## KIDS

## Kind, Imaginative, Dyirimic Students

Bullitt County Edition May 2014
Made Possible by:


## A trip to the <br> grocery

Johnny and his mom go to the

## $\overline{\text { यागाIn }}$

The first thing Johnny gets is

juice
shopping cart
"Would you like (1) to pack in your lunchbox?" asks Mom.
pretzels
"Yes. I need a and

for my lunch too," said Johnny.

"We need to shop for more than lunch," said Mom. They get Mom and for Dad.
ice cream
Johnny looks at the items in the
 "Mom, why is all the food in packages?" asks Johnny.
"The packaging keeps the food fresh longer, safe during
 and easy to store," said Mom. come from?" asks Johnny.
"Distinct Packabilities in Bullitt County prints packaging and labels for a lot of the items we see at the "णाIIIII," said Mom.

HARLAN'S


Kind, Imaginative, Dynamic Students

May 2014
www.harlanskids.com
INNOVATIVE

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502.423.7272 888.780.2241 FAX
www.innovativepublishing.com
Aran Jackson CEO aran@harlanskids.com

Bob Sales Sponsorship Consultant bob@harlanskids.com

Shannon Patterson Operations Manager shannon@harlanskids.com

Dawn Koontz Editor dawn@harlanskids.com

Daniel Owsley<br>Creative Director daniel@harlanskids.com

Nichole Edralin
Graphic Designer nichole@harlanskids.com

Michael Adkins Writer michael@harlanskids.com

Erin Pinkerton Writer erin@harlanskids.com

Deanna Strange Writer deanna@harlanskids.com

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## Hey, everyone!

Harlan here. Welcome to the May issue of Harlan's K.I.D.S.!
Every month, we explore a lot of fun stuff - from the way the world works to great activities you can try with your friends.

This month, we're talking to Timothy E. Dowling, a professor at the University of Louisville and the director of the university's Atmospheric Science Program. Manning and I enjoyed learning about Timothy and his job. He inspired us to take our telescope out to look for asteroids! Manning was trying to find the one named for Timothy. Pretty cool!

We also have a neat "anti-gravity" experiment for you to try on page 9. If you want to see it in action, go to the "We Share" page on harlanskids.com. Don't forget to let us see how yours turned out too! Send us your videos or photos of your experiment at harlanskids.com.

Here at Harlan's K.I.D.S., the name of our game is "K.I.D.S.," and we want to hear from you. Let us know what you thought of a story, tell us how you did trying our activities, suggest stories for future issues - we want your feedback! Log on to harlanskids.com, and let us know what you think.
It was fun getting this issue of Harlan's K.I.D.S. ready for all of you. Have fun, and see you next time!

Your friend,


We were down in Florida a few months ago to escape the cold weather and met a new friend named Skye. Friends are great, aren't they?

Harlan's K.I.D.S. is a fun, free, educational magazine inspiring curiosity and engaging lifelong learning for Kind, Imaginative, Dynamic Students.

- Kind - We hope you will be friendly, helpful and courteous to your peers, teachers, families and fellow citizens.
- Imaginative - Whatever your interests - history, science, the arts or anything else under the sun or beyond - we hope you will be excited about the world around you.
- Dynamic - We hope you will be active, productive young people who grow into the active, productive leaders of tomorrow.
- Students - We hope you will be curious, engaged learners who realize that the best students are the ones who never stop learning.


# Harlan's K.I.D.S. 

 in Your Neighborhood!

If you know of someplace that you would like to see Harlan's K.I.D.S., let us know about it! Send us an email at info@harlanskids.com.

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# Atmospheric Physicist: Timothy E. Dowling, PhD 

by Michael Adkins

In each issue of Harlan's K.I.D.S., we give you a look at people who have really cool jobs. For this issue of Harlan's K.I.D.S., we're speaking with Timothy E. Dowling, a professor at the University of Louisville and director of the university's Atmospheric Science Program.

