Harnessing energy from the ocean

Dino-like dragons?

Time for treehouses
FALLING LEAVES: It’s that time of year again. Trace each leaf’s path to figure out where it lands. Write the leaf’s number in the circle at the bottom of its trail.

Now take the letters from each leaf's path and unscramble them to complete the words on the corresponding line.

1 “___
2 E__ER_T__IN_
3 T___E_I_
4 A_E_O_”
5 E__CLE_IA__ES 3:1
A Copy Sets Sail

BOOM! A ship’s cannons fire a powerful salute. Make way for the Götheborg! (pronounced yeh-tu-BOR-eh) Not the old Götheborg. The new one.

The old Götheborg was an armed merchant ship from Sweden. It sank in 1745. This one is just as big: 197 feet long. That makes it the longest operational wooden sailing vessel in the world. Just like the first Götheborg, it has three masts. Builders invested more than a decade to create it. They built with the same materials and tools ship builders would have used on the original.

The Götheborg and her crew will trace the old ship’s route to Asia. The goal: improve trade relations between Asia and Sweden. Götheborg will visit London, Lisbon, Palma de Mallorca, Athens, Alexandria, Djibouti, Muscat, Chennai, Singapore, Ho Chi Minh City, Hong Kong, and Shanghai.

Whew! Can you find those cities and countries on a map?

Ask a grown-up for permission to track the ship’s progress here: https://www.gotheborg.se/.

At each stop, new crew members will come aboard to help with the journey. Anchors aweigh!

When Fido is . . . a Hyena

A hyena may not be your average house pet. But in northern Nigeria, some men keep the creatures in their homes. They display them at festivals. They even use their dung or saliva to make health remedies.

Abdullahi Jahun comes from a line of hyena men. He learned how to tame and handle hyenas from his father. Now he makes a living from entertaining crowds with his own animal. “This was my job from when I started walking as a child,” he says.

Mr. Jahun captured his hyena from the wild. He takes it to events such as festivals, coronations of traditional rulers, and durbars. A durbar is a type of parade where horsemen in colorful costumes show off their skills.

Hyenas can be quite dangerous to people. But that doesn’t stop hyena men. Mr. Jahun even allows children to sit on his hyena’s back.

This model shows how cargo was stored on merchant ships.
Beacon the Lifeguard

Beacon the Newfoundland is training to become a lifeguard. She has some big shoes to fill. But no worries. Those puppy feet will grow . . . and grow . . . and grow. Soon the dog will weigh up to 130 pounds. "That dog will be able to pull them in," says her trainer Greg Wilfert. "And it's going to be pretty impressive when she does it."

The little Newfie is learning from the best. Mr. Wilfert has worked as a lifeguard at the beach in Scarborough, Maine, for 50 years in a row. He has watched many swimmers grow up. Some kids he lifeguarded are grandparents now!

Newfies love water. They are strong swimmers, and, like St. Bernards, are highly trainable for rescue work. In some ways, dogs make better lifeguards than people do. They can easily jump into water and paddle out to swimmers fast. Dogs are strong. Just one can pull a boat full of people to shore.

Got Lithium?

Near California's dying Salton Sea, super-hot liquid is drilled from deep underground and collected in vats. The vats connect to tubes. The tubes spit out . . . dishwater? Nope. Not dishwater. Lithium.

The Salton Sea isn't a sea. It's a lake—or, it was a lake. Once, tourists and fishermen flocked there. But storms in the 1970s destroyed resorts and marinas. Floods wrecked homes. Then drop by drop, the lake started to evaporate. Fish died. With fewer fish to eat, fewer birds migrated overhead. Many people left too. Towns near the Salton Sea felt deserted. Now the Salton Sea is nearly completely dried up.

Lithium is an ultralight metal that can be extracted from salt water. It's also an important ingredient in rechargeable batteries. People will pay for it. Will this lithium bring money back to the Salton Sea area?

Lithium could be a new beginning for Salton Sea.

More news shorts online everyday at kids.wng.org
Meet *Dunaliella salina*. It’s a type of algae... EXTREME algae. *D. salina* flourishes in salt pans. *Salt pans* are wide, flat, dried out places. These spots are too salty for most life. Salt draws moisture from cells. It can literally suck the life out of most creatures. Salt pans also receive a lot of ultraviolet (UV) radiation from the Sun. UV radiation can damage or kill many living things.

Yet *D. salina* survives. Where does its superpower come from? The algae carry high levels of a liquid chemical called glycerol. They’re also loaded with vitamin A. Glycerol protects from salt. Vitamin A fends off UV damage. Lesson learned! People put *D. salina* in makeup and face creams. This helps protect from Sun damage and keeps skin moist.

Some creatures can survive harsh conditions. Some love harsh conditions. Snow? Salt? Heat? Volcanic acid? If these microorganisms could talk, they would say, “Bring it on!”

We have a name for these critters: *extremophiles*. Extremophiles are microscopic creatures that live in extreme conditions. Scientists watch these amazing, tiny...
organisms. They wonder, What makes them so hardy? What can they teach us that will help humans? You may have heard of water bears, or tardigrades. These favorite extremophiles look part chubby bear and part one-eyed alien. No water? No worries. Tardigrades survive. Antarctic cold, 300-degree heat, a lack of oxygen, and even radiation don’t stop these itty-bitty beasties. They live all over Earth: on mountaintops, deep in the ocean, and maybe even in your driveway. In 2007, scientists launched tardigrades into space. The water bears were exposed to cold, airless space full of radiation from the Sun and stars. A person in that situation would explode! But tardigrades lived. Later, they multiplied. How might they be useful? Biologists suggest putting their tiny genes into crops to help them survive drought. And could tardigrades help us find a way to use vaccines without refrigerating them? From single-celled organisms to mammoth blue whales, God created an Earth teeming with life. Some parts of Earth are hard places to live. They’re extremely sunny, salty, cold, acidic, or pressurized. Still, wherever scientists search—ocean depths, volcanic springs, solid ice—they find flourishing organisms. After all, God made His creation “very good.” In the next story, you’ll meet some more small living things with extreme survival skills. Can they give us ideas to protect, diagnose, and treat humans? For by Him all things were created, in heaven and on Earth, visible and invisible. —Colossians 1:16

Some Cyanobacteria lie beneath frozen lakes in Antarctica. Brrrr! But cyanobacteria seem to like the cold. They need very little heat and light. The cyanobacterium is a hard-core microorganism that can capture the Sun’s energy even deep in an ice-covered lake. Cyanobacteria use a purple pigment to absorb green light. Researchers use cyanobacteria for dietary supplements, fertilizer, food production, food colorings, fuel, energy, and medicines.

