

**ITQ ARTS AND SCIENCE INTEGRATION
GRADE 4
THEATRE and PHYSICAL SCIENCE**

**You said this but you meant that?
Cause and Effect/Multiple Trials
“Magnetism and Electricity,” Investigation 1, 4 and 5
LESSON #3**

CONTENT STANDARDS

Theatre

1.3 Demonstrate how voice (diction, pace and volume) may be used to explore multiple possibilities for a live reading. Examples “I want you to go.” “I want **you** to go.” “I want you to **go.**”

4.1 Develop and apply appropriate criteria or rubrics for critiquing performances as to characterization, diction, pacing, gesture and movement.

4.2 Compare and contrast the impact on the audience of theatre, film, television, radio, and other media.

Physical Science

I&E6c Formulate and justify predictions based on cause-and-effect relationships.

I&E6d Conduct multiple trials to test a prediction and draw conclusions about the relationship between predictions and results.

ESSENTIAL QUESTIONS (*Questions students might ask about the topic*)

- How can I use my voice and body to create different meanings for the same words?
- If I say or do something in a specific way in a play, how does that effect the rest of the play?
- How does this change the way an audience might see or feel about the play?
- Can I do multiple trials of my performance and make the same impact on my audience?

OBJECTIVES & STUDENT OUTCOMES (*Students will be able to.....*)

- Identify what characters do, both vocally and physically, to show what they want and why they want it.
- Conduct experiments with two-line dialogue to create multiple meanings from a piece of text using a variety of physical and vocal skills.
- Conduct multiple trials with a scene to verify the impact has on an audience.

ASSESSMENT (*Various strategies to evaluate effectiveness of instruction and student learning*)

- **Feedback for Teacher**
 - Student rehearsal and performance
 - “Scene Evaluation Teacher Rubric”
 - Video
- **Feedback for Student**
 - Teacher side coaching and comments
 - “Scene Evaluation Teacher Rubric”
 - Peer comments
 - Video

WORDS TO KNOW

Theatre Grade Four

- **dialogue:** the conversation between actors on stage
- **pacing:** the rate of speed at which an activity takes place
- **scene:** 1. a location at which an event or action happens; 2. any of the divisions of an act of a play or opera, presenting continuous action in one place
- **tone:** the way an actor says something as an indicator of what the person is feeling or thinking; may have multiple meanings

Science Grade Four

- **Cause-and-effect:** a cause is an action that makes something else happen and an effect is what happens as a result of the cause
- **predict:** to make an educated guess based on data or previous experience
- **prediction:** an educated guess based on data or previous experience

MATERIALS

- “Open Scenes Handout” (included)
- Video camera and playback system (optional)
- “Scene Evaluation Teacher Rubric” (included)

RESOURCES

- “The Playing is the Thing: Learning the Art of Acting Through Games and Exercises”, Anita Jesse, Wolf Creek Press, 1999
- VAPA Core Learnings
- FOSS, Grade 4, “Magnetism and Electricity,” Investigation 1, 4 and 5

PREPARATION

- Teacher reviews “Scene Evaluation Teacher Rubric.”
- Review the actor’s tools; voice, body, imagination.
- Complete a physical and vocal warm up.

WARM UP (*Engage students, access prior learning, review, hook or activity to focus the student for learning*)

(15 minutes)

- Select two students to read the “Class Demonstration Scene” as it is written. (Handout included at end of lesson) Video tape this performance.
- Ask the class to discuss possible options for the situation of this **scene**.
- Discuss and chart the following:
 - What is the situation for this **scene**?
 - What is the **tone** for each of the characters? (indicators of what the characters are feeling)
 - What the voice and body movement would look like for each of the two characters.

Sample Chart:

Situation	Character	Tone	Show with Voice	Show with Body
A is stuck underneath a tree and B is not strong enough to lift it.	A	Scared	Loud and harsh	Lies on floor
	B	Frustrated	Slow and loud	Lowers head and puts both hands on head

- Have the two volunteers perform the **scene** again with the class’s choice of situation and tone. Video tape this performance.
- Make sure actors use appropriate voice and body movement for their characters’ tone in the

scene.

- Ask: “What made the **scene** more understandable or clear with the changes we made?”
- Teacher note: Point out to students that the words of the **scene** did not change. It was what the actors did with their voices and bodies that gave the text meaning.
- Discuss the concept of **cause-and-effect**. Say: *Cause-and-effect is a very important part of scientific thinking. Remember when we were doing experiments with magnets? We were working on measuring the force of attraction between two magnets. You were using washers in different ways to change the experiment. Each action you used was a cause and had a different outcome or effect. Before you started using the washers you made **predictions** on what you thought the outcome would be. As actors, **cause-and-effect** is very important to us as well. The choices an actor makes with their voice and body carries meaning. The way we use our words and bodies causes an effect on the other actors in the scene as well as the audience.*
- Say: *As people our actions and words are often influenced by our families and environments. In one family loud voices might mean that people are angry. In other families loud voices might mean that people are just excited. Your personal experience will help you make your **predictions**, but you may be surprised by how someone else may react to certain ways of using our bodies and voices. Remember that there is no right or wrong in making the **predictions**. Keep your mind open to how your partner may respond.*
- Review with students the “**Actors Planning Chart**”.
- Explain to the students they will need to fill out the “**Actors Planning Chart**.” They need to write what tone they want to convey, how they plan to use their voice and body to convey the tone for each of their characters. In addition they will **predict** how their choices will make their partner feel. Remind students that before they complete an experiment they make an educated guess or **prediction** about what will happen. In this activity they will be doing the same thing as actors. After they complete the activity in the guided practice they will add to the chart how their partner reports it actually made them feel.
- Allow students time to fill out the “**Actors Planning Chart**” and rehearse their two line scenes.
- After students have completed the chart direct students to sit with their partner and listen to the next set of instructions.

