

USING TABLEAU TO EXPLORE PHYSICAL & CHEMICAL CHANGE

Grade Band: 4-5

Content Focus: Theatre & Science



LEARNING DESCRIPTION

Students will explore and use the art form of tableau to dramatize both physical and chemical changes. Students will begin with a warm-up of drama exercises that will explore small group tableaux. Students will then work as a class to discuss and review the science terminology and characteristics that classify a physical change versus a chemical change. Small groups will each be given a task on an index card of a specific type of change (ie. melting chocolate). In small groups, students will determine whether the change is physical or chemical and then they will create a two-part tableau dramatizing the change. Next, they will be asked to add dialogue to their tableau that supports their argument of whether the change is physical or chemical. Small groups will share their tableaux with the class and a class reflection/discussion will take place on whether the change was physical or chemical.

LEARNING TARGETS

Essential Questions	"I Can" Statements
What is the difference between a physical and a chemical change?	I can explain the difference between a physical and chemical change.

How can theatrical techniques help us understand and express scientific concepts?

I can demonstrate a physical or chemical change through tableau and dialogue.

I can identify a physical or a chemical change.

GEORGIA STANDARDS

Curriculum Standards	Arts Standards
Grade 5: S5P1. Obtain, evaluate, and communicate information to explain the differences between a physical change and a chemical change.	Grade 5 TA5.CR.1 Organize, design, and refine theatrical work. TA5.CR.2 Develop scripts through theatrical techniques. TA5.PR.1 Act by communicating and sustaining roles in formal and informal environments.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
Grade 5: 5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	Anchor Standard 1: I can create scenes and write scripts using story elements and structure. Anchor Standard 3: I can act in improvised scenes and written scripts. Anchor Standard 8: I can relate theatre to other content areas, arts disciplines, and careers.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none">● <u>Physical change</u> - A change from one state of matter to another without a change in chemical composition● <u>Chemical change</u> - A change that produces one or more new substances and may release energy● <u>States of matter</u> - The distinct forms that different phases of matter take on: solid, liquid, gas, and plasma	<ul style="list-style-type: none">● <u>Theater</u> - Dramatic literature or its performance; drama● <u>Thought-tracking</u> - Drama technique in which individuals participating in a tableau, or members of the class observing a tableau, are invited to speak the thoughts or feelings of a portrayed character aloud● <u>Dialogue</u> - Conversation between characters



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- Reversible change - A change that can be undone; often called a physical or temporary change
- Irreversible change - A process that is not reversible

- Scene – The dialogue and action between characters in one place for one continuous period of time
- Ensemble - All the parts of a thing taken together, so that each part is considered
- Tableau - A “living picture” in which actors pose and freeze in the manner of a picture or photograph
- Character - A person, an animal or other figure assuming human qualities, in a story
- Voice – An actor’s tool, which we shape and change to portray the way a character speaks or sounds
- Body – An actor’s tool, which we shape and change to portray the way a character looks, walks, or moves
- Improvisation - A creation that is spoken or written without prior preparation
- Monologue - A speech by a single character in a play, film, or other dramatic work; often used to give the audience deeper insight into the character's motivations and feelings

MATERIALS

- Anchor chart paper (two sheets)
- Markers
- Index cards with physical and chemical changes written on them
- Pencils
- Stick notes

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

Classroom Tips: Use cueing methods when directing tableau in your classroom: “3-2-1- Freeze” and “Actor’s Neutral”. Make your expectations for the tableau science task explicit and go over



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these before the group work begins. Post them so that students can refer back to them if they need to during their group working time.

- Start with a general physical warm-up to get the students' bodies ready. Use exercises such as:
 - **Stretching:** Stretch all major muscle groups.
 - **Shaking Out Limbs:** Shake out arms, legs, and the whole body to release tension.
 - **Energy Passes:** Stand in a circle and pass a clap or a simple motion around to build group focus and energy.
- Introduce tableau with "Silent Tableau".
 - Arrange students in small groups.
 - Explain to students that tableau is a "living picture" in which actors pose and freeze in the manner of a picture or photograph.
 - Tell students that you will say a word or phrase and the group must form a tableau of that word or phrase. The twist is that the group must use non-verbal communication.
 - Say various words, like "triangle", or scenarios, like "eating dinner at a restaurant". Groups should then form the various scenarios within their groups silently.
 - Tell students that they will now add dialogue through thought-tracking. Thought-tracking is a drama technique in which individuals participating in a tableau, or members of the class observing a tableau, are invited to speak the thoughts or feelings of a portrayed character aloud.
 - Next, introduce a two-part scenario, such as a group on a picnic and it begins to rain. Students will create two tableaux, one to represent each part of the scenario.
 - Prompt students to add in thought-tracking.
- Have students return to their seats.

