

Super

Magazine

Mind Matters

Amazing Facts About the
Brain's Awesome Abilities



On the cover:
The Crevasse by
Edgar Müller

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About Your Brain

Your brain is mighty! It does many jobs all day long—and it does them all at once. Your brain lets you think, feel, and move. What else can your brain do? In this issue, find out ways to keep your brain working its best. Discover what your brain is up to as you sleep. Learn about kids whose brains have super abilities. Then explore art that tricks the mind. Read on to fill your brain with facts and fun!

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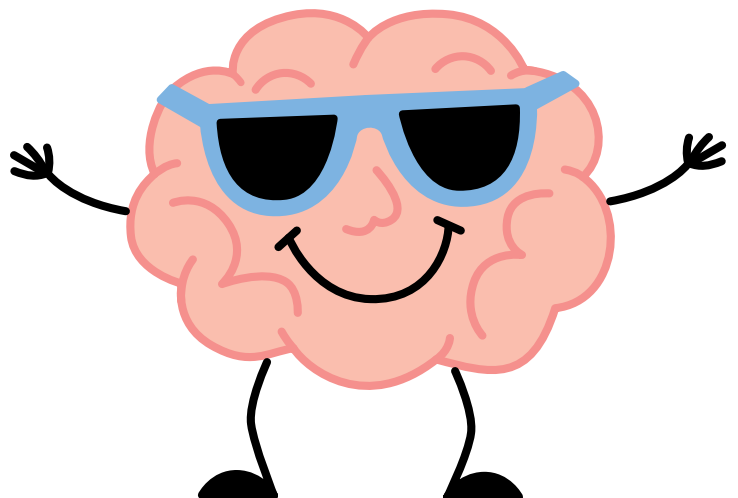
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Wise Wrinkles

Did you know the human brain has wrinkles? Here's why: The outer part, or surface area, of the brain does most of the work. The more surface area a brain has, the more work it can do. And wrinkles let more surface area fit inside your head. How?



Think about a sheet of paper. Its front and back are its surface area. When the paper is flat and smooth, it cannot fit in your closed fist. If you crumple the paper into a ball, you scrunch its surface area. It still has the same amount. But now that amount fits in your fist! This is how wrinkles fit more brain surface in your head.



Feeling Colorful

Feelings form in the brain, but many things can affect how and why feelings form—even the colors you see! Each person may feel a different way about different colors. But some colors create common feelings, like those listed here. See if you agree with any!



Red can make you feel energetic.



Orange can make you feel playful.



Yellow can make you feel cheerful.



Green can make you feel hopeful.



Blue can make you feel calm.



Bright Ideas

Your brain can make electricity! Your brain has many cells. Some are called *neurons* (say it: NUR-onz). These cells send messages to each other all the time. They never stop. Each neuron also makes a tiny bit of electricity. The electricity from all your brain neurons put together could power a small light bulb!





Brain Freeze

Have you ever been eating ice cream when *ouch*—your head hurts? Why does this happen? You have blood vessels in your mouth and throat. Contact with cold makes these blood vessels shrink. Your body then sends a rush of blood to them. This makes the blood vessels larger again. It can also cause pain. Blood vessels in your mouth and throat branch up into your head. So the pain is felt there too!



Mummy Minds

Long ago people in Egypt thought the dead could come back to life. So they took steps to stop a dead body from rotting. This made the dead body into a mummy. The person's organs were removed—except the heart. Ancient Egyptians thought the heart was needed in the afterlife. Some of the other organs were thought to be important too. Ancient Egyptians saved them in jars. But they did not save the brain. Why? They didn't think it did anything important!



Mummy coffin



Jar for organs

Smarty Party

July 22 is World Brain Day. It's a good day to celebrate your mind. How? By doing things that help it work better!

Exercise! It helps pump blood to your brain. This perks it up.



Solve fun word puzzles. They give your brain a workout.



Take a warm bath to relax. Relaxing helps your brain tap into deep thoughts.



Listen to music you like. This can improve your memory and learning.

Brain Training

by Ellen Freebus

You know *a lot*—because of your brain! Maybe you can name some things that are good for your brain. You might say healthy foods and sleep. But laughing is good for your brain too. So are other surprising things! Train your brain to be its best.



