

February 2016

arts & sciences for kids

ask[®]



The
Best
Defense

From the publisher
of Cricket[®]

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Suggested for ages 7 to 10.



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BARF-O-MATIC

When this machine projectile-vomited in the lab, scientists were thrilled. They're hoping it will help them figure out how germs spread.

They are particularly interested in a stomach bug called norovirus. Norovirus makes lots of people sick every year. But scientists weren't sure whether norovirus can fly through the air after someone throws up. To find out, they built this machine. It has a miniature head, mouth, throat, and stomach.

The scientists filled the machine's stomach with fake vomit made of vanilla pudding. Instead of dangerous norovirus, they added a virus that's harmless. Then they

This fake head vomits on cue.

pumped up the stomach to make the machine hurl. It made a mess. It also made viruses fly through the air, showing that norovirus might be able to fly too.

OOoh, the possibilities!

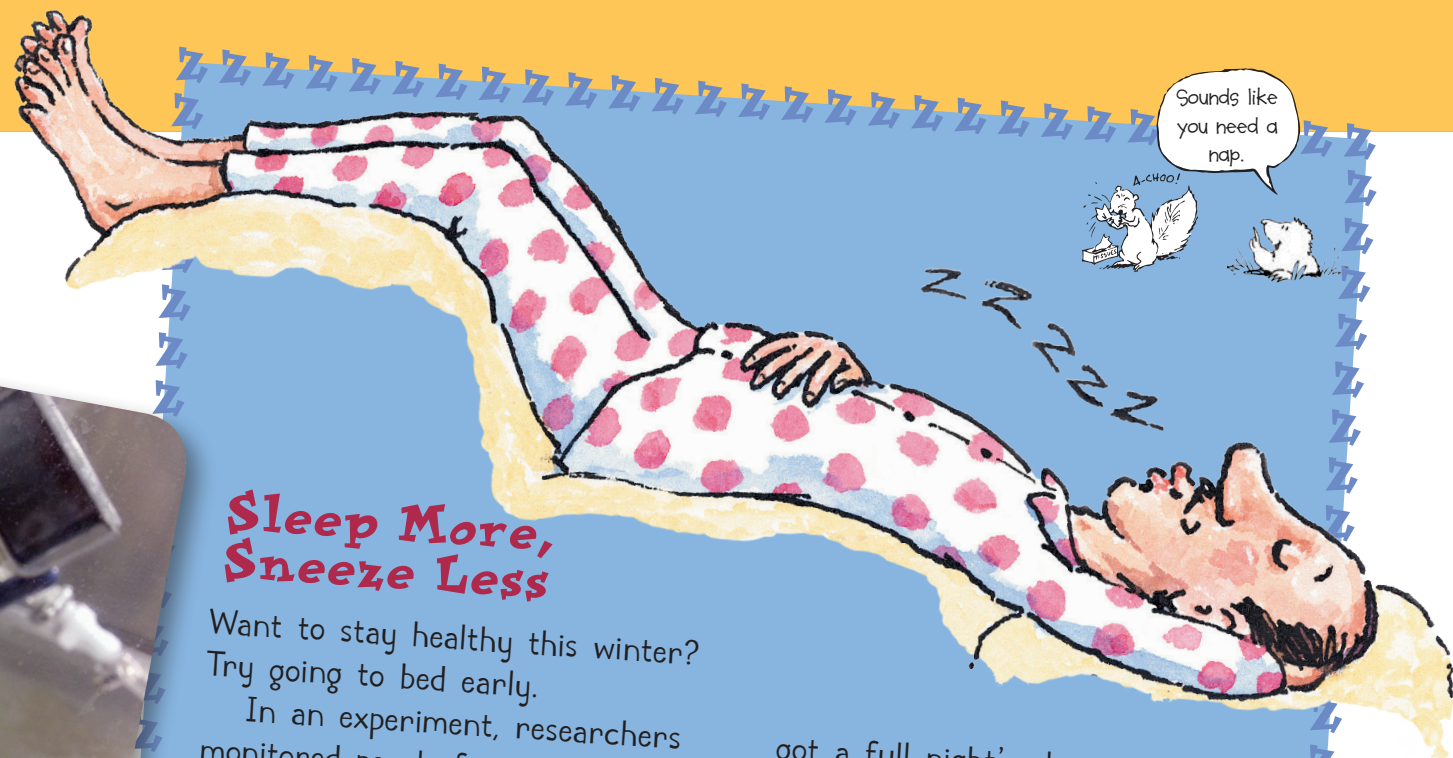


Brave Snails Have Stronger Shells

Who knew pond snails have personalities? Some snails are outgoing—they don't spend much time hiding in their shells. Others are shy and

like to stay safely hidden. In one study, researchers figured out which snails were which by poking them so they hid inside their shells,

then seeing how quickly they stuck their heads back out. The snails that came out first were the boldest. Scientists also discovered that



Sleep More, Sneeze Less

Want to stay healthy this winter? Try going to bed early.

In an experiment, researchers monitored people for a week to see how much they slept. After the week was up, they exposed the people to viruses that cause colds. Just because you're around a virus doesn't mean you'll get sick—and sure enough, not everyone in the experiment caught a cold. But they were more likely to get sick if they slept less than six hours a night. People who

got a full night's sleep were less likely to get sick.

Scientists think sleep helps keep the immune system strong, so you can fight off any germs you meet. If you're having trouble falling asleep, try counting very healthy sheep.



the boldest snails had the strongest shells. Shy snails had weaker shells. They aren't sure if having a stronger shell makes snails bolder,

or if bolder snails grow stronger shells. But snails have shells that match their

personalities. (Spots and stripes are just for fun.)

A bold pond snail ventures forth.

art © 2002 by Thor Wickstrom

by Jeffrey Ebbeler

NESTOR'S DOCK AVE

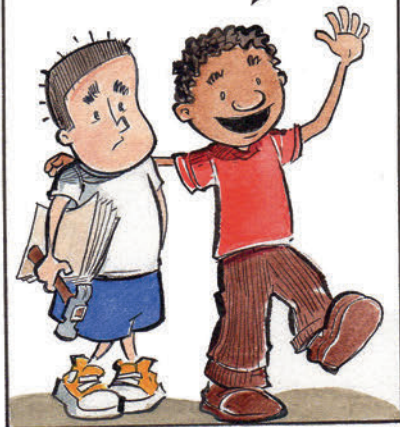
WANTED

BODYGUARD
to protect me from bullies
Must be big and scary
Contact me at
phil.is.awesome @philmail.com

I'm going to hire a bodyguard to protect me from Harry. He's always picking on me.



You don't need a bodyguard, Phil. I know how to deal with Harry.



He leaves me alone because I make him laugh.



...and so the panda says to the moose, those aren't my socks.



The best way to deal with bullies is to stand up to them.



Don't even think about it!



Animals have all sorts of ways to protect themselves.



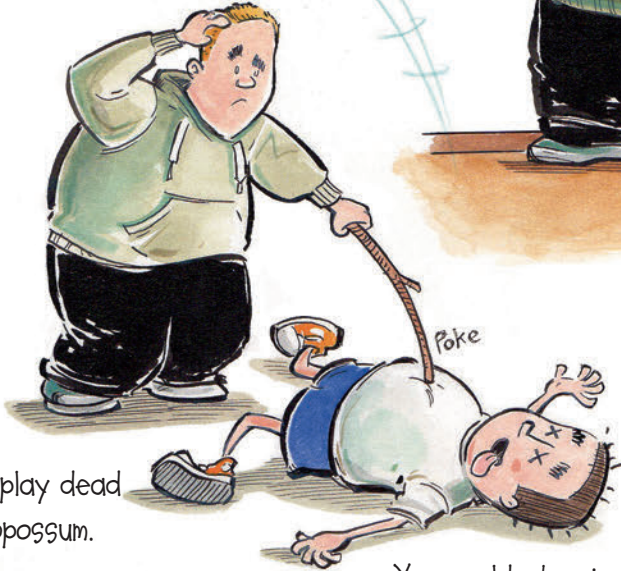
You could run away fast, like a gazelle.



