a tree has, they all make tree seeds.

Tree seeds grow in many shapes and sizes. Some are as large as a pine cone, a coconut, or a peach seed. Others are as small as an acorn or an apple seed. Some seeds are round and hard so that they tumble and roll on the ground to find a place to grow. Other seeds fly through the air on one or two fairylike wings to find a spot. Some of these even have a soft bit of fluff on their wings to catch the wind. This is Nature's way of helping tree seeds travel to a spot where they can open and grow. Squirrels help Nature by burying acorns and nuts. These tree seeds are in a good place to open and grow because they are already planted. Tree seeds that do not get planted may open and grow on top of the ground if the spot is wet enough to soften their hard seed coats. Yes, coats! Nature has done a marvelous thing for these young tree seeds who have ripened and left the parent tree. All winter the baby tree is packed into its little home with plenty of food surrounding it. On the outside is a hard weatherproof coat for protection until spring comes again. With the warmth of spring, the seed begins to grow and bursts its coat open. When the tree seed begins to grow, a new tree is born.

Of course, this tree within a seed is very small. But if you look closely, you will see all the parts of a tree. There is a tiny white thread which will someday be the trunk. At one end of the thread is a root tip; at the other end is a bud with two tiny leaves. Even if the seed is lying on the ground, the threadlike stem of the tree grows bigger, and longer, and stronger. Then, magically, the end of the tree with the root tip turns down into the earth, while the end with the bud and leaves turns up to find the light from the sun.

Many years will pass before the tree will be very big. The sun will warm it and the rain and snow will water it. The wind will blow against it and make it strong. Someday it will be big enough to have seeds of its own. They may be apples, acorns or nuts, but they, too, will leave the parent tree to find a spot to open and grow.





## Lesson 28

## Little Maple Leaf

by Janet Thomson-Lloyd



One fine spring morning, a tiny maple leaf uncurled from the bud where she had been sleeping. She had been awakened by the sun that smiled down on her and warmed her through and through. The gentle breezes rocked her as the birds sang a sweet lullaby. Each day as she grew, her coat became a deeper shade of green. The little leaf soaked up the sun's rays on some days and played with the raindrops when they came to visit.

From her home on a branch near the top of the maple tree, the little leaf could see for miles. Above the treetops she loved to watch the sky, a beautiful painting that was always changing. Below, she could see a sparkling brook that gurgled as it slipped over the stones. She loved her home on the branch with her brothers and sisters all around. She wondered, though, what it would be like to travel and see more of this beautiful world.

One warm summer day, a handsome red bird flew up and perched on the branch beside the little leaf. She admired his brilliant red coat and listened in awe as he sang of the wonders he had seen. Then he spread his wings and glided away through the branches. As the days went by, the little leaf thought about the bird often and wished that she could be just like him. She longed to be free to fly and see the world.

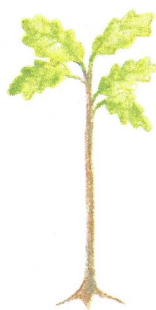
The days grew shorter and the frost came to visit each night. One cool, windy morning, the little maple leaf's dream came true. She found herself free of the branch. She joyfully danced and twirled with the breeze, her brilliant red coat glowing in the sunlight. The little leaf smiled as she landed on the surface of the water in the brook and slid over the stones. She knew that she was just beginning a wonderful adventure.





## Lesson 3

## The Mighty Oak

*by Julie Curtiss Voss*

Look out your window—over the fence—there in the field. Do you see me? I am the OAK TREE. The mightiest tree in the park.

Today is a fine autumn day. Autumn is my favorite time of year. My leaves are as beautiful as a rainbow. And hidden in my leaves are hundreds of acorns still wearing their caps. Animals are busy in my branches getting ready for the winter. Birds come and eat my acorns and carry them away. A squirrel family has made a cozy nest between two of my sturdy branches. My branches cover them like a big umbrella.

