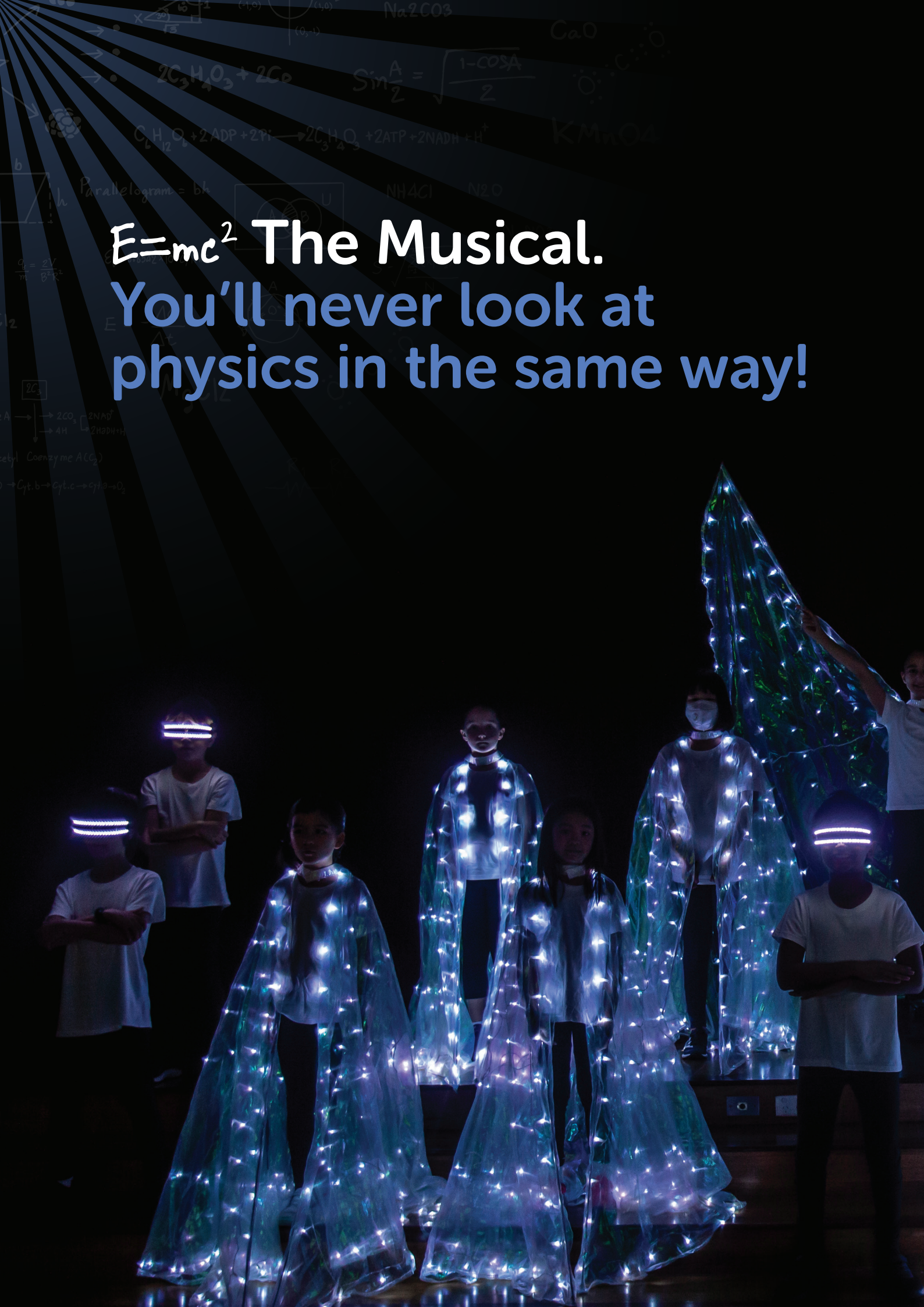
PROGRAM

Education
Public Schools


E=mc² The Musical.
You'll never look at
physics in the same way!

A Haberfield Public School Production with the support of NSW Department of Education Arts Recovery Grant.

26, 27 & 28 MAY 2022.