You could blend into your surroundings like a chameleon.



You could play dead like an opossum.



You could stay in a pack to watch out for enemies like prairie dogs.



Next Day



Animal Defense

So, you don't want to get eaten, huh? Totally understandable. Here at Animal Defense Academy, we can teach you plenty of ways to avoid becoming someone else's lunch.

Run Away

The first line of defense is pretty simple—run away! Of course, it helps to have a speedy body, or wings.



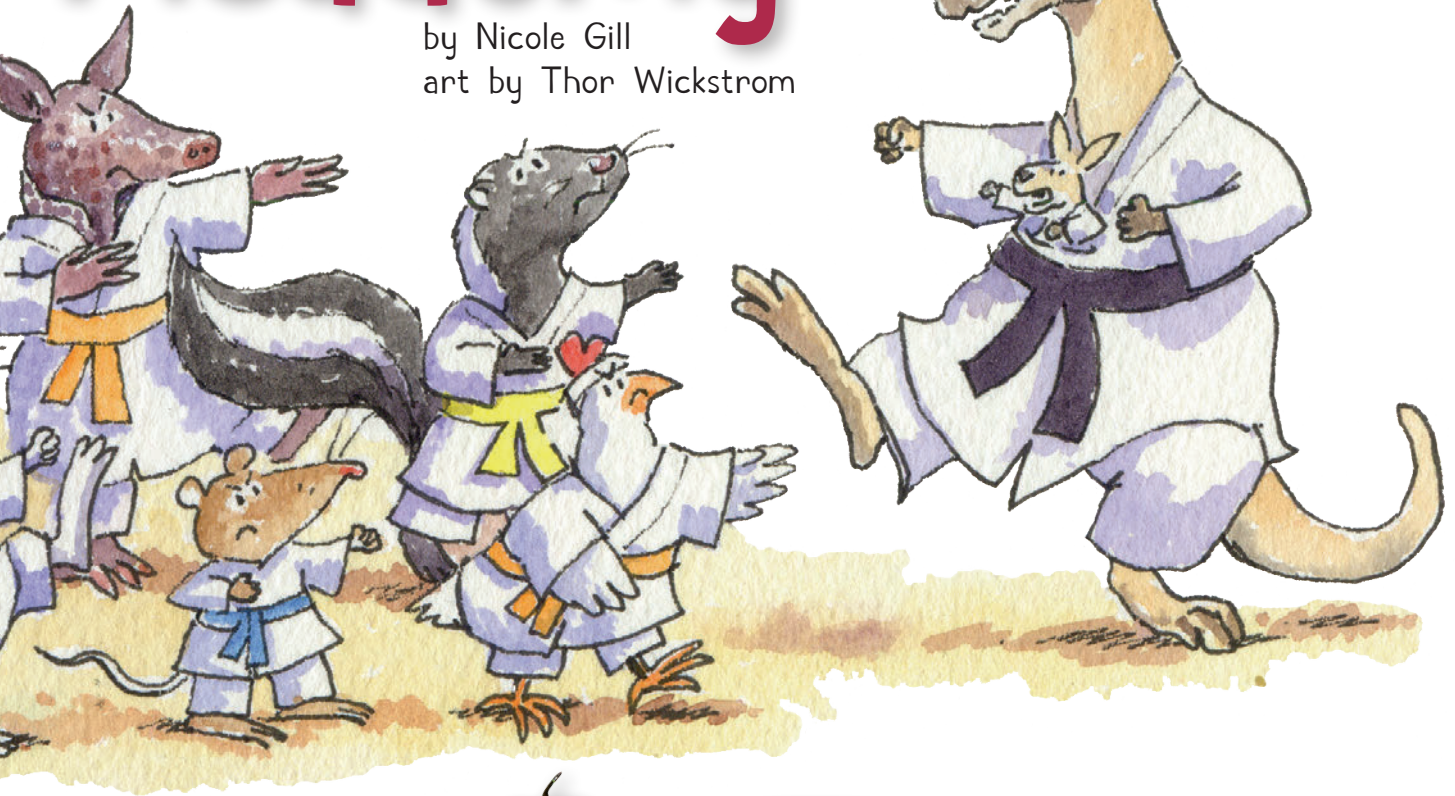
Thomson's gazelles are fast—they can run 40 miles (65 km) an hour. Cheetahs like to eat gazelles and are just a bit faster. But cheetahs can't keep running for as long as gazelles can, so the gazelles often get away.

It also helps to have plenty of friends around to keep an eye out for prowling carnivores.



Academy

by Nicole Gill
art by Thor Wickstrom



To get a head start on your escape, why not leave behind a decoy, like, say, a tail? Some lizards can drop their tails and keep on running. The tail tidbit distracts the predator long enough for the lizard main course to escape. Later, the lizard simply grows a new tail.



Five-lined skink, with optional tail

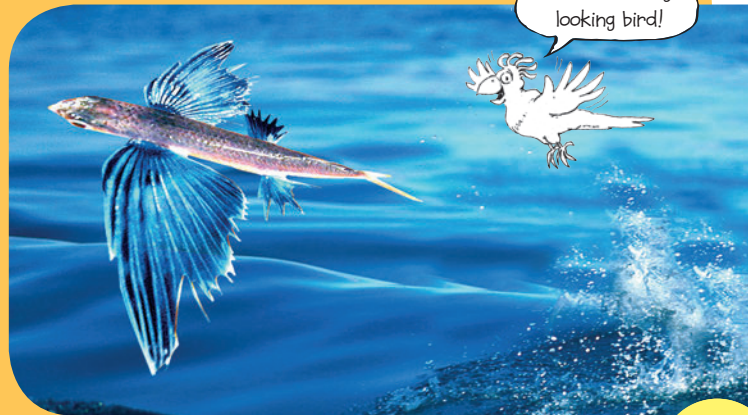
Rabbits run in crazy zig-zags that make them hard to catch.



Flying fish have a great escape trick—they leap right out of the water and glide through the air on oversized fins that act like wings. The big fish chasing them in the water must wonder where they've disappeared to.



Most birds fly away from danger. But ostriches can't fly. Instead they run away on long, powerful legs. And they're quick! An ostrich in a hurry can run as fast as a gazelle.



What a strange looking bird!

ARMOR

If you can't run away, a nice suit of spines or armor can make you look like an unappealing meal.



Anyone for tennis?



Puffer fish stick out their spines and gulp in water until they look like large spiky balls that would be impossible to swallow.

When a hedgehog senses danger, it curls itself up into a prickly ball. Its sharp spines will poke the tender nose of anything that tries to eat the hedgehog.



Many soft-bodied animals, like this garden snail, grow hard shells to protect themselves from becoming an easy dinner.



The pangolin, or scaly anteater, is covered in hard, scaly plates like its own suit of armor. When threatened, it rolls itself up into a bite-proof ball.



Poison or Stink

Another great defense is to make yourself taste or smell really, really bad.



Poisonous animals often sport bright colors to warn predators to **STAY AWAY!** Tiny poison arrow frogs look jolly, but just one has enough poison to kill 10 adult humans.

If something bothers the bombardier beetle, it sprays out a boiling hot, stinging jet of acid. That attacker will think twice before biting another one.



Fulmar birds leave their chicks alone on the nest while the parents hunt for fish. But the babies can protect themselves—they vomit a sticky, stinky goo on any would-be attackers.



Skunks are champion stinkers, and their stripes let you know who they are. Other animals quickly learn not to bother the black-and-white stripes, or risk being squinted with a smelly liquid from a gland near the skunk's tail.



