



The DEAR READER Thrill Space

One summer day several years ago, I stood on a Florida beach with hundreds of other adults and kids. We were gathered to watch NASA's last crewed space shuttle launch.

Because the weather looked iffy, we weren't sure the launch was going to happen, until it did. There was a countdown, then flashes of flame, vibrations, and lots of noise.

For several minutes after liftoff, cheers went up and down the beach, drowning out the sound of the ocean. We all craned our necks to watch the shuttle soar into the blue sky and disappear, on its way to deliver supplies to the International Space Station.

NASA retired the shuttle program after that. Today, it is focused on sending astronauts back to the Moon and to Mars. NASA thinks that someday it might be possible for people to live on the red planet. "Living on Mars" (pages 14–19) talks about some of the questions scientists are exploring as they study that possibility.

Would you live on Mars, if you had the chance? What do you think it would be like? I'd love to hear your thoughts or see your drawings.

Space exploration can tickle our imaginations. I can't wait to see what you are imagining.

Your friend,

nistine

WRITE TO ME christine@Highlights.com

A handmade picture is a good gift.

A day out together. It would be a good way to spend time with just your mom. Emily Sanchez New Jersey

What's a good Mother's Day gift? WOULD

YOU WANT

TO LIVE

ON MARS?

The Moon Speaks: By James Carter

I, the moon, would like it known—I never follow people home. I simply do not have the time. And neither do I ever shine. For what you often see at night is me reflecting solar light. And I'm not cheese! No, none of these: no mozzarellas, cheddars, bries, all you'll find here—if you please—are my dusty, empty seas. And cows do not jump over me. Now that is simply lunacy! You used to come and visit me. Oh do return, I'm lonely, see.

3, 2, 1, **AUJNCH** AUSTRIA STOPAUTS OF A SATERING

Whether it's a spacecraft carrying astronauts or a satellite hitched to a rocket, getting into space requires a launch. Here are a few locations where spaceflights begin.

What's Up at Wallops

NASA's **Wallops Flight Facility** in Virginia has been launching rockets and scientific research missions since 1945, making it one of the world's oldest launch sites. Wallops also manages NASA's Scientific Balloon Program, which launches balloons from different locations around the world. The balloons are as thin as plastic wrap but can lift up to 8,000 pounds of equipment into space. When

fully inflated, the most commonly used balloon could hold a football field inside it!



Polar Launches Pacific Spaceport Complex—Alaska (PSCA),

Atlantis

on Kodiak Island in Alaska, is a great location for polar launch operations. While rockets launched from there often carry satellites and research equipment, private companies are now testing spacecraft that could carry space tourists. PSCA also launches huge balloons that may one day be able to carry people in a capsule to the very edge of space.





Moon Missions and More

All piloted missions to the Moon and space shuttle missions have been launched from the **Kennedy Space Center** in Florida. From there, NASA recently completed a flight test of the Artemis I megarocket as part of a plan to send astronauts back to the Moon in 2024. At the massive Kennedy complex, tourists can learn about spaceflight and, if they time it right, even watch a rocket launch.



National Duckling Month

The ducklings on the grounds at Mountfitchet Castle in England have an unusual protector—a Labrador retriever named Fred. Originally built in 1066, the castle is a national Historic Monument. It has been reconstructed and turned into a museum experience with many animals living on the grounds. Last summer, when a mother duck went missing, Fred began looking after her 15 ducklings. The group could often be found snuggling up to Fred in the sun.

page 38

ALMANAC FUN MAY

th Happy World Laughter Day!

To solve the riddle below, use the fractions of the words. The first one has been done for you.

HOW DO YOU MAKE AN OCTOPUS LAUGH?

Last ¹/₃ of ANT Last ¹/₂ of THEN First ¹/₂ of TIME Last ¹/₂ of LOCK First ¹/₂ of LESSON On this day 70 years ago, Tenzing Norgay and Edmund Hillary became the first people to reach the top of Mount Everest. The dangerous climb involves facing low oxygen levels and extremely cold, unpredictable weather. At 29,035 feet above sea level, Mount Everest's peak is commonly considered the highest point on Earth.

We're on

top of the

world!

it's No

Socks Day!

Celebrate the beginning of warmer

weather by freeing your feet.



Wish a happy MOTHER'S DAY to all the mother figures in your life. You might even make your mom breakfast in bed. Mom-lette, anyone?

4tk

29th

day to remember the soldiers who have died while serving in the military. You can honor them by:

- Visiting a military cemetery or historic site with your family.
- Attending a local Memorial Day parade or ceremony.
- Making a bouquet of poppies, a symbol of remembrance for soldiers and their sacrifices.

