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Highlights®

Fun with a Purpose®

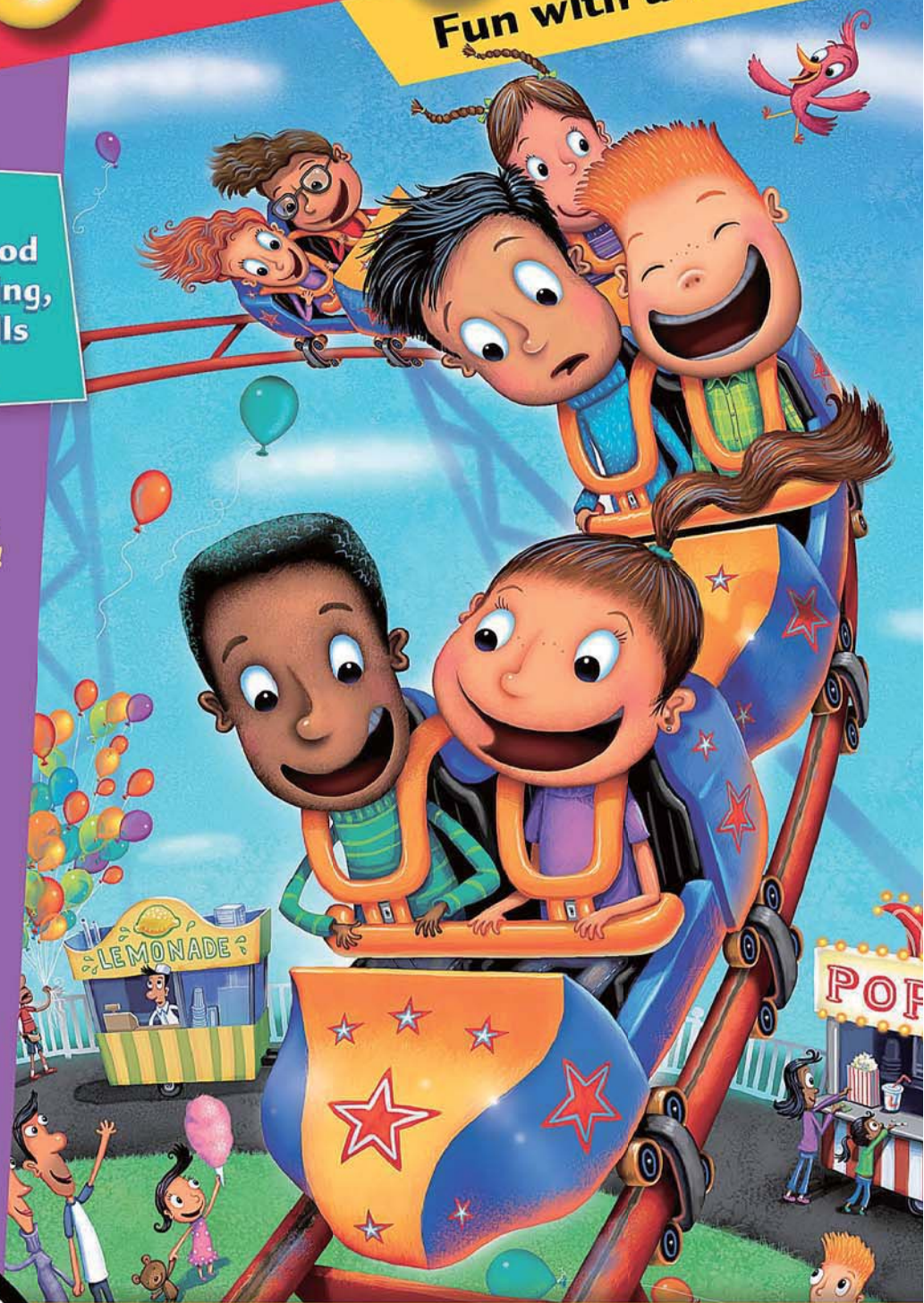
Kids see *Highlights* as pure fun, but you'll feel good knowing it helps build reading, thinking, and learning skills that will last a lifetime.

Each issue of *Highlights* is jam-packed with 42 pages of creative and engaging fun!