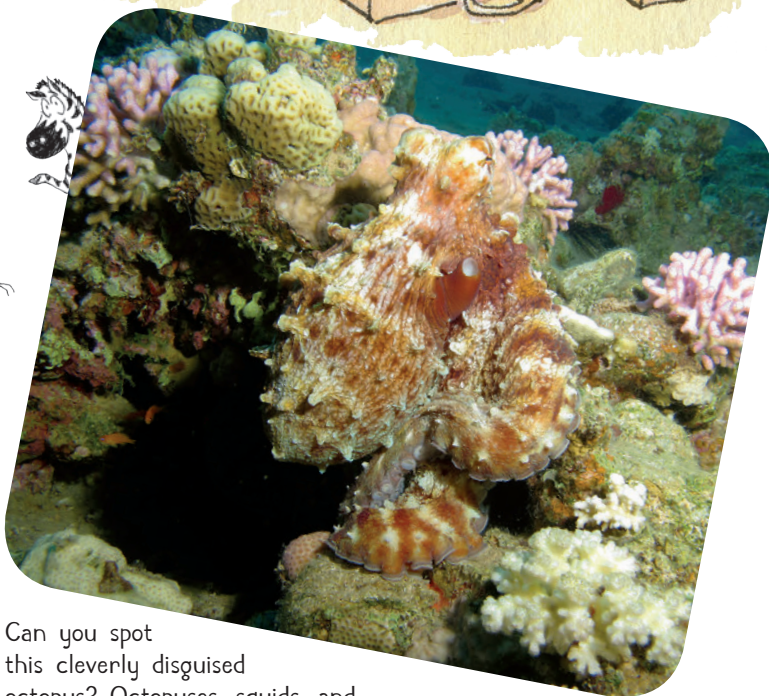
HIDE
 Predators can't eat what they can't find. Hiding is an excellent defense—and many animals are very good at it.

Leaf me alone!

Leaf insects are hide-and-seek champions.



An underground burrow is a great place to hide. When prairie dogs are out feeding, one always keeps watch for predators. When the lookout barks, everyone scurries for the tunnels.



Can you spot this cleverly disguised octopus? Octopuses, squids, and cuttlefish can change the color and texture of their skin to match different backgrounds.



Nope, no potoo bird here, just an old tree stump.





Lie

In the animal kingdom, honesty is not always the best policy. Sometimes the best defense is a clever deception.



The American opossum is a great actor. When threatened, the opossum keels over and pretends to be dead. Its body goes stiff and it lies perfectly still. Sometimes the opossum will even ooze out a bit of stinky green mucus, so it smells like it's been dead awhile.

Kildeer birds will pretend to have a broken wing to lead predators away from their nests. Then—ha, ha, fooled you! The not-really-hurt bird flies away, safe.



Like this twin-spot goby, many fish have big spots on their fins that look like eyes. This confuses bigger, predatory fish, who don't know if they're coming or going.



coral snake—venomous



Some animals protect themselves by copying the colors of more dangerous relatives. The Pueblan milk snake is harmless, but it looks enough like a deadly coral snake that snake-eating animals leave it alone.



milk snake—harmless



The cunning swallowtail caterpillar is colored to look exactly like a pile of bird poo. Would YOU eat it?



art by
Dave Clark

A little short on gold? Let's start with basic cloth and leather—pretty good protection, for not much cost!



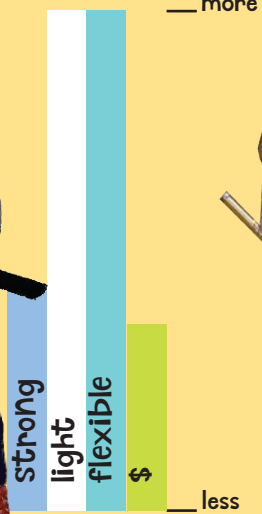
What makes good armor? It needs to be:
Strong. Armor's first job is to protect. So it needs to be strong enough to stop a sword or spear. Padding inside helps to cushion blows that might bruise or break bones.

Light. You'll have to wear or carry your armor around everywhere, often for long distances. So it shouldn't be too heavy.

Flexible. Strong is good, but you still need to be able to move.



Quilted Coat



Chain Mail



Plate



art © 2016 by Dave Clark

One shirt, Two shirts, Three shirts, More shirts



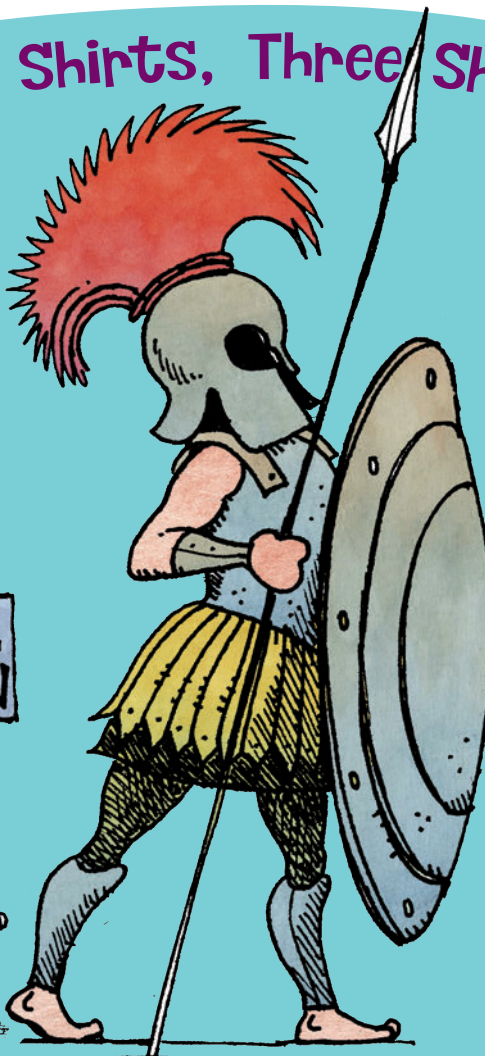
Europe, 800–1800

For much of history, the only armor a common soldier could afford was a jacket of leather or quilted cloth. Actually, layers of cloth can be pretty good protection. The tight weave of the cloth could stop a knife or arrow, and the padding softened the force of blows.



South Pacific islands, 1800s

Use what you have! Warriors on tropical islands in the South Pacific wove sturdy armor out of coconut and cane fiber.



Greek Hoplite, 300 BCE

Ancient Greek soldiers called hoplites wore stiff vests made of 10 to 20 layers of linen cloth sewn together. Hoplites with more money sometimes added a leather or metal breastplate and shin guards.



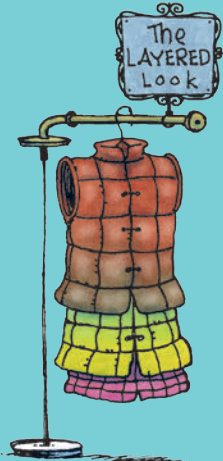
Today

Modern body armor is made of layers of a tough nylon cloth called Kevlar. Ceramic plates in between the layers make it strong enough to stop a bullet.



Aztec, 1400s

In ancient Mexico, some Aztec warriors painted their quilted linen coats to look like animals.



Italy, 1700

A strong leather vest or jacket could block blades and arrows. Another layer or two added extra protection.

Don't believe cloth can make good armor? Try it with paper. It's pretty easy to cut through one sheet of paper, right? Now fold the paper in half, and again, and again. Now how easy is it to cut? The secret is lots of layers. In fact, the ancient Chinese sometimes made armor by sewing layered paper into coats.

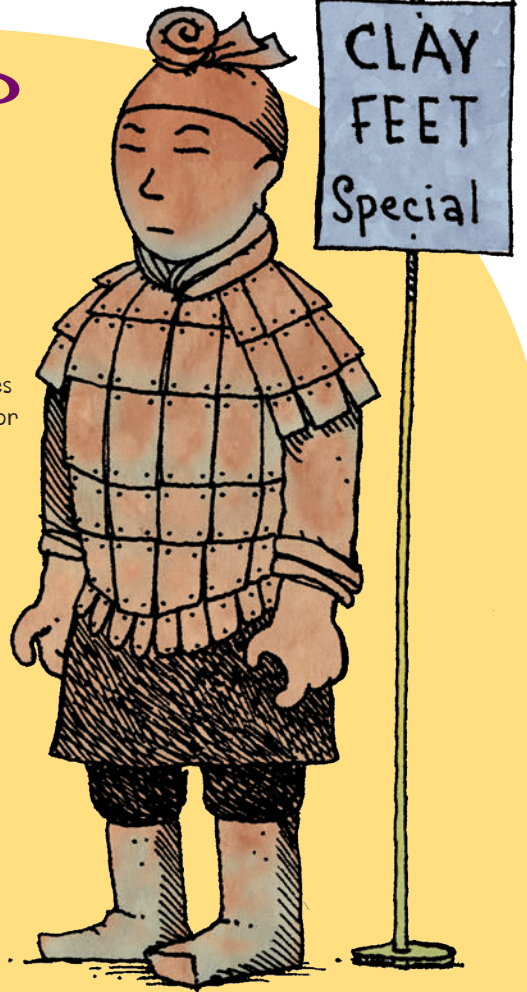
Want something a little tougher, but still flexible? How about armor covered in hard scales, like a pangolin?