Laugh

Giggling is good for your brain. It makes you breathe more. This sends extra oxygen to your brain. The oxygen gives your brain energy. And it helps you focus. So take time to laugh! Read funny comics. Tell jokes with friends.





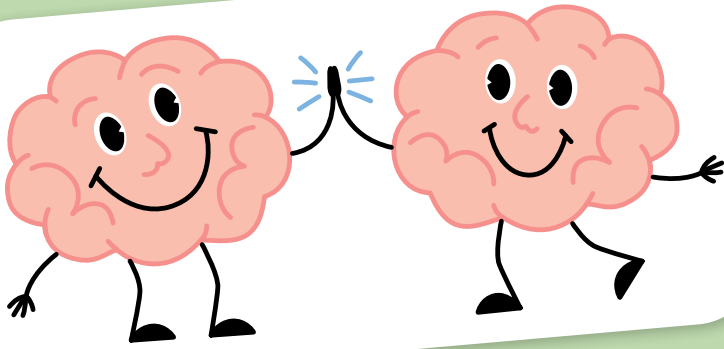
Play

Playing is more than fun. You use your imagination when you play. And you solve problems. These activities work your brain and make it stronger. This is a good reason to play each day!



Get Some Sun

Did you know sunshine can help you feel happy? Being in sunshine tells your body to make serotonin. Serotonin is a chemical that makes you feel happy. It can also help you think creatively. Try to get about 15 minutes of sun each day. But don't forget to wear sunscreen to protect your skin!



Be With Buddies

You may like to spend time with friends. But did you know it can make you smarter? You learn new skills from others. You learn new ideas too. What do your friends teach you?



Create Calm

Do you ever feel sad or angry? It's okay to feel these emotions. Everyone does sometimes. But too much stress for too long is not good. It can shrink your brain! So when you feel upset, think of your brain. Then you can try out some tips to calm it.



Just Breathe

Breathe slowly. Breathe in through your nose. Breathe out through your mouth. Focus on the air going in and out of your body.

Make a Splash

Splash cool water on your face. Or sip cold water. Cold water can help your body make chemicals that lower stress.





Tune In

Think about what's around you. What do you see? What do you hear? What do you smell? Focusing on these things can keep your mind off what is upsetting you.

Hug it Out

Find someone you trust. Ask them for a hug. Or give yourself a squeeze! Hugs can calm you.



Think about what you are reading here. Surprise! You are training your brain right now. Reading and thinking also train your brain. ★

Sleep in Mind

by Megan Borgert-Spaniol

Your brain needs sleep. Read on to find out why! You'll also learn what you can do to get a good night's sleep.

Zane
SAMP

The Sleep Cycle

At night your brain moves through four kinds of sleep. This is called the *sleep cycle*.

Stage 1 is when you are falling asleep. This stage usually lasts less than ten minutes.

The last stage is called *REM*. Your brain is very busy in *REM*. Your brain being active can cause dreams you have during this stage to be more complex.

Stage 3 is deep sleep. Your heart rate slows down even more. You are hard to wake up in this stage!

Stage 2 is light sleep. Your breathing slows. So does your heart rate.

One sleep cycle lasts about 90 minutes. Most nights you sleep through four to six cycles!

Sleep Well

Your brain needs 9 to 12 hours of sleep each night. Here are some things you can do to make sure you get enough sleep.



Turn off all screens at least one hour before bed. Light from screens can make your mind feel awake. This can make it hard for you to fall asleep.

Do something quiet before bed. Listen to soft music. Read a book. Write in a journal. Doing these things can get your mind ready for sleep.



Make your room dark when it is time for bed. Close window shades. Turn off lights. Darkness can tell your mind it is time to sleep.





Brain at Work

While you sleep, your brain is still at work. It sorts through what you have learned. This helps you remember things. As you sleep, your brain may also work to solve a problem that's on your mind. Your brain also sorts through your feelings while you are asleep. This helps you deal with your feelings when you are awake. That's why you might not feel your best when you get too little sleep.



Dream Maker

Your dreams are made in your brain. Dreams are what we see or hear in our minds while we sleep. Some dreams can make us feel happy. Other dreams can make us feel sad or scared. These are called *bad dreams*. They are also called *nightmares*.