MODELING (Presentation of new material, demonstration of the process, direct instruction)
(15 minutes)

- Say:
 - Remember when we were doing experiments with magnets? We were working on measuring the force of attraction between two magnets. You were using washers in different ways to change the experiment. Each action you used was a cause and had a different outcome or effect. When a scientist completes an experiment they would conduct multiple trials to determine the accuracy of their results. Can someone explain how you conduct multiple trials? When actors are in a play they experiment during rehearsals on how they will speak their dialogue [tone], where they will move on the stage [blocking] and the gestures the actor will use to convey their characters feelings. Once they have decided on how to do all those things to best make an impact on the audience they then conduct multiple trials. We would call them performances. When you go to watch a play one day and then you went again another, do you think the actors perform the play the exact same way? [Yes]
- Explain to the students they are now going rehearse their two-line **dialogue scenes** and decide on the best way to impact the audience with their gestures, movement and tone of voice.
- Explain to students it very important they choose only one way they intend to perform their scene and must perform it the same way every time.
- Say:
 - Remember, When a scientist completes an experiment they would conduct multiple trials to determine the accuracy of their results. It is the same way with actors. In order for an actor to

now if the choices they made with tone of voice, movement and gestures really make an impact on the audience, they need to repeat their performance in the same way.

- Allow an additional ten (10) minutes to **rehearse the scenes**.
- After students have rehearsed their **scenes** have them return to their seats.

GUIDED PRACTICE (*Application of knowledge, problem solving, corrective feedback*)
(15 minutes)

- Call on three (3) groups of two (2) to come up to the acting space or stage to perform.
- Explain to the students you will assign each a pair a number (e.g. group 1, group 2 and group 3) and when you call out their number they are to perform their scene.
- Tell the students you will be calling on their group multiple times to perform their scene and they are to repeat their performance the same way.
- Explain to the students it is very important they stay focused and be ready to repeat their performances when called on.
- Have the students perform their scenes. Make sure to call on all groups to more than once.
- Tell the students to applaud for the **actors**.
- Select another three (3) groups of two (2) to come up and perform.
- Ask:
 - *So, when you are performing your scene and then repeating it the same way every time what do we call that in science? [multiple trials] Is that what we call it in theatre? [No, they are just multiple performances and it is the actors job to repeat the performance the same way each time.]*

DEBRIEF & REFLECT (*Identify problems encountered, ask and answer questions, discuss solutions and learning that took place. Did students meet outcomes?*)

(5 minutes)

- Ask:
 - *What do actors use to make an impact on the audience? [gestures, tone and voice.]*
 - *When actors are in rehearsal, what do they experiment with to make in impact on the audience? [They experiment with gestures, tone and voice.]*
 - *Which groups had the most effective performances? Consider clear **tone** of scene, **tone** of each character, voice and movement.*
 - *What made the performance effective? Be specific: consider clear **tone**, characters, **setting**, voice and movement*
 - *When you are performing your scene and then repeating it the same way every time, what do we call that in science? [multiple trials]*
 - *Why do scientist conduct **multiple trials**?*
- *Have students respond to the following prompt in their science notebooks:*
 - *How did theatre help me understand how to conduct multiple trials?*

EXTENSION (*Expectations created by the teacher that encourage students to participate in further research, make connections, and apply understanding and skills previously learned to personal experiences.*)

- Have students take **scenes** from television shows, movies or commercials and change the meaning by changing the characters, **dialogue** and/or **tone**.
- Have students take pieces of classroom literature and change the meaning by altering the characters, **dialogue** and/or **tone**.

OPEN SCENES HANDOUT

Class Demonstration Scene:

A: Help me

B: I can't

A: Come here

B: I'm on my way

One line dialogue

Scene 1

A: You're sure about that

B: Yeah I'm sure

Scene 7

A: Who sent this package

B: You wouldn't believe me if I told you

Scene 2

A: You should have asked me

B: I know but I forgot

Scene 8

A: What's in the box

B: What ever you do don't open it

Scene 3

A: Which one do you like

B: I told you -I like them both

Scene 9

A: I really like you

B: Get out of here

Scene 4

A: You're the boss

B: Don't call me that

Scene 10

A: What are you doing?

B: What does it look like?

Scene 5

A: Of course you can

B: Are you serious

Scene 11

A: It's time to go.

B: Not yet

Scene 6

Scene Evaluation Teacher Rubric

Use the criteria below to assess and evaluate the group's scene work *process* from the original scene to the new scene.

Advanced: 4 pts.

Clear and significant change in setting is made to the original scene. Voice and movement reflect and are appropriate to the new setting, pacing is appropriate (students either sped up or slowed down as necessary), intention and relationship between characters is clearly established.

Proficient: 3 pts.

Change in setting is noticeably different from the original scene, Voice and body movement reflect and are appropriate to the new setting, pacing remains about the same, intention and relationship between characters is evident, although not well defined.

Basic: 2 pts.

Change in setting is noticeably different from the original scene. Voice and body movement are marginally reflective to the new setting, pacing remains about the same, intention and relationship between characters is marginal.

Below Basic: 1 pt.

Change in setting is not much different from the original setting. Voice and body movement attempts to reflect the new setting, pacing is sporadic, intention and relationship between characters is unclear.

Not attempted: 0 pts.