Harlan's K.I.D.S.: What is an atmospheric physicist? Timothy E. Dowling: An atmospheric physicist studies the forces and energies that cause changes in the wind, temperature and pressure in an atmosphere.

K.I.D.S.: What does an atmospheric physicist do? Timothy: Some use satellite data to figure out exactly what is happening in an atmosphere, both near the ground and high up. ... Others use computer models to test theories, by turning different effects off and on and seeing what causes what.
K.I.D.S.: What tools or instruments do you use to help you do your job?
Timothy: I study the weather on other planets! I use high-resolution photographs and infrared temperature maps of Jupiter and Saturn taken by spacecraft, including Voyager, Galileo and Cassini, and by the Hubble Space Telescope. I also use fast computers to test theories of how jet streams and giant storms like Jupiter's Great Red Spot work.

Great Red Spot: a storm in Jupiter's atmosphere that is large enough for three Earth-sized planets to fit inside it
K.I.D.S.: Why did you decide to become an atmospheric physicist?
Timothy: I was a kid in the 1960s, when the astronauts went to the moon and spacecraft were starting to explore the solar system. When I was in high school, the Voyager 1 and 2 spacecraft visited Jupiter in 1979, and the pictures they sent back of the jet streams and the storms were so detailed, I knew I wanted to study them.
K.I.D.S.: What sort of education did you need to become an atmospheric physicist?
Timothy: Some people think science is the most important subject to study in school if you want to be a scientist, but it is a close second! Math is the most important subject. To become a professor takes a PhD, which you get in graduate school after college. But it is all interesting!
K.I.D.S.: Growing up, what was your favorite subject in school? How do you use that subject in your work today? Timothy: I loved math and science class in school. I can remember when I first learned about the Kelvin temperature scale - now I use it every day. I also use English, because a scientist has to write about his discoveries so that others can read them and has to read about what others are doing. The better the English, the better the science.


During the winter, Timothy helped The Courier-Journal with its news story on the polar vortex and how it was affecting temperatures throughout our area.
K.I.D.S.: What do you like most about being an atmospheric physicist?
Timothy: I like figuring out what causes the swirly-gigs like Jupiter's Great Red Spot. Our computer model, called the EPIC Atmospheric model, does a good job of predicting the weather on Jupiter.
K.I.D.S.: What advice would you give to students who might be interested in becoming atmospheric physicists when they grow up?
Timothy: Do well in math, but try to do well in all the subjects, and if you have big questions, email or write a university and ask them! Professors love hearing from eager young students; we think they are too shy sometimes.
K.I.D.S.: Is there anything else about your job that our readers should know about?
Timothy: Science is fun because you do not have to get it right on the first or second try; you do not have to be perfect. But you do have to be stubborn and like to keep trying over and over to solve problems.

- Which two planets are the ones where Timothy studies the weather?
* 

PARENT
PROMPT

- What is the subject Timothy says is the most important for students who want to become scientists?
- How does Timothy use English in his work?
- Why does Timothy say science is fun?


## Special Focus: Asteroids

Our solar system contains more than just Earth, the other planets and the sun. There are also many objects called asteroids, which are rocky bodies that orbit the sun but are not planets or comets. These objects are also known as minor planets.

Most of the asteroids in our solar system are located in the asteroid belt, a region between the orbits of Mars and Jupiter. The asteroid belt contains millions of asteroids, and more than 1 million of these are larger than 0.6 mile ( 1 kilometer) in size.

The first asteroid was discovered by Giuseppe Piazzi in Palermo, Sicily, on January 1, 1801. Its name is 1 Ceres. Asteroids are always given numbers when they are discovered and may be given names as well. If they include names, the scientists who discover the asteroids choose their names.

Dr. Schelte J. Bus, an astronomer and one of Timothy's former students, discovered several asteroids. He decided to name one of them after Timothy - and, in 1996, the asteroid was officially named 3529 Dowling. The asteroid has its own page on Wikipedia at en.wikipedia.org/wiki/3529_Dowling.