What causes bad dreams? You might get them when you are sick or feeling worried. Watching scary movies can also cause nightmares.





Do you worry about having nightmares? Try sleeping with a dim night-light on. It will let you see you are in a safe place. Your brain might still create a bad dream. But know that the dream won't hurt you. Talk about it to someone you trust. This can make the dream less scary. It can help put your mind at ease. ★



Feeling Blue

How do you cheer yourself up when you're feeling sad?



Sometimes when I'm sad, I take a little nap. I just lie and rest. Then I feel lots better.

Jack, age 7

I talk to my grandma because she understands. She gives me hugs.

Gael, age 8



I cheer myself up by doing something I really like. I have a basketball hoop. I practice shooting baskets.

Ivie, age 7



Sometimes I talk to my mom. One day I felt sad because I was doing bad in math. I told my mom. She said she would help me practice math at home. That made me feel better.

Noah, age 8



I listen to my favorite song. Sometimes I listen to it over and over. The more I listen, the better I feel. Then I get up and dance!

Bilan, age 9



I like to think of something funny. My sister tells really funny jokes. So I try to remember them to cheer me up.

Maya, age 7

Smile Trial

It's okay to feel low. We don't have to be happy all the time! But if you want to cheer up, there's a simple trick you can try. You can smile! Even a pretend smile tells your brain to make chemicals that help you feel better. Testing out a pretend smile doesn't mean you have to act happy. Think of it more like an exercise. It is like a smile push-up! Next time you feel sad, see if a smile helps. ★





Why do I forget things?



Answer:

Your brain needs to forget.

It is a lot like a messy room that is full of stuff. Some stuff is important to keep. This includes memories that mean a lot to you. It also includes knowing how to do things like tie your shoes. Your brain saves these things.

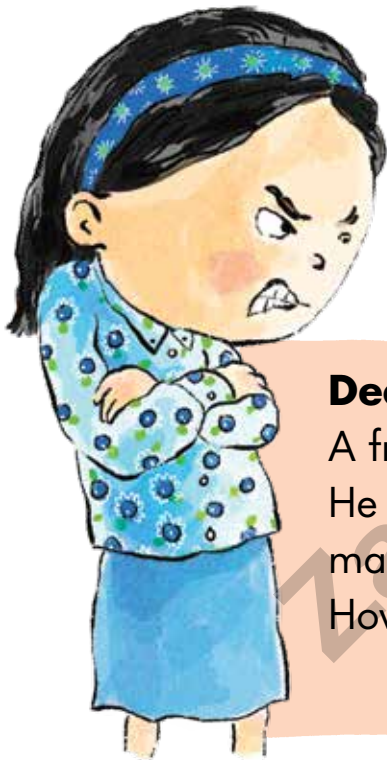
Other stuff is not as important, like what you ate for lunch last week. The brain rules that these things can be thrown away.

You can forget them! Your brain also looks for small things it does not use any more. Then it forgets that stuff too. That's why you can forget things you used to remember, like your locker number from last year.

Okay, your brain has sorted things. Now it can rest. Right? Nope! More information comes into your brain all the time. Your brain must sort and sort. It never stops! ★



Ouch!



Dear Ouch,
A friend broke my toy.
He didn't mean to, but I got
mad. Then I got madder.
How can I get un-mad?

— Grrrrrrr!



► Anger starts in a tiny part of your brain. Luckily, a bigger part of your brain decides what you do about it. Try these things to keep anger from growing:

- Take a big breath.
- Step away if you can.
- Tell someone how you feel.
- Get some exercise.
- Think about the person you are mad at. Imagine how they feel.

Dear Ouch,

I feel bad about myself. I can't do anything right. I'm bad at sports and reading and even art. How can I feel better?

— Bad at Everything

► Are you comparing yourself to other kids? Try not to. Everyone is good at some things and not good at other things. If you think you must be good at what others do well, you may miss what makes you shine. Make a list of what you do well. Ask family or friends to help. You may be surprised by what they say!



Dear Ouch,

I'm afraid of the dark. I don't even like to go to sleep in the dark! If I have to get up at night, it's scary.