Scaling Up

China, 200 BCE

Clay models of warriors from ancient China show them wearing jackets covered in small square plates, a style called lamellar armor. The plates could be made of metal or tough rawhide leather.



Egypt, 1420 BCE

Ancient paintings show Assyrian and Egyptian kings wearing scale armor thousands of years ago. Did they invent it? Who knows.

Japan, 1600s

Japanese samurai wore elaborate armor made of small metal, wood, and leather tiles laced together and painted.



Europe, 1500s

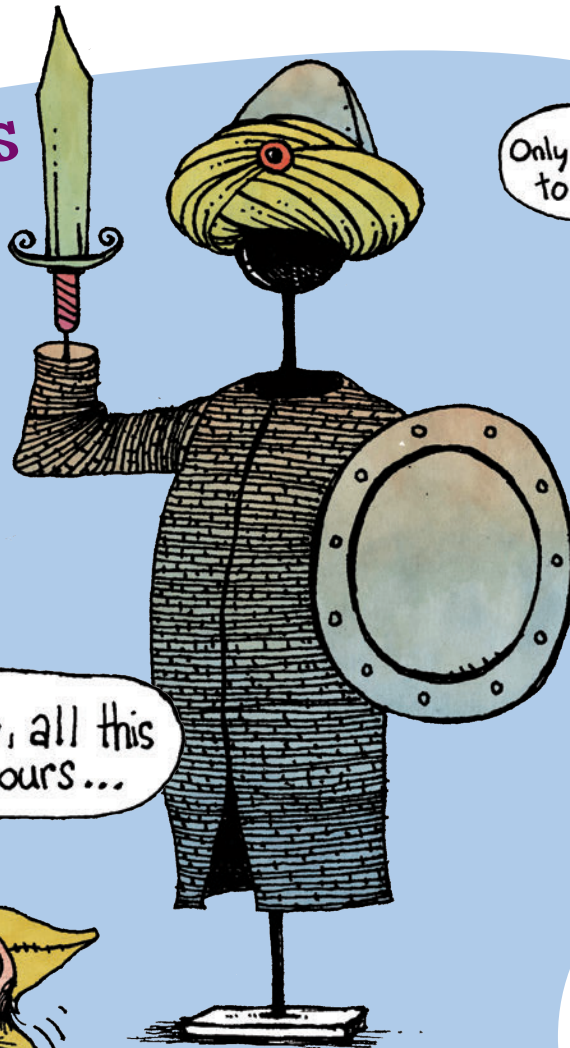
This sneaky armored coat is called a brigandine. Inside are metal plates, but outside it looks like an ordinary cloth coat with metal studs.



Chain Links

India, 1700s

Chain mail, or just mail, was probably invented by the Celts, early Europeans skilled in metalwork. Romans borrowed it from the Celts and took it to the Middle East and India, where it became very popular.



Only 5,385 to go!



Making Mail

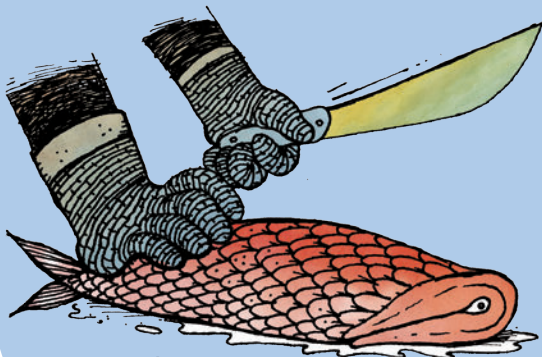
Mail is a kind of metal cloth made up of lots (LOTS!) of small metal rings linked together. It can take 100,000 rings to make one mail shirt, and each had to be riveted by hand. Mail took a long time to make, so it was expensive.

Someday, all this will be yours...



Europe, Middle Ages

Mail was expensive, but it never wore out. Mail shirts were handed down as family heirlooms.

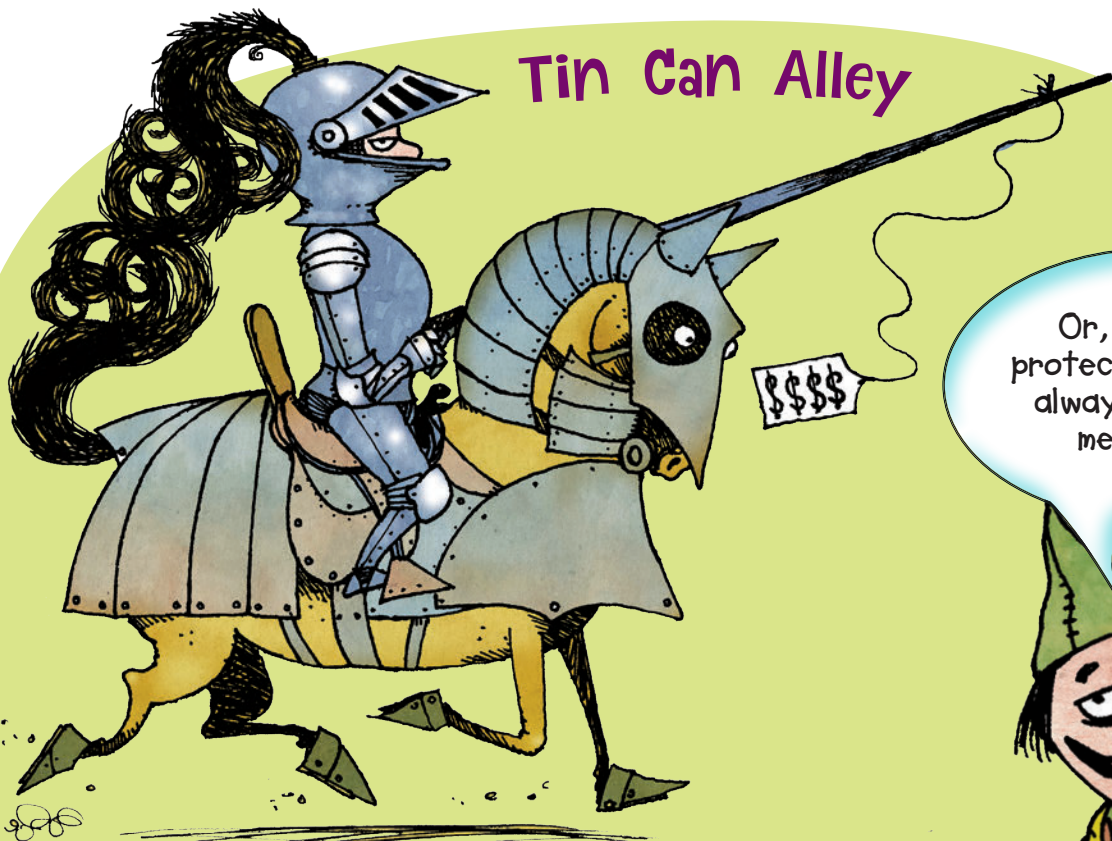


Today

Mail is still protecting people—modern workers who cut up fish and meat wear mail gloves so they don't accidentally cut themselves.



