

Study Guide

Steve Trash Science – LIVE



Did you know? This performance is a public service of the Sampson CenterStage Performing Arts Series and the County of Sampson and is funded and underwritten through the financial contributions of many businesses, corporations, civic organizations, and individuals from across Sampson County and is provided **FREE** to students from across Sampson County.

On the day of the performance a complete list of Class Acts Sponsors will be distributed to each teacher.

How you can help! Please take a moment to have YOUR students write a note of appreciation to our sponsors! Our sponsors love receiving notes from students.

Many thanks to each Class Acts-Sampson CenterStage for Students Sponsor!

This study guide was prepared and provided as a courtesy of the *Class Acts-Sampson CenterStage for Students* series and is designed to aid in preparing students for an exciting performance...We encourage you to make use of this valuable resource designed to not only enhance each student's theatergoing experience; but to also complement their total educational experience.

GOING TO THE THEATRE (101)



Watching a live performance is very different than watching television or going to the movies. When you see a live performance you play a part too! Your role is an audience member. As an audience member you should obey the following instructions:

When you arrive, follow an usher to your seat. Your group may be assigned to specific areas or seats in the theatre. Please stay in the seat that you are given until the show is over.

Most theaters do not allow cameras, cellular telephones or recording devices. Please leave these at home or in your classroom.

Food, drink, candy and chewing gum are not allowed in the theatre.

Book bags and/or oversized handbags are not allowed in the theatre.

When the theater lights dim, it means the show is about to begin...Please be quiet.

Listen and watch carefully. Talking and making noise disturbs the performers on stage and your fellow audience members. Please hold your comments until after the performance. Of course when something is funny you may laugh. You may even cry when something is sad.

Show your appreciation by clapping when the performance is over and when the performers take a bow.

Stay seated after the show and an usher or your teacher will lead you out of the theater.

SPECIAL NOTE

This show will have a question and answer period following the performance. Please stay seated after the curtain call. If you have a question, raise your hand. Speak loudly and clearly when you are called upon.

Theatre Collaborators



When we see a show, we often think of only the performers on stage. However, many people come together to make a performance happen. Read the list of theatre collaborators and answer the discussion questions with a partner.

Performer - a person who entertains an audience; includes actors, singers, musicians.

Producer - someone who finds financing for and supervises the making and presentation of a show.

Musical Arranger - a musician who adapts a composition for particular voices or instruments or for another style of performance

Director - someone who supervises the actors and directs the action in the production of a show; the “visionary” for the show. The director also collaborates with designers to create the entire picture you see on stage.

Costume Designer - the person who creates costumes for actors to help define and express the character; works with the director and creates renderings of what costumes should look like.

Lighting Designer - imagines and creates the lights of a performance to enhance the mood and the setting.

Sound Designer - imagines and creates the music and other sound effects which help tell the story of a play

Set Designer - makes a map of each set and its changes

Props - items held or used by the actors on stage that help tell the story

Gels - pieces of plastic that are used in stage lights to change their color

THINK ABOUT IT!



Why is changing the color of lights or the use of props important for the mood in a scene?

DISCUSSION QUESTIONS...



1. If you were to work in the theater business, which theater collaborator would you rather be?
2. Which job seems most challenging? Why?

- STUDY GUIDE -

STEVE TRASH SCIENCE - LIVE - BUS IN - SHOW

GENERAL SHOW OBJECTIVES -

Objective #1 – Understand the difference between Magic and Science.

Objective #2 - Understand exactly what science is and why it has value.

Objective #3 - Understand the scientific method and its usefulness.

Objective #4 - Understand that everyone needs to be science-literate.

STUDENTS WILL LEARN -

Science and Magic Tricks look remarkably similar. But they are very different. In this show Steve focuses on making STEAM - SCIENCE TECHNOLOGY ENGINEERING ART & MATH - fun by illustrating the difference between science and magic. He actually has a passion for both! Students will understand the difference between them AND get to explore how the scientific method makes us better thinkers and problem solvers as well.