— Scared



► Many kids feel this way! But you can learn to ease your fears. Tell a grown-up or someone you trust how you feel. Talking about scary things can make them less scary. Try walking around home in the dark with that person. Look into corners. Touch tables and chairs. You will see that everything is the same in the dark as in the light.

Brains Beyond Belief

by Valorie Lee Schaefer

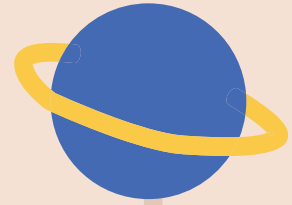
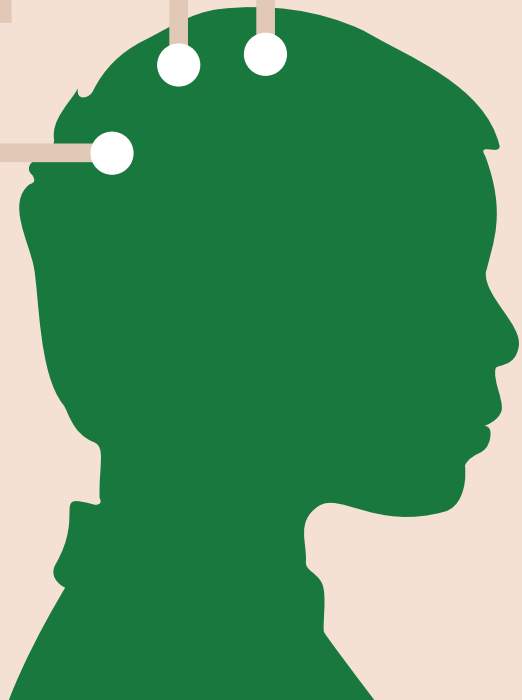
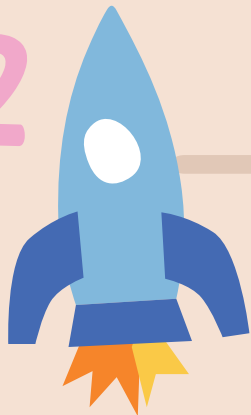
Your brain is busy! It has a big job doing many things. It lets you think. It tells your body how to move. Your brain even works as you sleep!

Kid brains are also busy developing. Brains learn many things. And every brain is amazing. But some can do things that most brains cannot.

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Super Smarts

Some brains are super smart. People with these brains are called *geniuses* (say it: JEEN-yuhs-uhs). They might be a whiz at math. They might play piano in a new way. Or they may create new kinds of art. Geniuses can be many things. Some are kids!

One real-life kid genius took college classes at age three. At age eight, he studied with scientists who make plans to explore outer space!

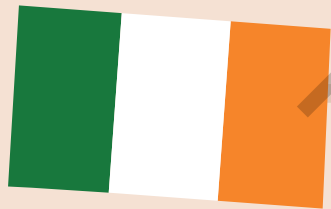
Another supersmart kid was a whiz with words. She wrote four books by age ten! She was also a world champ at the word game Scrabble. At age 11, this kid won a contest. The contest named her a “kid genius”!



Memory Power

Kids with genius brains amaze people. So do kids whose brains remember more than most.

One real kid had super memory. He showed this special ability at age two. He could remember all the world's flags. That's almost 200 flags! If this kid saw a picture of a flag, he could name its country right away. This ability is sometimes called a *photographic memory*.



Ireland



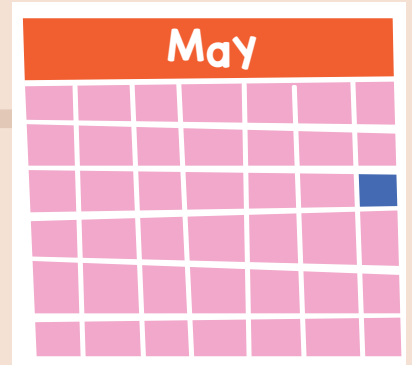
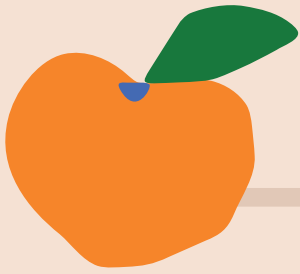
Argentina



