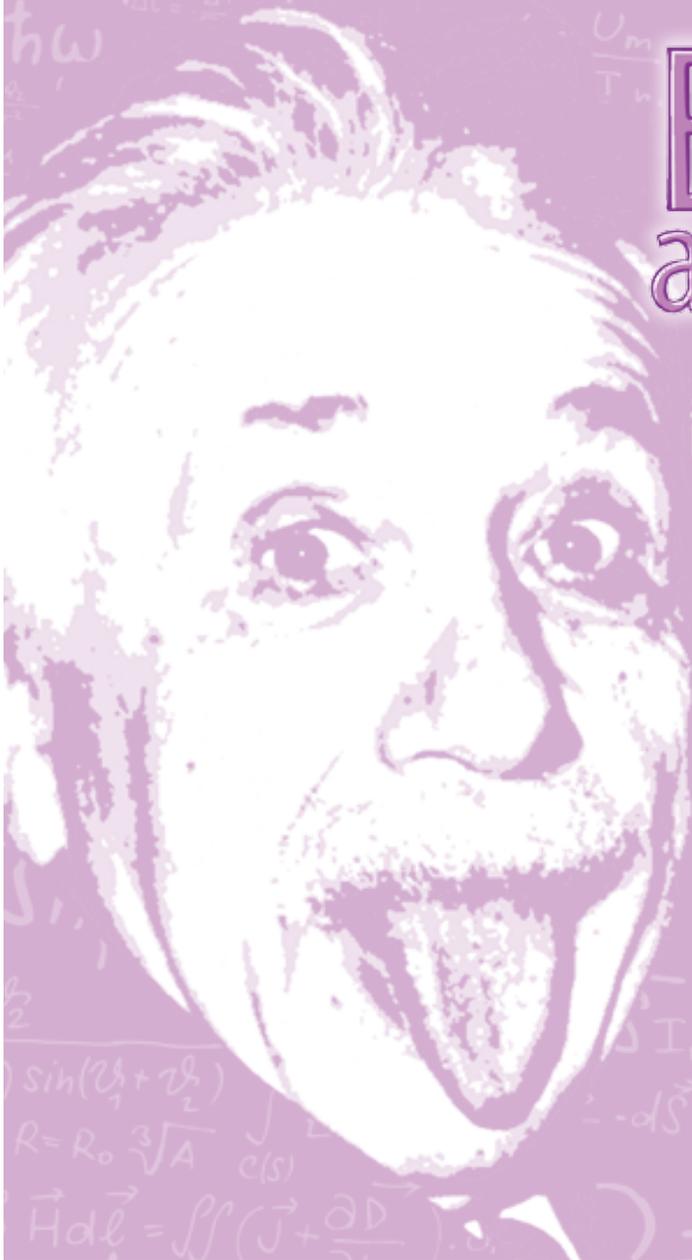


Nashville Children's Theatre

Einstein is a Dummy



Books and lyrics by Karen Zacarías
Music by Deborah Wicks La Puma

September 17 - October 4

Nashville Children’s Theatre

25 Middleton St
Nashville, TN 37210
(615) 254-9103
nashvillect.org



Inside this Guide:

About *Einstein is a Dummy*2

About Young Albert Einstein3

Wonder: An Activity for the Bus Ride.....4

Reproducible for Wonder Activity.....5

Science, Imagination, & Curiosity.....6

Thinking in Music..... 7-8

Perspective: What do you see?.....9

Standards for Activities in this Guide.....10

Subject Area Key:

These icons show what subject areas each activity addresses.
Standards for all activities are on page 9.



English
Language
Arts



Music



Theatre
Arts



Career
Guidance



Science

Once you’ve been to NCT, please tell us about your experience by completing an Online Survey.

(This survey is a requirement for ticket subsidy recipients.)

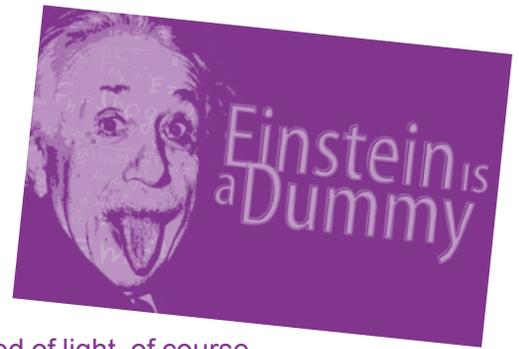
Go to nashvillect.org and click “Visiting NCT” from the top menu.
Select “Book a Field Trip” and then follow the “Click here for a short online survey” link.
Thanks!