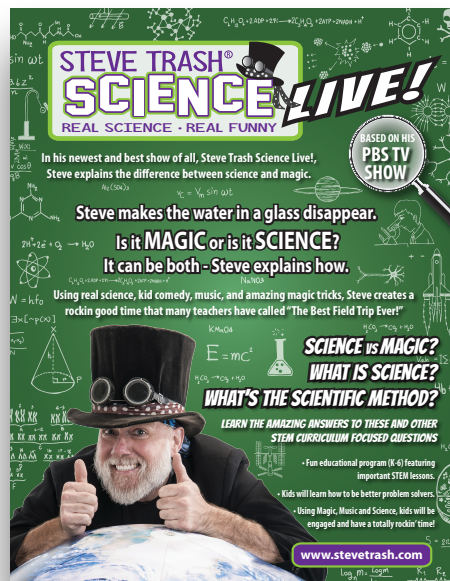
VOCABULARY -

Magic - creating the **illusion** that you can defy the laws of nature.

Science - the study of how the natural world works.

Natural Resource - Something that is found in nature and can be used by people. Earth's natural resources include light, air, water, plants, animals, soil, stone, minerals, and fossil fuels. People need some natural resources to live. They use others to make their lives better.

The Scientific Method - a process or method of research. A problem is identified, information about the problem is gathered, a hypothesis or question is formulated from the information, and the hypothesis is put to test with an experiment to prove or disprove its validity. That information is then shared.



Scientifically Literate - a person that is curious about the world around them, can ask insightful questions, is able to find credible information, and use that information to form opinions that are scientifically informed.

IDEAS FOR DISCUSSION -

Please review these concepts and vocabulary words with your students. They cover ideas that are directly and indirectly addressed in the **STEVE TRASH SCIENCE - LIVE - SHOW**.

- How can we use The Scientific Method in our daily lives to solve problems?
- Of all the planets in our solar system, which planets can support carbon-based lifeforms?
- How is recycling household waste similar to the way our environment recycles water, dirt, and air?
- What is a hypothesis?
- What are some of the differences between science and magic? How does magic APPEAR to violate natural laws?
- Why does good scientific work require both observation and experimentation?

TRUE - FALSE - 9 POST-SHOW DISCUSSION QUESTIONS -

1. TRUE or FALSE – Science is creating the illusion that you can defy the laws of nature.

FALSE. *Science is actually the study of how the natural world works. Science is a powerful way of discovering the secrets of the universe, and everyone can use it to understand how the world works...it's not just for scientists. Magic, on the other hand, is not science. Magic is creating the illusion that you can defy the laws of nature.*

2. TRUE or FALSE – Science is fake.

FALSE. *This is totally false. Science is not fake at all. Without science, we wouldn't have cell phones, Velcro, the internet, or even games like Fortnite and Minecraft. Science is very true and very valuable to humans. Science is real and makes our lives better. Scientists (and you and I) can use verifiable steps, starting with a hypothesis and going to a conclusion to prove or disprove a theory. Science helps us better understand nature and the world around us.*

3. TRUE or FALSE – Sodium Polyacrylate is a polymer used in baby diapers.

TRUE. *Sodium Polyacrylate is non-toxic, biodegradable, polymer that's used to absorb very large amounts of liquid. That property is why it's used in diapers. Remember how Steve pretended to pour water into a cup and make it disappear? It didn't really disappear — he just pretended that it did. It was actually absorbed by sodium*

polyacrylate, transforming it into a gel that wouldn't fall out of the cup. Magic is cool, but science is just as cool. Magic is for fun, but science is for real.

4. TRUE or FALSE – Magic is for FUN, but Science is for REAL.

TRUE. *Magic is creating the illusion that you can defy the laws of nature. No one can defy the laws of nature. Science is about discovering the laws of nature and how they work and understanding them better. Scientists, and you and I, can do this through experimentation and using the scientific method.*

5. TRUE or FALSE – This is the Scientific Method: Step 1 is to just make something up. Step 2 is to pretend that it's true because I want it to be true. Step 3 is to tell others that they are stupid and call them names because they don't believe in my version of science.

FALSE. *The Scientific Method is about having an idea and supporting that idea with evidence that others can see, understand, and verify. There are different versions of the Scientific Method. Here's one of them with an example.*

STEP 1. Make an observation. For example, pretend Steve's computer won't start.

STEP 2. Ask a question. "I wonder why Steve's computer won't start?"

STEP 3. Create a hypothesis or an educated guess as to why this happened. "I think it won't start because the power strip is off."