 \bowtie



By Julie M. Prince Art by George Caltsoudas

THE GR

he hover-bus rose into the air. shuddered slightly, and flew away from the curb as soon as I sat down next to my best friend, Tera. I felt a tap on my shoulder and turned around.

(but

ALWAYS

Late

My brother, Jared, peered over the seat behind us. "You almost missed the bus again, Aleeya. Can't you ever be on time?"

Jared was always punctual—always early, in fact. I groaned at him and turned back to Tera. "Here's why I was late," I said.

She read the title of the book I held out. "The Great Rain of 2065."

"It's for my history project," I said. "It took forever to decide on a topic."

Tera's eyes widened. "You haven't started vet? The project is due tomorrow." I sighed. "I know." "How will you get the report and the visual aid done tonight?" This time

she used a quieter voice.

My shoulders slumped. "I

forgot about the visual aid." "Too bad you can't go back in time and start your project when it was assigned," Tera said.

"Too bad you can't go back in time."

My mind clicked into overdrive. "What if I can?" I snapped my NeoGum and blew a metallic silver bubble.

Tera looked confused. "Can what?"

"Go back in time!"

In the remaining minutes of the bus ride, I explained my plan.

Tera nodded but looked doubtful. "I quess it could work," she said.

Air brakes hissed as the hover-bus lowered at my stop. I hurried to the front and waved to Tera over my shoulder. I dashed home as Jared lagged behind.

In my room, I dictated three notes to myself before I settled on one to print:

Dear Aleeva. You know the history project that was assigned today? Start on it right away! There's an interesting book all about The Great Rain in the school resource center. Go grab it. Don't miss the hover-bus

after school!

From.

Your Future Self PS: Make the visual aid something awesome, OK?

PPS: Next Tuesday, Zeke will offer to trade snacks with you at lunchtime. Tell him "No, thanks." Dragon chips may sound cool, but they are seriously spicy.

My tongue burned at the memory of those chips.

After dinner, I slipped into the garage. It smelled of mildew and paint. I waved my hand to brush away cobwebs as I looked for Jared's homemade

time machine. It was rid behind the antique mod airplane I'd begged for had never finished.

The time machine was a small metal box. The timer on the front blinked to life as soon as I touched it. When the top of the box slid open, a tinny voice sounded from it, echoing through the garage.

"Welcome to the Time Portal Deluxe. Awaiting



ght	
del	
but	

vour instructions."

I looked toward the door to the house, which I'd left ajar. Satisfied no one had heard the computerized voice, I turned my attention back to the machine. But before I could drop my note inside and set the timer. I noticed another note already inside the box.



(Continued from page 9)

To Future Aleeya. From Aleeya of two weeks ago. I gasped. I was in the future right now! I ripped open the note and read:

Thanks for your instructions about my history project. Unfortunately, I'm busy catching up on homework I should have done last week. You'll have to stop wasting time on silly notes and get to work, or you'll never finish the project before tomorrow!

I stared at the note. I blinked a few times and then noticed the handwritten signature at the bottom. It didn't look like mine. A muffled laugh sounded from behind our hover-van.

"Jared!" I yelled. He stepped out, his shoulders shaking. "How did you know?"

I asked.

"How did you know?" I asked.

"I heard you talking to Tera on the bus, then heard you in your room dictating the note. I put it together. How else could you try to alter time, if not with my fabulous, note-directed time portal?" He took the box and thumped it with his finger. "You know this time machine never really worked."

"It was worth a try," I mumbled. He grinned. "That's what I told myself when I built it." What was I going to do about the project and the visual aid? I blew a spectacular NeoBubble. A thunderous pop resounded through the garage. And then an idea came to me. "Jared . . . mind if I borrow your time machine?"

"I guess not. Why?"

My words rushed out. "I can use it as a prop during the presentation tomorrow. My class can pretend to travel back in time, to 2065. To make the classroom look and sound like The Great Rain, I'll put thunder noises on the sound system, close the auto-blinds, and click the lights on and off."

"Awesome idea," Jared said, handing over the Time Portal Deluxe. "At least it'll be good for something."

"Thanks! If I start my report right away, I might finish my assignment on time after all!" After Jared left the room, I had another thought. I jotted a quick note for my brother to discover in the portal before we left for school the next morning. Dear Future Jared,

Thanks for your help with my project.

You know, your time portal just may work after all—I'm writing to you from yesterday! Strange, huh? From,

Aleeya of the Past 😗

I was in the future right now! I ripped open the note.



I love dirt bikes because I can do tricks like jumps and wheelies. Steven Pinto Jr. Age 8 Pennsylvania

When kids were misbehaving on the bus, my friends Scarlet, Lucy, and Kaylee started a project: "Stop the Fuss on the Bus!" Arianna and I



helped them make posters to remind people. It's going great! Mollie Rabuse Age 10 • Connecticut ABOUT YOU

I have a Great Pyrenees

dog and a husky dog.