The information and activities in this guide were compiled, devised, and edited by W. Riley Braem and Alicia Fuss. Layout by Erin McInnis.

About Nashville Children’s Theatre

Nashville Children’s Theatre is a professional theatre company providing the children, families and educators of Middle Tennessee with extraordinary shared theatrical experiences that inspire imagination, develop creativity and build community in partnership with our volunteers and donors.

About the Play



About the Play:

As an adult, Albert Einstein changed our view of the universe. But as a boy, he struggled with the same issues any 12-year-old might – keeping up with violin lessons, impressing the girl next door and, oh yeah, comprehending the fundamental relationship of space and time to the speed of light, of course.

This uplifting play about a fictional day in young Einstein’s life confirms that each of us is both ordinary and special. With an engaging, original score, a healthy dose of imagination and the help of a mysterious cat, *Einstein Is a Dummy* reveals life’s atomic possibilities.



About the Playwright

Karen Zacarias’ award-winning plays include *The Book Club Play*, *Legacy of Light*, *Mariela in the Desert*, *The Sins of Sor Juana*, an adaptation of Julia Alvarez’s *How the Garcia Girls Lost Their Accents* and the adaptation of Helen Thorpe’s nonfiction book *Just Like Us*. Her TYA musicals with composer Deborah Wicks La Puma include *Chasing George Washington: A White House Adventure*, *Einstein Is a Dummy*, *Looking for Roberto Clemente*, *Jane of the Jungle*, *Cinderella Eats Rice and Beans*, *Ferdinand the Bull* and *Frida Libre*. Her plays have been produced at the Kennedy Center, Arena Stage, Goodman Theatre, Round House Theatre, Denver Center for

the Performing Arts, Alliance Theatre, Imagination Stage, GALA Hispanic Theatre, Berkshire Theatre Festival, South Coast Repertory, La Jolla Playhouse, Cleveland Play House, San Jose Repertory Theatre and more. Her awards include 2010 Steinberg/ACTA New Play Citation, National Francesca Primus Prize, the Kennedy Center’s New Visions/New Voices Award, National Latino Playwriting Award and a Helen Hayes Award for Outstanding New Play. Additionally, Zacarias was a finalist for the Susan Smith Blackburn Prize. She is currently a playwright-in-residence at Arena Stage and teaches at Georgetown University. Zacarias is the founder of Young Playwrights’ Theater, an award-winning theatre company that teaches playwriting in local public schools.



About the Composer

Deborah Wicks La Puma (music) is a composer, music director, and orchestrator. Her work for adults and children has been seen by thousands around the world, from Australia to Bahrain to the East Room of the White House, enjoying both popular and critical success. Her other works for young audiences include two collaborations with Mo Williams, *Knuffle Bunny: A Cautionary Musical* and *Elephant and Piggie: We Are in a Play!*, as well as *Frida Libre* (La Jolla Playhouse), *Ferdinand the Bull* (based on the book by Munro Leaf), *Chasing George Washington* (Kennedy Center), and *Einstein Is a Dummy* (Alliance Theatre) with playwright Karen Zacarias, and

Nobody’s Perfect (based on the book by Marlee Matlin) with Doug Cooney, a bilingual musical in English and American Sign Language, commissioned by VSA and the Kennedy Center. Her awards include the Jane Chambers Playwriting Award, a National Endowment for the Arts’ New American Works Grant, two Parents’ Choice Awards, an iParenting Media Award, and two Helen Hayes nominations for Outstanding New Play. A proud Mexican-American who speaks Spanish and Portuguese, she is also a member of the board of directors of TYA USA/ASSITEJ International, ASCAP, and The Dramatist Guild. She resides in Los Angeles with her three daughters, her cat, and her very patient husband.