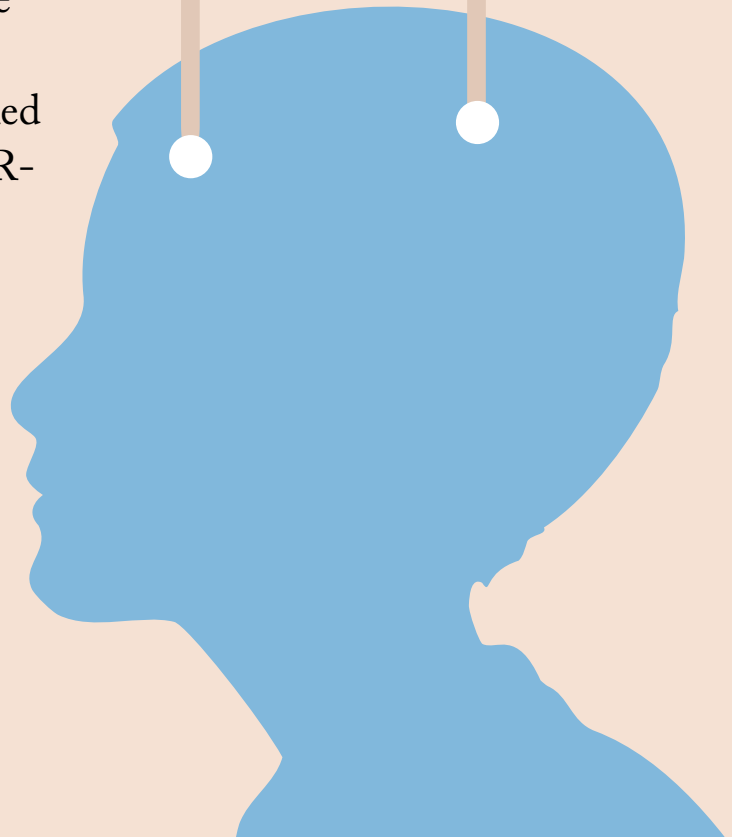
Sweden



May 15, 2021



Another kid's super memory gave him a different special ability. Ever since age eight, he could remember every bit of his life. He could tell you what he did day by day. He could even remember what he ate each day! This ability is called *hyperthymesia* (say it: high-PER-thiy-mee-zjah).



Where is Brain Power Born?

How do brains develop super abilities? Science tells us a lot about the brain. But many things are still a mystery! Genius brains are one. There's no one recipe for supersmart brains. The brain's many parts might all help.

Shown below are the different parts of the brain. Each part does different things. Which parts do you think each kid in this article used most? ★