- Hidden Pictures® and challenging puzzles
- Real-world articles and silly stories
- Hands-on craft pages that encourage creativity
- Jokes and riddles to keep kids giggling
- Drawings, letters, and poems from our readers
- Science and nature topics

**Special
Sample Copy**

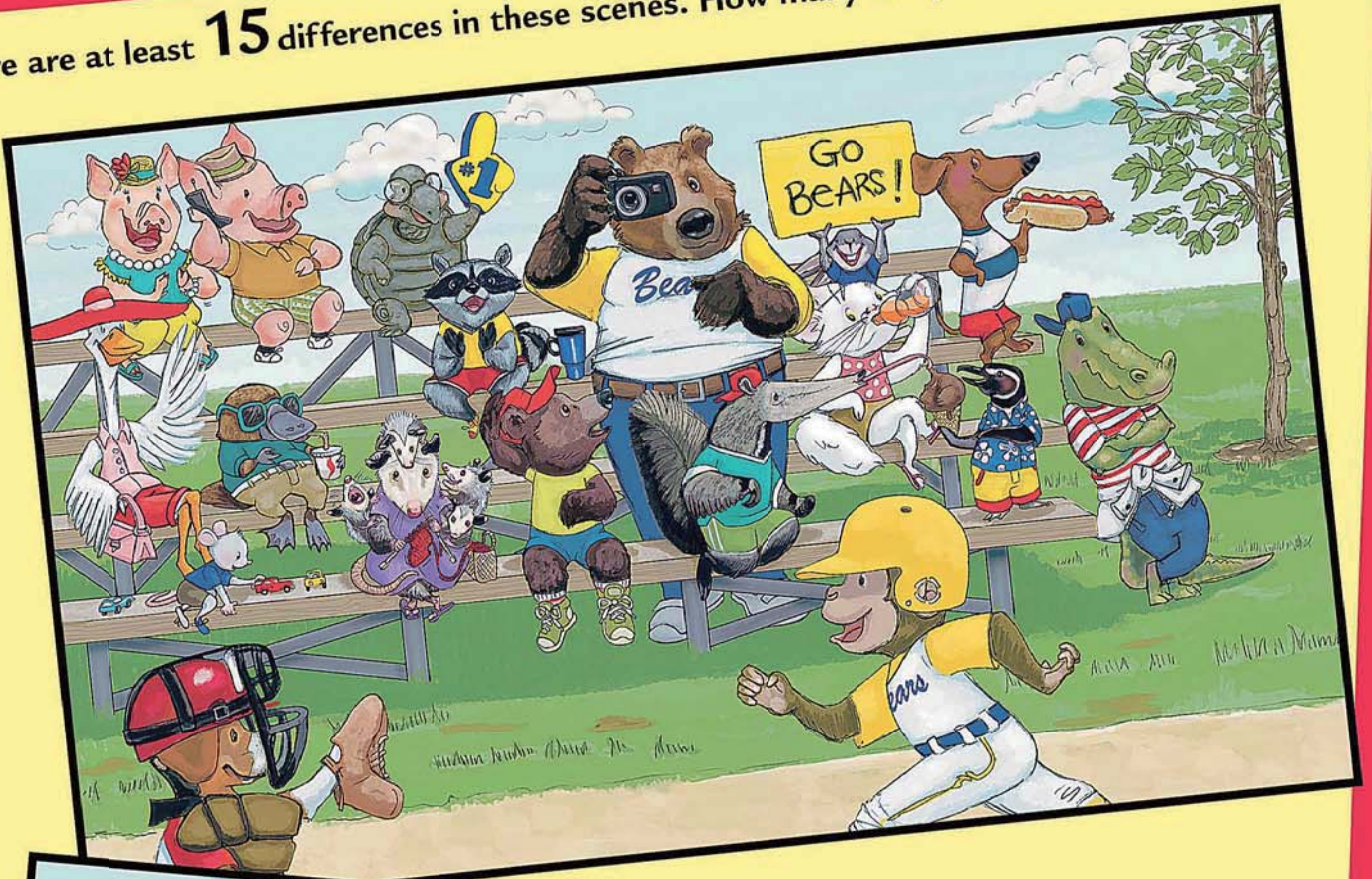
Over a million readers each month!