**Play synopsis and author bio taken from the Dramatic Publishing Website.
www.dramaticpublishing.com**

**Composer bio adapted from her personal website.
www.crunchynotes.com**

About Young Albert Einstein



Albert Einstein was born on March 14, 1879, in the city of Ulm in Württemberg, Germany, about 100 km east of Stuttgart. His parents were Hermann Einstein and Pauline née Koch.

While many rumors suggest that Einstein failed math as a young student, records from Luitpold Gymnasium, the first school he attended, indicate he was a math genius even as a young child. His sister is quoted as saying that he had a more difficult time with “easy” math than “harder” math, but Einstein advanced quickly in math and by age 12 had taught himself Euclidean geometry and was studying calculus. He did, however, receive poor marks in verbal disciplines. It is contested whether that was due to lack of skill or lack of interest.

Einstein also clashed with authorities at Luitpold Gymnasium arguing that the regimented learning environment stunted the spirit of learning and creative thought.

When Einstein was five, his father showed him a small pocket compass, and Einstein realized that an invisible force acted upon the needle. He would later describe this realization as one of the most revelatory moments of his life. After this, young Einstein spent his free time building models and conducting physical experiments.

Even though the Einsteins were working-class, they greatly revered scholarship. In 1889, a medical student and family friend of the Einsteins named Max Talmud introduced Einstein to key science and philosophy texts, including Kant's *Critique of Pure Reason*. Two of his uncles also provided young Einstein with books on science, mathematics and philosophy.

In 1894, the Einsteins moved from Munich to Pavia, a city in Italy near Milan. Albert stayed in Munich to finish school, after one term (a year and a half before graduating), he quit school without telling his parents and joined them in Italy.

Einstein failed the liberal arts portion of the entrance exam for the Federal Polytechnic Institute in Zürich, and his family sent him to Aarau, Switzerland to finish secondary school. Einstein later applied and was accepted at the Federal Polytechnic Institute in October and moved to Zürich.

In 1900, Einstein earned a teaching diploma from the Federal Polytechnic Institute. In 1921, Einstein won the Nobel Prize for his work on quantum theory.

Einstein's Famous Formula: $E=mc^2$

In this mathematical equation, **mass (M)** going at the constant speed of **light (C)** equals the amount of **energy (E)** needed to reach that speed. In other words, it states that the amount of mass you want to reach the speed of light determines the energy needed to do that. For centuries, scientists had considered energy and mass to be completely unrelated. Einstein showed that in fact, energy and mass are different forms of the same thing.



Wonder: An Activity for the Bus Ride

In this pre/post show activity, students learn about the relationship between change in motion, force, inertia and mass by observing the motion of objects on the bus to the theatre.

Learning Objectives

Students will experience, observe and describe:

- The feel of the force caused by changes in the speed and direction of the moving bus.
- That the movement of the tennis ball on the floor of the bus is the same as the students' movements.
- That the helium balloon moves differently from them and the tennis ball.

Materials Needed

- One Helium Balloon on a String
- One tennis ball
- Pencils and Clipboards
- Bus Record Sheet for each student (page 5)



Activity Instructions

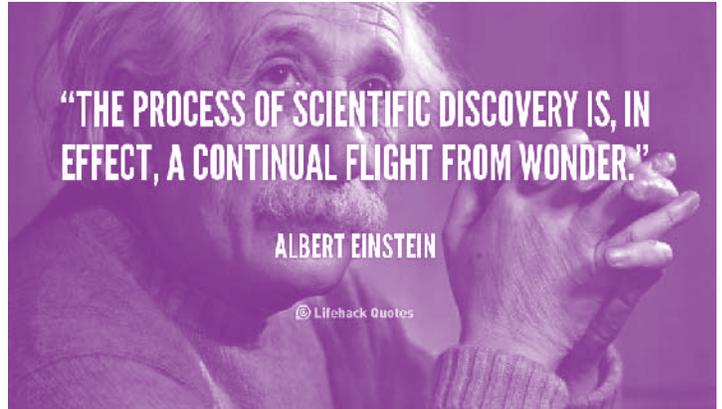
1. Tell the bus driver what you are going to do, and be sure that you and the students observe the guidelines necessary for a safe trip.
2. Ask students to be aware of how their own body feels and moves as they travel. They are going to make observations about the motion of the bus, people, the balloon, and the tennis ball as they travel inside the moving bus.
3. Remind students to pay particular attention to the different actions the bus may take during the trip.
4. Distribute the Bus Record Sheets, pencils, and clipboards.
5. Tie the balloon to a place in the front of the bus where it is clearly visible to all the students. Be sure that the balloon is not touching the ceiling of the bus.
6. Put the tennis ball on the floor of the bus in the aisle, where all students can see it. Encourage students to observe and record during the trip.
7. When you return to school, ask students what they observed.
8. Discuss why the balloon behaved so differently from the other objects. The term "inertia" refers to an object's amount of resistance to change in velocity. Explain that an object needs to have some mass in order to experience inertia and that the helium-filled balloon doesn't have much mass at all.
9. Give the students 2 minutes to write their explanations of why the objects behaved as they did and turn in their record sheets.