Tin Can Alley



Europe, 1400–1700

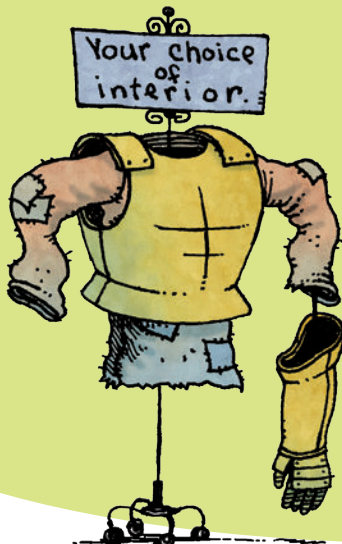
A suit of armor was expensive and had to be specially made—only the richest knights could afford one. It came in many separate pieces, held together by buckles and straps. And don't forget to get some for your horse!



Rome, 50–300 CE
Ancient Romans copied the Greek hoplite armor, but added a shirt made of overlapping metal bands. This was more flexible than a solid plate.



A shield is also a kind of solid armor—and always fits.



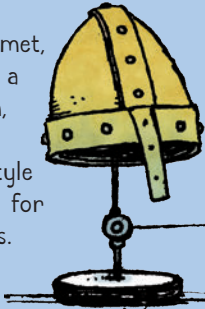
Europe, 1600s
If you couldn't afford a full suit, a metal breastplate and wrist guards might do.



And of course, you'll need a helmet. A good helmet has a hard outside and a soft inside. The hard shell stops blows and sends the force around your head. Squishy padding inside absorbs force and also makes the helmet more comfortable.



The basic Viking helmet, known as a spanghelm, was a popular style in Europe for 800 years. (Note: no horns.)

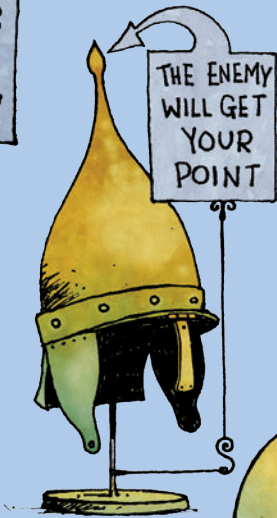


KEEPS YOUR NOSE CLEAN!

Wear Your Helmet



Ancient Greek helmets had a face-protecting plate and a decorative crest on the top.



Pointed helmets popular in the Middle East and India sent blows sliding off to the side. A movable bar in the middle protected the nose.



HALLOWEEN SPECIAL

Samurai helmets were often extremely fancy, meant to inspire awe and to identify the leader of the army.



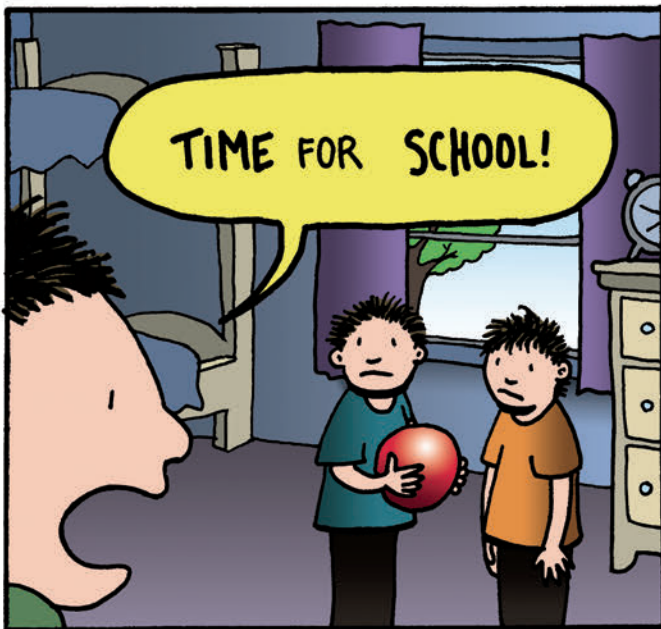
This curvy morion helmet worn by Spanish soldiers might look funny, but it was quite comfortable and kept rain off the face and neck.

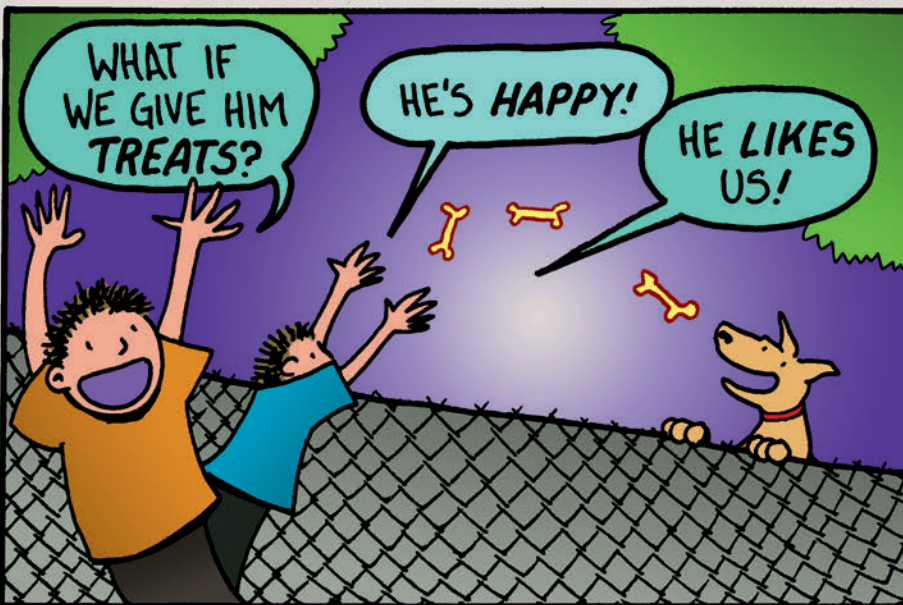


The important part of a sports helmet is not the hard plastic outside, but the foam shell inside. If you hit something, the foam crumples instead of your head.

DOG BULLY

by: SHANNON WHEELER





They Made Me Do It



I'm in sixth grade, and I have the best friends ever. Except for one thing.



Don't say Hi to Ella



Every few weeks, someone gets the silent treatment. We all pretend they don't exist. I don't know why we do it—but we all do.

No matter what, we don't break our silence. We cut them out.

Then, after a week or two, it's over. It's someone else's turn.

When it's your turn, it's awful.

No one to walk with to school. No one to hang out with. No one texting you. Lots of crying. Parents totally not understanding.

Mom says, "If they do that, then they're not really your friends."

But they are, and I want them back!

No one does anything to make it stop. It's just the way things are.

But then one day, everyone starts to ignore Eric.

Don't say Hi to Eric, CiCi—we're ignoring him.

But I *like* Eric. Not *like*, like. But he's smart and fun. We talk about space—fun! He lets me swim in his pool—fun! We swap comics—fun!

So after school, I do something crazy. *I text him.*

Hey, how R u?

I thought you were all ignoring me.



and *I'm Sorry*

by Cecil Castellucci, art by Laura Perez



All that night, I wonder what will happen at school the next day. Will I be brave and talk to him? Or will I cave and ignore him?

But Eric has his own way of dealing with the silent treatment. He doesn't show up at school that day, or the next.

So I collect his homework and bring it over to his house. And we chat like everything is normal.

When Eric comes back to school, everyone acts like nothing happened. But I'm worried. I know it is just a matter of time before someone is ignored again. Who will it be?



I feel bad. Did I think he wouldn't notice that I was giving him the silent treatment? I want him to know that I'm different. So I text...

They made me do it and I'm sorry!

No answer for a minute, and I think he's mad. But then he writes back.

The silent treatment is totally dumb.

It totally is. :)

Me.

Don't say Hi to CiCi, everyone- we're ignoring her.

But Eric doesn't. He looks at everyone and says, "I don't play that dumb game anymore. Want to go get some pizza, CiCi?"