The husky is named Luca

and has one floppy ear.

Ev Armbruster Age 8 • Wyoming

Stuff you love, things you tried, and what you wish other kids knew about you.

SEND US YOURS! SEE PAGE 38

Bird-watching is my favorite thing to do. I love birds! We have many in our backyard. Parrots are one of my favorites. I like how they are bright and colorful, and some mimic people! Emilia Bybee Age 10 • California

I love math. It is my favorite time in school. I even get to use the calculator sometimes. Nico Mazzarelli Age 7 • New York



I love languages. I am learning Hebrew. I really like it. Sarah Claudino Tennessee



What I want to tell you is that sometimes I get angry, but I fix it. Lily Ann Russell Age 7 • Virginia



I am a very good builder. In Minecraft, I built 10 bases! It is very fun. And I also like to draw. Austin Robb Age 11 • Texas



Mother's Day Mix-up

Amir, Beth, Caleb, and Destiny made the Mother's Day cards above for their moms and grandmas. Use the clues to figure out which kid made each card.

CLUES

- Either Amir or Caleb made the yellow card.
- Beth did not use green lettering on her card.
- Amir did not make a red card or use red lettering.
- Amir did not use glitter.



How would we live, work, and play on the red planet?

Have you ever thought about the possibility of living on Mars? Have you wondered what your house might look like? What you might eat or wear? Whether you could play soccer?

Dr. Ariel Ekblaw, a scientist at the Massachusetts Institute of Technology, thinks about these questions every day. She's in charge of a group of people who are trying to figure out ways to make our lives work on Mars. The group includes engineers, scientists, architects, and artists.

If people are going to settle on Mars, Dr. Ekblaw says, we will need more than just the basics (food, water, and shelter). We'll need culture—music, art, sports, comfort food, and other things that make us happy.

First, though, we'd need shelter and a way to survive on the surface. If we stepped out of a spaceship onto the red planet without a space suit, we'd die within seconds, says planetary scientist Dr. Pascal Lee. Almost no oxygen, temperatures far below freezing, and toxic dust are only three of the threats to life on Mars. But we can't just chop down trees or make concrete to build houses on Mars.

(Continued on page 16)

In a plan called MARSHA, robots would land on Mars and use huge 3D printers to build homes and work spaces before humans arrive.

> High windows would offer views of the martian alandscape.

What's It Like Inside? Families could have comfortable

CT-

living spaces, such as this one, inside an egg-shaped MARSHA building. The strong egg shape would hold in the air pressure that humans need to survive.







(Continued from page 14)

One option would be to bring everything with us. That would be really expensive—as much as \$5,000 per pound! Another option would be to figure out how to use martian dirt to make houses.

Our Martian Homes

Dr. Ekblaw and her team are inventing one type of potential martian home called TESSERAE. Picture a giant soccer ball made of huge Magna-Tiles. You'd carry the tiles to Mars

in a spaceship. They're strong and lightweight. Once you were in orbit around Mars, you would drop the tiles out of the ship. Magnets in the tiles would make them snap together into a big, ball-shaped living space. On Mars's surface, you could use the tiles to build domes and covered walkways.

Another type of habitat, called MARSHA, could be built entirely on Mars using martian soil and a huge 3D printer. The idea, says architect David Malott, is to send 3D printers

and robots to Mars ahead of people. The robots could then operate the 3D printers, building houses for us before we arrive. Malott leads AI SpaceFactory,

the team that developed MARSHA for a NASA competition. MARSHA buildings are shaped like eggs: they're tall, and wide in the middle. The shape is important, Malott says. That's because the air inside would have to be pressurized the same way an airplane is pressurized. Any sharp corners in the structure could break as the Earth-like pressure inside pushes out against the low pressure of Mars's atmosphere.

Living on Mars on Earth

In a few places on Earth that are rocky and remote like Mars, people are learning how to live on another planet. On Mauna Loa volcano in Hawai'i, six-member crews live in a two-story, dome-shaped habitat for missions that last as long as a year. Their work is part of the Hawai'i Space Exploration Analog and Simulation (HI-SEAS).

Crew members wear full space suits when they go outside. Inside, they sleep in tiny rooms. They eat the way they would in space and grow plants without soil in towers like those that may be used in space. They share weird toilets and take one shower a week (to conserve water).

They also do research. One part of future martian life that the mission focuses on is the

HI-SEAS researchers try out new space



New Space Suits

A current space suit weighs about 300 pounds! Even in Mars's weak gravity, it would weigh more than 100 pounds. "That's too heavy!" says Dr. Pascal Lee of NASA. "You can't do geology; you can't even hike."