Picture Puzzler

Art by Joy Steuerwald


There are at least **15** differences in these scenes. How many can you find?




Shoebbox

By Pat Lessie Art by Debbie Palen



I'm taking my new pair of  shoes from the  box.

Now what should I do with my  box?



I could fill it with  marbles or fill it with  blocks.



I could use it to hold all my  rocks.



I could pack all the  postcards I get from my friends and put in the  letters my grandparents send.


Now which shall I choose—the  marbles or  blocks

or  postcards and  letters or  rocks?

Oh! My  kitten is using my  box for his bed.

He's fallen asleep with one  paw on his  head.

I'll put in a  pillow and give him the  box.

That's what I'll do with my  box!

MySci is a monthly science feature that offers engaging content designed to inform and excite children.

Making Paper

How do people turn wood into paper?

Alyssa Kotula, Age 12
Minnesota



The basic idea is to make a soup of fibers, usually by grinding up wet wood. When the fibers are all tangled up, a worker or machine spreads them onto a screen, lets the water drain away, and presses the fibers dry. The wood fibers then stick to one another as a sheet of paper.

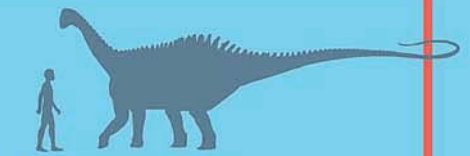
Dinosaurs

Agustinia

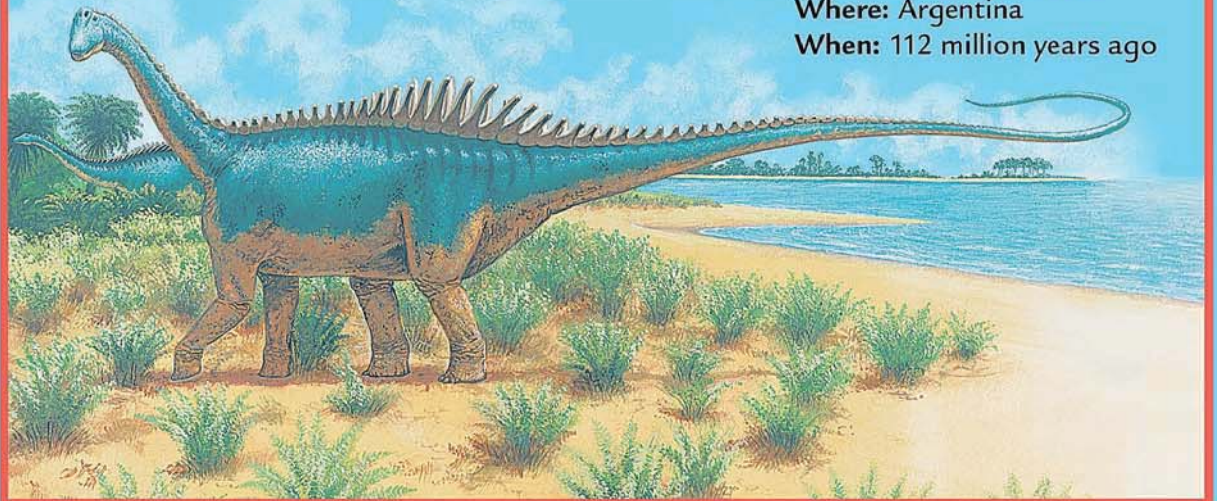
AH-gus-TIN-ee-ah

This long-necked plant eater had plates and spines on its back. No one knows how *Agustinia* might have used them.

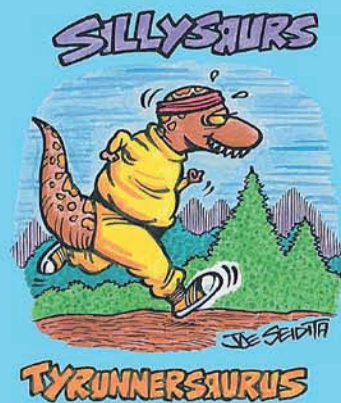
Agustinia was named after Agustin Martinelli, who discovered the fossils.