After this, I don't think anyone will get the silent treatment again. ✈️



Grandfather

by Arun Gandhi and Bethany Hegedus
art by Evan Turk

December 17, 1945

Chi Arun,
I think of you every day, but
especially today during silence. Do
you spin carefully at least 160 rounds
daily? Is the yarn even? Do you
yourself fix the spinning wheel? Do you
keep a daily account? If you keep this one
promise, you will learn a lot.

Blessings to all of you from,
Bapu

Who is Bapu?

It means
grandfather.

When we arrived at Sevagram in India, Grandfather Gandhi gathered us to him in a big hug. He smelled of peanut oil.

“Arun walked the entire way from the train station,” Father said.

Grandfather stood and smiled his toothless grin.

“That walk is a test



Gandhi



of character. I am impressed.” My heart swelled as big as a balloon. I had made Grandfather proud.

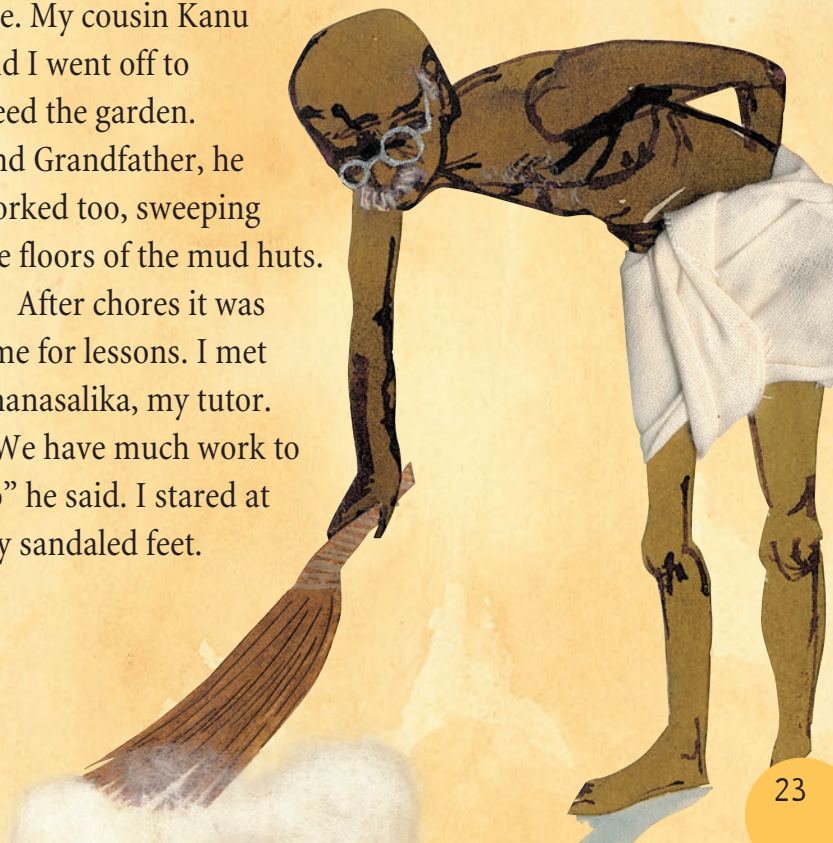
Sevagram was filled with people. That evening I ate spoonful after spoonful of boiled pumpkin. It was mushy and bland, but what I liked less was sharing Grandfather with the 350 other people who lived there.

The air was so thick and hot, we slept under the stars to keep cool. I tossed and turned, wondering what the next day would bring.

The next day, everyone awoke at 4 a.m. With the dark of early morning wrapped around us, we prayed. Silence filled the air. Everyone was still, but I was fidgety. The peace of prayer felt far away.

I was glad when the sky turned the deep orange of a tangerine. It was time for chores. My sister Ela headed off with Mother to wash vegetables. Father went with his team to clean the toilet buckets that needed to be emptied, washed, and put back for use. My cousin Kanu and I went off to weed the garden. And Grandfather, he worked too, sweeping the floors of the mud huts.

After chores it was time for lessons. I met Bhanaslika, my tutor. “We have much work to do” he said. I stared at my sandaled feet.



At home I spent my time playing cowboys, like in the movies. But here at Sevagram, there would be no movies. There wasn't even electricity.

I tried to get the other kids to play bank robbers and sheriff, but the only game anyone was interested in was soccer, which ended up being OK. I was good at soccer, better than I was at lessons.

For most of the day, Grandfather worked in his hut. I'd run a stick along the fence post outside, waiting for some time with him, but I was always shooed away. Idleness was not allowed.

Then one day Grandfather came to find me. "Will you walk with me?" he asked. This morning there was no one else along. Lucky me!

I set off after Grandfather. His stride was quick, and each time he raised his walking stick,

he asked me a question. He asked how my sister Ela was behaving, and about life in South Africa, where I lived, and the cruelty that came with blacks and whites being separated by race.

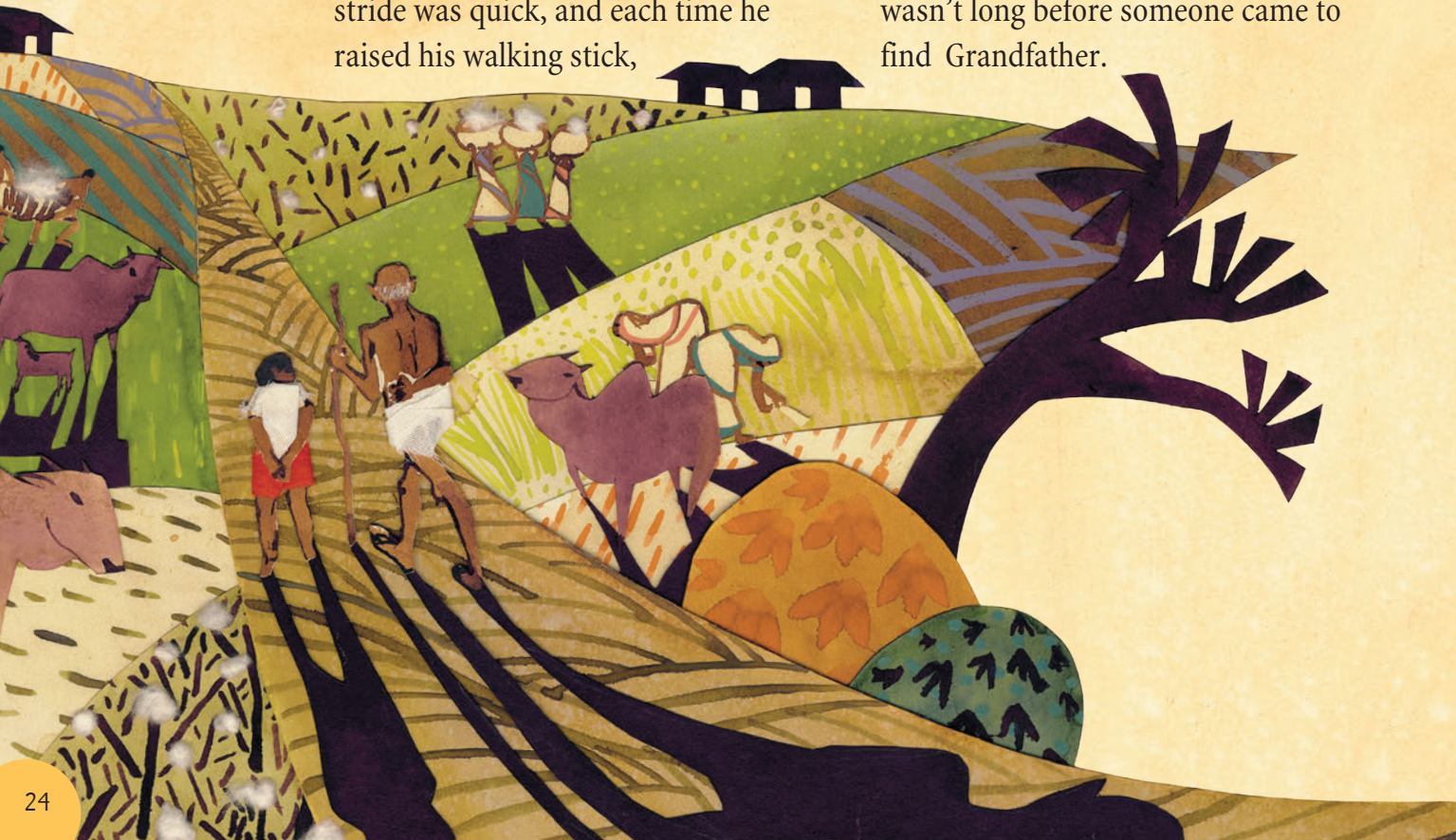
Eventually Grandfather asked about me. "How are you finding life here at Sevagram?"