Last night winds howled through my branches and blew away most of my leaves. Soon my branches will be bare and I will be ready for winter. During the wintertime it will rain for many days and sometimes the winds will be fierce. When I was just a small sapling with only two or three leaves, I used to worry about the storms. I thought the winds might blow me away. Then I would think hard about making my roots deep and strong. Those roots held me fast through many storms. Now that I am a sturdy OAK TREE, I enjoy the feeling of the wind rushing through my bare branches. Even the thunder and lightning storms do not scare me.

During my winter rest when I stand quietly, I am getting ready for spring when my animal friends will return. Tiny green leaves are tightly curled up on my branches. One day when the sun shines warm on my branches, the baby leaves start to uncurl. Soon my branches look like they are covered with a soft green fuzz.

Then my flowers start to shoot out. On spring days the air is full of a yellow dust that helps my acorns to grow.

Then, almost before you notice, summer is here again.




In the summertime, my branches are covered with big, green leaves. Birds fly into my arms and children play at my feet. They feel safe under my shady branches. The days are long and lazy. I tower over the other trees and look out far in the clear blue skies. I think about the long years I have stood in this place and the many happy years to come. Soon it will be autumn again—my favorite time of year.



## Lesson 20

## Moonlight Flight



Night is softly falling. While human mothers sing quietly to their little ones, beyond the silver night light, over the window sill and into the meadow, mother squirrels nestle close to silky baby fur. Mama birds tuck in newly feathered ones. The woodpecker has long ceased his work. Down by the pond, mother duck and her ducklings are fast asleep, as the turtle family nearby breathes softly in their shells. Butterflies are at rest in the cool, night hours, while they dream of sunshine, nectar and bright petal mornings. Much of the meadow is quiet and still.

But as Mother Moon rises in the sky, the cricket band begins their merry welcome. “Finally! Night has come and it is our time to sing!” they say. Skunks bustle by, out of the forest in hopes of finding a scrap from the farmhouse nearby. Raccoon is already tugging at seed bins, bound up too tightly, and scurries away as the farm cat pounces—eyes glistening and hair upright.



The pond, too, has its lovers of the night. Toads call to one another, "Here! Here!" And a nearby river otter slinks under the water, in search of fish and other treats. Lightning bugs dance and delight the meadow with their flickering diamond light that gives way to the stars.

This is the moonlight flight, the dance and song of the creatures of the night.

## Lesson 36

# Paul Loves Vegetables

by Shari Mueller

It was a beautiful spring day and Paul was helping his mother in the garden. The ground had already been turned and it was time to add a layer of compost to prepare for the planting next week.

"Paul," said Mother, "please bring your wheelbarrow over to the compost pile and help me shovel some compost into it." Paul picked up the long wooden handles of the new, red wheelbarrow his uncle had given him for his last birthday. It was just his size, and Paul loved to haul things around in it. He was so happy that spring was here so he could use it to help in the garden.

"Here I am, ready to shovel compost into my wheelbarrow!" Paul announced excitedly. He grabbed his shovel and dug into the large mound at the edge of the garden. "How is compost made, Mom?" asked Paul as he continued shoveling.

"Well," began Mother, "all year long we pile the grass clippings and leaves we rake up from the lawn and throw vegetable and fruit scraps from the kitchen onto this mound. There are tiny animals in the earth who eat this stuff and break it down. They help change the materials in the compost heap into crumbly black earth called humus, which is the very fertile soil that we are putting on our garden today!" Mother explained. "We will put this on top of the ground, then dig it under, to mix with the soil already in the garden."

"Then we'll plant our seeds and those tiny plants we've been growing in the greenhouse, right?" asked Paul. "Right!" replied Mother. "I can't wait for the tomatoes and corn to get big enough to eat!" Paul said. "They are my favorites!"



“Well, you can thank the tiny animals for helping grow your corn and tomatoes,” said Mother, “because they do a very important job by breaking down the waste materials and providing the soil with essential food. That’s what has made the old oak tree so healthy and strong. The compost that helps the oak tree also helps our vegetables grow well. Here’s how it works for the oak tree. When it rains, the food gets carried along with the rainwater and ends up at the roots of the oak tree. The roots suck up the food in the water and the food becomes part of the oak tree’s sap. As the sap rises, it carries the food through the tree trunk toward the end of a branch. There the oak uses the food as an important part of an acorn. The acorn grows, and in the autumn, falls off the tree to the ground.”