Dr. Michaela Musilova of HI-SEAS agrees. "You can't bend over to pick something up, and if vou fell, it would be very difficult to pick yourself up!"

Both teams are developing lighter, more flexible space suits. "A space suit is not just clothing," Dr. Lee says. "It is a wearable spacecraft." It holds in air pressure and blocks out deadly cold, radiation, and meteorites. His group is working to put the heaviest equipment onto a robotic **ATV** that follows the explorer like a puppy.

(77)

On Earth. team members wear space suits to explore the challenges of living on Mars.

The hardened lava of Mauna Loa volcano offers a Mars-like landscape for researchers in the HI-SEAS program.

(Continued from page 17)

mental health of the crew. The team studies challenges we'd face in space. One is being away from friends and family for long periods of time. Another is living in a small place with a group of strangers.

Dr. Michaela Musilova says that her team identifies the kinds of conflicts that happen often. Then they look for ways to avoid them, such as choosing a mix of crew members who are not likely to engage in such conflicts.

Crew members also do the kinds of research that would be done on the Moon and Mars. In their space suits, they study the nearby rocks, landscape, and living things. They work on new technologies for everything from getting

around, to growing food, to developing new space suits.

Creating a **Life on Mars**

To keep astronauts healthy and happy, scientists will need to give them some comfort and fun during the seven-month trip to Mars, their time in orbit around the planet, and their missions on Mars.

Researchers will need to adapt ordinary things for use in space. These things might include musical instruments. furniture, sports, and ways to get around.

Some members of Dr. Ekblaw's team developed musical instruments designed to work without gravity. Other team members are working on different high-performance clothes and shoes.

Robots could go first and build habitats for us.

And we'll definitely need new ways to get food in space! Space food right now is mostly freeze-dried stuff or "just-addwater" prepackaged meals.

Scientists are working on ways to grow fresh vegetables and fruits with no soil and little water. They're developing stoves that work in low gravity.

They're also thinking about how soccer, swimming, and other sports may work. Without gravity, everything would be different.

In addition, "on Mars, there's a very limited set of resources. and you're in a very dangerous environment," says Arizona

State University theater professor Dr. Lance Gharavi. "It's really critical that people find ways of working and living together effectively."

He and his teammates in the Interplanetary Initiative group developed a game, called "Port of Mars," to figure out how people can learn to work together while still meeting their own needs.

Dr. Ekblaw says this work will require creative thinkers, including kids. You don't have to be interested in just science or math to participate in the future of space. "We need space doctors, space artists—people who make life in space worth living for all of us," she says.

At the University of Arizona, Dr. Gene Giacomelli began

food and recycle air, water, and waste on other worlds.

a team project that's developing ways for plants to provide

Within your lifetime, you may be able to go to space if you want to—so plan for it! 😗

What Would Our Life on Mars Be Like?

DR. ARIEL EKBLAW

"For the first few decades, it will probably be like an extreme environmental outpost, like Antarctica's McMurdo Station was at first. But over time, as we grow settlements on the Moon and learn more about how to live in those environments and how to keep humans happy, we will start growing those outposts into small towns and maybe eventually cities and societies."

DR. PASCAL LEE

"I think Mars will be like an international park. There might be a research station where rangers live permanently, but other people would come and do research and then leave, as on Antarctica. There would be no families, no kids growing up or going to school. But I can definitely imagine that in the future we'd have regular flights to Mars for tourists. They could spend time in a resort there, like an EPCOT 'city of the future.'"



A. 16





Pour 1/4 cup of water into the jar. Squish the cotton balls with a spoon or spatula handle.

S Repeat steps 1–4, using paint colors of your choice, until the jar is full.

6 Twist on the lid. Decorate the outside of the jar.













YOUR Goofus and Gallant Moments

I felt like Goofus when I erased my sister's drawing. Juliana Ade 9 • New Jersey I felt like Gallant when I Swept the house. Evelyn Age 7 • North Carolina **I felt like Goofus** when I ate all the free samples at the bakery.

Age 9 • Philippines





Bags into Blankets

By Gail Skroback Hennessey

Alyssa Dean, age 12, of Wales, helps to reduce waste by recycling used bags from potato chips (or "crisps," in the United Kingdom). She turns the bags into blankets for people who don't have homes and need warmth. She also donates them to people in Ukraine who have lost homes and possessions in the war. And she offers workshops to teach others how to make the blankets. We asked her to tell us about it.

How did you get started?

I was inspired by a group of people in England who were making crisp-packet blankets for people who are homeless. I learned how and decided to do it too. People donate crisp packets to me, and my mum has a box at work where people can put empty packets for me to use.