MUSIC
David Collins-White

LYRICS
David Collins-White and Chris Kohn

SCRIPT
Chris Kohn

MUSICAL ARRANGEMENTS
Lindsay Scandrett

ORIGINAL DESIGNS
Josh McIntosh

MESSAGE FROM THE SCHOOL PRINCIPAL

Welcome to Haberfield Public School's production of E=mc² The Musical where we travel on a journey into the past reliving and honouring a remarkable discovery which continues to influence our lives.

The journey we have travelled on has opened many doors with new friendships and partnerships formed. It pays tribute in music and song to the scientists of yesterday and today and the importance of following your dreams.

We hope tonight you enjoy following this journey with our students and that you leave at the end of the performance with a smile on your face and joy in your heart.

—

Ms Karlynne Jacobsen
PRINCIPAL

A WORD FROM THE COMPOSER & DIRECTOR

A separate musical could be written about the journey to the launch of E=mc² The Musical.

What started with my involvement in music mentoring in a far north Queensland primary school led to a more extensive discussion with well-known Aboriginal leader Noel Pearson. This discussion was about one of the most famous science formulae and how we might translate a moment in history into a musical.

That first discussion was in July 2020. This led to the trial performance by all students at Haberfield Public School via video. Singing was not permitted between grades, state borders were closed, and zoom conferences were the only way we could continue our project. Through YouTube, we broadcast the world premiere of E=mc² by students of Hope Vale school in Cape York in September 2021.

But our October efforts to premiere in Haberfield were hampered by Sydney's second lockdown.

So here we are, May 2022, at the NSW premiere, where we can finally bring you the story behind E=mc², through an exploration of science and math via the performing arts.

Thank you to all for supporting this journey. I could not have done it without you.

I hope you enjoy the performance by the Haberfield PS students. They have been a joy to work with.

I dedicate this performance to my mentor and teacher, the late Richard Gill.

—

David Collins-White
COMPOSER & DIRECTOR

SYNOPSIS

Sarah and Jack are students who love their science and take school projects very seriously! They build a time machine powered by 'brain energy' to visit the 'Ancestors' of Albert Einstein's famous formula $E=mc^2$.

They recruit Jack's sister Laura and his football-loving friend Dave to balance the brain energy needed for their time travel adventure.

They'll visit the extraordinary scientists behind the famous equation $E=mc^2$. Michael Faraday, the 'E' man, Antoine and Marie Anne Lavoisier, the 'M' people, Albert and Mileva Einstein, who enlighten them to the importance of light, the 'C' part, and finally, Émilie du Châtelet who explains the purpose of the little number 2 that floats above the 'C'; the all-important 'squared'.

But as brilliant as our time-travellers are, something goes wrong at the touch of a button, causing everyone to shrink to subatomic size. Here they meet the protons, neutrons, and electrons inside the atom. Escaping before Lise Meitner uncovers the secret to splitting the atom, they hear the tragic story of Lise's life journey. And where are the 'Women of Science'? Laura is outraged history has almost forgotten them.

Follow Sarah, Jack, Laura and Dave as they journey through time to deliver their $E=mc^2$ science project to the class and receive an outstanding result for their work.

It will use our brain energy to propel all of us – that includes you in the audience – it will propel all of us through wormholes in the fabric of space–time, and can take us to any place or time in history. Its full name is the Dynamic Energy Aggregator To Help Traverse Relativity And Positionality. Or D.E – A.T.H T– R.A.P for short.

SARAH

Cast

SCIENCE STUDENTS

Abbey Cowell, 6R
SARAH

I have no idea why I love music. It's always been a huge part of my life and me, it's fun and I enjoy being the music kid.

Luke Glasscock, 6R
JACK

I like drama because I can be a completely different person up on the stage.

Ronav Auti, 4S
DAVE

I like drama because I get to play interesting characters. I also like the musical because I get to perform in front of other people.

Sia Rupil, 4A
LAURA

My favourite is drama because I like acting in character and being expressive. I love being in the spotlight on stage and acting with other people.

SCIENTISTS

Enrico Cuomo, 5L
ALBERT EINSTEIN

I love drama. I imagine the emotions Albert Einstein would have felt whilst creating his formula. I try to act so that the audience will feel it too.