“Then a squirrel comes along and stores the acorn to eat in the winter, right?” asked Paul.

“Yes,” Mother said. “When the squirrel eats the acorn, the food goes into his body. When he is caught by a fox, the food is passed into the body of the fox as he eats the squirrel. When the fox eventually dies, the tiny animals take over and break down the dead animal so the food goes back into the earth where it can start the cycle all over again,” Mother explained. “In some cases the acorn is not eaten by a squirrel, and the tiny animals get to it, and break it down directly back to the earth. The food is constantly being recycled from living things back into the earth. If this didn’t happen, the supply of minerals would have been used up a long time ago.”



“One other thing, Paul,” Mother said. “In our garden, we don’t use any pesticides or chemicals . . . our garden is organic. Do you know why?”

“So we can have strong, healthy plants to eat?” asked Paul.

“Yes! If we used poisons and chemicals in our garden, they would be recycled just like the good food we just learned about. They would get into the water, plants and animals, including us, and make us sick. That’s why we must be careful not to pollute the Earth.”

“I’ll always be kind to the Earth, Mother,” said Paul thoughtfully, “because I love the things she gives us to eat that keep us healthy. I’m glad we’ll have delicious tomatoes and corn ready in our garden soon!”



**Lesson 18****Stargazing***by Shari Mueller*

It was a beautiful winter night and Dad had set up the telescope on the deck. He was enjoying looking at the moon and the planets and the stars, when Denny came out.

"What are you doing, Dad?" asked Denny.

"I'm just looking at the night sky, Son."

"May I have a look?" Denny had never shown any interest before, and Dad was delighted.

"Let me focus on the moon, and you can see the craters," said Dad. He lined the telescope up just right and Denny took his first up-close look at the moon.

"Wow! This is so neat!" exclaimed Denny. "I can see everything! It's like I could reach out and touch the moon! Show me something else, Dad!"

Adjusting the telescope to a distant star, Dad said, "You'll notice that the light from the stars appears to twinkle. That's because there is so much moving air between the stars, which are millions and billions of miles away, and Earth."

Looking away from the telescope, Denny asked, "What is that row of three bright stars, Dad?"

"That's Orion. It is a grouping of stars called a constellation," explained Dad. "Long ago, people made up stories about the constellations. They said that Orion was once a mighty hunter. When he died, the gods placed him in the sky. You can see him there every night. He has two very bright stars for his shoulders, and that row of three stars you noticed is his belt. Two more bright stars are his feet. It was said that Orion was killed by a scorpion. So when the gods put Orion in the sky, the scorpion that killed him was put in another part of the sky, so he would never sting Orion again. Scorpio is another constellation in the sky."

"That's interesting," said Denny. "What is that really bright star that is twinkling like a rainbow?"

"That is Sirius," answered Dad. "It is part of a constellation called the Big Dog. It is the brightest star in the sky. Sirius was very important to the ancient Egyptians. They used its position in the sky to know when the Nile River would flood." Just then, both Denny and his father saw a beautiful streak of light go across the night sky.

"What was that?" Denny asked excitedly. "Was that a shooting star?"



“That was a meteor! A meteor is pieces of metal or stone that fly through space. They travel so quickly through the air that they become hot and glow,” said Dad.

“Where do they come from?” asked Denny.

“Nobody really knows. Maybe you’ll grow up to discover that!” said Dad. He told a few more stories about the stars, until it was Denny’s bedtime. When Denny fell asleep, what do you think he dreamed about?