Some like it hot. Thermus aquaticus likes it almost boiling! These bacteria live in thermal springs. As temperature rises, T. aquaticus stays in shape. It’s still intact above 140°F! That’s the temperature required to pull apart and copy DNA in order to study it. T. aquaticus’ heat-resistance allows scientists to copy strands of DNA. This quality really came in handy this year. Scientists used T. aquaticus to develop a common type of COVID test.
Can you grab a wave and turn it into electricity? Oscilla Power, Inc. (OPI) knows that’s possible. For starters, the company is working on a wave-powered, floating science station.

These days, there are more than 8,000 marine platforms set up in oceans around the world. The platforms serve different purposes. Some are bases for underwater exploration. Others are connected to oil and gas drilling rigs. Still other floating platforms are science stations. Researchers use these marine platforms for all kinds of experiments. But to do so, they need energy to power lights, equipment, and communication devices.

Solar panels or batteries provide that power to many floating science stations. But solar panels require maintenance. So do batteries—which also need a source of recharging. Scientists at OPI don’t want to make service calls to their floating science stations. So they have a new plan. They will harness the energy in ocean waves and turn it into usable electricity.

Electricity from waves doesn’t produce waste like dead batteries do. It won’t release dangerous gases into the air like some energy sources do either.

So how will OPI power its floating science station? It starts with a large buoy that floats in water. That buoy is anchored to a heavy plate that hangs under it. A chain of iron-aluminum rods is tethered to both the buoy and plate. As the buoy floats, the ocean’s movement stretches and pulls the rods. They wiggle with energy from the waves. Coils on the rods capture the wave energy. The coils turn the wave energy into electricity. That electricity flows through a cable, where it can be put to work as a power source.

The United States government must think that OPI is on to something smart. The United States Department of Energy gave the company a grant. A grant is a gift of money. The government funds big, helpful ideas. Collecting energy from ocean waves and turning it into clean, constant electricity is definitely a BIG IDEA!
CATCHING SOME WAVES

Ocean waves form when wind passes over the surface of the sea. Scientists see the movement. Where there is movement, there is energy. So scientists wonder how ocean waves can be useful.

People around the world use electricity every day. What if ocean waves provided some of that electricity? After all, over 70 percent of the Earth’s surface is covered with water. That means waves are moving and cresting all around the world, all the time. That’s a lot of unused energy!

An ocean wave carries kinetic energy. That is energy of motion. According to the United States Office of Efficiency and Renewable Energy, the energy in one wave could power an electric car for hundreds of miles. Scientists are figuring out how to take a wave’s energy and turn it into electricity.

Here’s what they are up to:

First, the wind blows across the ocean. This creates waves. The strongest waves are in deep water. Researchers plop a platform, or floating science station, into that deep water. The platform has tools on board to grab energy from the waves that crash into it. Machines take that wave energy and turn it into electricity. The electricity can be stored in batteries. Or it can be used right away by running it through power cords to provide electricity for the platform’s equipment. Electricity is also sent back to shore through cables that are attached to the platform.

OPI’s ocean platform is called Triton. It has five important parts.

1. SURFACE FLOAT: A bright yellow buoy that floats on top of the ocean’s surface
2. REACTION RING: A heavy ring attached to the surface float, also called a heave plate
3. TENDONS: Three tight rods that connect the surface float to the reaction ring
4. COILS: Iron-aluminum spirals on each rod capture wave energy and turn it into electricity
5. CABLES: Electricity-conducting cords that carry electricity back to shore

Developing technology helps us understand waves and the energy they carry better than ever before. Psalm 107:25 says, “For He commanded and raised the stormy wind, which lifted up the waves of the sea.” God stirs up ocean waves. He also has the power to calm them. Psalm 107:29 says, “He made the storm be still, and the waves of the sea were hushed.”

Quiz

1. What are extremophiles?
   a) organisms that can talk
   b) scientists who study microorganisms
   c) blue whales
   d) microorganisms living in extreme conditions

2. Which are algae?
   a) cyanobacteria
   b) Thermus aquaticus
   c) Dunaliella salina
   d) Sulfolobus

3. What did the government give OPI to help the company research wave energy?
   a) research tools
   b) science textbooks
   c) a grant
   d) a boat

4. What is kinetic energy?
   a) stored energy
   b) energy of motion
   c) heat
   d) static electricity

5. Why did OPI not want to use solar panels or batteries on its floating science platforms?
On his lunchbreak near Richmond, Australia, Len Shaw uncovers a jawbone fossil. What a find! What did this giant bone belong to? A dragon! Well... almost a dragon.

Mr. Shaw dug up his fossil over 10 years ago, in 2011. At last, researchers have determined what creature the fossil came from. The jawbone belonged to the largest kind of pterosaur ever found in Australia.

A pterosaur isn't a dinosaur, even though its name sounds like one. It's a different type of extinct reptile. A big one. The pterosaur had wings. And when this one spread those wings out, they spanned nearly the length of a school bus!

Led by Tim Richards, researchers studied the fossil. They say the flying reptile had a skull over three feet long. About 40 sharp teeth nestled inside. According to Mr. Richards, this pterosaur likely plucked its daily dinner from the ocean. “It wasn’t built to eat broccoli,” he tells The Guardian. Some of the teeth were over an inch long, designed to grip something large.

The researchers gave the fossil a name: Thapunngaka shawi. That name comes from an indigenous Australian language. (Indigenous people lived in a place before others came to settle there. The Wanamara language once spoken in Australia is now extinct.) The pterosaur’s name combines the word thapun (pronounced ta-boon) and ngaka (pronounced nga-ga). These Wanamara words mean “spear” and “mouth.”

Mr. Richards says this is an exciting find because pterosaur fossils are so rare. What makes them uncommon? Pterosaurs had light-weight bones built for flying. These likely decayed quickly. Or perhaps many pterosaurs died over water and were gobbled up by beasts in the sea. No bones left to discover!

Imagine this savage-looking pterosaur soaring above you. Mr. Richards says, “It would have cast a great shadow over some quivering little dinosaurs somewhere.”
Close your eyes and imagine a dragon.

Okay, open!

What was your dragon doing? Guarding treasure like Smaug in The Hobbit? Overseeing a princess locked in a castle? Roasting enemies with fire breath? Was it flying? Did it look like a big dinosaur with wings? Did it have a snakelike shape similar to the dragon floats in Chinese parades? Or was it as cute as Toothless from How To Train Your Dragon?

The book of Job discusses a creature called Leviathan. Could these words from chapter 41 describe your dragon too?

“Around his teeth is terror.”

“His back is made of rows of shields. . . . One is so near to another that no air can come between them.”

“His sneezings flash forth light. . . . Out of his mouth go flaming torches. . . . Out of his nostrils comes forth smoke.”