How do you make the blankets?

I wash and open 44 packets. I overlap them and iron them together on low heat. Then I fuse them together by ironing clear plastic on top. From cleaning to fusing takes about 1½ hours. Each blanket is waterproof and very light to carry. And the shiny side reflects back a person's body heat to help keep them warm.

Then you give the blankets to shelters and organizations?

Yes, along with socks, a hat, chocolate, and a toothbrush and toothpaste. To hold each set of items, my auntie makes a bag from old bedding.



I used my own pocket money from helping around the house at the start. Since then, I have also started raising money by doing raffles and charity events.

Any thoughts to share with other kids?

I would like to inspire other kids to recycle and care for our environment and to help others too. It is not a difficult task and you feel better for doing it.





All day long, Benny th betta fish darted through his castle. Sunlight dand across his shimmering scales. On the walls out his tank hung crayon drawings from the kids Room 203. "You're the b pet ever!" kids had writt on their drawings.

And then Harold arriv

Harold was soft. He chewed on cardboard ar ate carrots. He could be lifted out of his glass-wa cage, ready for petting.

Benny watched Harole His scales itched with

It was easy to like a

Soon, drawings paper the walls behind Harold cage. Kids shredded car iust for him. Someone brought him a palace with winding tube tunnels. Someone else wrote a so for Handsome Harold.

No one had ever written a song for Benny. Not a lyric, not a story, not even an acrostic poem.

Before Harold came along.



le	the kids in room 203 had
'n	liked Benny just fine.
ced	Benny tried to get close
	to see why everyone
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	Harold's wiggling nose.
in	Benny spat a food-pelle
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	the floor, inching closer to Harold.
	the floor, inching closer

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fore Harold came along, e kids in room 203 had iked Benny just fine.

Once, when the lid was his tank, Benny created hirlpool of bubbles, ding water flooding out he tank and Benny along h it. He thrashed across floor, inching closer Iarold.

pair of fingers lifted tail first, plopped him into his tank, and snapped the lid shut.

Harold hadn't noticed. He was busy eating lettuce.

(Continued on next page)



For days, Benny swam along slowly, his fins dragging. He was lonely.

Then, one evening, his tank took flight. It wobbled across the room. He closed his eyes.

When he opened them, he found himself in a new spot under the windows. Right next to Harold.

Benny narrowed his eyes. He fluffed out his fins. He glared at Harold.

Harold pushed his quivering nose against his glass-walled cage. He scrambled up a tunnel and peered through the plastic.

"You are so colorful," Harold squeaked.

That took Benny by surprise. He fluttered. He spun. He couldn't help waving his beautiful fins. "Thank you," Benny said at last. "I can stay by the edge of the tank. That

way, you can see my colors whenever you want."

"That would be nice," said Harold.

Benny did a double flip. Harold applauded. He slid down the tube and somersaulted. Benny nodded in approval.

"It was lonely here without anyone to talk to," said Harold.

"It was lonely here without anyone to talk to," said Harold. "I was lonely too," Benny admitted. From then on, Benny

didn't really mind Harold. At night, when the kids went home and the custodian's vacuum fell silent, Harold snuffled in his cage next to Benny. It wasn't so bad, having a friend.

And one day, the kids in room 203 made a new sign: *Benny & Harold. Best Class Pets Ever.*

Then Valencia flew in. 😗



5 QUESTIONS FOR A ... By Lavonne Leong

'Ukulele Musician

Jake Shimabukuro talks about music, emotions, and tapping into your creative side.



HOW DID YOU BEGIN PLAYING? I started playing 'ukulele when I was four. My mom taught me a few chords. I would play all the time. Sometimes my parents had to take it away from me so I would do homework or eat dinner!

TELL US ABOUT A TIME WHEN MUSIC HELPED YOU. My parents

YUU. My parents divorced when I was in fifth grade. It was hard to deal with those emotions. Music was good for me because I could put my emotions into the music. You have to have a way to channel your emotions. But the most important thing is to have someone you can talk to.



WHAT DON'T MANY PEOPLE KNOW ABOUT

YOU? Before I was a teenager, I was very, very shy. Even in high school, performing in front of crowds, I refused to have a microphone because I didn't want to talk into it. I'd stay in the background while everybody was in front, singing.





MUSIC? Listening to music is great, but when you make music yourself, you tap into your creative side. As you play, you engage physically, mentally, and emotionally. Doing all three things centers you.

DO YOU HAVE ADVICE FOR KIDS?

I always tell my kids that, for me, the three big pillars in life are to be humble, grateful, and kind. And having a passion in life is so important. When you find something you love doing and want to become better at it, remember these three things: 1. Study. 2. Practice. 3. Make healthy choices.