Discussion Questions: When you drop the tennis ball, why does it fall on the ground? Why doesn't it float up? What happens when you roll the ball down the bus aisle? What do you think will happen when the bus changes direction? Do you think the ball will react differently if the bus suddenly stops? If you spin a top, do you think it would spin forever? Why does it eventually stop?

Assessment

- Did students make observations during the trip?
- Did the student's explanations reflect an understanding of inertia, force, and mass?

Do this activity with your students while on the way to NCT to see *Einstein is a Dummy!*



Bus Record Sheet

Observations of myself, other students, a tennis ball, and a helium-filled balloon while traveling on a bus.

By _____

Date: _____

Bus	Students	Tennis Ball	Helium Filled Balloon
Cruising at a steady speed			
Slowing down			
Speeding up			
Turning left			
Turning right			
Stopping			

My explanation: _____

Science, Imagination, and Curiosity

At the age of 16, Einstein performed the thought experiment known as “Albert Einstein’s Mirror”. Looking into a mirror, he imagined what it would be like if he was traveling at the speed of light. His conclusion was that the speed of light is independent of the observer.

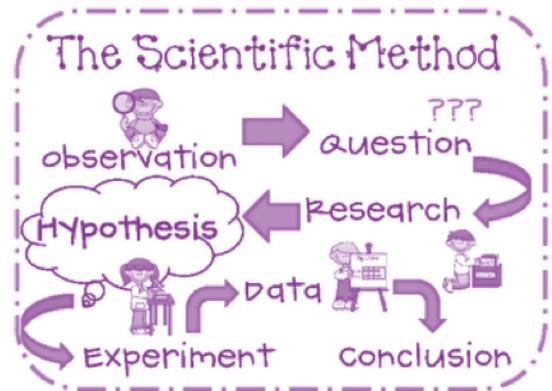
The Thought Experiment



Einstein’s conclusion to his thought experiment would become the basis of his second postulate of the theory of relativity, all because he was curious enough to ask a question that no one ever had before. Some of the most important discoveries in the world (science and otherwise) have been made because those people were curious enough to ask questions about the world around them, bold enough to imagine the possibilities behind those ideas, and patient enough to really observe the results of their experiments.

Activity Instructions

1. Observe the world around you.
2. Think of a question, mystery, or problem of the world.
3. Use your logic, imagination, and creativity to make a prediction about the answer.
4. Research your question.
5. Experiment and collect data.
6. State your conclusion and present it to the class.



What If?

What if **Jonathan Ive** had not imagined the personal stereo we all know as the **iPod**?

What if **Copernicus** had not asked if the sun is the center of the universe?

What if the **Wright Brothers** had not dreamed of the possibility of flying?

What if **Benjamin Franklin** didn't think about flying that kite that stormy night?

What if **Edward Jenner** had not wondered why milk maids didn't get smallpox?

What if no one ever thought walking on the moon could happen?

To Make This Activity Even More Fun



Use the drama structure *Mantle of the Expert** and have your students step in role as a Scientist who is presenting their findings at a prestigious scientific gathering! ***Mantle of the Expert**: Members of the group become characters endowed with specialist knowledge that they are called upon to share with the rest of the group to perform a specific task together.



Thinking in Music

Music + Science = Rondo!

In the song from the play “E=mc²,” Albert uses scientific terms to explain his composition to Constantin and Elsa. In this activity, students will create a **Rondo** using concepts they learned in science.