Jessica Kelly, 6T
OTTO HAHN

I love music. I like how there are so many different styles of music and how it lets you express yourself in different ways depending on your mood.

Myra Santiwong, 5B
MILEVA EINSTEIN

Music - Music allows me to express my feelings through sounds, rhythms and lyrics. Music also allows people to sing together to create a happy harmony.

Prasansha Shrestha, 6R
MARIE ANNE LAVOISIER

Music makes me feel happy. When I need to escape to a safe place, music is where I go. It makes me enjoy myself to a full extent.

Riley Cox, 5B
ANTOINE LAVOISIER

I love science because it has helped the world through innovation. My favourite area of Science is technology.

Roger Xue, former HPS student now Y7 at ABHS
MICHAEL FARADAY

My favourite is Science and what I like most about it would be that there are experiments which are engaging and fun to conduct.

Sofia Butera, 6R
ÉMILIE DU CHÂTELET

I like science in general. Being in the musical has been a lot of fun. It's gives me an opportunity to do more drama which I love.

Zahra Assassa, 6R
LISE MEITNER

Music is the best. It's a universal language and can make people feel all kinds of emotions.

MULTI PERFORMANCES

Abigail Daly, 6R
ANNOUNCER, WOMEN OF SCIENCE AND CHORUS

I enjoy drama because we can work with people we may not usually work with, explore new ideas and express ourselves through creativity.

Andrea Jin, 4D
CHORUS AND ATOM SOLOIST

I find science and maths dazzling! I love solving problems and puzzles and love being in the musical.

Eva Wakhare, 5E
CHORUS AND WOMEN OF SCIENCE

I like music and musicals – they're a lot of fun.

Honey Vilensky, 4S
CHORUS AND SOLOIST

Singing! When I sing it makes me so happy. I feel lots of emotions when I perform and when I listen to music.

MULTI PERFORMANCES

CHORUS

Leo Hunter, 3R

CHORUS/LEAD ELECTRON

I love science because without it nothing would exist. And it is fun.

Natalia El Beyrouthy, 5L

CHORUS AND WOMEN OF SCIENCE

My favourite of these subjects is music because it is a fun chance to do things that I am passionate about.

Noemie Grande, 3D

CHORUS/LEAD NEUTRON

I like science because if an experiment doesn't work, you can try another way or – try to work out why it didn't work. It's like solving a problem.

Rose Newman, 3R

CHORUS/LEAD PROTON

My favourite thing about music is how fun it is. You can make your own music up and it can be weird and also cool.

Adeline Lui, 3K

CHORUS

What I like most about Sing 2 is that the musical is funny, full of action, and the music is exciting!

Aubree Rupil, 3R

CHORUS

Drama is my favourite because it's really dramatic and I like acting. I enjoy saying lines.

Claire Barry, 4D

CHORUS

I like science because you wouldn't know what everything in the world is made out of. Also, scientists are finding ways to stop global warming.

Claire Shuai, 3G

CHORUS

I love music. My favourite part of music is singing songs. I like singing with my friends best because they make me less nervous in performances.

Emerson Hanna, 3D

CHORUS

I love music because you can express yourself. I enjoy making different rhythms and beats and I feel good when I sing!

Felix Yap, 3D

CHORUS

I like playing music and messing around on any instrument. I'll explore anything that's related to music. Music makes me feel playful.

Riva Auti, 4D

CHORUS

I like science because there are so many things that you can learn, experiment with and explore within different areas of science.

Summer Quach, 4S

CHORUS

I like music and drama because its fun and because its about acting and acting and singing is my thing.

Vedant Gawali, 5E

CHORUS

Music can change our mood and bring joy to our lives. When I get the notes correct, it gives me a sense of accomplishment and also sounds amazing.

Anjana Sanjeevan, 3D

CHORUS

I like science because it explains everything we need to know about the world. Like how tress grow and how everything is made.

Dechen Lama, 4D

CHORUS

I like science because it is fun doing experiments and you find out lots of cool things.