Cities of the Future

For centuries, people have imagined new ways to live.

By Andrea Silen

This city looks pretty cool. But it isn't a real place—at least, not yet. It's a plan for a futuristic city.

For centuries, humans have been dreaming up designs for futuristic cities. No one has built the perfect one, but the planning helps people think of solutions to current problems and imagine new ways to live. In the late 1400s, inventor

and artist Leonardo da Vinci had ideas for a city that would help solve overcrowding issues. His plan showed different levels connected by stairways, along with wide roads and a complex system of canals. More recently, at the 1964 World's Fair, designers displayed models of an undersea hotel and a city with moving sidewalks and road-building robots.

illaren and

Today's futuristic cities aim to solve modern challenges. Designs might include super skyscrapers, delivery drones, and drought-resistant water systems. They would try to reduce pollution by using renewable energy. People have designed underground cities and cities that float on artificial islands in the sea. When will you get to visit

This image shows a vision for a futuristic city called Telosa. Its planners want it to have energy-efficient buildings, rooftop farms, and everything you'd need within walking distance.

10120

one of these cities? Some are under construction. Others will never be built. But just drawing the designs helps us think about new possibilities. If *you* could design a city,

what would it look like? 👭

29



Watercolor Carrots Eli

Sakura trees

So stunning

The light pink blossoms

Waves of red and pink

Into the palm of my hand

Oliver

Age 11 • California

Goodnight Whispers

Goodnight whispers, soft and low.

Michaela Golden

Age 10 • New Hampshire

descend from the branch

Age 7 • Virginia



Age 8 • Wisconsin



The Tooth

It was so hard and very stuck, But good for me, I was in luck. My mom was there to get it out. "The tooth is gone!"—I gave a shout. **Ellington Williams**

Age 7 • Virginia

Snake

Rocks resting under his chin Light reflecting on his skin He slithers not walks In a gap in the rocks He's alert as a hunter Body huddled up together See the sun in his eyes Trying to hide as he spies Hear him hiss as he talks Peeking out of rocks Feel his blood getting hotter Scales as smooth as water

> Ayan Kolachalama Age 8 • Massachusetts



Lainey Age 11 • Ohio

Me

Nora

Age 11 • New Mexico

Bruno is my hamster **R**unning on the wheel he loves Under the bedding he goes Noisy at night he is Out of the cage he escapes! Julia Age 10 • Missouri

Night at the Seaside

Waves crash and bash. Water bubbles. And dash— Seagull flies by. Fish swimming, going swish. Mountains rising over Trees and patches of clover. Sleepy town, down below. Sun is setting, faded yellow.

Rhett Phares Age 9 • California

A Mom and **Baby Otter Addie Johnson**



Super Pig Liam Carr Age 7 • Colorado



Scarlett Simoni Age 7 • New Jersey

For My Little Brother

Friends come and friends go, but an elder sibling is someone who will never let you go.

> **Zaeemah Khan** Age 8 • New York





EVER WONDER?

This umbrella is making me feel under the weather.

> How do scientists know if it'll be a hot or cold day?

Age 10 • Massachusetts

Predicting something in the future seems as if it would require supernatural powers which doesn't sound very science-y! But there's no magic here. Instead, scientists who study weather use special tools to help make their predictions.

Weather science is called meteorology (MEE-tee-uh-RAHL-uh-jee). That may sound as if it's about studying meteors, but it's not. The name comes from an ancient Greek word and means "the study of things that are up high." And, to study those high-up things, meteorologists put tools up there to help.

One tool is a mini weather station they attach to a weather balloon and launch into the part of the atmosphere above

ours. There, the weather station takes readings on things like air pressure and temperature. What's happening way up there can affect what happens in our part of the atmosphere.

Weather stations are also on the ground throughout the world. They give accurate, real-time readings, which help meteorologists see how weather is changing from moment to moment. Satellites, both far above I think we make a striking team.

Hee Hee

our atmosphere and within it, are other tools that gather data for weather scientists. And radar shows precipitation and where it's moving, as well as wind speed and direction.

Information from these many sources gets fed into supercomputers, which calculate what is most likely to happen next (based on what has happened under those conditions before).

Meteorologists combine all of this with their own knowledge, experience, and expertise to let you know what kind of weather is likely on the way. Since a change in any factor can change the outcome, weather predictions are most accurate for upcoming hours and days, rather than weeks. That's why meteorologists update their forecasts often—and can't tell you today whether it will rain when you're at camp in July!



Art by Jim Bradshaw



ASK ARIZONA

My mom says that all she wants for Mother's Day is to be with family, but my brothers and I want to do something special for her. Any suggestions? -Searching Son in Salt Lake City

How to Freeze Time

By Lissa Rovetch • Art by Amanda Morley

Dear Searching,

Your mother reminds me of mine! Last year, my mom said that all she wanted for Mother's Day was to be together. So we packed a picnic that included a few treats from my mom's favorite bakery, and off we went for a day at the beach.

