The Burping Caper At-Home Toolkit

Deloitte, in collaboration with The Ella Project (an initiative that was created to ensure that young children have a hero with a background and passion for STEM and entrepreneurship to identify with), is excited to provide you with an exciting resource to engage children at-home. This resource features a comic starring Ella the Engineer, the hero of the story, who has a passion for knowledge and learning. The comic in this interactive toolkit features Nishita Henry, chief innovation officer at Deloitte Consulting LLP.

This toolkit will provide you with all the resources you need to:
1. Read through the comic or watch Nishita’s story time video on YouTube (~10-15 minutes)
2. Engage in a discussion around innovation and technology (~5-8 minutes)
3. Complete the activities from Ella's Innovation Lab (~10-15 minutes)

We hope you enjoy this fun and educational resource. Please take pictures and share them with us using #LearningwithElla!
Vocabulary

1. **Pandemic**: An outbreak of a disease
2. **Quarantine**: Keeping of a person, animal, or thing away from others to stop a disease from spreading
3. **Robot**: A machine designed to execute one or more tasks automatically with speed and precision
4. **Vulgar**: Something gross (usually referring to someone’s body)
5. **Corrupt**: Acting dishonestly
6. **Flatulence**: Burping or passing gas
7. **Extradition**: To bring a person back to the USA after they leave for another country if they committed a crime
8. **Grit**: Toughness, unwillingness to give up
9. **Innovation**: A creative new idea, device, or way of doing something
10. **Antidote**: A medicine taken to counteract a poison
11. **Chemistry**: Study of substances and how they work
12. **Blockchain**: A technology that allows people from all over the world to make digital transactions for digital money called Bitcoin
ELLA THE ENGINEER

BURP!

THE BURPING CAPER!
Welcome to the world of ELLA THE ENGINEER!

Getting kids to understand the importance of science, technology, mathematics, coding, engineering, and entrepreneurship is a vital and worthwhile goal. It helps them feel empowered, creative, and confident in addition to building essential problem-solving skills that they can use throughout their lives. This series of comic books, produced through a collaboration between Ella Adventures and Deloitte, promotes female leadership and encourages young women to explore the wonderful world of STEM — and have fun along the way!

We hope you enjoy reading it as much as we enjoyed making it!

THE CAST

Ella The Engineer: The irrepressible hero of the story, Ella has a passion for knowledge and learning. Relentlessly curious, technologically adept, and a dedicated problem-solver, Ella is always willing to help her friends and colleagues solve whatever problems come their way — with confidence and style!

Paloma: Paloma is Ella’s best friend and partner in many of her adventures. Paloma is analytical by nature and excited to learn new things, especially when they concern her favorite branch of science - robotics! Competitive and independent, Paloma rarely lets problems get her down or stand in the way of success!

Viral Vector: Viral Vector is a loathsome lout whose selfishness is matched only by his lack of personal hygiene. He takes particular delight in using technology to “troll” and embarrass people while trying to force them to stoop to his uncouth level of behavior. Viral Vector believes that playing by the rules and being kind are for suckers and that the only true loyalty you have is to yourself... and possibly your cat.

Glitch: This digital mischief-maker delights in algorithmic anarchy and computerized chaos! His tireless antics often create problems for people that live in the “real” world. Wait, is Glitch even in this issue?!

Nishita Henry: Nishita is Deloitte Consulting’s Chief Innovation Officer, and leads the Deloitte Innovation & Platforms business. In this role she drives the firm’s innovation agenda by working with cutting-edge technologies, engaging the startup community and driving the transformation of next generation technologies into practical solutions for Deloitte’s clients.
BEEDLE-DEEDLE
Boop Doop!

HEY
PALOMA.

OMG, THE CRAZIEST
THING IS HAPPENING!

BURP!
BELCH!
BUH-UP-UP-UP!

WRITER: MISS LASKO-GROSS  ARTIST: BOBBY TIMONY
COLORIST: NAYOUNG KIM  PRODUCER: RON PERAZZA
SPECIAL THANKS TO: ANTHONY ONESTO, LAUREN HUGHES,
NISHITA HENRY AND JANET FOUTTY
GROWN-UPS ARE SUPER WEIRD.

RIGHT? ANYWAY, I’LL SEE YOU TOMORROW AT THE CHAMPIONSHIP.

BURP!

WE’RE GOING TO CRUSH IT!

AND WE’LL FINALLY GET THE RECOGNITION WE NEED TO START OUR GIRL CODER CLUB!

LATER, ELLA!

GOODNIGHT PALOMA!

TRUTH!
I'M READY TO GO!

...YOU MAY HAVE CHUCKLED AT THE VIRAL VIDEOS OF BRINDLEVALE'S UNCONTROLLABLE BELCHING EPIDEMIC LAST NIGHT...