“In his neck abides strength, and terror dances before him.”

“His heart is hard as a stone.”

Scientists do not agree about dragons. Did a version of these fantastical creatures ever live as real animals? Or did people just think they did? One thing is sure: Even if dragons didn’t exist in real life, they certainly existed in the stories of people groups from all over the world. Could pterosaurs be the source of these thoughts and stories? Maybe. Maybe not.

Some societies associate dragons with the serpent in the Garden of Eden and the enemy dragon in Revelation. In other words: Dragons are bad guys. Other cultures have totally different ideas about dragons. In China, dragons are thought to bring good fortune (or luck). Their thunderous voices and wavelike bodies represent rain for crops.

The ancient Chinese concept of a dragon was many animals combined into one. A dragon had the horns of a stag (male deer) and the forehead of a camel. It had the neck of a snake, the belly of a sea-monster, the scales of a carp, and the claws of an eagle.
Mexico City is a loud, busy place. Car engines roar, horns honk, people shout. There were no engine noises there 500 years ago. But there was an ancient Aztec city on the same land. On the five-century anniversary of its collapse, people in Mexico City want to remember. The Aztecs are part of Mexico’s heritage.

The Aztecs were once a powerful, ruling force in the area that is Mexico today. The empire’s capital city was called Tenochtitlán (TEN-ock-TEET-lahn). It was established in 1325 on swampy land. The Aztecs transformed that boggy ground into a magnificent city. Aztec builders constructed Tenochtitlán on manmade islands in Lake Texcoco. The city’s center held a temple complex. It had pyramids and a king’s palace.

“Tenochtitlán was a huge city. It had public institutions, a whole system of government, public servants, schools, public services. It was a totally organized city,” says Raúl Barrera Rodríguez. He’s an archaeologist at Mexico’s National Institute of Anthropology and History.

Aztec society was sophisticated for the time. Politics, intelligence, and art were important. So were their gods—and war. The tribe entered battle often. Tragically, the Aztecs sometimes offered their enemies as human sacrifices to their bloodthirsty, imaginary gods.

In 1521, the Spanish conquistador (conqueror) Hernán Cortés and his army took over Tenochtitlán. Hundreds of thousands of people died in that epic battle. The Aztec empire fell. Many of the natives who survived the fighting died from diseases that the Spanish forces brought with them. The Spanish built their city—Mexico City—on the Aztec ruins.

Fast forward to today. A painted line on Mexico City’s streets will show the ancient boundaries of Tenochtitlán. A life-sized replica of the Aztecs’ twin temples stands nearby. Women sell corn tortillas and amaranth (an ancient grain) sweets on city streets, just as they would have in the 1500s. Street vendors offer artwork and artifacts. These remind people of the type of life that once thrived in Tenochtitlán. Plaques mark historical sites in the city. They serve as gentle reminders of a not-so-gentle history.
Conquest. War. Bloodshed. Death. The Aztecs were a savage tribe. They did many things that did not please God. They adored false gods. They murdered people. They prized power but not human life. Today, it is popular to revere (or honor) all native cultures. But not all cultures act honorably. All humans are capable of evil. And terrible evil came out of the Aztec empire.

The Aztecs built magnificent temples to their gods. But their religion was ghastly and false. They believed that they owed a debt to the gods. That debt could be paid only with human blood. They sacrificed other humans at their temples. They thought this gruesome act would keep the gods happy. And they thought happy gods would let them remain powerful. “It was a deeply serious and important thing for them,” says John Verano. He’s an anthropology professor at Tulane University in Louisiana.

The Aztecs were good at many things. They had advanced engineering skills. They built artificial islands as a foundation for Tenochtitlán, their capital city. They constructed pyramids and temples. The Aztecs also developed a complex calendar system. Education was highly valued by the Aztecs. So were art and agriculture. Much good came from the culture of this fierce warrior tribe. But so did much evil.

In Psalm 106, the psalmist remembers God’s faithfulness to His people, even when they rebelled. The Israelites worshiped a false god. “They exchanged the glory of God for the image of an ox that eats grass.” (verse 20) “They served their idols, which became a snare to them.” (verse 36) The psalm also says that the Israelites poured out innocent blood that they too sacrificed to the pagan idols. What a horror!

But God remembered His promise of faithfulness to His people. Verse 45 says, “For their sake He remembered His covenant and relented according to the abundance of His steadfast love.” God did not give the Israelites the punishment they deserved for their evil actions. He knew that their sin would be covered by the blood of their (and our) Savior Jesus Christ.

God created all people with dignity. That means He made everyone worthy of respect and honor. But still, we must be careful never to call evil good. God created the Aztecs—like all people—in His image. He made them worthy of bringing Him glory. But they destroyed other bearers of His image. They chose evil over good.

**Quiz**

1. savage  
   a) fantastical  
   b) fierce  
   c) extinct

2. abides  
   a) dwells  
   b) flashes  
   c) thunders

3. sophisticated  
   a) advanced  
   b) fake  
   c) primitive

4. dignity  
   a) different feelings  
   b) a strong attitude  
   c) God-given worth that is due respect

*Answers on page 5*
Jay Warren loves LEGO bricks. He loves them so much he has built a LEGO city over several tabletops in his game room. This fall, all that LEGO love paid off.

“It’s a hobby,” Mr. Warren tells NBC DFW, “one that I’ve had since I was a kid.” Now all grown up, Mr. Warren has an important day job. He’s the Director of Communication and Legislative Affairs for the city of Arlington, Texas. One part of his job is to explain to Arlingtonians how the city spends the dollars they pay in taxes. Sounds boring, right? It would be. But Mr. Warren used LEGO to do it.

City videographers stopped in at Mr. Warren’s house. They found the whole LEGO city ready for filming. A lot of the work was already done! They used stop motion animation to make a four-and-a-half-minute LEGO video explaining the city budget. (Two things: A budget is a plan for spending money. Stop motion animation is a filmmaking technique where you move objects just a tiny bit at a time, photographing each movement. When you string the photos together, it looks like the objects are moving on their own.)

Lights, camera, action!

“I love my city,” says a LEGO lady in the video. While she speaks, we get views of Mr. Warren’s city: streets, cars, buildings, a playground with flowers and trees, a café, the inside of a library, and more. “It has great parks for my kids, safe neighborhoods with friendly people, good libraries, and smooth roads.” Then LEGO lady asks, “How does all that get done?”

“Good question,” answers a LEGO man. “Keeping a city running takes a lot of work, and it starts with the annual budget. Just like with LEGOs, the parts of the city’s budget come in a lot of shapes, sizes, and colors . . . .”