"The other kids tease me, and my tutor thinks I am useless," I blurted out. "I try hard, but it is not enough."

I stopped short of saying that I didn't feel like a Gandhi, that peace and stillness did not come easily to me.

Grandfather listened, and when I finished, he wiped his spectacles, put them back on, and looked me in the eye. "Give it time, Arun. You will adjust and go on to good things. I have faith."

He said no more. We walked on. It wasn't long before someone came to find Grandfather.



I should have known—there were more important things than me.

The rest of the day was just as disappointing. My pencil nub shrank to almost nothing, but we weren't supposed to waste, so I couldn't throw it away. I held it, squishing my fingers. My hand cramped. Stupid pencil!

After lessons, with the sun high overhead, I was glad to head to the soccer field. We played hard, as if the match really mattered. I was about to make a goal when Suman, an older boy, shoved me. His feet stole the ball as I lurched forward and fell face down in the dirt. Blood trickled from my lip. It tasted like tin.

I snatched a rock and leaped up. "You did that on purpose!" I shouted. "Didn't you?"

Kanu stepped forward. "It was an accident, Arun," my cousin said. "Calm down."

But I didn't want to calm down. I wanted to throw the rock, to hit Suman, like he hit me. Everyone stared—I dropped the rock and ran . . . straight to Grandfather's hut.

"Bapuji," I cried. "What is it, Arun?"



Grandfather set down his pen and pushed aside his many papers. It was wrong to come here. Grandfather had work to do, important work. I backed up to leave, and Grandfather bowed. "Namaste," he said—not to me, but to the aide, politely dismissing him. And then we were alone.

"Tell me what has you so upset," he said. I did. Out came what had happened on the soccer field, getting pushed, the rock, everything. When I was done, my head throbbed. Grandfather didn't need to say it. I'd never live up to the Mahatma. I'd never be at peace.



“Do you think Suman and Kanu never get angry? Or that they never think injustices happen solely to them?” Grandfather wiped my tears. “Do not be ashamed, we all feel anger.”

But that wasn't possible. Suman and Kanu, maybe, but not Grandfather.

“Even you?” I asked.

“Even me,” said Grandfather.

But Grandfather taught peace. I'd never seen him angry, not even now when I told him what I'd almost done.

“Let us spin,” he said, and he sat before one of two spindles.

Grandfather wasn't one for riddles, Father had often told me, but he was one for stories. One was coming, I was sure of it. I held

Ooo, I could just...



Don't get mad. Make it better!



the thin cotton thread between my thumb and forefinger, not moving, as Grandfather's fingers went to work.

“Have I not told you how anger is like electricity?”

I shook my head.

“It is. Anger can strike, like lightning, and split a living tree in two,” he said.

I saw myself on the soccer field, rock in hand, ready to strike.





I saw the movie cowboys and their guns.

“Or it can be channeled, transformed. A switch can be flipped, and it can shed a light like a lamp.”

I saw Grandfather, speaking before thousands. When Grandfather was angry, he didn’t lash out. He worked to make changes, lasting changes, for all—not just for himself.

“Then anger can illuminate. It can turn the darkness into light,” Grandfather said.

“That’s what *you* do,” I said quietly, sure I couldn’t do the same.



“Arun, we can all work to use our anger, instead of letting it use us.”

Grandfather slowly stood. He beckoned me to him and together we stood at the doorway of his hut looking out—at everyone working as one. He hadn’t told me I was foolish. He hadn’t told me I was wrong and he was right. He hadn’t even forced me to choose: lightning or lamp.

But I did choose, and would choose, over and over, from that moment on, like Grandfather . . . I did my best to live my life as light. 🕯️



Mahatma Gandhi was a great leader who worked to free India from British rule in the 1930s. Gandhi taught a new way of fighting—without violence. He and his



followers simply refused to obey unjust laws. If they were arrested or beaten, they did not strike back or attack British people. They stood firm, but were always peaceful. This helped convince everyone, even the British, that the laws had to change.

India finally won its independence in 1947. Gandhi’s success inspired Martin Luther King Jr. and many other civil rights movements around the world to use nonviolent protest to change unfair laws.

Gandhi believed in simplicity and self-reliance. He even spun his own cloth. At Sevagram, he lived in a large community of activists, writers, and families. This is the true story of one summer when his grandson Arun came to visit.



by Ivars Peterson
Five Sides

Look closely at a fire hydrant and you'll see something odd. The knob that firefighters turn to let water out has five sides. Doesn't that make it hard to open?

The jaws of an ordinary wrench are made to fit around a shape with opposite sides that line up evenly. This happens if the shape (the bolt head) has an even number of sides: four, six, eight, etc.

A five-sided knob can't be opened with the kind of wrench you have in your house. But that's a good thing. It stops people from fooling around with hydrants.

Firefighters want to keep hydrants closed so that there's enough water pressure to get the water into their hoses. When they need to turn on the water, firefighters use a special tool with a five-sided hole.

A shape with five sides is called a pentagon (*pente* is the Greek word for "five"). Keep a lookout—

they're less common in everyday life than shapes with four sides (squares), six sides (hexagons), or eight sides (octagons).

Near Washington, D.C., is a huge government building known as the Pentagon. Indeed, it has five sides, fitting between five streets. It also has five rings of corridors and stands five stories above the ground. More than 25,000 people work there. How many fives is that per floor?



Pentagons can be small like a hydrant bolt or large like the Pentagon.

ASK JIMMY & THE BUG

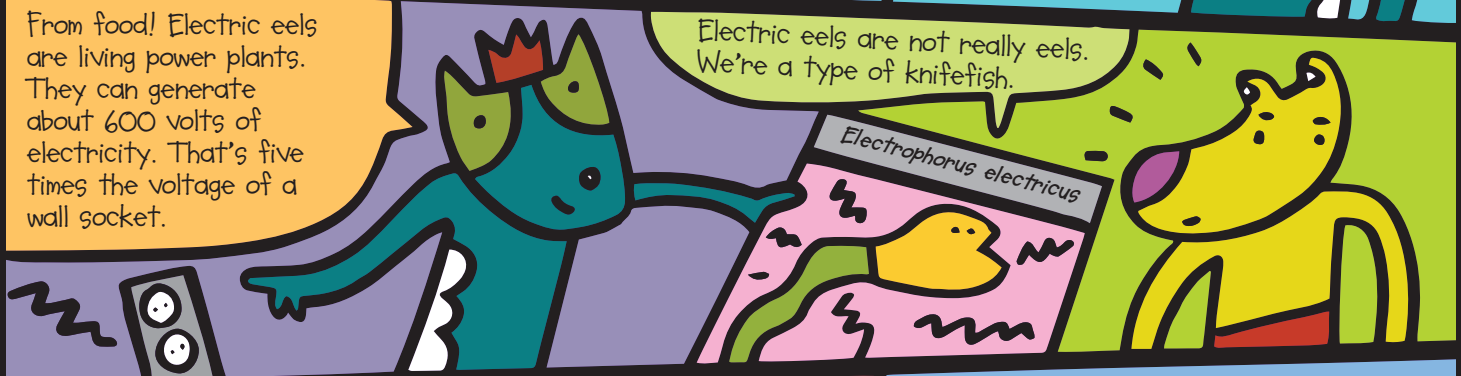
Words by Ellen Braaf, Pictures by Dean Stanton

Hey, Bug! Jacob B. in California wants to know: Where do electric eels get their energy to shock people?