STEP 4. Create an experiment to determine whether your guess is accurate or not. "I'm going to plug Steve's computer into a power strip that I know is turned on."

STEP 5. Draw a conclusion. "Steve's computer started when it was plugged it into a power strip that was turned on, so his power strip must have been turned off."

STEP 6. Determine whether the outcome supports your hypothesis or not. "It does!"

6. TRUE or FALSE – Science is just something that smart people use to make everyone else feel stupid.

FALSE. *Science is for everyone. Science is a way of looking at the world and using verifiable fact-based questions about the natural world. Science is a better way to understand the physical world. Everyone can use science, and this includes you and me.*

7. TRUE or FALSE – Cell phones, YouTube, and [Minecraft](#) could not exist without science.

TRUE. *The technology that makes these wonderful things possible was brought to us by engineers, scientists, programmers, and game creators. They all used science and the scientific method to make these wonders possible.*

8. TRUE or FALSE – The Scientific Method is a series of steps that includes making an observation, asking a question, creating a hypothesis (educated guess), designing an experiment, coming to a conclusion, and determining if your results do or do not support your hypothesis.

TRUE. *There are different versions of the scientific method, but they are all a way of gaining knowledge through a step by step process that bases its conclusions on experiments and evidence. The steps are observe, question, hypothesize, experiment, make a conclusion, and examine your results.*

9. TRUE or FALSE – The magician is seeking to entertain, **and** the scientist is working – using the scientific method – to discover and share how the natural world works.

TRUE - A magician uses the holes in our perception (the assumptions we make and the way we see things) to create false impressions. They pretend to defy the laws of nature. The scientist works to use all the facts regarding questions (without ignoring facts that contradict their hypothesis) to draw an accurate conclusion.

MORE TEACHER RESOURCES -

Steve Trash has lots of cool resources that teachers (grades 1-5) can use in the classroom on his website. www.stevetrash.com

STEVE TRASH - PBS TV STAR + ROCKIN' ECO HERO

Steve Trash is the star of his own nationwide - PBS kids science show - **STEVE TRASH SCIENCE**. Want to watch? Go to official PBS site. <https://www.pbs.org/show/steve-trash-science/> and check it out or check your local PBS listings.

He was recently honored with the **EEAA'S - BEST ENVIRONMENTAL EDUCATION PROGRAM OF THE YEAR AWARD** and has also won the **OUTSTANDING RC&D PROGRAM** award and **BEST ENVIRONMENTAL SCIENCE CURRICULUM**.

He's appeared on many national and international **TV** shows including - **CBS THIS MORNING**, **ESPN OUTDOORS**, **VH1 TOP 20 COUNTDOWN** and was recently interviewed on Levar Burton's **READING RAINBOW**.

He's been featured in the **NEW YORK TIMES**, the **LOS ANGELES TIMES**, **FAST COMPANY MAGAZINE**, and he's even been on the cover of the kids' magazine, **THE WEEKLY READER**.

Always attempting to "walk the talk", Steve lives in an energy-efficient, earth-bermed home with a 21-panel solar PV array, in beautiful downtown Frog Pond, Alabama. Here's a link to a story about our home.

<https://www.stevetrash.com/bio>

PBS – STEVE TRASH SCIENCE - <https://www.pbs.org/show/steve-trash-science/>

Steve Trash - Rockin' Eco Hero www.stevetrash.com 892024



AT HOME

Dear Parents,

Recently, your student attended a performance by Steve Trash Science -LIVE. Steve believes that science and magic can coexist. His think-outside-the-box educational performance helped to plant seeds designed to help grow creative, open-minded, engaged and open-hearted students.

Prior to attendance, teachers reviewed proper theatre etiquette with students and provided background information about the performance. Aside from the many benefits for students of simply experiencing theater, the material addressed in this performance supported many goals in the North Carolina Standard Course of Study.

As a parent, you are your child's best teacher. They can also teach you through their experiences. Ask your student about the performance they attended and read through this booklet. This is a wonderful opportunity to talk with your child about the performance they experienced.

Thank you for your participation in the arts.



DO IT!

A reviewer writes an opinion of the actors, sets, and director for a newspaper or magazine. Write your review of the performance for your family.