What must a city budget include? The video shows: clean water, trash pickup, police, road work, and more. A LEGO person drinks from a tiny LEGO cup. Itty bitty garbage trucks pick up trash. A little LEGO police officer chats with a LEGO citizen. A teensy LEGO construction worker uses a cute jackhammer to fix the LEGO road. Now that’s fun budgeting!

WHY: Budgeting matters for citizenship on Earth and in heaven. God cares about how we steward what He entrusts to us.
So Many Budgets

Your country has a budget. Your state has a budget. Your town has a budget. Ask your mom and dad: Do they have a budget? Do you?

WHY all the budgets? That's simple. Money is hard to earn and easy to spend. Keeping careful track of where it goes helps it go further.

And God cares where our money goes. He owns all the wealth in the world . . . plus the world itself, of course! He entrusts nations, states, cities, families, and individuals with just a little of His treasure. Their job is to steward what He has given in a way that blesses others and gives Him glory.

Nations: As much as possible, a nation’s government needs to keep its people safe. It also has the task of basic levels of care for everyone. A national budget answers these questions: How much money in taxes will be collected? How will that money be spent? How much will go to the military for people’s protection? How much will be spent on highways? How much will help pay for healthcare? How much will help support people in need?

States: States collect taxes too. This money is spent on schools, health and hospitals, highways and roads, police, courts, and so on.

Cities: Arlington is a good example here. Cities help pay for some of the same things states do: schools, hospitals, and roads. They also pay for commonplace things that make life safe, smooth, or fun. This includes fire departments, water, sewers, and parks.

You: Imagine something you would really, really like to buy but don’t really need. How do you know whether you can afford it?

You have to know: How much money do I have?

As soon as you know that, you can subtract three other numbers:

• How much money do I need to spend on necessities?
• How much money should I give to church or others in need?
• How much money do I want to save?

Can you afford the thing you want? Yes—if it costs as much as or less than the amount you have left. If not, keep saving up!

Families: Your family keeps track of earned money. This is used for electricity, heat, internet, food, giving to church, clothes, doctor visits, insurance, cars, house payments or rent, vacations, savings . . . and much more! Good budgeters notice where every dollar goes.

Remember: God doesn’t give us things mainly so we can have them. He gives to us so we can share with others—just like He does with us!

Let the thief no longer steal, but rather let him labor, doing honest work with his own hands, so that he may have something to share with anyone in need.

— Ephesians 4:28

If you don’t have a budget to manage your money, consider asking your parents to help you set one up.
Where is it? A time capsule dating from 1887 is supposed to be inside the pedestal—or base—of a Virginia Civil War statue. Historians felt sure it was there. But so far, no one has found it.

The search began after crews removed a statue of Confederate General Robert E. Lee. Workers spent about 12 hours moving huge stones from the base. They dug through dirt, looking for the time capsule. A newspaper article from 1887 suggests Civil War trinkets are tucked inside the capsule. The paper says the container holds a photograph of President Abraham Lincoln.

The General Lee statue stirred up people’s emotions. The famed Civil War figure owned slaves. He fought for the South in the Civil War. The huge monument honoring General Lee stood in Richmond, Virginia’s capital. Many people felt divided over its place there.

Some say the statue was a painful reminder of a dark time. Before and during the war, some of God’s image-bearers—slaves—were used and often abused by others—slave owners. That’s why one side wanted the statue taken down.

Others think the statue helped people remember American history—even the bad parts. That side wanted it to stay.

Government leaders removed the statue when people began fighting over it. It was lifted off its base in early September. They left the pedestal in place—at least for a time. It was covered in graffiti by protesters. Two weeks later, two miles away, a new statue went up. It celebrates emancipation. That means freedom for slaves.

Crews working at the Lee statue used ground-penetrating radar to search for the time capsule. They also had metal detectors and other construction equipment. Though they didn’t find it, workers hid a new time capsule inside the pedestal. The modern capsule contains items from the year 2021. They include an expired vial of the Pfizer COVID-19 vaccine. Capsule contents also document the way people felt about race-based disagreements too. That is one way to remember history without giving it public glory.

Good time capsules keep contents safe for decades. They can be fun and informative to open later! Psalm 77:11 tells us to remember what God does in our lifetimes. It says, “I will remember the deeds of the Lord; yes, I will remember your wonders of old.”

General Lee Time Capsule

Crews could not find the Civil War time capsule in the pedestal . . . but they hid a new one in its place.

The new statue celebrates emancipation.

Why? Sometimes there is a tension—or a stress to manage—between remembering history well and treating its less honorable events rightly.
History’s Reminders

As you look back at things that happened long ago, some events may remind you of difficult times. Others may be happy memories. All things can help us recall that God is the perfect author of history.

National holidays mark events that changed history. Countries around the world joyfully celebrate their independence. Some holidays are somber, like Veterans Day in November and Martin Luther King, Jr. Day in January. History marks good things like women winning voting rights in 1920 and the first Moon landing in 1969. Around the world, statues, monuments, and signs note important past events.

Virginia’s statue of Robert E. Lee was a reminder of the Civil War. During that war, the United States split into North and South. The two sides fought over slavery. They also argued over the government’s power. More than 200 years later, the Lee statue made some people upset. The statue stood 60-feet high in a public place in Virginia’s capital city. That seemed to say that maybe slavery wasn’t so bad. General Lee owned slaves. But still, he was an honored hero. That’s why Virginia’s governor decided to take the statue down.

Henry Marsh III is a civil rights attorney. He was the first black mayor in Richmond, Virginia. He thought the Lee statue should be removed.

But removing it doesn’t mean people should forget Robert E. Lee. Mr. Marsh thinks people can still remember other parts of General Lee’s life. For one, he was president of Washington and Lee University. Tradition says the Southern general also had faith in Jesus.

The Bible tells us how God is faithful to His people year after year. Hebrews 11 shares stories of real people like Noah, Abraham, Rahab, and Gideon. God used them to write His story. None of them lived perfect lives. All were sinful people. But their faith made them righteous in God’s sight.

Sometimes it’s hard to believe and remember what we can’t see. That’s why museums and monuments can be helpful. They are tools to remind us of important events. Psalm 105:5 says, “Remember the wondrous works that He has done, His miracles, and the judgments He uttered.”

1. What is a budget? 
   a) total collected taxes  
   b) total city expenses  
   c) a person who works for the government  
   d) a plan for spending money

2. Which budget includes the military? 
   a) the family budget  
   b) the city budget  
   c) the individual budget  
   d) the national budget

3. What is missing from inside Virginia’s Robert E. Lee statue pedestal? 
   a) Civil War coins  
   b) ancient stones  
   c) a time capsule  
   d) General Lee’s sword

4. Who is the author of history? 
   a) citizens  
   b) Robert E. Lee  
   c) people  
   d) God

5. Think about the things you want and need in your life today. Make a list of those things. Ask a parent to help you attach a cost to each. What would a monthly budget look like for you?