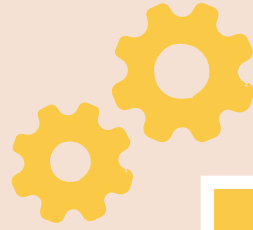


Parietal Lobe

- Focus
- Language
- Hearing

Occipital Lobe

- Sight



Frontal Lobe

- Speech
- Problem-solving
- Movement
- Planning



Temporal Lobe

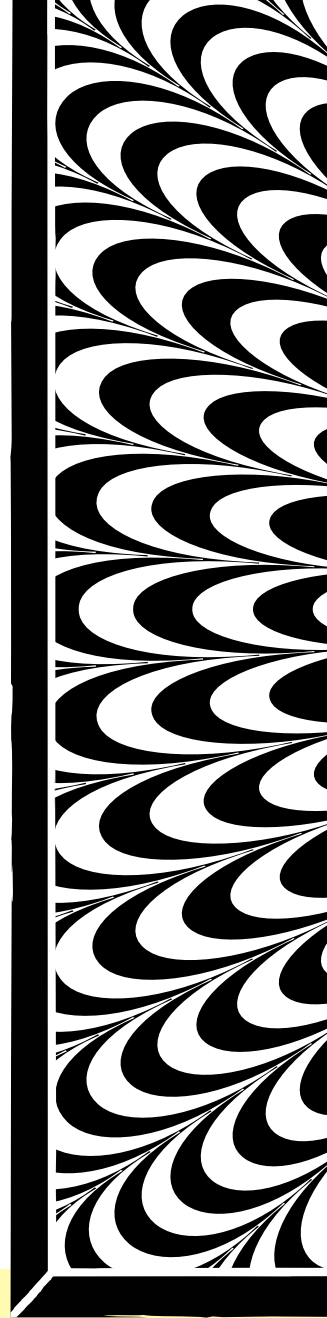
- Language
- Reading
- Hearing
- Memory

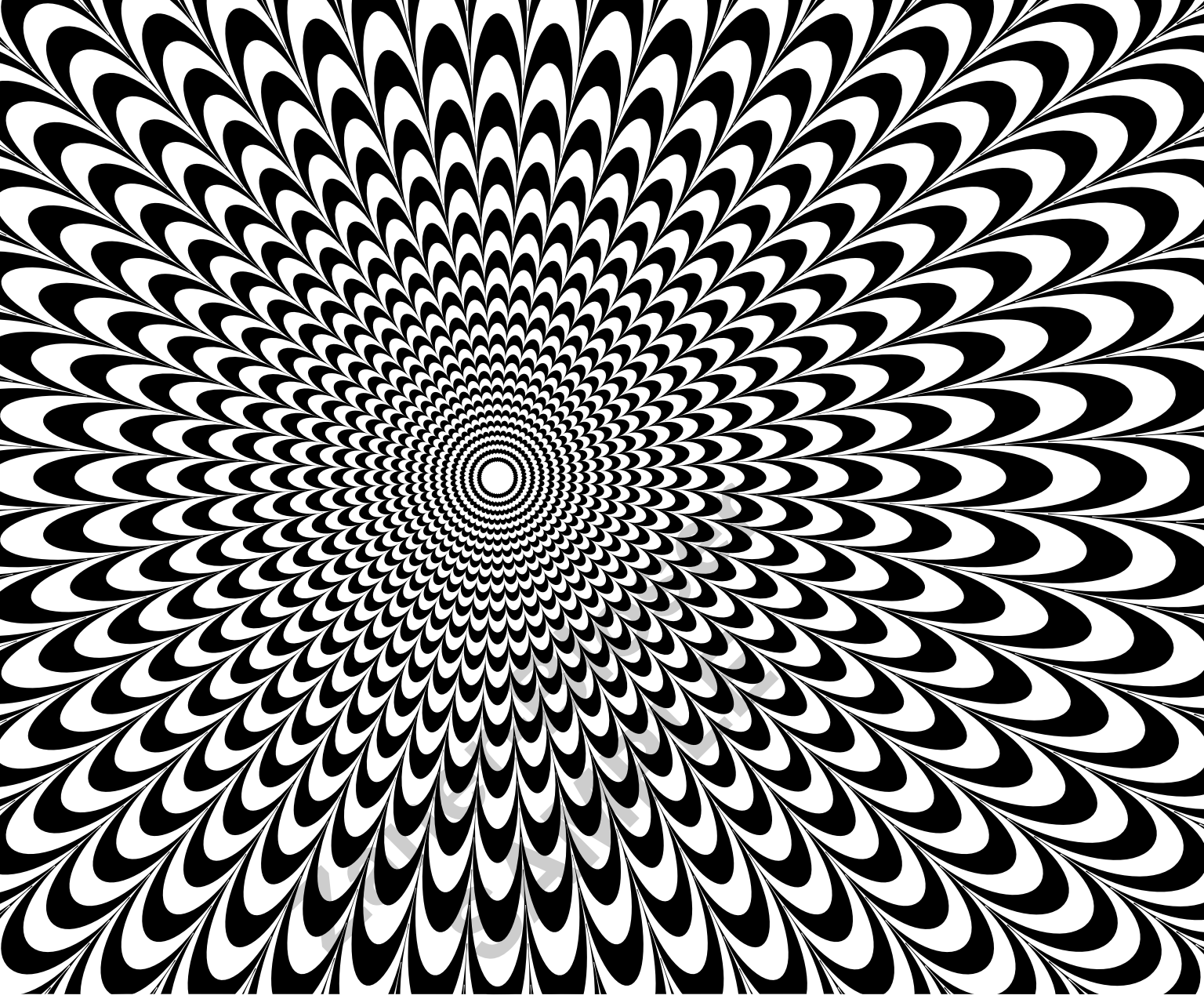
Look Smart

by Vidas Barzdukas

The eyes look at art. But the brain sees it. And some art tricks them both!