BUT THIS INTENTIONAL MASS POISONING IS NO LAUGHING MATTER...

ISN'T THAT WHERE YOUR FRIEND, PALOMA, LIVES?

THEY'VE QUARANTINED THE WHOLE AREA SO I GUESS YOU'LL HAVE TO FIND A NEW PARTNER FOR THAT ROBOT FIGHTING THING.

BUT, IF PALOMA CAN'T MAKE IT WE'LL BE DISQUALIFIED!

IT'S NOT FAIR!

BREAKING NEWS!
THE SELF-PROCLAIMED "CRIMINAL MASTERMIND" VIRAL VECTOR HAS DEMANDED TEN MILLION DOLLARS IN CRYPTO CURRENCY BY MIDNIGHT, IN RETURN FOR THE ANTIDOTE.

HEAR ME, YOU PUNY BRAINED SIMPLETONS!

PAY UP OR THE SYMPTOMS WILL BECOME PERMANENT.

WHO DOES SOMETHING LIKE THIS?!
Isn’t that right, Plutus?

Daddy is as smart as he is handsome.

Believe it or not, the last three and a half minutes of the tape is just baby talk directed at the kitten.

Citizens are urged not to panic, the ransom will be paid.

The police are working with Deloitte to help our citizens and catch the criminal. Deloitte’s Nishita Henry is leading a team of doctors, law enforcement, and city experts to devise a plan.

I have to go help defeat Viral Vector!

‘Urph

How terribly vulgar!
Hey Paloma, I’m outside the temporary command center but they won’t let me in ‘cause I’m ‘just a kid’ or whatever.

Can you hack the-

Already doing it. Go!

You rock!

Sector three? Now?

Consumer purchase data, store sales data, it just doesn’t match up.

There’s no food item that all of the infected people ate! We should-

You’re right. The data must be corrupt!

We should be separating naturally occurring belches from artificially induced ones!

But what about flatulence?

I don’t smell any-
TIME FOR A BREAK, GUYS.

UM, MS. HENRY? I COULDN'T HELP BUT NOTICE YOUR TEAM DOESN'T HAVE AN ANSWER. DOES THAT MEAN THE TOWN IS DOOMED?

OF COURSE NOT. THESE DAYS, WE CAN COLLECT DATA FROM SENSORS FROM BAR CODES, DELIVERY TRUCKS, RETAIL STORES, YOU NAME IT!

THAT LEVEL OF CONNECTIVITY IS OFTEN CALLED THE "INTERNET OF THINGS" AND IT CAN TAKE TIME — ALONG WITH HUMAN INGENUITY — TO DRAW THE RIGHT CONCLUSIONS. TRIAL AND ERROR, HEALTHY DEBATES, QUESTIONING DATA, IT'S ALL PART OF THE PROCESS.

COOL!

IT'S ALWAYS NICE TO MEET AN INQUISITIVE MIND.

I'M ELLA!

WELL ELLA, WE HAVE THREE INTERRELATED PROBLEMS TO SOLVE.

IDENTIFYING THE SOURCE OF INFECTION, FINDING AN ANTIDOTE FOR THAT PARTICULAR POISON AND... THEN WHAT?

TIC TOCK BRINDLEVALE! PAY UP IN TWO HOURS OR BE RESIGNED TO A LIFE OF HUMILIATING BELCHES!
THE HARDEST OF ALL, FINDING AN INNOVATIVE WAY TO MASS-PRODUCE THE ANTIDOTE IN TIME.

UNFORTUNATELY, WE'VE GOTTEN STUCK ON THE FIRST PROBLEM.

ALL KINDS OF PEOPLE WERE AFFECTED, WE CAN'T FIGURE OUT WHAT THEY CONSUMED IN COMMON.

WOULD IT HELP TO TALK TO AN UNAFFECTED LOCAL?

YES. MORE DATA IS ALWAYS USEFUL.

HEY PALOMA, SORRY TO BOTHER YOU AGAIN!

PERFECT TIMING! -BURP- I'VE JUST BECOME INFECTED!

I'M SO SORRY!

NO, IT'S GREAT! -BURP- THINK ABOUT IT!

OH! YOU'RE RIGHT!
IF WE FIGURE OUT WHAT SHE ATE RECENTLY WE CAN SOLVE THIS!

YEAH, COOL! -BURP- EXCUSE ME.

WELL, SINCE MY PARENTS WERE TOO SICK TO COOK, I ATE THE CHI CHI PARTY LEFTOVERS. THOSE FANCY POOF TEA BISCUITS.

DID THEY TASTE UNUSUAL?