Answers on page 5
Stephen Warner is another technician working on the flooded organs in Michigan. He also does regular organ maintenance. Each year, Mr. Warner spends the weeks before Easter and Christmas helping churches get their organs in tune. “The pitch of organ pipes can change with the temperature,” he explains.

Have you ever seen and heard a pipe organ in action? Huge pipes bellow out powerful sounds. “The pipes themselves are singing,” says Mr. Warner. “You have a sense of majesty. The sound of the organ seems like it came from a long time ago, and it’s going to be here after we’re gone. It can go from an absolute roar to a whisper—and everything in between.”

That seems like a fitting instrument to praise God with, don’t you think? God was here before us. He will be here after us. He is endlessly glorious! — Psalm 90:2

David Hufford is no ordinary repairman. His mission: get the music flowing again from a soggy, 63-year old pipe organ.

What happened to the old organ at St. Paul Evangelical Lutheran Church in Grosse Pointe Farms, Michigan? A flash flood happened to it. During a big storm, the church filled with more than seven feet of water. The flood damaged the church’s boiler, electrical system, elevator, and more.

“Just astounding,” says Mr. Hufford, thumbing through photos of the flooded church on his phone. But Mr. Hufford isn’t going to fix the boiler, electricity, or elevator. He’s a pipe organ expert. Not many people know how to do what he does. Right now, the city needs him.

“You might think that the pipe organ that sits high in the loft would be spared,” says Reverend Tim Pelc. He works at another flooded church nearby. “But the blower system, which supplies air to the bellows, is located in the basement.”

The system at Reverend Pelc’s church was “wiped out” by water. A piano now leads the hymns. Other area churches have the same problem. So does the nearly century-old Senate Theater in Detroit, home of a Mighty Wurlitzer organ.

Time to get to work! Mr. Hufford explains: A blower and other intricate parts of an organ are commonly installed in lower levels of a building. They serve as the “lungs of the organ.” He finds the organ’s wind reservoir. If this wooden box doesn’t work, the organ doesn’t work either.

“Uh oh. The box is totally soaked. “It’s going to the dump,” says Mr. Hufford. “It’s done.”

The cost to fix the organ? About $12,000. The value of David Hufford’s unique knowledge? Too much to guess.

An Old Instrument . . . Played for an Everlasting God

Stephen Warner is another technician working on the flooded organs in Michigan. He also does regular organ maintenance. Each year, Mr. Warner spends the weeks before Easter and Christmas helping churches get their organs in tune. “The pitch of organ pipes can change with the temperature,” he explains.

Have you ever seen and heard a pipe organ in action? Huge pipes bellow out powerful sounds. “The pipes themselves are singing,” says Mr. Warner. “You have a sense of majesty. The sound of the organ seems like it came from a long time ago, and it’s going to be here after we’re gone. It can go from an absolute roar to a whisper—and everything in between.”

That seems like a fitting instrument to praise God with, don’t you think? God was here before us. He will be here after us. He is endlessly glorious!

Before the mountains were brought forth, or ever you had formed the Earth and the world, from everlasting to everlasting you are God. — Psalm 90:2
**Pipe Organs 101**

Just how DO pipe organs work? Pipe organs are large and complex. Their creators design them specifically for the buildings they will be played in. Most organ parts are hidden. Did you know organs have thousands of pipes? A behind-the-scenes forest of pipes can be found in a room-sized organ part called the organ case. Each can produce only one note. Small pipes play high notes. Large pipes play low notes. Some pipes sound like flutes. Others sound like trumpets. Some pipes are wooden. Some are metal. These materials affect the sound produced.

How do you play this massive machine? Your hands play the keyboards. An organ keyboard looks like the one on a piano. But large organs have up to five keyboards (called manuals). When you push a key, a valve opens. That lets air into the pipe, making a sound.

Your feet play the pedals, which do not act like pedals on a piano at all. Piano pedals change the sounds of the notes you're playing with your hands. Organ pedals are just another set of keys for the feet to play.

That seems like plenty for an organist to think about! But an organist also needs to remember to control the stops. “Stops” are knobs beside the keyboards. They turn sets of pipes on and off. Does the organist want to play soft or loud sounds? Flutelike sounds or brassy sounds? The organist uses the stops to choose between many instrument voices.

It’s no wonder the composer Amadeus Mozart called the organ the king of instruments. Playing an organ is something like playing an entire orchestra!
How do you make a map of all the world’s underwater coral reefs? With a few million satellite images! Researchers looked at more than two million such images of the Earth. They used those photos to create a helpful tool. It’s a complete coral reef map.

The Allen Coral Atlas is named after late Microsoft co-founder Paul Allen. The online map is the first global, high-resolution collection of its kind. It is a great reference for people working to save fragile reefs. But the map isn’t just for conservationists. It’s for everyone who’s curious about coral! The Allen Coral Atlas is free to view on the internet.

A coral reef is an area in the ocean made up of thousands of tiny animals called coral polyps. But a reef is also home to hundreds of thousands of other animals. A healthy coral reef literally teems with life.

The team that created the Allen Coral Atlas wants the information in it to help preserve reefs around the world—for the health of the whole world. “Our biggest contribution in this achievement is that we have a uniform mapping of the entire coral reef biome,” says Greg Asner. He’s the managing director of the atlas. Hundreds of people worked to gather the images that were used to create the reef map. Everyone shared information about reefs so that satellites could be programmed to focus on the right areas. Some of those images showed coral reefs that had never been mapped before. In fact, the Allen Coral Atlas maps about three-quarters of the world’s reefs for the first time ever.

The project began in 2017. That’s when a researcher in Hawaii helped come up with the idea. Ruth Gates teamed up with Mr. Allen and Mr. Asner. Their goal was to use technology to locate and document all the reefs in the world. Both Mr. Allen and Ms. Gates passed away about a year after the project began. But people kept the project going. “Ruth would be so pleased, wouldn’t she?” says Mr. Asner. “She would just be tickled that this is really happening.”

The sea is His, for He made it, and His hands formed the dry land. — Psalm 95:5

The Allen Coral Atlas shows us how many beautiful and necessary coral reefs God scattered across the vast oceans of the globe.
Making and Using the Maps

What does a coral reef look like? Does it waft in the waves? How colorful is it? Do fish get lost hiding in a reef? Are there reefs in every ocean? Those are just a few of the questions you might have about reefs. The creators of the Allen Coral Atlas also asked questions. The collection of reef maps is for anyone who is curious about sea coral. After all, a team of curious people made it!