Work Session

- Review the concept of physical and chemical changes.
 - Model a physical change by tearing up a piece of paper and asking class if this was a physical or a chemical change. Discuss why.
 - Pass out sticky notes.
 - In their groups, students should write down the characteristics and examples of physical and chemical changes on the sticky notes (one characteristic/example per sticky note).
 - Place two large sheets of anchor chart paper on the wall. Label one "chemical change" and the other "physical change". Have students place their sticky notes on the appropriate chart.
 - Review the responses as a class and move any characteristics that need to be switched to the other chart.
 - Physical change: The change that occurs does not result in new substance forming; the change is usually reversible.
 - Chemical change: Results in the formation of a new substance; new materials that form are irreversible.
- Tell students that each group will be given an index card that includes a change on it. The group will be responsible for discussing the change and determining whether it is a physical or a chemical change.



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- Examples of changes:
 - Melting chocolate
 - Water freezing into ice
 - Mixing paint to make a new paint color
 - Lighting a match
 - Frying an egg
 - Light bulb getting hot
- Tell students that now the groups will form two tableaux that will dramatize the change that occurred.
 - In each change, students will create dialogue that helps support the type of change that occurred.
 - Allow time for students to form tableaux and practice. Circulate the room to work with students and assess understanding.
- Groups will perform their tableaux in a non-formal class performance (this could involve groups staying where they have been working in the classroom and performing from that spot instead of coming to the front of the class). *Discuss appropriate audience participation and etiquette prior to student performances.*
- Project all physical and chemical changes on the smart board for students to refer to as groups perform.
- The audience should be able to determine the materials that changed and whether it was a physical or chemical change based on the performance.
- Reflect on each performance with the following discussion questions:
 - What did you like or notice about this group's performance?
 - Can you tell which type of change they were dramatizing?
 - How did they include characteristics of the change in their performance?
 - How did the tableau and dialogue support this?

Closing/Reflection

- Reflect after all performances on the following questions: What have we learned today about physical and chemical changes? How did using tableau help us explore this topic?
- Have students complete a 3-2-1 ticket out the door—three things that they learned, two things that they want to know more about, and one question that they still have.
- Allow time for students to share with a partner.

ASSESSMENTS

Formative

Teachers will assess students' understanding of the content throughout the lesson by observing students' participation in the activator, discussion of characteristics of physical and chemical changes, collaboration with groups to demonstrate physical or chemical changes through tableaux, and 3-2-1 ticket out the door.

Summative

CHECKLIST

- Students can explain the difference between physical and chemical changes.
- Students can demonstrate a physical or chemical change through tableau and dialogue.
- Students can identify a physical or a chemical change.



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DIFFERENTIATION

Acceleration:

- Have students write a monologue (a speech by a single character in a play, film, or other dramatic work; often used to give the audience deeper insight into the character's motivations and feelings) as the material that is being changed, such as chocolate being melted.
- **Technology extension:** During the student performances of the tableau, digital pictures or video should be taken for integration on a final group presentation of a Thinglink (<https://www.thinglink.com/>). The class will work in groups to create a Thinglink example of their physical or chemical change. They may link their digital pictures or videos to a place in the artwork. Other content to include on the Thinglink should be the definition of the physical or chemical change, other examples of the physical or chemical change, why the change is important, and a definition of a tableau.

Remediation: Provide specific groups with a list of characteristics of physical and chemical changes. Students should determine from the list which are physical and which are chemical. They will then write those on sticky notes and place them on the appropriate chart. (Students who have processing difficulties may benefit from cutting out the characteristics—or having pre-cut characteristics—and taping them to the chart paper rather than rewriting the characteristics on sticky notes).

ADDITIONAL RESOURCES

NA

**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.*

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