SCENE LIST

1. **Intro “Hero of the Day”**
   CHORUS, ANNOUNCER AND ALL CAST MEMBERS

2. **Energy – Faraday’s Engine “Faraday and Faith”**
   FARADAY, DAVE, SARAH, LAURA AND JACK

3. **Mass – Lavoisier Diamond Show “Mass Waltz”**
   ANTOINE AND MARIE ANNE LAVOISIER, DAVE, SARAH, LAURA AND JACK

4. **Celeritas – Einstein’s Thought Experiment “Celeritas Dominus”**
   CHORUS, ALBERT AND MILEVA EINSTEIN, DAVE, SARAH, LAURA AND JACK

5. **Squared – Châtelet’s Falling Ball “Je suis désolé”**
   ÉMILIE DU CHÂTELET, ALBERT AND MILEVA EINSTEIN, DAVE, SARAH, LAURA AND JACK

6. **The Atom – Building Blocks of the Universe “The Atom Song”**
   ATOM CHORUS, LEAD PROTON, LEAD ELECTRON, LEAD NEUTRON, ATOM SOLOIST, DAVE, SARAH, LAURA AND JACK

7. **The Proof Through Nuclear Fission – “Meitner Matter”**
   LISE MEITNER, DAVE, SARAH, LAURA AND JACK

8. **Addressing a Historical Imbalance – “Women of Science”**
   MARIE ANNE LAVOISIER, ÉMILIE DU CHÂTELET, LISE MEITNER, MILEVA EINSTEIN, DAVE, SARAH, LAURA AND JACK

9. **Science Presentation – “The Ancestors”**
   ALL CAST MEMBERS

10. **Returning Home – “Stardust in the Stars”**
    DAVE, SARAH, LAURA AND JACK

11. **Song – "Stardust in the Stars"**
    ALL CAST MEMBERS

12. **Encore**
    ALL CAST MEMBERS

PRODUCTION

DIRECTOR AND PRODUCER
David Collins-White

MUSIC DIRECTOR
David Collins-White

CHOREOGRAPHY
David Collins-White and Scene 8 Women of Science by Luahn Rosenthal

SET CONSTRUCTION
Students: Sam Barry (6T), Charlotte Walker (6R), Abigail Kelly (6T) and Thomas Owens (6R).
Mentored by: Peter Baldwin, Michael Shuai and Damon Lee

ARTWORK AND DESIGN FOR POSTERS AND PROGRAM
Chelsey Page

HABERFIELD STAFF PRODUCTION TEAM
Karlynne Jacobsen, David Collins-White, Katie Martin, Michael Fraser, John Tran, Mary Scalia, Carleen Perez and Deborah Madden

PARENT PRODUCTION TEAM
Michael Shuai, Suzy Sole, Billie Cox and Patricia Butera

HABERFIELD STAFF ASSISTANT DIRECTORS
Santino Emmi and Alexandra Dwyer

STUDENT STAGE MANAGERS
Lily Brittliff (6R) and Trinity Ong (6R)

ASSISTANT STAGE MANAGER
Holly Simon (former HPS student, Y9 PLC)

BACKSTAGE
Students: Charlotte Walker (6R), Sam Barry (6T), Elizabeth Coughlin (6R), Abigail Kelly (6T), Xi Xi He (6R)
Mentored by: Santino Emmi, Alexandra Dwyer and Deborah Madden

PROPS
Students: Eliana Shadwick (6R) and Ashton Cox (3D)
Mentored by: Santino Emmi, Alexandra Dwyer and Deborah Madden

LIGHTS AND SOUND
Crystal Productions

HALL DRESSING
Geoff Newey – The Look

PHOTOGRAPHY
Sachin Wakhare

TICKETING AND PROGRAM
Patricia Butera

COSTUMES
Michael and Fiona Shuai, Suzy Sole and Billie Cox

VIDEO DESIGNER
Nevin Howel – Empire Slate Media

SOUND PRODUCERS
Paul Burjan, David Collins-White and Lindsay Scandrett

WWW.ECM2.ORG.AU WEBSITE
Michael Shuai

STUDENT MEDIA CREW
Felix Vilensky (6R), Alexandra Kim-Aghnatios (5B), Xi Xi He (6R) and Abigail Daly (6R)

THANKS

Sincere thanks to these people who supported and assisted in bringing this production to the Haberfield stage.