Scientists, technologists, and conservationists worked together on the project. Mapping all the coral reefs in the world was a lot of work. Everyone had to stay organized. People worked on one of five different teams. The Vulcan Inc. team managed the project. The Planet team provided high-resolution satellite photos for each map in the atlas. The University of Queensland in Australia helped produce the maps. Arizona State University developed technology to read the satellite images. The National Geographic Society provided field scientists and divers for the project. Their team spent time underwater, exploring the reefs in person.

For four years, all of the teams looked at satellite images. They shared ideas. They talked about new discoveries. Computers helped use the millions of satellite images to create detailed maps. Map by map, the teams pulled together the completed Allen Coral Atlas.

Some maps in the collection show healthy, colorful reefs. Others show bleached reefs. (Bleaching happens when pollution or too-warm ocean water damages corals. When corals are hurt, they lose their bright colors.) One section shows marine habitats in coral reefs. Another shows protected reefs.

The creators of the Allen Coral Atlas hope it will be used to help restore and protect coral reefs around the world. Coral reefs aren’t just beautiful ocean structures. God made them useful. Reefs keep sea water clean. Each reef houses thousands or millions of sea critters like fish, shrimp, worms, crustaceans, sponges, mollusks, eels, and more. Reefs form barriers that protect shorelines from storms. They slow down powerful waves. The new atlas will help many people enjoy and protect these vibrant underwater habitats.

1. intricate
   a) basic
   b) complex
   c) wide open

2. massive
   a) miniscule
   b) huge
   c) extinct

3. reference
   a) a phone call
   b) a reminder
   c) a source of information

4. waft
   a) move gently
   b) sink
   c) wash away

Answers on page 5

A shark swims by a coral reef near the Marshall Islands.
Science and nature are strange sometimes. Take horseshoe crabs, for example. They look like helmets with long prickly tails scurrying along the sea floor.

On the inside, they are just as unusual. Bright, milky, blue blood flows in their bodies. That sounds like science fiction—not fact!

Believe it or not, that unusual blue blood is critical for medical progress. It’s the only natural resource in the United States that is used to make sure injectable medicine isn’t contaminated. Clean needles depend on the blue blood of horseshoe crabs.

Every year, thousands of horseshoe crabs arrive in laboratories. Scientists safely collect their blue blood. They take just enough blood so that the crabs aren’t hurt. Then the crabs go back home to the ocean. Many of the crabs come from the coast of South Carolina.

What makes horseshoe crab blood blue? And why does that matter? The blood is blue because it has copper in it. It is also filled with valuable proteins. Scientists use those proteins to check medical products for bacteria.

Back in the 1950s, scientists discovered that horseshoe crabs have a strong immune system. That means their blood is really good at fighting off bacteria. Scientists used the blue blood to develop the LAL test. That test makes sure medical materials and supplies are free of bacteria. Horseshoe crabs are the only domestic source of the LAL test’s key ingredient.

Foster Jordan is senior vice president of Charles River. That company tests most of the world’s medical devices. The company uses crab blood to make sure things like IV bags, dialysis solutions, and even surgical cleaning wipes are safe to use. “If it touches your blood, it’s been tested by LAL. And, more than likely, it’s been tested by us,” says Mr. Jordan.

Synthetic (man-made) alternatives aren’t widely accepted by the healthcare industry. That’s why scientists depend on crabs for medical supply cleanliness.
The head is called the prosoma. It is round and U-shaped, like a horseshoe. It’s the largest body part. The brain, heart, mouth, nervous system, largest set of eyes, and some glands all exist inside the prosoma. (What it doesn’t have in there? Teeth!) It has 10 legs that crush food before passing it to the crab’s mouth.

The horseshoe crab’s belly is called the opisthosoma. It looks like a triangle. It has spines on the side and a ridge in the center. This part of the body has muscles for moving and gills for breathing.

The horseshoe crab’s third body part is the tail. It’s called the telson. It is long and pointed and looks very dangerous. But it is harmless.

God made horseshoe crabs helpful to people. Hurray for horseshoe crabs!

What Am I?

I have 10 legs and 10 eyes, but no teeth. My body looks like a helmet with a long tail. That tail comes to my rescue when I’m clumsy. It flips me over when I get stuck on my back.

Inside my body, my blood is blue. It is really good at fighting bad bacteria. A long time ago, people figured out how to use my blood to help doctors.

My animal family lives on the ocean floor. We feed on worms, clams, and algae. You might find us on sandy beaches during a full Moon. That’s when we come out of the water to breed and lay eggs.

We lay thousands of eggs, but most are gobbled up by birds, reptiles, and fish. Some eggs hatch tiny larvae. (Each looks like a “mini-me” but without a tail.) The larvae head back into the ocean to grow into adults.

Surprise! I’m not a crustacean. I’m more like a scorpion or spider.

What am I? A Horseshoe Crab!
MOO LOO

You’ve heard of litter training a cat, housetraining a dog, and potty training a toddler. What about stall training a cow?

As it turns out, cows can be potty trained . . . pretty easily!

Scientists put the task to the test. Eleven out of 16 cows learned to use the “MooLoo” when they had to go. The project took only 15 days. Some kids take quite a bit longer to potty train.

“The cows are at least as good as children, age two to four years, at least as quick,” says Dr. Lindsay Matthews, an animal behavioral scientist at New Zealand’s University of Auckland.

Why potty train a cow? Because, say researchers, it’s good for the planet.

Urine (pee) contains nitrogen. When mixed with feces (poo), it becomes ammonia. If that mixture gets into nearby water, it taints it with nitrates (a type of chemicals). It also creates the airborne pollutant nitrous oxide.

And cows do pee a lot. A single cow can produce about eight gallons of urine every day!

Now: How do you potty train a cow? At the lab in Dummerstorf, Germany, researchers mimicked a toddler’s training. They put cows in a pen. When a cow urinated in the right spot, it got a reward: a sweet liquid of mostly molasses. Cows have a sweet tooth. But if a cow urinated outside the MooLoo after the training, it got a squirt of cold water.

Next, the researchers tested their progress. They let the cows roam about the indoor facility. When the cows had to urinate, 11 of them pushed into the pen, did their business, and got their sweet rewards.

Mission accomplished! Except . . . the researches didn’t train cows to do number two in the MooLoo. But Dr. Matthews says he wouldn’t be surprised if cows could learn that too.

EVERYTHING BUT THE MOO

Cows—gotta have ‘em! These beasts are good for more than milk and steaks. God made them walking suppliers of all sorts of useful things. It is said that 100% of a cow can be used—everything but the moo.