What is Rondo? A Rondo is a piece of music, which has one main theme, repeated several times, with other musical ideas in between each repetition. If we give the main theme a label “A” and the other musical ideas “B”, “C”, “D,” etc., then the form of a rondo can be described as ABACADA. The sections in between the main “A” section are called “episodes.”

Learning Objectives



To compose and perform a 4-beat rhythm within a Rondo structure that incorporates science terminology.

Activity Instructions

Explain that today we will be creating a rondo – a musical sandwich – in which each person will be performing a part in the main theme several times, and also a part in a small group theme.

Step 1: Creating the Main Theme of Your Rondo (Part A)

1. Ask children to think of and share words or short phrases linked with their current topic of study in Science class. Record some of these on whiteboard.
2. Begin a steady beat with 1 click and 3 thigh slaps, with everybody joining in. Ask how the beats are grouped (in 4’s).
3. Explain that we can now set some 4-beat rhythms over the steady beat, by using some of the words and phrases. Experiment by checking that the phrase has 4 beats by counting aloud over phrase.
4. Write phrase on whiteboard, and if possible, write the rhythmic notation under it.
5. When 4 suitable and rhythmically contrasting phrases are agreed upon, divide the class into 4 groups, and allocate 1 phrase each. While waiting for their group’s turn, the class will keep the steady beat.
6. Begin with the full class establishing the steady beat.
7. When this is going well, count 1-2-3-4 to bring in 2nd group (chanting the first phrase).
8. Repeat with remaining groups.
9. Now stop the chanting and just keep the steady beat.
10. This is the main theme of the rondo – Part A – which will be played many times!

Materials Needed

- Optional: Un-pitched percussion instruments (enough for each student)
- Card/paper for each group to write its verse
- Means of recording Rondo for playback
- For extension: Pitched percussion instruments

Thinking in Music activity continued on page 8.

“I OFTEN THINK IN MUSIC. I LIVE MY DAYDREAMS IN MUSIC. I SEE MY LIFE IN TERMS OF MUSIC.” - ALBERT EINSTEIN

Perspective - What do you see?

Learning Objectives



To understand how people may have different perceptions of the same event and to appreciate that seeing things differently does not necessarily mean that someone is right or wrong.

Activity Instructions

1. Explain to the students that you are going to show a picture on the overhead. You want them to look at it and think about what they see but not say yet.
2. Show the image of “My Wife and Mother-in-Law” without giving the title of the artwork.
3. Ask students what they see.
4. Select one student who sees the young woman to point her out to the others. Do the same for the old woman.
5. Explain that some people see a young woman and some see an old woman. Explain that other people may see other things as well.
6. Questions to ask:
 - Why did some people see a young woman while others saw an old woman? Is there a correct way to see the picture?
 - What did you feel towards those who saw the drawing the same way you did? Towards those who saw it differently?
 - What did you feel when you “discovered” the other aspect of the picture?
 - Was there ever a time when you saw something one way and someone else saw it differently?
 - How did you feel about the person who saw that situation differently?



Assessment

If it's true that two people can look at the same picture and see something different without either being wrong, how might this affect a conflict? What if each person sees the situation a different way? How can they figure out a resolution to the conflict if they are both right about what they see?

Extension Activity



To continue the discussion on Perspective, explore how individuals perceive and interpret words and ideas differently by asking students to strike a Still Image* of the following words: Family, Friend, Success, Injustice, etc. Discuss how each person perceives and interprets these words differently. You can also place students into small groups and create group Still Images of these words. *Still Image: Using tableaux or using sculpting to create a moment, idea or theme. Think of creating a frozen picture with your body.*

ALBERT: AMAZING THAT NO MATTER WHERE I AM ON EARTH, NORTH IS THAT WAY...BUT...BUT...

CAT: BUT WHAT? WHAT ARE YOU THINKING? TALK TO ME.

ALBERT: WELL, CAT, WHAT IF I WEREN'T ON EARTH... WHAT IF I WAS IN THE MIDDLE OF THE UNIVERSE?