NO, THEY'RE A TOTAL WASTE OF MONEY! THEY TASTE IDENTICAL TO CHEAP PETE'S TEA SNAK.

THAT'S IT!

IT'S THE SAME PRODUCT LABELED FOR DIFFERENT MARKETS!

THEY EVEN HAVE THE SAME TYPO, BAKING "SOD" INSTEAD OF SODA.

YES! EVERYONE INFECTED DID EAT ONE OR THE OTHER!
I'M CALLING MY CONTACT AT THE FDA TO MAKE SURE THE WHOLE BISCUITS BATCH IS RECALLED.

OKAY PALOMA, NOW IT'S UP TO US!

-BURP-

HOW SO?

LET'S MEET AT THE COMMAND CENTER. I'LL BRING OUR TOP-SECRET ROBOTICS PROJECT. GRAB WHAT YOU'LL NEED TO RE-WRITE THE CODE.

TO DO WHAT?

CHEMISTRY, WE'RE MAKING AN ANTIDOTE.
I have the biscuit test results!

It’s a poisonous root vegetable which only grows in Hoboken!

It continually expands and produces gas! The antidote is pretty simple, but we’re almost out of time!
I'VE RECEIVED YOUR PAYMENT OF CRYPTO CURRENCY...

...AND WOULD NOW LIKE TO OFFER YOU THE CURE I PROMISED.

HOWEVER, I'M CURRENTLY TRAVELING TO A TROPICAL ISLAND PARADISE WITH NO EXTRADITION LAWS, SO, SORRY 'BOUT IT SUCKERS!

HA HA HA!

PEOPLE ARE BEGINNING TO PANIC, IS IT WORKING?

I-I THINK SO.
WE RECONFIGURED OUR MASTERPIECE!

AND PROGRAMED IT TO WORK LIKE TEN CHEMISTS SIMULTANEOUSLY FORMULATING MULTIPLE DOSES OF ANTIDOTE!
BURNING HOT!  
-BURP-

DON'T GIVE UP, GIRLS!  IT'S TIME TO SHOW SOME Grit!

FIVE MINUTES LATER.

LIQUID NITROGEN FROM THE MEDICAL TENT!

LET'S -BURP- TRY AGAIN!

IT WORKED!

HERE -BURP- GOES...

I'M NOT BURPING AND THE PRESSURE IS GONE!
WE DID IT!

HOORAY!!

WHAT ARE YOU DOING?
I STILL HAVE A BAD GUY TO CATCH!

HOW?
A BLOCKCHAIN IS SECURE BY DESIGN. THAT CRYPTO CURRENCY CAN'T BE TRACED!

BUT PETS TRAVELING INTERNATIONALLY CAN.
VIRAL VECTOR WOULDN'T LET HIS PRECIOUS KITTY END UP IN QUARANTINE,

SO I'M HACKING THE SYSTEM OF VETERINARY PAPERWORK REQUIRED FOR PET PASSPORTS.

GOTCHA!

SOMEBODY OVER THE CARIBBEAN.
Hey, sweetheart! Refill, now!

Ahh, Plutus! Once I set foot on those warm island sands we're home free!

You're the only one who truly appreciates me.

Passengers are now free to disembark and enjoy the beautiful day!

Except for you, sir.
I'm glad we saved everyone and all but, man!

We missed the championship.

We were going to win and it would have been nice to be recognized for all of our hard work.

Girls! There's a car waiting for you outside, and a little surprise, too!

Hooray!!

No. Freakin' way!
Discussion on innovation

1. Engage in a discussion around innovation and technology by walking through the activity on the next page.

2. Use the activities from Ella's Innovation Lab to reinforce the concept of innovation. If you are unable to print out the templates, have your child use them as inspiration.

Definition of innovation

Innovation (n): A creative new idea, device, or way of doing something
Describe the picture above.

1. I see...
2. I think...
3. I feel...

In the comic, Ella chose to program her robot (an innovation!) to make antidotes. Think of a recent problem you faced – it can be an every day problem. **If you had to create an innovation (like a robot or a new technology) to solve that problem, what would it be? What would it look like? How would it work?**
Complete the following activities with your child:

1. Have the child **draw** their own innovation

2. Have the child **write a letter** to a friend or family member, introducing them to the child’s new innovation

3. Complete the **vocab crossword puzzle** and **word search**

4. Complete the practice **math problems**
Draw your innovation!
Dear __________________ ,

The name of my innovation is ____________________________.