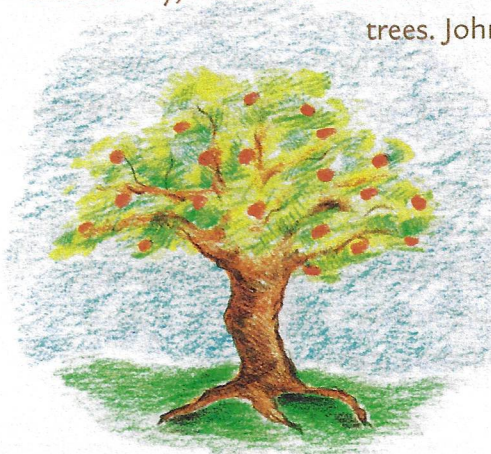
## Lesson 32

# The Story of Johnny Appleseed

by Rebecca Ide Lowe

Johnny Appleseed was born in a little cabin by the Connecticut River in Massachusetts long ago, in the year 1774. Of course he wasn’t called Johnny Appleseed then—he was called John Chapman. As a little boy he spent many hot summer days sitting on rocks by the river dangling his feet in the cool water, swimming in the shallow spots, and playing with his friends. His family had a little orchard, and Johnny especially loved to pick the fresh apples. After eating his fill of raw apples right off the trees, he would bring them to his mother in big baskets, and she would make all kinds of delicious treats for him. She made applesauce, apple pie, apple butter, dried apples, apple cobbler, apple crumble, baked apples, and even apple salad. Johnny just loved apples, no matter how he ate them!

When he grew up, Johnny worked with his father as a carpenter. Eventually he got tired of that, and after listening to the wonderful tales of pioneers who traveled around the country, he moved to a farm in Pennsylvania. On his farm there were some apple trees. Johnny still loved apples as much as he had as a little boy, and every day during the fall he would go outside and pick six apples. He ate two for breakfast, two for lunch, and two for dinner. Of course, he ate lots of other things too, but apples were always his favorite thing to eat.



Johnny liked living on his farm, and he liked to share his apples with his friends and neighbors. He started thinking about how much he loved apples and how some people didn’t get to eat apples



every day. He thought maybe there were some people who had never even seen apples. So Johnny decided he would plant more apple trees. First he planted more apple trees on his own farm. He planted so many apple trees that his whole farm was covered with them! Then he planted apple trees on his neighbors' farms. Then he hiked up into the hills and planted apple trees there. Then he went way down the road and planted some apple trees there. Soon he had planted apple trees in all the places he could walk to in one day.

Then Johnny started thinking about all those pioneers who had headed west seeking adventures. Were there apple trees in all those places? Johnny decided it would be a good idea to plant more apple trees in places that were farther away from home. He picked many baskets of apples and laid them out in the sun to dry, being careful to keep the seeds safe in the middle of each apple. When all the apples were dried, he loaded up as many bags as he could carry, and set out down the road with his metal cooking pot on his head for a hat, just in case he ever needed to cook anything. His pot would also come in handy for collecting water when he was near a river. The only other things he carried were a small hoe, an axe, and a Bible, so he could read to himself. He walked for one day and soon he reached a place where no apple trees grew. He stopped there and planted the seeds from half a bag of dried apples. The next day he walked again, and reached a place where no apple trees grew. He stopped there and planted the seeds from another half of a bag of dried apples. He did this for six days, until all the dried apples in his bags were gone.

Then Johnny went home and picked more apples. He laid them out in the sun to dry, being careful to keep the seeds safe in the middle of each apple. When all the apples were dry enough, he loaded them up in bags and set off down the road again with his cooking pot on his head. This time Johnny went much farther. He walked and walked, and planted and planted. Everywhere he went he made new friends and planted new trees. It wasn't long before people started calling him Johnny Appleseed, because it seemed to suit him much better than Johnny Chapman!

Johnny was never afraid of wild animals because he treated all animals like friends. Animals loved him and he loved them. He was never afraid of people, because he believed that all men and women were his brothers and sisters. People were glad when Johnny stopped in to visit. Sometimes he went back to help take care of orchards he had already planted, and sometimes he went out of his way to bring news to people of their families far away. He never went hungry, because he was so friendly that those he met were happy to share their food with him. Whenever he was given a meal or a bed for the night, he gave his new friends some apple seeds and told them how to plant them and take care of the trees that would grow. He liked to make wooden toys for the children and to read his Bible to the grownups, so he was a welcome guest!



He had such a good time traveling around planting apple trees that he never bothered to go back and live on his farm ever again. When he was out in the woods where there were no houses where he could spend the night or have a meal, Johnny picked wild berries and nuts to eat, and slept on the ground under the stars. He carried cornmeal with him and cooked up mush for supper, using his cooking pot hat and adding an apple and some wild herbs for flavoring.