How Long: 50 feet
How Tall: 10 feet at hips
How Heavy: 6 to 8 tons
What It Ate: Tree leaves
Where: Argentina
When: 112 million years ago



Maria Mora, Age 9
Florida



MY.SCI

Spotlight

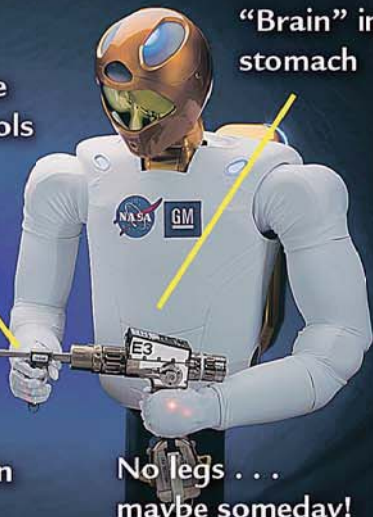
Robonauts

Engineers have invented space-traveling robots that can work side by side with astronauts.

5 cameras
inside head



Hands
work the
same tools
that
people
use.



“Brain” in
stomach

Each arm can hold 20 pounds in
any position in Earth gravity.

No legs . . .
maybe someday!

Solar Cells

How do solar panels get their energy from the sun?

Manav Singh, Age 6
Pennsylvania

A solar panel is made up of many small solar cells. Each cell uses light to make electricity.

We see electricity at work every day. When a person turns on a lamp, electrons move through the cord and light up the bulb. That flow of electrons is electricity.

The solar cell uses light to make electrons move. The cell is made up of two different layers that are stuck together. The first layer is loaded with electrons, so the electrons are ready to jump from this layer to the second layer. That second layer has some electrons taken away. It is ready to take in more electrons.

When light hits an electron in the first layer, the electron jumps

to the second layer. That electron makes another electron move, which makes another electron move, and so on. So the light started a flow of electrons, or electricity.



These cars get their power from the flat solar panels on top. Standing with each car is the team of high-school students who designed, built, and raced it in the 2010 Solar Car Challenge.

Photos: Robonauts courtesy of NASA, Try This! by Guy Cali Associates, Inc., Solar Cells courtesy of the Solar Car Challenge.

Try This!

Bobble or Sink?

Fill a bowl with water and gather some small things, such as a coin, pencil, cork, and piece of fruit. Make your best guess whether each object will sink or float. One by one, place each item underwater, then let go. Why do some things float and others sink?

See the answer below.



Answer — Things that sink are denser than water. One object is denser than another if it has more matter, or mass, in an equal amount of space. A piece of sandstone is denser than a potato of the same size and shape. An object that's denser than water pushes the water out of the way and sinks to the bottom. Something that's not as dense as water also pushes down, but water keeps slipping down underneath it, buoying it up.



Stumped?
The answers to
this puzzle are on
HighlightsKids.com.

Tug-of-War Fun

By Rocky Fuller



In this big picture, find the heart, hamburger, shovel, ladder, screw, tea bag, banana, ladle, mug, worm, drinking straw, wrench, and funnel.

Want a challenge?

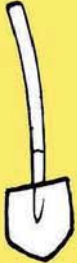
Fold back this page to hide the picture clues.



heart



hamburger



shovel



ladder



screw



tea bag



ladle



banana



mug



worm



drinking
straw



wrench



funnel

BONUS!

Can you also find the magnet, pencil, envelope, and fishhook?

ha ha hee ha Jokes hee hee ha ha ha

Cooper: Did you hear about the mouse that fell off a shelf into a soda?

Ava: Ouch!

Cooper: Don't worry—it was a soft drink.

Cooper Saye, California

A teacher asked her students to draw cows eating grass. One student drew a cow on the paper with no grass. The teacher asked, "Why didn't you draw any grass?"

The student replied, "The cow ate it all!"

Natalia Kidder, Kansas

Mom: Do you want the right half of this cookie?

Ezra: Sure—I certainly don't want the wrong half!