It solves this problem:

____________________________________________________

____________________________________________________.

This is how it works:

____________________________________________________

____________________________________________________.

My favorite part about this innovation is

____________________________________________________

____________________________________________________.

Sincerely,

____________________________________________________
The Burping Caper crossword puzzle clues

**Down**

2. Acting dishonestly
3. A medicine taken to counteract a poison
5. A machine designed to execute one or more tasks automatically with speed and precision
6. Keeping of a person, animal, or thing away from others to stop a disease from spreading
7. Study of substances and how they work
8. Burping or passing gas
10. A creative new idea, device, or way of doing something

**Across**

1. A technology that allows people from all over the digital world to make digital transactions for digital money called Bitcoin
4. Toughness, unwillingness to give up
9. To bring a person back to the USA after they leave for another country if they committed a crime
11. An outbreak of a disease
12. Something gross (usually referring to someone’s body)
The Burping Caper word search

Extradition  Antidote  Blockchain  Flatulence  Quarantine
Corrupt     Chemistry  Innovation  Pandemic   Robot
            Innovation  Vulgar      Grit
The Burping Caper math problems

Solve the following problems. Be sure to show your work and put units on your answers!

1. Ella’s robot has created 189 vaccines. The community needs 250 vaccines in total. How many more vaccines does the robot need to make?

2. Ella’s robot has 5 arms. Each arm can create 9 vaccines. How many total vaccines can the robot create?

3. Ella and Paloma create a second robot to make vaccines. The first robot can create 234 vaccines in an hour while the second robot can create 187 vaccines in an hour. If both robots are running for 1 hour, how many total vaccines could they create?
   • **Bonus:** If both robots run for 3 hours, how many vaccines could they create in total?

4. The robot created 124 vaccines. Unfortunately, 37 of them were spilled out of the test tube, so the robot made 18 more. How many total vaccines are now available?
Answer key: The Burping Caper crossword puzzle

Down

2. Acting dishonestly (corrupt)
3. A medicine taken to counteract a poison (antidote)
5. A machine designed to execute one or more tasks automatically with speed and precision (robot)
6. Keeping of a person, animal, or thing away from others to stop a disease from spreading (quarantine)
7. Study of substances and how they work (chemistry)
8. Burping or passing gas (flatulence)
10. A creative new idea, device, or way of doing something (innovation)

Across

1. A technology that allows people from all over the digital world to make digital transactions for digital money called Bitcoin (blockchain)
4. Toughness, unwillingness to give up (grit)
9. To bring a person back to the USA after they leave for another country if they committed a crime (extradition)
11. An outbreak of a disease (pandemic)
12. Something gross (usually referring to someone’s body) (vulgar)
1. Ella’s robot has created 189 vaccines. The community needs 250 vaccines in total. How many more vaccines does the robot need to make? (61 vaccines)

2. Ella’s robot has 5 arms. Each arm can create 9 vaccines. How many total vaccines can the robot create? (45 vaccines)

3. Ella and Paloma create a second robot to make vaccines. The first robot can create 234 vaccines in an hour while the second robot can create 187 vaccines in an hour. If both robots are running for 1 hour, how many total vaccines could they create? (421 vaccines)
   • Bonus: If both robots run for 3 hours, how many vaccines could they create in total? (1,263 vaccines)

4. The robot created 124 vaccines. Unfortunately, 37 of them were spilled out of the test tube, so the robot made 18 more. How many total vaccines are now available? (105 vaccines)
ABOUT THE ELLA PROJECT

The Ella Project was created to ensure that girls passionate about science, technology, math, engineering, computers, entrepreneurship, and other similar interests have a hero with whom they can identify. In addition to publications like Ella The Engineer, The Ella Project aims to bring together remarkable women in one place, share their inspiration, provide a glimpse into how they’ve achieved success, and offer advice to future leaders.

LEARN MORE ABOUT THE ELLA PROJECT AT WWW.THEELLAPROJECT.COM

ABOUT DELОITTE

Deloitte provides industry-leading audit, consulting, tax and advisory services to many of the world’s most admired brands, including nearly 90 percent of the Fortune 500 and more than 5,000 private and middle market companies. Our people work across the industry sectors that drive and shape today’s marketplace to make an impact that matters — delivering measurable and lasting results that help reinforce public trust in our capital markets, inspire clients to see challenges as opportunities to transform and thrive, and help lead the way toward a stronger economy and a healthy society. Deloitte is proud to be part of the largest global professional services network serving our clients in the markets that are most important to them.
Girl Power

Science
Technology
Mathematics
Engineering
Coding
Computers
Robotics
Entrepreneurship
Medicine
Art
Economics
Law
Informatics
Media
Programming
Leadership
Mechanics
Electronics
Analytics
Biology
Physics
Chemistry
Astronomy
Statistics
Aerodynamics
Research
Geology
Exploration
Discovery
Fun

Ella’s Adventures continue at THEELLAPROJECT.COM

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