SCHOOL PRINCIPAL

Karlynne Jacobsen

RELIEVING DEPUTY PRINCIPAL

Katie Martin

PARENT VOLUNTEERS PRODUCTION TEAM

Michael Shuai, Suzy Sole, Billie Cox and Patricia Butera

HABERFIELD STAFF PRODUCTION TEAM

Karlynne Jacobsen, David Collins-White, Deborah Madden, Santino Emmi, Alexandra Dwyer, Carleen Perez, Michael Fraser, John Tran, Mary Scalia, Samara Spedding, and Julia Elks.

All the staff at Haberfield Public School.

I am SOOO confused – we are supposed to be finding out about C – but we keep talking about light – shouldn't the next letter be "L".

A ha – well done Dave – "C" means light – it is from the latin – Celeritas – which means speed.

DAVE AND JACK

WITH THE SUPPORT OF

NSW Minister's Arts Recovery Grant.

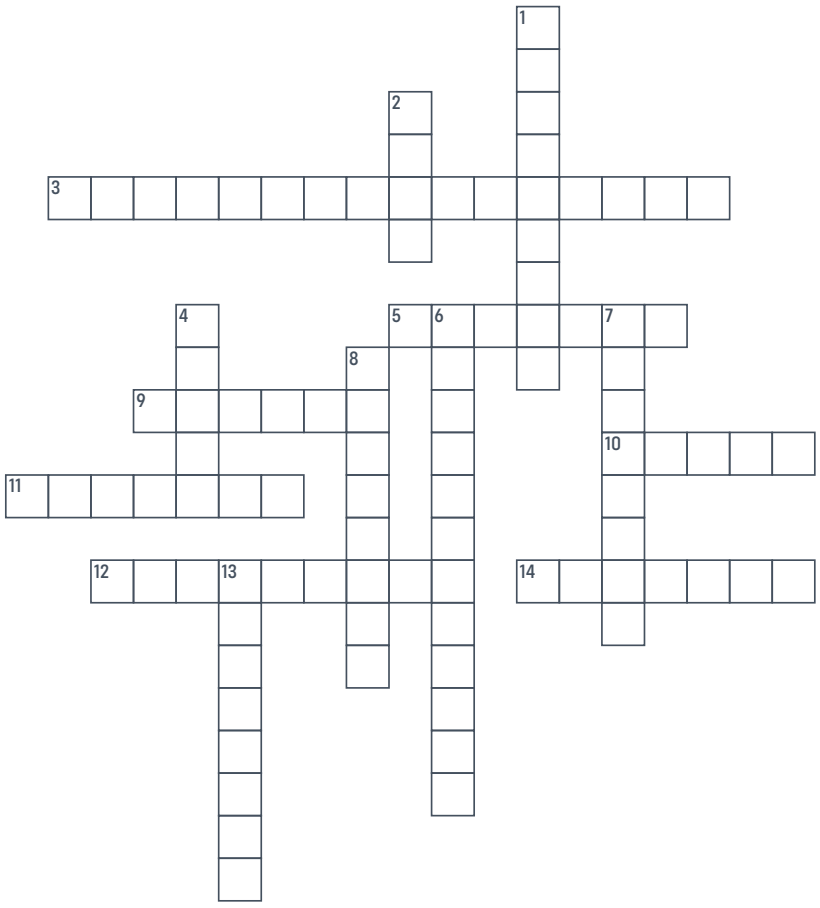
SPECIAL THANKS TO

THE LOOK Theatrical Drape Hire & Installation

Questacon The National Science and Technology Centre

Officeworks Five Dock

CROSSWORD



DOWN

1. Marie Anne & Antoine _____
2. Otto _____
4. The _____ of science
6. Surname of HPS music teacher
7. Region where musical first premiered in Australia
8. Protons, Electrons and _____
13. Mileva & Albert _____

ACROSS

3. Prof Michelle Simmons is a _____ _____
5. The hero of the day
9. _____ du Châtelet
10. Einstein's famous equation
11. Lise _____
12. The people that came before us
14. Michael _____