Ezra Paul, Pennsylvania

A book never written: *How to Read Novels* by Paige Turner.

Paige Martin, Mississippi

Camp counselor: How did you get that horrible swelling on your nose?

Jimmy: I bent down to smell a brose.

Camp counselor: There's no *b* in rose.

Jimmy: There was in this one!

McKayla Cothern, Texas

"Knock, knock."

"Who's there?"

"Dishes."

"Dishes who?"

"Dishes a nice place to visit!"

Michael Byler, Ohio

Send the funniest joke or riddle you've ever heard, with your name, age, and full address, to

Highlights

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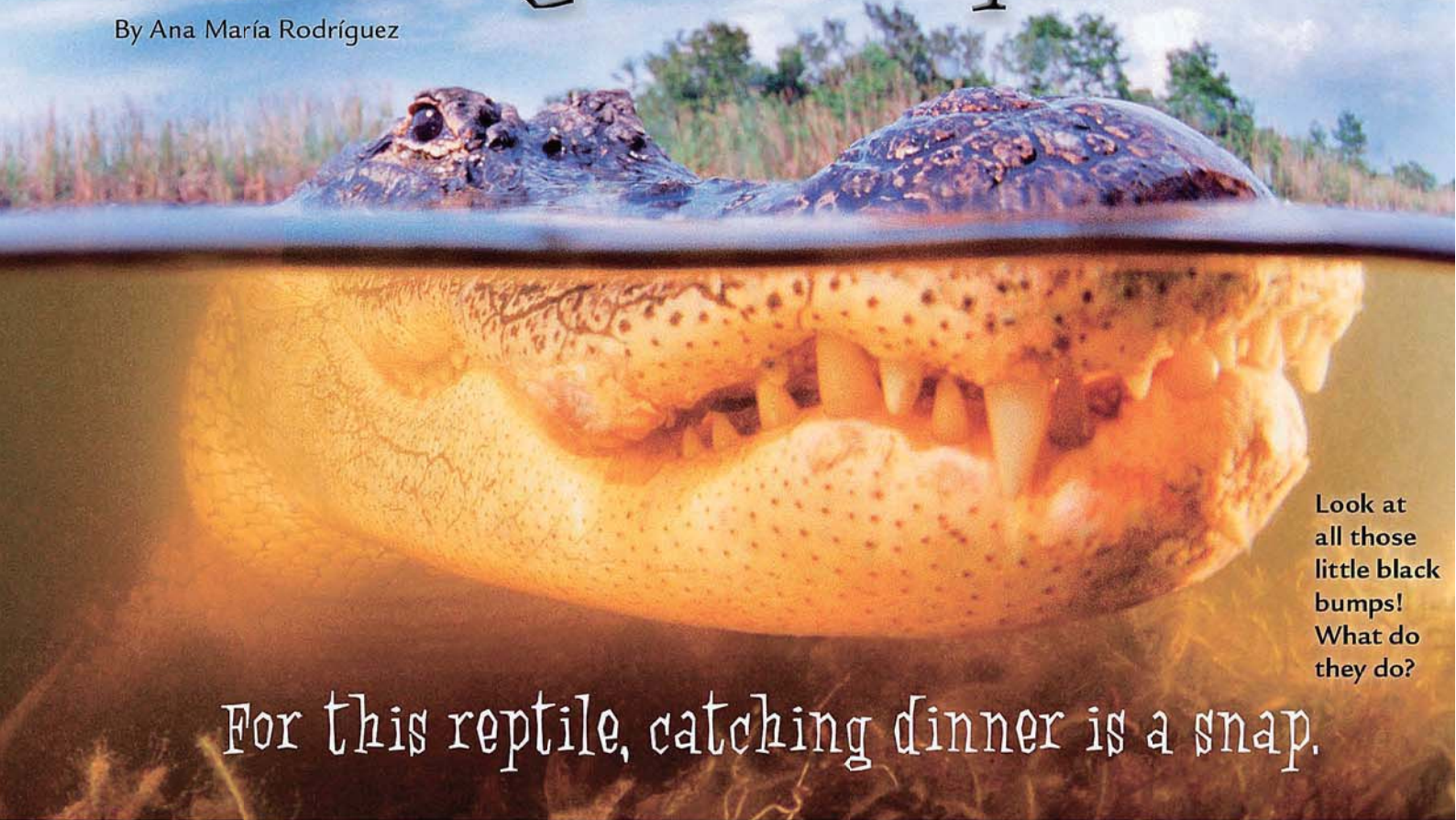
Moonlight

Silver drops
of moonlight
splash
upon the earth.
I smile
and dance
in the puddles.