Johnny Appleseed walked around planting apple trees for forty years. When he was seventy one years old, Johnny suddenly realized he was very tired. He had walked over 10,000 miles, back and forth over the countryside, looking for places that needed some apple trees! While he was working in one of his frontier apple nurseries, he lay down under the shade of an apple tree to rest. Under that tree he quietly died. Johnny Appleseed's traveling days were over. But his gift of apple trees lived on. Just as Johnny Appleseed gave thanks for the sun, the rain, and the apple trees, we can give our thanks to Johnny for sharing all those apples so we can still eat apples today!

## Lesson 33

# Sunflowers

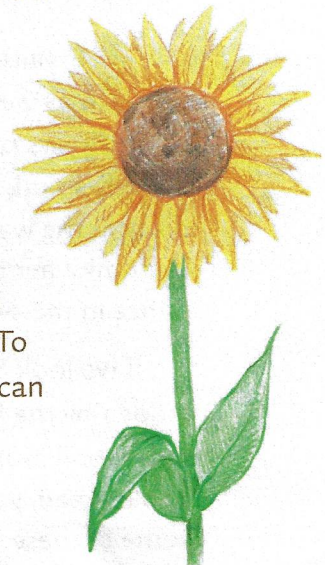
by Shari Mueller

Janie played on the grass as her mother worked in the garden one day. "Mama," asked Janie, "what are these big yellow flowers called?" "Those are sunflowers, Janie," replied Mama. "They are beautiful, aren't they?" "Yep! And the birds like them too! Why do they keep pecking at the middle of the flower?"

"The middle of a sunflower produces sunflower seeds that are good to eat. The birds love them, just like you do. Here, let me show you," Mama said as she reached over and picked up a dried up sunflower that had fallen off its stalk last year. "I leave the dead sunflowers here because once they die, the center contains thousands of tiny sunflower seeds." Mama carefully picked a black and white seed from the center and showed it to Janie. "This is the seed casing and inside is a sunflower seed. To eat the seed, you have to bite through the casing and spit it out, then you can enjoy the tiny sunflower seed inside!" explained Mama.

"If I plant one of those, will it grow?" asked Janie.

"Yes, it will. Do you want to plant some now?" Mama offered.





“Oh, yes! Right over there next to my window, so I can look out every morning and see them,” Janie said as she pointed to her window. As they loosened the soil, Janie asked, “Why is this flower called a sunflower, Mama?”

“Because the face of the flower follows the sun as it travels across the sky. It turns to face the sun. Besides containing seeds, the center of the sunflower also holds a beautiful pattern. Just look at the way the lines cross and make such interesting patterns!” Mama said. “When I was a girl, I used to imagine that I could fly to the sun and to other stars and planets! I would sit and stare at the center of the sunflower and let my imagination take me soaring!”

“I can’t wait till they grow into great big sunflowers and turn with the sun,” Janie said, munching on a sunflower seed. “I might even use my imagination and go to the stars, like you did, Mama!”



### Lesson 35

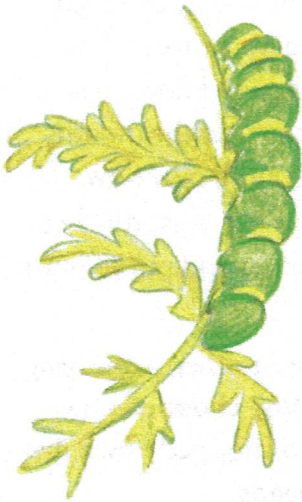
## The Swallowtail Butterfly

*by Cerise Giovannetti*

Close your eyes and come with me into the flower garden. Shshsh... if you sit very still, a little, winged creature, reflecting the color of sun, may land on your arm. This sunny, swallowtail butterfly silently flutters from blossom to blossom, drinking the sweet nectar hidden deep within the flower. Can you see the lovely long, black tongue? This is actually a long tube, like a straw, that the butterfly pokes about into the flower to find the sweet flower juice. I wonder if she likes this nectar as much as we like our orange juice in the morning? If you look very closely, while the butterfly sits resting on the hot, pink, penta flower, you can see the tongue curled in a lovely spiral. I think she is enjoying the late summer sun. Doesn't it feel wonderful to drink in the warm, liquid sun, like the butterfly drinks her nectar? There she goes! I love to admire her lacy, yellow wings, with their bold, black stripes and watch her float and dance in the sweetly-scented garden air.