Official Name: 3529 Dowling (1981 EQ19)
Discovered at: Siding Spring Observatory, near
Coonabarabran, New South Wales, Australia
Discovery Date: March 2, 1981
Approximate Distance from the Sun: 2.792
astronomical units ( $258,603,055.9086$ miles)
Approximate Distance from Earth: 2.142
astronomical units (199,111,339.2366 miles)
Time Taken to Orbit the Sun: 1,343.081 days (a little more than 3.67 Earth years)

Sources: www.nasa.gov, www.kentauren.info, en.wikipedia.org/ wiki/3529_Dowling

# An Apple a Day... <br> Sir Isaac Newton 

by Deanna Strange

If you have ever spilled a drink or dropped something on the floor, then you have encountered one of Sir Isaac Newton's laws.

Newton was born in England in 1643, and he became a scientist, a mathematician and an astronomer. One night, he was taking a walk and saw an apple

fall from a tree to the ground. Then he noticed the moon, and he wondered why it didn't fall, too. This led him to understand that the moon is in constant free fall around the Earth, and the Earth is "falling" around the sun. Both of these "falls" are called orbit, and the force that makes them happen is called gravity.

Without Newton's ideas about gravity, space travel may never have been possible. Newton was also responsible for discovering the three laws of motion. This discovery would make

## Fun FaCt

In 1705, Queen Anne made Isaac Newton a knight for his achievements in science.
physics possible, and his ideas are still used today. As a mathematician, Newton founded calculus. As an inventor, he created a new kind of telescope. Modern telescopes like the Hubble Space Telescope still use that technology.

[^0]
## What Goes Down Must Go... ?

# Build Your Own "Anti-Gravity" Machine 

by Michael Adkins

Have you ever wondered about what keeps you stuck to the ground when you're walking to your classroom or out riding your bike? The answer is gravity. Gravity is the force that makes all matter attract all other matter. In this case, Earth attracts us and constantly pulls everything down toward its surface.

We're going to show you a really cool experiment on gravity that you can do at home. It will look like you're breaking the laws of gravity, but the experiment really just illustrates how these laws work.

You'll need a few items (and an adult's permission):

- Three to five thick books
- Two long rulers or yardsticks (about the same size)
- Two plastic funnels, both the same size
- Tape
- A flat surface, such as a table, a desk or the floor


## Here's what you do:

1. Arrange the books in two stacks, with one stack slightly higher than the other.
2. Lay your rulers across both stacks of books, with the ends closer together on the short stack and farther apart on the tall stack.
3. Tape the rulers to the books (make sure you ask an adult first!).
4. Tape the two funnels together at the bowls (the wide parts).
5. Set the taped-together funnels down between the two rulers at the lower end, with the funnels' narrow ends pointing sideways across the rulers. You may need to space out the rulers to make enough room.
6. The two funnels should roll up the ramp you've made with your rulers.

How does this work? It has to do with the center of gravity between the two joined funnels. The center of gravity is where all the weight of the object is concentrated. So even though the funnels climb up the ramp we've built, the center of gravity between the funnels is actually moving down.

This idea of the center of gravity is the reason Earth orbits the sun. They both actually spin around a common center of gravity, which is known as a barycenter.

Are you ready to give it a try? Go to harlanskids.com to see a video of an "anti-gravity" machine in action, and don't forget to send us photos or videos of yours!

Sources: www.weirdsciencekids.com, www.nasa.gov

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1．The study of plants
pue słəue｜d＇sıełs to Kpnłs ə૫। other objects in space The study of the physical history of Earth

5．The study of humans and their
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Down
6．The study of living organisms The study of matter，energy， motion and force
The planting and care of trees The study of the interactions between organisms and their 10．The study of a

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## Three Things Yodu Might Not Kn About Sports

As the weather heats up, it's time to get back outside and play! Here are a few things that you might want to know about your favorite sports.