When we look at something, our eyes do not see it. Our brains do! Light enters the eyes. Then the brain makes sense of the shapes and colors to tell us what we are seeing. The eyes and the brain work together.





Optical illusion by troyka

Looks Tricky

Sometimes our brains get tricked as we look at something. We see things that are not really there.

Look at this picture. Do you see the lines moving? Well, they are not!

The picture is tricking your brain. The picture is an optical illusion (say it: ih-LOO-jhen). An optical illusion is a trick your eyes play on your brain. It might make the brain see a shape that is not really there. It might also make the brain think something is moving when it is not.





CREDIT "The cave in London" © Edgar Müller/metanormophe.com. Used with permission.

Watch Out!

Careful, it's an icy cliff! Or is it? Look again. This image is painted on the ground. Did it fool you? Paintings like this are called *trompe l'oeil* (say it: tromp loy). That is French for "trick the eye." The purpose of these paintings is to fool your brain into thinking they're real.

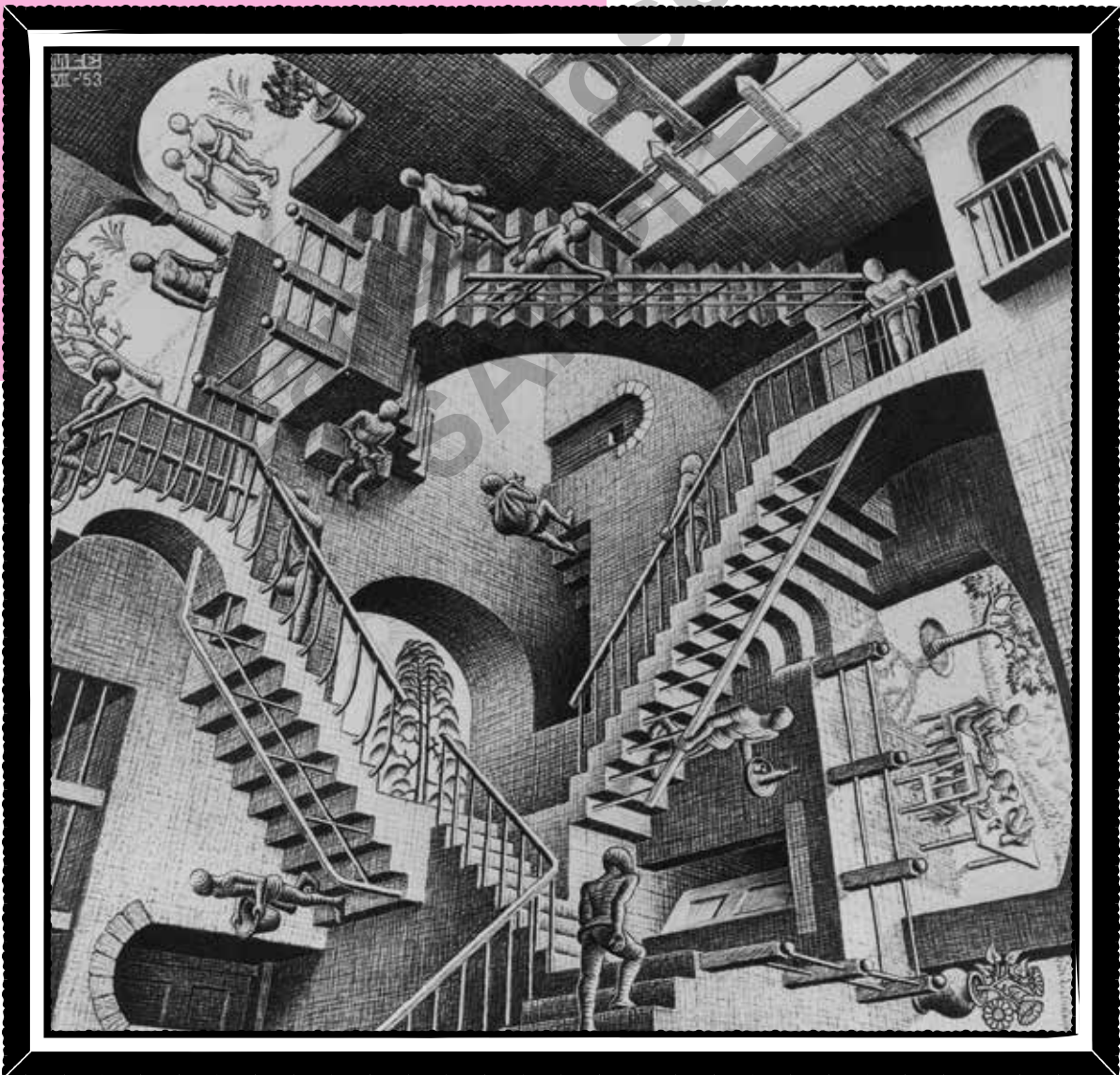
Artists have many ways to make paintings look like real objects. One way is to give the objects lots of detail. Look at the cave formations. They have cracks and shadows just like real cave formations. And the cave water has detailed splashes and ripples.