Don’t have a cow! Have the part that’s used in yogurt, ice cream, marshmallows, canned meat, and Jell-O. Gelatin comes from cow bones and hide. Some margarine is made from a mixture of vegetable oils and cow fat. It is often used in cookies and candies.

Bones and hooves are ground up and used in dog biscuits and animal feed. Guess where bone china dishes come from. Yep—cows again!

Makeup and face creams contain glycerin from tallow (cow fat). Ingredients for perfumes come from cows too. And they smell better than old Bessie ever did.
**QUIZ**

1. What makes horseshoe crab blood blue?
   a) salt  
   b) copper  
   c) blue dye  
   d) seaweed

2. Which body part of the horseshoe crab gave it its name?
   a) the tail, or telson  
   b) the belly, or opisthosoma  
   c) the prosoma, or head  
   d) the legs

3. What chemical pollutant can cow waste create?
   a) bleach  
   b) ammonia  
   c) carbon dioxide  
   d) oxygen

4. What is rennet?
   a) a beef enzyme  
   b) a kind of film  
   c) a cow disease  
   d) gelatin

5. Describe the process scientists used for teaching cows to use one area for their waste.

---

More than 100 important drugs come from cows. Insulin for diabetics is made from a cow's pancreas. Drugs to treat allergies, anemia, leukemia, respiratory diseases, and thyroid problems come from cows. Heparin and thrombin are drugs used to control blood clotting. Rennet, a beef enzyme, helps infants digest milk. (It's also used in turning milk into cheese.) Some cancer research depends on ingredients from a cow's blood and lungs.

It takes guts to play the violin—cow guts, that is, for some strings. Film requires gelatin made from cow bones. Film is still used in motion picture production. So it took a cow to make... Godzilla?

It is He who made the Earth by His power, who established the world by His wisdom.  
— Jeremiah 10:12
Aisha Khurram says, "The only thing people are thinking about is how to survive here or how to escape," as her country falls to an Islamist terrorist group called the Taliban. The government of Afghanistan has crumbled. Terribly sad changes are coming to Afghanistan.

In 1 Corinthians 14:33, Paul says, "God is not a God of confusion but of peace." It helps to remember that truth, as life seems to be falling apart in Afghanistan.

Before taking over Kabul, the capital, the Taliban captured one part of Afghanistan after another. Families fled homes. The Taliban took control of the towns. Men carrying the white and black flag of the Taliban walked through empty city streets. Residents hid indoors.

For Aisha and millions of other Afghans, there is no way out. Land borders are closed. Embassies are shut. There is a feeling that "everybody turned their back on the Afghan people," says Aisha.

Many United States military veterans who bravely served in Afghanistan watched in sad shock as America withdrew its troops from the country. Some Afghans who had helped the United States got to evacuate. But many were left behind—including some Christian Afghans. "Cast your burden on the Lord, and He will sustain you; He will never permit the righteous to be moved," says Psalm 55:22. Even in the darkest moments, God promises that He does not abandon those whom He loves.

The Taliban is an evil regime. It has ruled Afghanistan in the past. It’s likely the group will take away many freedoms that Afghans have had in the last 20 years. Under the strict Islamic law that the Taliban honors, women have very few rights. They may not show their faces in public. Girls older than eight may not go to school. Women are not allowed to work. The Taliban harshly punishes anyone who disobeys.

We know who created each person in Afghanistan. And we know how loving and merciful He is. "Though there is much we don’t understand, we can trust that God is in control. While we wait on the Lord on behalf of the people in Afghanistan, we can pray."
The young people of Afghanistan know war too well. They’ve grown up in a country torn apart by fighting. Sadly, war has long been a way of life in the midst of a tribal culture in this country. People groups in Afghanistan clash with one other. They have, ever since the region was settled.

Afghanistan sits at the crossroads of Central and South Asia. It’s a landlocked country, surrounded by Pakistan, Iran, Turkmenistan, Uzbekistan, Tajikistan, and China. As people groups have moved in and out of this region, there have been wars over power, boundaries, and resources such as oil. Today, a group called the Taliban wants to control the laws, beliefs, and actions of all Afghans.

God gave Afghanistan some of the highest and most rugged mountains in the world. The mountains are dangerous and hard to navigate. That harsh terrain creates excellent hiding spots for fighters. It makes the country difficult to govern.

Some Afghan villages are built like castles into the mountains. Like fortresses, they help to protect the people who live in them. The majority of Afghans will fight for their entire lives. They have nowhere else to go. “Deliver me, O Lord, from evil men; preserve me from violent men, who plan evil things in their heart and stir up wars continually,” says Psalm 140:1-2.

According to Operation World, Afghanistan is one of the least reached countries in the world when it comes to the gospel of Jesus. It’s home to approximately 160,000 Muslim mosques. But there isn’t a single church building in the entire country. That’s because Afghanistan is an Islamic country.

Muslims are people who practice the religion called Islam. They call their god Allah. The Taliban is an extreme group of Muslims who have taken control of Afghanistan. Taliban members do not know Jesus Christ. They demand that people obey their strict laws and worship their false god. It is especially hard for women and girls in Afghanistan now. There are many extra rules for women.

The Bible is clear that one day all fighting will cease. That day must be hard for Afghans to imagine. But Revelation 21:4 gives us hope that day is coming. “He will wipe away every tear from their eyes, and death shall be no more, neither shall there be mourning, nor crying, nor pain anymore, for the former things have passed away.”
Ooo, treehouses. Don’t you just want to climb up in one and hide out?

So did Jessica Brookhart. When an acre-sized slice of land in Gold Hill, Colorado, came on the market earlier this year, Mrs. Brookhart snapped it up for $80,000. Why? It came with a treehouse, the perfect place to hang out with her husband and two young sons.

“I had never been inside it,” she says, “but had admired it from a distance.”

The man who had owned the land built the treehouse with materials from a recycling center. The structure can fit two adults and two children. It has no bathroom or running water. There’s an outdoor potty and a camping stove for cooking. So, yes, visitors to the treehouse will be “roughing it.” But they’ll also get a view from the treehouse windows of Longs Peak and the Continental Divide.

“Since I was a little girl, I was obsessed with little mini-houses, or sheds and treehouses,” Mrs. Brookhart says. She sometimes rents the treehouse out online. Lots of people want to use it.

Treehouses of all kinds are experiencing a renaissance. (That’s a fancy way of saying many people are becoming interested in them again. The word literally means “re-birth.”) Some kids-at-heart got to act out their treehouse dreams when grounded at home during the pandemic. Some hired professionals to build stylish ones. The fanciest of these are like hotels. They may have black walnut or cherry wood floors, 100-year-old barn siding, fine linens and throw pillows, indoor plumbing, air conditioning, heat, and showers. No wonder treehouses now have their own section on the Airbnb vacation rental website!