- The term for a left-handed pitcher in baseball is a southpaw. The term most likely comes from how baseball diamonds were built in the mid19th century to keep the sun out of the batter's eyes. Because of the direction of the mound, a left-handed pitcher would throw from the south side of his body. - In tennis, the term for zero points is "love." The French word for egg is "l'oeuf," which has a similar sound to the word "love." A "goose egg" is a common expression for when a team or player scores no points. - Golf balls were originally made from thin leather stuffed with feathers. This made the balls go farther when they were hit.



## PROTECTING THE PLANET

If someone or something depends on you, then you have responsibility for it. You have the job of making sure that person or pet is fed, is clean, is healthy and is safe. You are caring for that person or animal by doing these tasks.

Our planet needs your help also. Part of good citizenship is doing your part to help keep our Earth clean and healthy.

We need to protect the environment from pollution and litter because we respect the planet. We admire Earth for its beauty and because it is our home. We need to make it the best planet possible!

Help do your part to protect our planet!

## What's That Word?

Responsibility - taking care of people or tasks that depend on you
Caring - showing concern or kindness for another person or thing
Good citizenship - showing you can take care of those around you, including the environment, your community, and your family and friends
Respect - admiring someone or something and showing it


## Mealtime Mix-Up



An apple is a fruit. A carrot is a vegetable. But what is an avocado?

Fruits are parts of a plant that develop from the flower. Fruits con-
tain seeds. The following foods are fruits that people often mistake for vegetables:

- Avocados
- Corn kernels
- Cucumbers
- Peppers
- Pumpkins
- Tomatoes

Vegetables are from other parts of plants, such as the leaves, roots or stems. Vegetables do not contain seeds. Lettuce is a vegetable. It is the leaves of a plant. Celery is a vegetable. It is the stem of a plant. Carrots and potatoes are vegetables. They are the roots of a plant.

You may forget if the tomato is a fruit or a vegetable. But you know it is healthy. So eat up!

## CULTURE Curious



T- ave you ever thought about the traditions your family has? You might eat turkey, stuffing and pumpkin pie at Thanksgiving. You might watch fireworks on the Fourth of July. These things are part of American culture. Most Americans have ancestors who came from another country. Do you know where your ancestors are from? If not, don't worry - most people have ancestors from several countries and continents.

Some of the most common backgrounds for Americans include Germany, Africa, Ireland, Mexico, England, Italy, Poland, France and China. These are just a few possibilities for cultures that you can investigate on your own. Visit your school library, and learn all you can about another culture. What kind of food is popular? What holidays are celebrated? What does the flag look like? These are just a few questions to get you started.


## What is an Orchestra?

An orchestra can best be described as a group of people playing a variety of instruments to create music. When the orchestra members play their instruments, they are able to blend the sounds together to create a new sound. The types of instruments used in an orchestra include woodwinds, brass, string and percussion. Flutes, bassoons, cellos, violins, trumpets, tubas, bass drums and cymbals are just a few of the instruments you might hear in an orchestra.

Orchestras can perform as the main act, or they might perform with a singer or a group of singers. In theater, an orchestra might play with a musical or a ballet. But you've probably heard an orchestra play without ever leaving your home.

Many television shows and movies use orchestras to create a musical score. The score is the music that can be heard in the background and helps to let the audience know what kind of scene is coming. The music can help make a scene more emotional, more frightening or more exciting.


The next time you watch your favorite movie, listen for that music. See how many different instruments you can hear being played. Check out the video at harlanskids.com to see the Louisville Orchestra playing the "Imperial March" from Star Wars.


Many people enjoy going to the theater to watch a play or see a concert. However, musical theater brings the audience the best of both worlds.

Musical theater performers need to be able to act, sing and dance. Musicals differ from opera for several reasons. Operas focus more on a style of singing and may not be sung in the same language as the audience speaks. Musicals are more about creating stories through the songs, so the audience needs to be able to understand those songs. Musical theater has been developing and changing since the late 1800s with the partnership of Gilbert
and Sullivan in England. In the early and mid-20th century, musicals became an American tradition through the work of composers like Irving Berlin and composing teams like Rodgers and Hammerstein.