If we look closely at this penta leaf we can see a cluster of pale, tiny eggs carefully hidden by the female Swallowtail, when she was resting here. What do you suppose her babies will look like? Now it may seem impossible to you, but her babies will be bright, apple-green, yellow-striped caterpillars. Look amongst the flowering plants and find some of these caterpillars. They love to munch on the leaves and their green color blends





in perfectly with the green of the plants. They are quite safely hidden here from any birds or lizards that may want a plump juicy caterpillar for lunch!

When the sun is lower in the sky and it gets dark earlier as the air turns crisp and the leaves begin to fall, the bright, green caterpillar grows very dull and slow. It crawls onto a twig in the brilliant orange-red sumac tree, over there behind the wildflower garden. It scrunches up very small and spins a little house, called a chrysalis. As the rain gets colder and icy frost settles on the barren sumac, the chrysalis will protect the caterpillar changing within.

Do you know what is happening inside the chrysalis? Mother Nature is working her most wonderful magic. The little caterpillar is turning into another swallowtail butterfly!

Now when you can smell the sweet cherry blossoms and the sun feels warm on your face, be sure to visit the budding sumac tree and see if you can find that very special, golden gift that Mother Nature gives to us every spring.

## Lesson 31

# Young George and the Cherry Tree

*adapted from a story of old*

When George was young he longed for one thing only. A hatchet of his own. He had seen his father and other helpers on the farm cutting wood for their fire. But time and time again, George was told he was just too young. "Someday son, when the time is right, you shall have a hatchet of your own." George would sadly walk away, wondering how he could possibly prove to his father that the time was now!

Finally, the day did come. George awoke on his birthday and at the foot of his bed, there lay his very own hatchet. He let out a whoop of joy, dressed as quickly as he could, and rushed outside to greet the day. First George ran to the woodpile and chopped wood for the fire. "Surely my father will be proud!" he thought to himself. After a while, though, chopping wood blocks was no longer satisfying. His eye caught a cherry tree in the field beside his home.



George could not resist. He ran to the cherry tree and, with all his might, chopped and chopped. Splinters of wood flew and George still chopped. Finally, the tree fell to the ground. George stood and looked at what he'd done. He had chopped down his father's favorite cherry tree! A lump formed in his throat when he thought of the months he had begged and pleaded for his hatchet, reassuring his father over and over how ready he was. How responsible he would be! George held back a sob. He must run away, he thought. That is the only thing to be done. With that, George turned and ran off into the woods.

That night George's father returned home. When he saw his favorite cherry tree lying on the ground by the house, he called the whole family together. "Who chopped down my tree!" he bellowed loudly. He demanded again, "I ask again, who chopped down my cherry tree!" Everyone looked to the other in fear and shook their heads.

All at once, George came in from the other room. He hung his head with sorrow. "Father," he said, "Father. I cannot tell a lie. It was I. I chopped down your cherry tree. And I am sorry." All was silent. Not a word was spoken, nor a body moved. George's father cleared his throat, "George, come here to me." He said sternly. George walked towards him; his head hung low, his eyes to the ground. "Look at me, George," his father said. George raised his eyes to meet his father's.

To everyone's surprise, George's father broke out in a smile as he reached for him. "George," he said, "I am glad my cherry tree was chopped down, for it has taught me an important lesson. I now know that you will always tell the truth and take responsibility for your actions—no matter how hard it may be to do so. You have proved yourself worthy this day, son; worthy of my trust, and worthy of that hatchet as well." With that, George's father embraced him, turned, and left the room. From that day forward, word spread throughout the land that this young George Washington was a man to be trusted, a man who would own up to his deeds—no matter what the cost.