From food! Electric eels are living power plants. They can generate about 600 volts of electricity. That's five times the voltage of a wall socket.

Electric eels are not really eels. We're a type of knifefish.

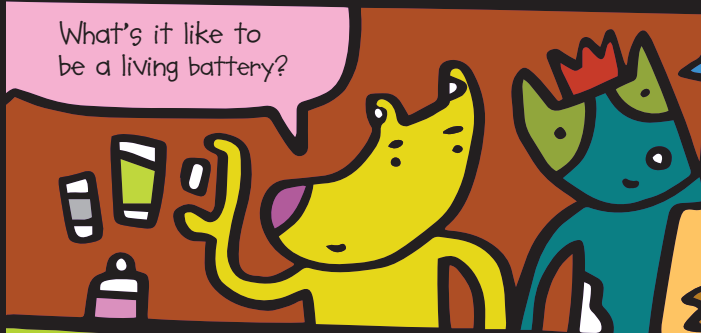


Where do they get all that juice?



All cells (even yours) make tiny electrical signals—it's how cells talk to each other. But inside the eel's long tail, about 6,000 special cells called electrocytes are stacked end to end like tiny batteries. When they're stacked like that and they all fire at once, the shocks add up to pack a punch.

What's it like to be a living battery?



The eel keeps its heart, liver, and guts all crammed into the top part of its body. The rest—about 80%—is all tail. Eels actually have three electric organs. One senses prey and other eels. The other two send out shocks by telling all the tail cells to fire at the same time. And zzzzap! Goodbye attacker...or...hello dinner!



Hey, could you eat if your food was wriggling all about?

Why don't the eels shock themselves?



No one knows! It's possible that the eels do get zapped, but don't mind. Or they may have some protection that we haven't figured out yet.

Have a Question?
BUG us anytime!

Write to us at
ASK
70 East Lake St.
Suite 800
Chicago, IL 60601
or email
ask@cricketmedia.com



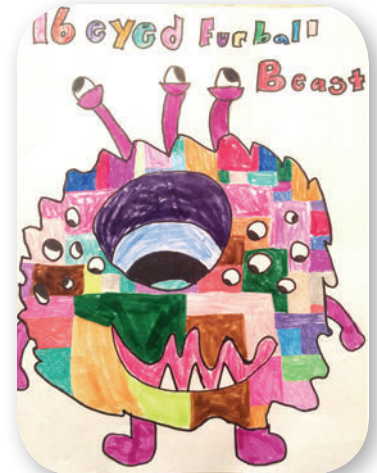
CONTEST AND LETTERS



Send your letters to Ask Mail,
70 East Lake St., Suite 800, Chicago, IL
60601, or email us at ask@cricketmedia.com.

In our September issue we asked you to roll the dice and draw a randomly generated monster. Thanks to all you talented monster-makers for sharing your creations!

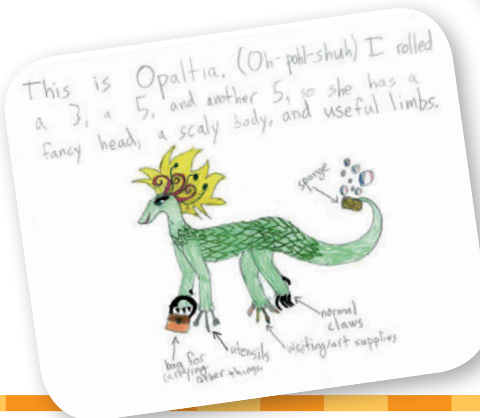
16 Eyed Furbal Beast
Anna Y., age 9



Dr. Franken-skelespike
Alex T., age 11,
Massachusetts



Clemmy V., age 13,
Massachusetts



Opaltia
Helena B.,
age 9,
Michigan

Dear Marvin,
Do your pranks really work?
Sometimes I try pranks on my
brother and they never work.
For example, on April Fools Day
I put a creepy spider in the
fridge and when he opened the
fridge he didn't even see it!
Love, Apple B., age 8,
California

Dear Apple,
*Brothers can be obtuse
sometimes, so keep at it!
Maybe you need a bigger
spider? That sounds like
an excellent project for
my new lab. If it works,
I'll send you one.*
Arachnistically,
Marvin

Dear Watson,
A good book for you is *The
Miraculous Journey of Edward
Tulane*. It's by Kate DiCamillo.
It is about a china rabbit.
Why are the fairy tales in the
3000s at the library?
From,
Leah S., Connecticut
P.S. When is your birthday?

Vejuné G.,
age 10, Maine



The Baughtit
Dhruva K.,
age 7,
Maryland



Graham
T., age 9,
Minnesota



	Head	Body	Limbs
1	toothy	round	short
2	squishy	wiggly	long
3	fancy	long	flexible
4	goofy	furry	spiky
5	huge	scaly	useful
6	absent	strong	too many

Monster on
the moon
Evelyn T.,
age 6,
Virginia



Keerthi G.,
age 9,
Pennsylvania



Dear Leah,
I love Kate's books—they are so absorbing and unexpected! Every library uses different numbers, so you'd have to ask your librarian why their fairy tales are 3000. Librarians know everything. Except my birthday.

Your friend, Whatson

Dear Ask,
If a plane goes straight for a long time, I mean like days, months, weeks, and years, would it go to outer space or would it just keep orbiting Earth?

Julia,
California

Dear Julia,
If an airplane kept flying straight at airplane speed, Earth's gravity would pull it around like a ball on a string. To escape Earth's gravity into outer space, it would need to be going 25,000 miles an hour! And for that, you need a rocket.

Roundly, Bone Pony

February Contest

Heads Up

Your head is full of fantastic ideas—better keep it safe! For this month's contest, put that head to work and design a super-amazing helmet to keep you invincible. What dangers will your helmet face? Stray baseballs? Curious sharks? Homework? Oobleck? Angry bees? How it could enhance your personal style? Can we borrow it on weekends? Send us a picture of your happening headgear, and we'll parade the most protective in an upcoming issue of *Ask*.



Contest Rules:

1. Your contest entry must be your very own work. Ideas and words should not be copied.
2. Be sure to include your name, age, and address on your entry.
3. Only one entry per person, please.
4. If you want your work returned, enclose a self-addressed, stamped envelope.
5. Your entry must be signed or emailed by a parent or legal guardian, saying it's your own work and that no one helped you, and that *Ask* has permission to publish it in print and online.
6. For information on the Children's Online Privacy Protection Act, see the Privacy Policy page at cricketmedia.com.
7. Email scanned artwork to ask@cricketmedia.com, or mail to: *Ask*, 70 East Lake St., Suite 800, Chicago, IL 60601. Entries must be postmarked or emailed by February 29, 2016.
8. We will publish the winning entries in an upcoming issue of *Ask*.

Dear Zia,
Since horses and horse cousins are my favorite animals, I am entering a horse-riding contest and dressing the horse up as a poodle. I will be riding a white horse named Rabbit. How many stripes do you have? Since you are striped, do you like striped things?

Your incredibly awesome horse-loving friend,
Olivia M., age 8, Maryland

*Dear Olivia,
I just counted and I think I have 23 stripes. Is that a good number? I do like striped things! Rainbow stripes are my second-favorite color, because*

you don't have to choose, you can have one of each. Have fun at the people-carrying contest! (That's what we horses call it.) Do you get to wear a costume too? My favorite dress-up is a beautiful, stripey butterfly.

*Your people-loving friend,
Zia*



Bug  Out	
	Marvin@Ask Anyone have some feathers I can borrow to finish my Super Supreme Genius Helmet?
	Ladybug@Cricket Oh no! It's February and I haven't started on my invention!
	Spider@Spider Say this ten times fast: Heather says this is a zither.
	Ladybug@Cricket That does not help with my inventing!
	Cricket@Cricket It's funny, though.
	Zia@Ask And laughter is the best medicine!

2016
5th Annual Global



Invent It Challenge



Think about a real world health problem and come up with a solution.

Submit your invention by March 18, 2016.
Learn more by visiting:

Challenges.Epals.com/InventIt2016

No purchase necessary to win.

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