—Laura Wynkoop

The Alligator's Super Sense

By Ana María Rodríguez



Look at all those little black bumps! What do they do?

For this reptile, catching dinner is a snap.

Dr. Daphne Soares was sitting on the back of an alligator tied up in the bed of a pickup truck.

The gator had moved into an area where a lot of people live. Dr. Soares and her co-workers had caught the gator and were taking it away. Why would she sit on an alligator? "I had no other place to sit!" she said.

Dr. Soares is a scientist. Naturally curious, she spent the ride looking at the reptile beneath her. She noticed many small black bumps on the animal's face, especially along the jaws. "What are those little spots for?" she wondered.

She asked other researchers about the black bumps. No one knew what they were.



Dr. Daphne Soares studied baby alligators.

Dr. Soares began to study them herself. Through her experiments, she learned what the bumps do, and much more. In fact, she discovered one of the alligator's secrets of survival.

The Alligator Hunts

The alligator is a master hunter. It lies just under the water with its eyes, nose, and mouth at the surface. When a bird, mammal, or fish passes by, the reptile turns and snaps its huge jaws. It has taken another meal.

Dr. Soares thought the black bumps might help the alligator sense its prey . . . but how?

To find out, she collected about 30 alligator eggs and took them to Woods Hole

Oceanographic Institution in Massachusetts. After the eggs hatched, she set up experiments to find out what type of sensors the black bumps were. Did they respond to light or electrical currents or even stinky things?

Dr. Soares knew how to find the answer. Humans and other animals have many kinds of sensors, such as the ones in the tongue for tasting, in the eye for seeing, and in the skin for feeling. When a sensor is activated, nerves carry electrical signals from the sensor to the brain. For instance, when you put a piece of chocolate into your mouth, sensors in your tongue (taste buds) send signals to the brain. Then you know how sweet the chocolate is.

Dr. Soares wanted to watch the electrical activity of the sensors' nerves to see what triggered a signal.

She prepared the baby alligators one by one. First, she gave an alligator a drug to make it sleep. Second, she connected tiny electrodes to the sensor nerves. Third, she connected the electrodes to a computer that would show any nerve activity. Then she placed the sleeping gator into a water tank. She was ready to start the experiment.

No Response!

Dr. Soares shone a light on the little black bumps. The computer showed no nerve activity. Next, she exposed the bumps to small electrical currents and then to smelly odors. None of these things activated the nerves.

The bumps did not sense light or electricity or odors. What could they detect?

Dr. Soares found the answer by chance. She accidentally created ripples in the water. At this



To an alligator, ripples in the water may mean lunch.

moment, the computer buzzed, showing signals from the nerves. The sensors had detected the ripples!

At first, Dr. Soares didn't

*The bumps might help
an alligator catch its
prey ... but how?*


believe what she had discovered. But after many experiments, she was convinced that the bumps were pressure sensors that detected small changes in pressure as ripples hit them.