- EINSTEIN IS A DUMMY

Educational Standards

Page 4:
Wonder Activity
ELA

3rd-6th Grade: Writing Standards 2,4

Science

3rd Grade: GLE 0307.11.1, GLE 0307.11.1, GLE 0307.Inq.3, GLE 0307.Inq.5

4th Grade: GLE 0407.11.3, GLE 0407.Inq.3, GLE 0407.Inq.5

5th Grade: GLE 0507.11.1, GLE 0507.Inq.3, GLE 0507.Inq.5

6th Grade: GLE 0607.Inq.2, GLE 0607.Inq.3

Page 6:
The Thought Experiment
ELA

3rd Grade: Writing Standards 2,4

4th-6th Grade: Writing Standards 2,4,9

Theatre

3rd Grade: 2.3, 2.4, 2.6

4th & 5th Grade: 2.2, 2.3, 2.6

6th Grade: 2.1, 2.2, 2.3, 2.6

Science

3rd Grade: GLE 0307.Inq.1, GLE 0307.Inq.2

4th Grade: GLE 0407.Inq.1, GLE 0407.Inq.2

5th Grade: GLE 0507.Inq.1, GLE 0507.Inq.2

6th Grade: GLE 0607.Inq.1

Career Guidance:

3rd-5th Grade: 2.1, 7.7

6th Grade: 2.1,7.8

Pages 7 & 8:
Thinking in Music
Music:

3rd-5th Grade: GLE 6.1

Science:

Will depend on the topic(s) selected by your students.

Page 9:
Perspective
Science

3rd Grade: GLE 0307.Inq.5

4th Grade: GLE 0407.Inq.5

5th Grade: GLE 0507.Inq.5

6th Grade: GLE 0607.Inq.4

Free Educator Preview:
Thurs, September 17th
Reception/Workshop : 5:00 pm
Performance : 6:30 pm

This FREE event includes a wine and cheese reception followed by a 45-minute workshop where NCT staff demonstrate lessons designed to explore some curricular connections of the production. The workshop qualifies for Professional Development credit.

Reception begins at 5 pm, and the evening includes two tickets to the 6:30 pm performance. Educators may purchase additional tickets for this performance at the school rate of \$8.00/person. The workshop is intended for adults only.

To reserve your spot visit NashvilleCT.org and click on "Book a Field Trip" under "visiting NCT." Scroll down to the Educator Preview Section

Einstein is a Dummy Cast

Mike Rosenbaum Albert

James Rudolph The Cat

Bobby Wyckoff Herr

Schloppnoppdinkerdonn

Shawn Knight Constantin

Megan Murphy Chambers Elsa

A PDF version of this guide can be found on NCT's website in the "Book a Field Trip" section.

NashvilleCT.org

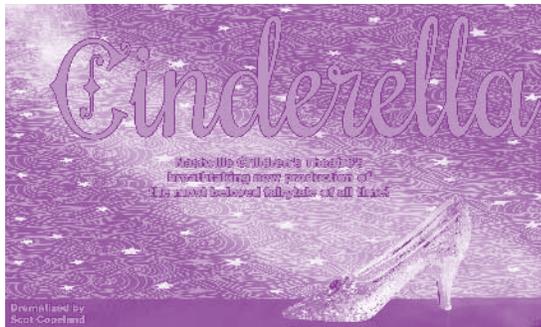
Nashville Children's Theatre's 2015-16 Season



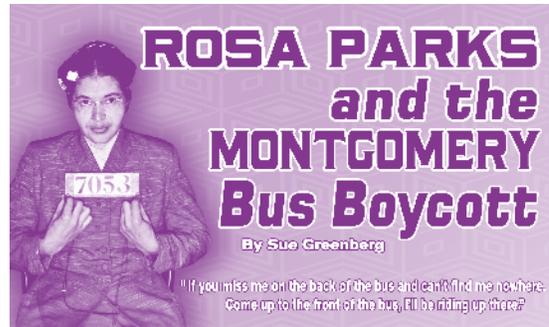
Sept 17 - Oct 4



Oct 29 - Dec 6



Jan 14 - Feb 7



Feb 25 - Mar 13



Apr 14 - May 15



To make a group reservation
call CATHERINE at 615-252-4662.

Einstein is a Dummy is supported in part by the NEA



*NCT is proud to acknowledge the government agencies, foundations and business partners that provide leadership support:
Metro Nashville Arts Commission, Tennessee Arts Commission, The Memorial Foundation,
The Shubert Foundation, National Endowment for the Arts*