After we scolded the seagulls for trying to snatch our food, my little sister and brother got to work digging in the sand.

"Hey, you stole my shovel!" Indi velled.

"I didn't steal it," said Tex. "It doesn't belong to you!"

"Yes, it does!" said Indi. "It came with the green seashell pail that Gran and Poppy gave me for my birthday."

"Well, I need it to build my castle," said Tex.

"Well, I need it to build my castle!" said Indi.

"Hey," said my dad, "have either of you heard of a little thing called sharing?" "We'll never finish if

we both have to share one shovel!" Tex complained.

"This might be the perfect time for some creative problem-solving," said my mom.

"Mom's right," said my dad. "I bet that if we put our heads together, we can come up with other things we can dig and scoop with."

"Hmm," said Indi. "I guess these picnic cups could work."

"Brilliant!" said my dad.

"If only there were a way to freeze these moments."



"And this empty potato-salad container could make a pretty good scooper," said Tex. "Great idea!" said

my mom. We found a few more unusual tools and built the biggest, coolest castle creation ever. Once the sand part was done, we decorated it with shells, stones, sea glass, and teeny-tiny sand dollars.

"Now that's what I call teamwork," said my dad. "Wow!" I said, adding a shell to the tippy top of the tallest turret. "We did kind of an amazing job!" "I love you all so much," said my mom. "If only there

were a way to freeze these moments and make today last forever."

My dad held up his phone. "Let's take a photo. Everyone say cheese!"

"A time capsule!" I blurted out.

"You'd better take another picture," said Tex. "Arizona accidentally said the wrong words."

"Yeah, Arizona," said Indi. "The right word to sav is *cheese*, because it makes vou smile when you say it."

"Cheese," I said as my dad snapped another photo. "But listen. I just thought of the perfect way to freeze this moment for Mom! What if we gather some treasures from today, put them in a container with the photo Dad just took, then bury the container somewhere?"

"That's a really good idea," said Tex. "Except if it's buried, the only people who will be able to see it are ants."

"Um. ants are not actually

people," said Indi.

"Nobody will see it until we dig it up on Mother's Day five or ten years from now," I said. "Then, when Mom finally opens it, she'll remember this day, frozen in time, just like she wished!"

Everyone agreed it would be fun to try. We took a bunch more photos, then carefully put some of the shells, stones, sea glass, and teeny-tiny sand dollars into a baggie. We even included one of the cups we

(Continued on next page)



(Continued from page 35)

had used as a shovel and the label from the bakery box.

When we got home, we printed out the funniest photo, and we each wrote about our favorite part of the day. We put the treasures, the photo, and the notes inside a stainless steel water bottle and put the lid on tight. We dug a hole under the apple tree in our backyard.

"When Mom finally opens it, she'll remember this day."

"OK," said my dad. "Are we ready to cover our time capsule with dirt?"

"Wait!" Indi said, running inside the house. When she came out, she was carrying a handful of ice cubes, which she threw right on top of the time capsule. "Indi!" My mom laughed. "Why in the world did you do that?" "Well," Indi explained, "you said you wished you could freeze these wonderful moments, so I

figured a little bit of ice would help!" My mom chuckled. "When you put it like th

"When you put it like that, it makes a lot of sense!"

So, dear Searching, the time-capsule idea turned out to be a really fun present for our whole family. If you're still looking for a Mother's Day gift, I highly recommend giving it a try. Just one thing, though: you can probably skip the ice part!

Ciao for now, Arizona

'Are we ready to cover our time capsule with dirt?"





Answers **INSIDE FRONT COVER Short Circuit**



PAGE 4 **World Laughter Day** With TEN TICKLES.

PAGE 13 Mother's Day Mix-up 1. Beth. 2. Caleb. 3. Destiny. 4. Amir.