Chomping in the Dark

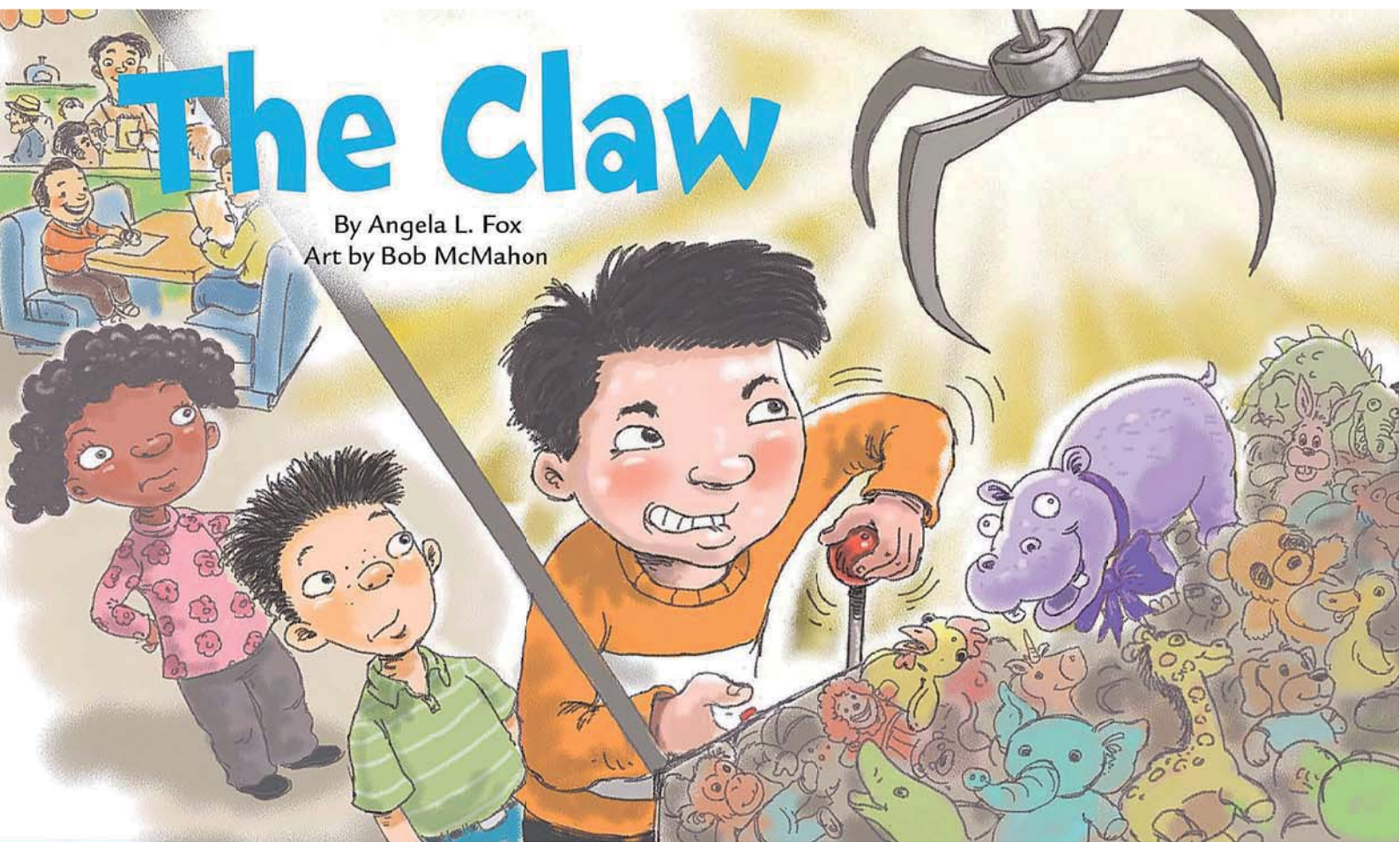
Dr. Soares wanted to know how well the alligator could use its pressure sensors. To find out, she blocked the reptile's other senses. She used petroleum jelly to block the ears, and she turned off the lights. (She used special equipment that let her watch the alligator in the dark.)

Finally, she dropped a single drop of water in the tank. The reptile snapped at the water drop!

Since those experiments, Dr. Soares has also found pressure sensors in crocodiles, which are relatives of the alligator. She also looked for clues to the sensors in fossils of extinct crocodiles. In fossilized jaw bones, she found little holes where nerves once carried signals from pressure sensors to the brain. The holes are just like the ones in modern alligator jaws.

The modern alligator's little black bumps were once a mystery. Now we know that they tell the alligator and its relatives just where and when to chomp. And those little pressure sensors have played that role for a long, long time. 





The Claw

By Angela L. Fox
Art by Bob McMahon

I glance across the restaurant to the table where my family is waiting patiently for our food to come. I'm at the claw machine, fingers pressed, nose squished, glass fogged.