Another way is to make the paintings look three-dimensional (say it: three duh-MEN-shn-uhl). The artist did this by making some things bigger and other things smaller. Look at the painting again. The ice walls in front are bigger, so they look closer! Trompe l'oeil paintings also show objects about the same size as they are in real life. This helps trick the brain into thinking the image is real.

Which Way?

Which way are the people in this picture going? Turn the page sideways. Then look again! Do you feel dizzy? Don't worry if this picture makes your head spin. That's what the artist wanted!

The same artist drew these reptiles. They look as though they don't want to sit still! The animals seem to climb off of the paper and back on again. In the drawing, their shapes form a pattern.



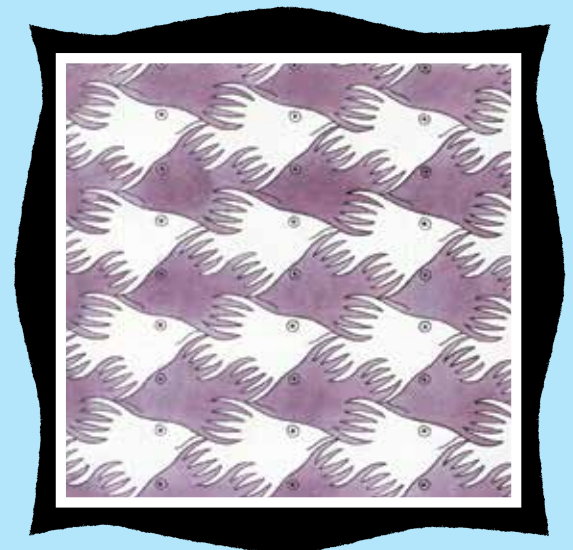
Relativity by M.C. Escher



Reptiles by M.C. Escher

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M.C. Escher's "Symmetry Drawing E93" © 2024 The M.C. Escher Company/The Netherlands. All rights reserved. www.mcescher.com

The fish in the artist's smaller drawing make a pattern too. Purple fish swim one way. White fish swim the other way. When shapes fit together like this, the pattern they make is called a *tessellation* (say it: tess-uh-LAY-shun). Have you seen this kind of brain bending art anywhere else? ★



Symmetry Drawing E93 by M.C. Escher



Number Muddle



Try this:

- Quick! Say the higher number in each pair pictured.
- Look at the numbers again. Think about their value, or how much each number is worth.



Did you choose the larger value when you were in a hurry? Or did you choose the number that was larger in size on the page? If you chose the numbers larger in size on the page, you are not alone! Your brain was tricked.



In each pair, the number with a higher value is smaller in size on the page. Your brain can quickly work out the size of the numbers on the page. Working out their value takes longer.

So when you had to choose quickly, your brain went with size on the page! ★



The Day I Decided to Become Sunshine

By Vanessa Brantley-Newton

The day I decided to become sunshine
in my own world
everything changed
I decided to shine my little light
into the darkest corners
of my community
I decided to be a light
by holding a door
open for others to come through
And to shine the light
of kindness into my every move
The day I decided to become sunshine
I felt like I could change the world





Game On

Games can bring big fun. But they are also a brain workout! Learning rules of the game boosts your brainpower. So does choosing the best moves.



CREDIT © antoniadiaz/Shutterstock