Musical theater goes beyond just stage performances. Many musicals have become movies like The Sound of Music and The Phantom of the Opera. There have also been several films and books that have been made into musicals like Mary Poppins and The Lion King. In recent years, Louisville has been host to several musicals such as Annie, Les Misérables and Sister Act.

by Erin Pinkerton

An old saying goes, "One man's trash is another man's treasure."

An object may have no value to one person. The same object may be useful or beautiful to another person. This is true of found art. One person's garbage may be another person's work of art.

Found art is made of objects that people do not usually think of as art. In the early 1900s, Spanish artist Antoni Gaudí did something unusual. He used broken pieces of pottery to decorate the outside of buildings that he designed. He gave a new purpose to something useless.

You can give new life to old things through found art too. You can even use trash or recyclables, like old bottles or plastic shopping bags. You can create interesting artwork instead of throwing away everyday objects.

Now it's your turn. Turn the page and use the empty frame to create your own piece of art. Try using objects around the house. Try using stuff that would be thrown away. You can use the objects to tell a story or show how you feel. You can use objects like these:

| - Scraps of | - Pieces of |
| :--- | :--- |
| paper | - Pieces of |
| broken toys |  | | fabric |
| :--- |
| - Soda bottles |
| - |

Show us how creative you can be! Send us photos of your original found art at harlanskids.com.

- "One man's trash is another man's $\qquad$ " — what word completes the old saying?
- What did Spanish artist Antoni Gaudí use to decorate his buildings? PROMPT
- What are three of the types of objects that could be used to make your own found art?
- What French phrase does the term "found art" come from?



# 5yunk Duzzu 

To solve the sudoku puzzle, each row, column and $3 \times 3$ box must contain the numbers 1 to 9 . You can't have any numbers the same in any row, column or box. Logic is key to solving a Sudoku.


## FILL IN THE BLANKS

Finish the sentences below by filing in the banks.You press clothes with an $\qquad$ 0 _.
(2) Walk the dog with a $\qquad$ A $\qquad$ .
3) Cookies go good with $\qquad$ L .The "animal" you use with a computer is called a
$\qquad$ U $\qquad$ -.You can put $\qquad$ Y $\qquad$ on pancakes.Baseball is called a $\qquad$ T.The month before August is $\qquad$ L $\qquad$
8 Disney World is in $\qquad$ 0 $\qquad$ D $\qquad$ .
(9) A good place to find books is at the local
$\qquad$ B __A $\qquad$ —.

## MaTh Puzzle



Jimmy, Susan and Mark are going to eat pizza for lunch. Jimmy knows that one pizza is cut into 8 slices. If Mark will eat $3 / 8$ of the pizza and Susan will eat $1 / 4$ of the pizza, how many slices of pizza will be left for Jimmy?

## May flowers for Kelly's Mom

was playing outside when she saw a bunch of wild She saw all kinds of - red ones, purple ones and yellow ones. They were so pretty that wanted to pick some for her mom. and picked some yellow, red and purple y 9 gathered all the together and ran into the house to give them to her mom.

- What was Kelly doing when she saw the flowers?
- What were the colors of the flowers that Kelly saw?
- Where did Kelly run after she picked the flowers?
- Whom did Kelly give the flowers to?


Kids - help the dog through the maze to find the newspaper.



## Answers

(Page 17)



## We Want to Hear from You!

Send us your art, stories, poetry and letters.
Name ___ Age_____
School $\qquad$ Teacher's Name $\qquad$
County $\qquad$
$\qquad$
Parent/Guardian's Name
$\qquad$ Date $\qquad$
Parent/Guardian's Signature $\qquad$ ate
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[^0]:    Sources: www.nationalgeographic.com, www.wikipedia.com