Most treehouse builders, though, think basic is best. They made makeshift treehouses in the backyard to escape the four walls of home . . . without spending millions.
Many kids use treehouses to play house. But once, most treehouses were real houses. People all over the world used them. Wherever there were trees, there were treehouses. Why? Treehouses kept people and their food up high. There, they were safe from wild animals and floods. In Southeast Asia, families came and went from their treehouse homes by riding in baskets up and down the tree trunks.

As time went by, people used treehouses more for fun, fashion, and even faith. In the Middle Ages, monks’ treehouses were spots to get away from the world and pray. During the Renaissance, people built treehouses for decoration in their gardens. Today, brave visitors can stay in treehouse Airbnbs for a night or two—but rare are those who actually want to live in them.

The name of the Lord is a strong tower; the righteous man runs into it and is safe. — Proverbs 18:10

**ENGLAND** A princess sits in the Treehouse at Pitchford. She’s watching foxhounds through the window. She’ll one day become Queen Victoria of England. The treehouse she enjoyed is today the oldest treehouse in the world. It has been hanging around in its large-leaved lime tree since at least 1692. At first, the tree did all the work of holding up the treehouse. Now metal supports and wires make sure this great-grandfather of a treehouse stays up.

**FRANCE** In 1848, restaurant owners in Le Plessis-Piquet, France, took their cues from the treehouse described in *The Swiss Family Robinson*. Tourists came from nearby Paris to eat among the branches of tall chestnut trees. The idea got popular. More restaurants popped up, complete with treehouses and swings. Sadly, none of the restaurants remain—just some leftover boards hanging from the trees.

**INDONESIA** Amusement aside—some people groups do still live in treehouses. To protect themselves from rival tribes, the Korowai tribe in Indonesia builds treehouses up to 140 feet in the air. Stilts hold up their homes nestled among the branches. They can be reached by wooden ladders. To count as a treehouse, a structure must make use of trees for support. The Korowai homes count. A Banyan tree forms the central pole of a Korowai treehouse. The bark of sago palm makes up the floor and walls, and the roof is made from leaves.

---

**QUIZ**

1. evacuate
   a) add
   b) stay put
   c) leave a place of danger

2. cease
   a) continue
   b) begin
   c) end

3. makeshift
   a) professional
   b) do-it-yourself
   c) newfangled

4. amusement
   a) necessity
   b) enjoyment
   c) attraction

Answers on page 5
Tornado Strikes Dairy Farm

Will the price of milk go up now? A tornado slammed into Wellacrest Farms, the largest dairy in the state of New Jersey. It took only three minutes to pass by, but the storm caused significant damage to the farm owned by Marianne and Wally Eachus. Two of the farm’s massive grain silos toppled. The tornado destroyed barns and demolished equipment. Hundreds of cows were trapped under debris (deh-bree). Milking crews saw several cows carried off by the twister. Other cows are still missing. Thankfully, no people on the farm were injured. The community is pitching in to help restore the dairy. People donated money, time, and tools. The cows have food and water. Remarkably, the milking operation was up and running again in just a few days.

Overdue Book Returned

A 1967 copy of the book Coins You Can Collect was mysteriously returned to a library in Pennsylvania. It had been checked out a half-century ago! According to The Citizens’ Voice in Wilkes-Barre, Pennsylvania, the book arrived at the Plymouth Public Library along with a $20 bill. A note was attached to the volume. It explained that a little girl had checked it out in 1971. The girl’s family moved away from Plymouth—taking the book along. Decades later, the book is home, along with some money for its L-O-N-G overdue fine. This just goes to show that it’s never too late to try to make things right! Both the letter and the book will be on display at the library.

Cows Get a Lift

Up, up, and away! These injured cows got a helicopter ride in Switzerland. The herd spent its summer high in the Swiss Alpine meadows. When it was time for the cows to come home, a few couldn’t make it on foot . . . or hoof. About 12 had been mildly injured. To make it easier on them, those cows got a lift down the steep mountain. The chopper operator set each down gently on firm ground near the Klausenpass mountain pass. The rest of the 1,000 or so herd-mates joined the air-lifted few after walking down on their own four legs. Each year in September, the cows parade through Switzerland’s Urnerboden area. Villagers celebrate their return.

More news shorts online everyday at kids.wng.org
The famous Notre Dame Cathedral in Paris, France, is finally stable. Now rebuilding can begin. In April 2019, a shocking fire tore through the beloved landmark’s roof. The cathedral’s tall spire collapsed in the flames. France wants to save its cathedral. Workers began cleanup the very day after the fire. But no one was sure if the rest of the structure was safe. Did the fire damage walls and buttresses (supports that come off the side of the cathedral and help hold it up)? It took more than two years to be sure: The building is safe. Next, companies will place bids on reconstruction. That means they will offer a cost to fix it. One or more will be chosen to do the work. The cathedral’s organ will be one of the first things to be repaired. Work on it should begin this fall.

Bringing Back Woolly

Long ago, heavy-footed woolly mammoths tromped across the Arctic tundra. Where they grazed, they kept plant life under control. Their broad feet compacted snow. That helped the terrain to stay frozen. Scientists today believe the extinct woolly mammoths played an important role in preserving the tundra habitat. Some of those scientists want to bring back the woolly mammoth. They have extracted bits of DNA from frozen mammoth remains. By combining that with the DNA of modern elephants, those scientists believe they can produce an elephant-mammoth hybrid in a lab. It wouldn’t be a pure woolly. But it would be “indistinguishable” from the real thing, they say. That means no one could tell the new from the original just by looking. What do you think? Should they bring back an animal that has gone extinct? Why or why not?

Top Toy Finalists

It’s that time of year again. A dozen toys are up for a spot in the National Toy Hall of Fame. All of the 2021 finalists have “greatly influenced the world of play,” says Christopher Bensch, of the National Toy Hall of Fame. Past winners include a simple cardboard box, Crayola crayons, and marbles. Some of this year’s finalists include Cabbage Patch Kid and American Girl dolls, sand, a toy fire engine, a piñata, and the board game Settlers of Catan. The three toys that receive the most votes will enter into the Hall of Fame. Winners will be announced on November 4, 2021. You can watch for the winners at www.toyhalloffame.org.
AZTEC SYMBOL CHECK: Each of the blocks below is made up of ancient Aztec symbols. (Read about the Aztecs on pages 12 and 13.) Complete the pattern by finding the missing piece. Circle the correct number. Hint: None of the symbols is repeated in a row or column.

The Aztecs did not have an alphabet, but they used symbols. Here are the five symbols’ meanings:

- Xochitl = flower
- Cuauhtli = eagle
- Miquitzli = death
- Calli = house
- Ocelotl = jaguar