I watch as seven kids in a row put coins into the slot and lose. My palms sweat against the two quarters in my fist.

Another boy tries. The claw lifts a toy by its cardboard tag and drops it into the chute! The boy shouts, "Yes!"

A woman is next. The machine whirs as it swallows her five-dollar bill, then clicks as it adds up her turns.

Her eyes fixed on the claw, she imparts her claw wisdom to me: "It's easier to win when the machine is full.

"You can't always go for your favorite toy.

"Grab the stuffie by its heaviest part, like its head or bottom.

"Grab long toys by the middle. If the stuffie's arms are sewn into a circle, or if it has a bow, aim for the loop."

The woman has three prizes in the chute already. Then she hooks a hippo with a purple neck bow. Oh no! Miss Hippo falls right next to the chute.

"You could get that hippo," the woman says.

Before walking away, the woman says, "You could get that hippo. Good luck."

The woman drops her prizes into the hands of a few kids she passes on the way back to her table.

I drop my sweaty quarters into the machine. Then I poise the claw over Miss Hippo's fluffy bottom. Holding my breath, I push the red button.

The claw drops, hugs the hippo's bottom, and lifts.

I let go of the claw, and Miss Hippo tips into the chute! *I WIN.*

Back at the table, I show my family my prize. They tell me how lucky I am and congratulate me.

My grilled cheese tastes better than ever.

But someone is wailing in the booth behind me.

I peek over the seat and see a tiny girl whose day is not going as well as mine is.

I pick up Miss Hippo and rub her fuzzy purple head. *There are lots of hippos in this world*, I think. As quietly as I can, I slide Miss Hippo onto the seat beside the girl. I sit down quickly and find myself holding my breath again.

I hear a squeal of delight—Miss Hippo is discovered! I listen to happy chatter as the girl makes friends with Miss Hippo.

I win, again! ♣

Dear Highlights

What do you mean when you say that *Highlights* is “fun with a purpose”?

Jasmine (by e-mail)



Our motto, “Fun with a Purpose,” means that *Highlights* is designed to let kids have fun while learning new things or developing skills. For example, we hope that you enjoy reading and answering “BrainPlay” questions—and that doing so helps you develop thinking and reasoning skills without even trying. Our goal since June 1946, when we published the first issue of *Highlights*, has been to help kids learn and grow while having fun.



My sister is always in a bad mood, which gets me in a bad mood. Then we have fights and get in trouble. What should I do?

Tessa, Virginia

It can be hard to be around someone who is in a bad mood. Since you can't change another person's mood, try to focus on what you *can* control: your own mood and reaction.

You might find it easier to stay in a good mood if you leave your sister alone when she feels grumpy. The next time she is in a bad mood, go to a quiet place in your house. Read, exercise, draw,

listen to music—do something that makes you feel happy.

Your parents might have some good suggestions for you, too.



I play soccer, but sometimes I lose. How can I do better?

Jarom, Utah

We can't help you win every time you play, but there are many ways to improve your skills.

To excel in anything, commitment and determination are important. Listen closely to your coach, watch other players, then practice, practice, practice! Professional athletes continue to practice their sports each day,

knowing that if they start to get lazy, they won't maintain or develop their skills.

In addition to practicing with teammates, ask your parents or friends if they will help you, or work on drills on your own.

Learning more about the sport may help. Your coach can likely direct you to some good resources on skill development.



I was moved up a grade a few years ago. Now, almost everyone in my previous grade asks me why. It wouldn't be a problem, except some boys ask over and over just to be annoying. What do I do?

Allison (by e-mail)

Are you sure that they are asking just to be annoying? Perhaps they really want to know.

If you're sure that they are trying to be annoying, you might ignore the questions or respond with a sense of humor. For example, you could say something like “They told me that the lunch lines would be shorter.” Use the situation to turn annoying questions into something to laugh about. A sense of humor can ease the tension in many situations.

When you write to us, we like to write back to you. Please include your name, age, and full address. Mail to

Dear Highlights

803 Church Street
Honesdale, PA 18431

Or e-mail us at Letters@Highlights.com.

Art by Jenny Campbell.