Exploration Industry and Reveals Lady 2021. Mike Guwer J, 2022 Storages 2001 (egs) of Telosa; 37: Johnathon Lightle, except (hand) iStock/Getty Images Plus, Sisi Liu. *Photo credits*: page 1: Heidi Ross; 3: (top) Shutterstock/Robert Hoetink, (bottom left) NASA, (bottom right) DARPA; 4: (duckling) iStock/ Getty Images Plus/bagil998, (dog with ducklings) South West News Service

Media Group; 5: (footprint in sand) iStock/Getty Images Plus/Travel Wild

(flowers) iStock/Getty Images Plus/neirfy, (explorers) SuperStock/Alamy

Stock Photo; 12: (iPad) DigitalVision Vectors/Getty Images/mikimad, (parrot) Shutterstock/Tracy Starr; 17: (right) and 18-19 (top) Dr. Michaela Musilova; 19: (inset) courtesy of The University of Arizona Controlled

Environment Agriculture Center, Tucson, Arizona; 20-21: Rich Brainero Studios; 27: courtesy of Jensen Communications/Photographer: Sienna Morales; 33: Rich Brainerd Studios; 37: (jeans and shirt) iStock/Getty Images Plus/Prostock-Studio, (pizza slice) iStock/Getty Images Plus/ diane39, (child on monkey bars) E+/Getty Images/Boogich, (movie clapper Stock/Getty Images Plus/Koya79, (girl) iStock/Getty Images Plus/Jeka33, (cow) iStock/Getty Images Plus/FooTToo; 39: © Harry Walker/Comedy Wildlife Photo Awards; 41: (goat) iStock/Getty Images Plus/Linas Toleikis.

Jokes and Riddles

Why are robots never afraid?

nerves of steel. Because they have

Kyleigh California

What does an avocado use to communicate?

.eiklet-eice. Arcturus Texas

What do you get from a pampered cow?

Spoiled milk!

Artemis Oregon

How do leopards change their spots?

Kenna Byman Washington

Where do butterflies sleep?

On cater-pillows.

Eunice California

A book never written: *I Love This Book* by Paige Turner.

Alie Pelli Wisconsin

TEACHER: "Use this book wisely, Bobby. If you do, it will do half your work." BOBBY: "Great! I'll take two."

Elizabeth Indiana

What isn't a cantaloupe able to do?

iədolə ז, ערט **Luc** Age 10 • Connecticut

Wacky Captions



LAUGHS FROM YOU

MOM! I NEED

Age 10 · New Jersey



One day, me and my dogs, Bruno and Basil, were playing tug-of-war. Basil and I went one way, and Bruno tricked me by pretending to go the way I went—then he turned around and took a shortcut. It was so funny!

Eddie B. Age 9 • Washington

Funny But True

In class, I sit next to Joseph. One day, I told him how many minutes were left until recess. He pretended to think seconds were minutes, minutes were hours, hours were days, etc. So now I always say "seconds" to mean "minutes" to Joseph.

Age 9 • California

When my mom and I were both sick, my mom's fish had babies. From her bedroom, I heard my mom say "I have baby fish!" I was like "What!?" Ansley Age 10 • Texas



DEAR HIGHUGHIS

I want to know how to cook, especially cookies. Riley California

That sounds like a yummy goal! You might start by talking to a parent about it. Together you can figure out a plan for how to get started.

If a parent cooks and bakes, you may be able to help out and learn at home. If not, perhaps your school has a cooking club, or your community may have a youth cooking class that would help you develop skills. With a parent's OK, you can also find how-to videos for kids online or at your local library.



I'm terrified of tornadoes. When one comes, what should I do to stay calm? Makelle Georgia

You aren't alone. Many people worry about weather emergencies and what to do about them.

One way to make you feel calmer is to prepare as a family now. With permission, visit https://www.ready.gov/kids/be-readykids. Together, you can find the best places in your home to go in the event of a local tornado warning. Then create and practice a "family safety plan." Like a fire escape plan, this plan helps everyone know what to do in case of an emergency. Being prepared for whatever could occur can help you feel calmer and more confident, rather than anxious and unsure.

Anytime you feel afraid, remind yourself that you are prepared. Then try taking a few deep, slow breaths. Imagine a very relaxing place. Think of all the sights, sounds, and smells there. Anytime you're upset, you can return to this place in your thoughts.

Share your fears with a parent or another trusted adult. They can comfort you and help you handle your feelings.

ADVICE FROM YOU

My dad yells at me when I play sports or make a mistake at home. Any tips?

(by e-mail)

Ask your dad to encourage you instead of yelling. sophie Age 10 • Texas It's OK to make mistakes. Next time, tell him how you feel so you both can find ways to do better.

Age 7 • Hawaiʻi

Write to us at Letters@Highlights.com or by postal mail (see page 38).

TIE-DYE TO GO We're taking

those good vibes with us! We love the convenience of this cheerful BEACH BAG with matching TOWEL and WATER BOTTLE.





OUT OF THIS WORLD

Decoding all the puzzles in **SPACE CODE CRACKERS** is a blast! We think the built-in cipher wheel really makes this book stellar.

Here are some cool things we love this month.

EDITORS

Our family game nights just got wackier with the card game **THAT'S SILLY!** With 750 cards and two ways to play, there's no limit to the laughs!

hts 🕖 👬

That's



Parents, find these products and more at Highlights.com

